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RESEARCH PAPER

Mobility Divides: Gender, Nationality, and the Role of Institutions in Italy's Internal Migration

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Abstract
We study interprovincial migration flows in Italy from 2004 to 2019. Using a theoretically grounded gravity model, the analysis separately investigates push and pull factors for total flows, females, males, Italians and foreigners. Along with traditional macroeconomic and demographic factors, we introduce an index of institutional quality. Our empirical findings show that citizenship is the most decisive dimension, producing distinct migration patterns across nearly all determinants. The nationality dimension shows that foreigners exhibit significantly greater geographic mobility than their Italian counterparts. Gender differences are comparatively minor, primarily evident in responses to population, human capital and unemployment. This heterogeneity highlights the pivotal role of socioeconomic and institutional structural characteristics in shaping differentiated patterns of internal migration in Italy.

Keywords Internal migration · Migration by gender · Migration by nationality · Gravity model

JEL Classification J16 · J61 · R23

1 Introduction

Empirical research on the origin and destination factors that determine internal migration in Italy has grown significantly in recent decades. Economic disparities between provinces or regions are the major force that drives migration: areas with better employment opportunities, higher wages, and stronger economic growth tend to attract more migrants (Piras 2017; Fratesi and Percoco 2014; Bonasia and Napolitano 2012; Etzo

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2011; Biagi et al. 2011; Furceri 2006; Attanasio and Padoa-Schioppa 1991; Salvatore 1977). Amongst the other factors examined in the literature, Piras (2021, 2017) and Fratesi and Percoco (2014) find an important role for human capital; Cannari et al. (2000) provide evidence that the housing price differential between macro-areas is a crucial factor in explaining the falling pattern of South to Centre-north internal mobility; Piras (2020) highlights the crucial role of migration networks. Despite these contributions, various gaps in this specific field of empirical research still remain.[1]

A principal shortcoming, common to many studies, concerns the failure to disaggregate migration flows by gender. To our knowledge, no previous research on the determinants of internal migration flows in Italy has examined these determinants using a theoretically grounded structural gravity model framework, while distinguishing between female and male migrants. This is not intended to suggest that gender differences in internal migration in Italy have never been explored within different theoretical and empirical frameworks. For example, Impicciatore and Panichella (2019) focus on internal migration from the South to the North and find that short-distance mobility is influenced by family dynamics, particularly marriage and parenthood, which generate significant heterogeneity across genders. Ballarino and Panichella (2021) examine the impact of geographical mobility on employment and occupational attainment (defined as access to upper social classes, avoidance of working-class positions, and avoidance of agricultural occupations) and shows that its effects differ markedly by gender: for males, geographical mobility increases the probability of employment and of holding a working-class job, whereas for females it reduces both probabilities. Biagi et al. (2023) analyse the spatial asynchronicity of Italian interprovincial migration flows, classifying migrants by skills, age, and gender. Instead of a standard gravity framework, they model destination-origin differences and explicitly account for gender and other individual characteristics. Their results show that destination choices vary principally by skill level. A second gap concerns differences in sensitivity to the main drivers of migration behaviour between Italians and foreigners. Few studies concerning Italy have explored this issue. In this regard, the general finding is that foreigners are more mobile than Italians. Casacchia et al. (2022) demonstrate that migrant networks and employment conditions primarily drive foreigners' mobility, whereas Italians' flows are more influenced by population size at origin; unemployment at the destination increases migration for some foreign groups in niche labour markets. Piras (2026) confirms large differences: Italians are more sensitive to human capital and quality of life at origin, whereas foreigners respond primarily to unemployment and are more mobile and reactive to labour market differentials. A third gap pertains to the role of institutions in driving migration flows. Historically, migration studies focused on economic and demographic factors as the main drivers of migration flows. More recent research has expanded the empirical analysis framework to include social, political, and cultural variables, thereby enhancing explanatory power. In this context, institutions have become key determinants of migration, acting as both pull and push factors. Poor institutional performance in the area of origin may push residents to seek better

[1] Internal migration has been studied extensively in other European countries. See the recent contributions of Maza et al. (2018) and Maza (2020) for Spain, Schündeln (2014) and Mitze and Reinkowski (2011) for Germany, Efthyvoulou et al. (2023) for England and Wales. A comprehensive analysis of internal migration trends in OECD countries is provided by Alvarez et al (2021).

quality of institutions elsewhere, while strong institutions in the destination area can attract migrants and influence their destination choices. Hence, institutional quality matters for most migrants, as it can significantly affect their lives (Akça and Çelik 2024; Baudassé et al. 2018).

This paper addresses these limitations by examining internal migration in Italy at the provincial (NUTS 3, according to the EU classification) level, thereby contributing to extending the existing literature. We utilise data from the Italian National Institute of Statistics (Istat), Eurostat, and Nifo and Vecchione (2014), spanning 16 years from 2004 to 2019, and apply the Posson pseudo-maximum likelihood estimation strategy (Santos Silva and Tenreyro 2006). We employ the gravity migration model, which has become the workhorse in migration studies (Beine et al. 2016; Poot et al. 2016). Within such a structural gravity approach, gender and nationality disaggregation enables us to investigate the differentiated effects of these variables at both the origin and the destination.

Internal migration in Italy has been predominantly directed from the South to the Centre-North. This pattern is largely attributable to persistent disparities in economic development between these two macro-areas: the Centre-North has historically been, and continues to be, more developed than the South. This dualistic development remains a defining feature of the Italian socioeconomic landscape, sustaining substantial migration flows along this established axis. As such, any empirical analysis of internal migration in Italy must take this divide into account. We align with this evidence and present separate analyses for the full bilateral and South to Centre-north samples.

The results for the full bilateral sample show that internal mobility is highly stratified and shaped by citizenship, gender, and structural conditions. Italians and foreigners, as well as females and males, respond differently to demographic, economic, and institutional factors. Overall, citizenship is the most decisive dimension, producing distinct migration patterns across nearly all determinants. Gender differences are comparatively minor, primarily evident in responses to population, human capital and unemployment. Analogously, citizenship emerges as the most decisive factor in the South to Centre-North sample, while gender plays a secondary role. Furthermore, the quality of institutions is a driver of migration flows. These findings confirm the relevance of socioeconomic structural characteristics and institutional theories in explaining Italy's uneven patterns of internal migration.

The rest of the paper is organised as follows. The next Section summarises the relevant literature. Section 3 elaborates the theoretical framework. Section 4 presents the data and variables used in the empirical Section. Section 5 provides a descriptive analysis of migration flows and rates across Italian provinces. Section 6 illustrates our results. Finally, Sect. 7 concludes and discusses the main findings.

2 Literature Review

Prior investigations regarding internal migration in Italy have found that macroeconomic variables are the main factors explaining them. A detailed discussion of all

previous studies goes beyond the scope of the present paper.[2] Since the present study is linked to the literature exploring the role of gender, migrants' citizenship, and institutional quality in migration, this Section focuses only on these elements.[3]

For years, the literature has tended to neglect gender-specific dimensions of migration. More recently, scholars have begun examining gender-specific migration behaviours. International disparities in migration patterns between females and males underscore the role of socially constructed gender norms. Motivations often mirror and reinforce societal expectations; male migration is typically driven by economic factors, particularly the pursuit of employment opportunities. In contrast, female migration is often linked to family reunification and culturally assigned domestic roles. However, country-specific studies reveal contrasting findings, partly due to geographic variation and differing methodologies. Many rely on micro-level data that may lack national representativeness and cross-country comparability (Christou and Kofman 2022; Abel and Muttarak 2017).

Research, particularly in developing countries (Anastasiadou et al. 2024; Pfeiffer et al. 2008), shows that gender influences migration motivations, experiences, and outcomes. Females and males differ in aspirations, determinants, reliance on networks, and integration paths (Amelina and Lutz 2019). However, quantitative studies capturing these differences remain limited (Anastasiadou 2024, p. 962). Migration models often rest on cost–benefit analyses, which vary by gender and nationality. Economists and social scientists should consider gender when analysing migration drivers and outcomes (Pfeiffer et al. 2008, p. 15). Male-focused theories and findings may overlook female migration, and gender-neutral studies risk misrepresenting variable impacts (Richter and Taylor 2008, p. 51). However, few models explicitly address gendered determinants or their evolution over time, possibly because of data limitations. However, while data limitations persist internationally, internal migration studies face fewer constraints, especially in developed countries with reliable transfer of residence records.

To the best of our knowledge, only one paper by Cipollina et al. (2024) has addressed the differentiated role of migrants' determinants by gender at the international level, using a theoretically grounded gravity model.[4] The authors assess responses to gender migration in the context of environmental shocks across a sample of 121 countries from 2005 to 2010. They distinguish between internal and international migration and find that females tend to migrate less than males, both within their own countries and across international borders, regardless of the income level of the countries of origin.

[2] A detailed analysis of the factors affecting internal migration flows in Italy can be found in Piras (2017).

[3] It should be re-emphasised that this paper investigates the drivers of migration flows, disaggregating them based on gender and citizenship. We are interested in examining the differentiated effects of internal migration flow determinants based on these two sociodemographic factors. Hence, we refrain from reviewing studies that include these two factors as explanatory variables.

[4] This is not to say that migration flows by gender have not been studied before. However, the focus of these other papers was different. For example, Ruyssen and Salomone (2018) examine the link between perceived gender discrimination and emigration intentions, focusing on differences between females and males. They find that females, and to a lesser extent males, are more likely to express intentions to emigrate if they feel females are disrespected.

Regarding Italy, Biagi et al. (2023) investigate the spatial a-synchronicity of Italian inter-provincial migration flows using data for 1975, 1985, 1995, and 2005, dividing migrants into three main groups based on their skills, age, and gender. They do not apply a standard gravity approach; rather, they measure all the variables as differences between their values at the destination and at the origin and explicitly consider migrants' gender along with other personal characteristics. They find that individuals with different skill levels choose different destinations, creating flows and counterflows: while low-skilled individuals prefer locations with lower income and unemployment rates, prioritising getting a job, the opposite holds for high-skilled migrants, who move towards destinations with higher incomes and higher unemployment rates. Furthermore, the role of economic factors varies according to migrants' skill levels. In a more dated study, Fachin (2007) concentrates his analysis exclusively on male migration from 1970 to 1996. He motivates this choice because male labour force participation rates are high and stable, in contrast to those of females. He claims that home income growth in the sending regions is the main factor explaining the decline in the migration rates during the investigated period. In contrast, he finds a weak effect for unemployment rate differentials.

As regards the literature on citizenship and migration, a common finding in migration studies is that foreigners are generally more dynamic than natives (Melguizo and Sanchis 2025; Melguizo and Royuela 2020; Maza et al. 2018; Gutiérrez-Portilla et al. 2018; Finney and Catney 2012; Friedberg and Hunt 1995). Foreigners are a self-selected group, differing in personal characteristics from the native population, as they have already undergone migration from their home country to the host country. In addition, they have weaker social and familial ties than natives, making them more willing to relocate (Schündeln 2014).

Few studies have conducted a comparative analysis of the internal migration of Italians and foreigners. Results show differences in the push and pull factors influencing the intensity of internal migration for these two groups. Lamonica and Zagaglia (2013) find that population size, distance, and economic factors account for the internal migration flows of Italians. In contrast, the presence of foreign populations and the employment opportunities at the destination are the main factors influencing foreigners. The results of Casacchia et al. (2019) indicate that the foreign population is the primary driver of foreigners, while unemployment is the single most significant factor affecting Italians. Casacchia et al. (2022) analyse migration flows for Italians and seven major foreign groups (Romanians, Albanians, Moroccans, Chinese, Ukrainians, Filipinos, and Indians). They show that migrant networks are a key determinant for foreigners, whose mobility is more strongly driven by employment conditions, whereas for Italians, the size of the population at origin plays a more prominent role. Interestingly, unemployment at destination is found to positively affect the migration of Moroccans, Chinese, Filipinos, and Indians, reflecting their concentration in niche labour markets. Finally, Piras (2026) documents substantial heterogeneity in the determinants of migration between Italians and foreigners. Italian migrants display predominantly economically motivated mobility patterns, moving from less developed, high-unemployment provinces to more affluent, low-unemployment areas, and exhibiting a strong sensitivity to human capital and quality-of-life conditions at the origin. In contrast, foreign migrants show less systematic responses, particularly to

GDP per capita at the origin, although they respond clearly to unemployment and to GDP per capita at the destination.

A related but distinct strand of the literature has examined how internal migration in Italy responds to the influx of immigrants from abroad. Recent work by Basile et al. (2021) analyses interregional migration and demonstrates that the influx of immigrants from outside the country displaces low-skilled Italians. Similarly, foreign-born residents experience reduced internal mobility, suggesting that new immigrant waves may limit internal migration for earlier arrivals. Conversely, the influx of immigrants from abroad attracts highly skilled Italians.

Finally, the literature on institutional quality and migration has found that migration aspirations are shaped by institutional contexts, living standards, and cultural factors that make destination countries more appealing than those of origin. Institutional theory (North 1990) highlights the pivotal role of formal and informal institutions such as legal framework, bureaucratic systems, and cultural norms. Using bilateral migration flows from 103 countries over the period 1990–2000, Arif's (2019) empirical findings indicate that economic, political, and social institutions serve as significant pull factors in international migration, as individuals tend to relocate to countries with stronger institutional frameworks. Nonetheless, the strength of this influence varies across institutional domains.

One important paper examining the role of institutional quality in internal migration in Italy is Niffo and Vecchione (2014), which investigates institutions as a key determinant of internal migration flows among graduates. By analysing a sample of 47,300 individuals who graduated in 2004, the authors show that the institutional quality index in the province of origin carries a negative coefficient, confirming the hypothesis that stronger local institutions reduce graduates' propensity to migrate. Conversely, the estimated coefficient for institutional quality at the destination is positive, highlighting the effective role of better institutional environments as a pull factor for graduates within Italy.

Other two papers that analyse the role of institutional quality (or one of its components) in Italian internal migration are Di Berardino et al. (2019) and D'Ingiullo et al. (2023). Both papers analyse Italian provinces from 2004 to 2012, but neither explores the push nor pull effects of institutional quality on migration flows. Di Berardino et al. (2019) focus on the effect of net migration on institutional quality. More specifically, they aim to investigate "the causal link between internal migration and institutional quality and whether and to what extent the skilled mobility affects the quality of institutions" (Di Berardino et al. 2019, p. 844). Their results indicate a positive relationship between human capital net gain and institutional quality, particularly when migrants' educational levels are taken into account. D'Ingiullo et al. (2023) aim to shed light on the role of social capital in interprovincial selective migration, considering both low- and high-skill migration flows. They proxy social capital by the voice and accountability variable elaborated by Nifo and Vecchione (2014) and find that social capital reduces low-skill migration flows and deters high-skill emigration.

3 Theoretical Background

Within a utility maximisation framework, individuals determine whether and where to migrate by evaluating the factors associated with potential destinations in light of their personal preferences. While empirical analyses commonly focus on economic, social, and demographic conditions, additional considerations may include institutional features and other location-specific attributes.

Following Melguizo and Royuela (2020) and Miguélez and Moreno (2014), the utility U_l^k that a given province l provides to individual k is a function of the province's observable characteristics (Z_l) and an unobserved, individual-specific idiosyncratic component (ε_l^k):

$$U_l^k = u(Z_l) + \varepsilon_l^k \tag{1}$$

The deterministic component of utility is assumed to be common across individuals and depends on a vector of socio-economic determinants and province-specific characteristics. Individual k opts to migrate when the expected utility from a potential destination-province j exceeds the utility associated with remaining in the origin-province i, after accounting for bilateral migration costs C_{ij}, namely[5]:

$$E\left(U_j^k\right) - C_{ij} > E\left(U_i^k\right) \tag{2}$$

We aggregate individual migration decisions and define a dummy variable m_{ijt}^k, which takes the value 1 when Eq. (2) holds at time t, i.e., when individual k chooses to migrate rather than remain in the province of origin, and 0 otherwise. Gathering these binary decisions across all individuals for each origin–destination province-pair yields the observed count of migrants moving from origin-province i to destination-province j at time t, $m_{ijt} = \sum_k m_{ijt}^k$. This allows us to specify a structural gravity model of migration in which bilateral interprovincial migration flows are expressed as a multiplicative function of a set of variables, encompassing economic, demographic, and institutional factors:

$$m_{ijt} = e^{\alpha_0} \prod_{v_i=1}^{V_i} x_{v_i t}^{\alpha_{v_i}} \prod_{v_j=1}^{V_j} x_{v_j t}^{\alpha_{v_j}} \varepsilon_{ijt} \tag{3}$$

In Eq. (3) interprovincial migration flows m_{ijt} depend on a constant term e^{α_0} that captures the impact of all common factors affecting interprovincial mobility, and on a set of variables V_i and V_j measured, respectively, at the origin $\left(x_{v_i t}\right)$ and at the destination $\left(x_{v_j t}\right)$, plus an idiosyncratic error term $\left(\varepsilon_{ijt}\right)$. In the province of origin $x_{v_i t}$ can exert either a positive (push) or a negative (stay-at-home) role. Analogously, in the province of destination $x_{v_j t}$ can have a positive (pull) or a negative (stay-away) effect (Bodvarsson and Van den Berg 2013).

[5] Migration costs are shaped by dyadic characteristics that are fixed over time, including bilateral distance and contiguity. In our empirical analysis, migration costs are proxied by origin–destination fixed effects.

A crucial issue in empirical research on migration is the potential for endogeneity resulting from multilateral resistance to migration, which might lead to biased results if not properly controlled for (Beine et al. 2016; Bertoli et al. 2013). In our empirical analysis, multilateral resistance to migration refers to the fact that migration from province *i* to province *j* is influenced not only by the characteristics of the two provinces but also by the relative accessibility of migration for both provinces compared to all other potential destination provinces. In this respect, and depending on the specific research design, multilateral resistance to migration can be tackled by including different sets of fixed effects. Including origin-time and destination fixed effects enables the researcher to account for all time-varying factors at the origin, any time-constant factors at the destination, and to estimate the role of time-varying variables at the destination. Notice, however, that under such a framework, the role of time-varying variables at the origin cannot be assessed. Conversely, including destination-time and origin fixed effects allows the researcher to account for all time-varying factors at the destination, as well as any constant factors at the origin, and to estimate the impact of time-varying variables at the origin. Under this set-up, time-varying variables at the destination cannot be identified. Alternatively, in both specifications, origin–destination fixed effects can be used in place of destination or origin fixed effects. This design is quite challenging, as it absorbs all time-invariant bilateral-specific factors, such as distance. In this paper, we apply this most demanding structure of fixed effects and estimate the following two equations:

$$m_{ijt} = e^{\alpha_0} \prod_{v_i=1}^{V_i} x_{v_i t-1}^{\alpha_{v_i}} \prod_j^J \prod_{t=1}^T e^{\vartheta_{jt} d_{jt}} \prod_i^I \prod_{j=1}^J e^{\theta_{ij} d_{ij}} \varepsilon_{ijt}^O \tag{4}$$

$$m_{ijt} = e^{\beta_0} \prod_{v_j=1}^{V_j} x_{v_j t-1}^{\beta_{v_j}} \prod_i^I \prod_{t=1}^T e^{\vartheta_{it} d_{it}} \prod_i^I \prod_{j=1}^J e^{\xi_{ij} d_{ij}} \varepsilon_{ijt}^D \tag{5}$$

where e^{α_0} and e^{β_0} are constant terms, d_{jt} are destination-year fixed effects, d_{it} are origin-year fixed effects, d_{ij} are origin–destination fixed effects, and ε_{ijt}^O and ε_{ijt}^D are well-behaved error terms. Importantly, note that origin–destination fixed effects capture all bilateral relations between origin and destination provinces, including fixed migration costs, distance, as well as origin or destination-specific variables (Bertoli and Ruyssen 2018). As is common in the empirical literature, all explanatory variables are lagged one year to account for a delay in the migration decision and to attenuate the endogeneity problem. Using Eq. (4), we can assess the role of the origin-specific time-varying variables (Ortega and Peri 2013); conversely, Eq. (5) allows us to estimate the coefficients of the destination-specific time-varying variables (Beine and Parsons 2015).

Until recently, the conventional approach in empirical migration studies has been to apply a natural logarithm transformation to the multiplicative gravity equation and estimate the resulting model using Ordinary Least Squares (OLS). Nonetheless, this log-linear specification entails several well-documented econometric issues. In response to these shortcomings, researchers have increasingly turned to mixed-model frameworks and nonlinear estimation techniques to estimate the gravity equation. Among the various estimation methods, the Poisson Pseudo-Maximum Likelihood

(PPML) has gained momentum (Santos Silva and Tenreyro 2006, 2011; Fally 2015; Head and Mayer 2014) for different reasons. First, it can be applied to any nonnegative dependent variable and does not require any explicit assumption regarding its distribution. Second, it is robust to different patterns of heteroscedasticity. Third, estimates are efficient and consistent even in the case of overdispersion. Fourth, when different sets of dummy variables are included, no incidental parameter problems arise. Fifth, it is suitable when the dependent variable has many zeros.

To estimate the model using PPML, we draw upon the property that provides the conditional expectation of m_{ijt} based on the set of regressors $X^O_{ijt} = (1, x_{v_i t-1}, d_{jt}, d_{ij})$ in Eq. (4) and $X^D_{ijt} = (1, x_{v_j t-1}, d_{it}, d_{ij})$ in Eq. (5), which takes the exponential functional form. Next, since our empirical analysis involves the study of interprovincial migration flows disaggregated by nationality and gender, we can rewrite Eqs. (4) and (5) as follows[6]:

$$E\left(m^{n,g}_{ijt}|X^O_{ijt}\right) = exp\left(\alpha_0 + \sum_{v_i=1}^{V_i} \alpha_{v_i} \ln x_{v_i t-1} + \sum_j^J \sum_t^T \vartheta_{jt} d_{jt} + \sum_i^I \sum_j^J \theta_{ij} d_{ij}\right) \tag{6}$$

$$E\left(m^{n,g}_{ijt}|X^D_{ijt}\right) = exp\left(\beta_0 + \sum_{v_j=1}^{V_j} \alpha_{v_j} \ln x_{v_j t-1} + \sum_i^I \sum_t^T \vartheta_{it} d_{it} + \sum_i^I \sum_j^J \xi_{ij} d_{ij}\right) \tag{7}$$

where $m^{n,g}_{ijt}$ are gross migration flows of nationality n or gender g, from origin province i to destination province j at time t.

4 Data and Variables

4.1 Data Sources

The data were collected from the Italian National Institute of Statistics (Istat), Eurostat and Nifo and Vecchione (2014). More specifically, interprovincial bilateral migration flows, unemployment rates, population, and educational levels of the resident population are sourced from the Istat data warehouse. Provincial GDP per capita is obtained from Eurostat, while the Institutional Quality Index was computed by Nifo and Vecchione (2014) and made available online up to 2019.[7] The data span 16 years, from 2004 to 2019, and refer to Italian provinces (corresponding to NUTS3 according to

[6] Equations (6) and (7) follows after assuming $E\left(\varepsilon^O_{ijt}|x^{\alpha_{v_i}}_{v_i t-1}, d_{jt}, d_{ij}\right) = 1$ and $E\left(\varepsilon^D_{ijt}|x^{\beta_{v_j}}_{v_j t-1}, d_{it}, d_{ij}\right) = 1$. To estimate them, we apply the user-written Stata command ppmlhdfe (Correia et al. 2020).

[7] https://sites.google.com/site/institutionalqualityindex/home. After the present paper was written, a revised version with updated data till 2023 was released.

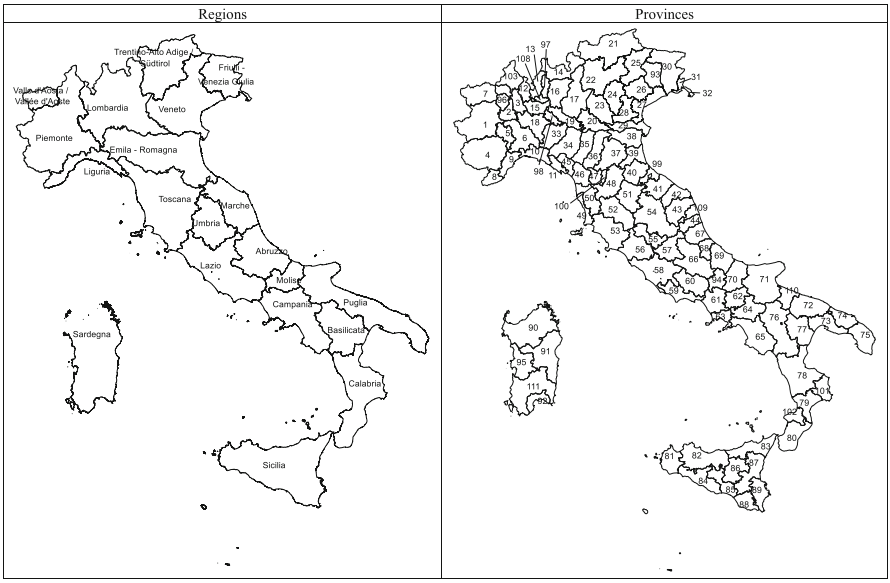

Fig. 1 Italian regions and provinces. See Appendix A for the names of the provinces corresponding to the numbers on the map

the EU classification). The number of provinces changed over time. From 2004 to 2005, there were 103; then four new provinces were established, increasing the total to 107. In 2010, three additional provinces were established, bringing the total to 110. Finally, in 2017, the four provinces established in 2006 were abolished, and a new one was created, bringing the total back to 107. The current situation of the provinces is illustrated in Fig. 1. Appendix A provides the list of provinces and the regions to which they belong. Summary statistics for all variables are shown in Tables B1–B3 in the Appendix.

4.2 Variable Description

The set of regressors $x_{v_i t-1}$ and $x_{v_j t-1}$, measured at both origin and destination, are the resident total population, the share of the foreign population over the Italian population, GDP per capita, total unemployment rate, a proxy for human capital, and the aforementioned index of institutional quality.

Population (POP) is the most commonly used proxy for measuring the size of both the sending and receiving provinces. Starting with the classical work of Ravenstein (1885, 1889) and the pioneering empirical analysis of Zipf (1946), almost all empirical works on migration have to consider the total mass of potential migrants, and population is the universally used measure. The expected effect is positive at the origin and destination, as larger populations are typically associated with higher migration flows.

The share of the foreign population relative to the Italian population (SH_FOR) can have opposite effects on Italians and foreigners, depending on the local context.

Regarding Italians, a higher share of foreigners at the origin could lead to displacement in cases of job competition, pressure on public services, or a perceived decline in local amenities due to the increased presence of foreigners. This would have a positive impact on migration flows. Alternatively, a higher foreign share could signal greater economic dynamism, particularly in cases of job complementarity. In this case, a higher share of foreigners would operate as a stay-at-home factor, resulting in a negative impact on migration flows. At the destination, a higher share of foreigners could deter Italians from moving to a province with many foreigners due to perceived competition or a cultural mismatch, thereby acting as a deterrent. Yet, a positive role (pull factor) cannot be ruled out, as provinces with a larger share of foreigners attract Italians who value a cosmopolitan, ethnically diverse environment. For foreigners, if a high share of foreigners at origin represents established immigrant communities, social ties, and job opportunities, they may be less likely to leave a given province, and we should find a negative effect on foreigners' migration flows. However, if foreigners at origin face poor social and labour conditions, a high share could push them out and positively affect migration. At the destination, a higher share of foreigners is expected to positively impact the presence of ethnic networks that provide information and job referrals, thereby lowering migration costs for incoming foreign migrants (Massey et al. 1993). Nevertheless, a higher share of foreigners could have the opposite negative effect if would-be foreign migrants perceive higher competition from other foreigners already settled in the destination province.

Previous empirical research on Italy (Basile et al. 2021) has found that the presence of foreign immigrants influences foreigners and Italians differently. For low-educated Italians (those with up to lower secondary education), immigration is associated with a higher likelihood of leaving their current region, indicating a displacement effect. By contrast, highly educated Italians (with upper secondary or tertiary education) tend to move more toward regions with higher concentrations of immigrants, reflecting a complementary relationship. Regarding foreigners already settled in Italy, they experience reduced internal mobility as a result of higher migration flows from abroad.

Among the macroeconomic factors influencing migration, following Harris and Todaro (1970), GDP per capita (GDPPC) and unemployment rates (UNRATE) are the most commonly used indicators of expected income that migrants consider when deciding to move (Piras 2017; Etzo 2011). Higher GDP per capita and lower unemployment rates at the origin are generally expected to discourage migration and act as a stay-at-home factor. At the same time, higher GDP per capita and lower unemployment rates at the destination tend to attract migrants. It should be noticed that GDP per capita is a proxy for migrants' income prospects and does not accurately reflect true income opportunities for migrants, as GDP per capita differences between origin and destination provinces are shaped by variations in human capital, which implies that part of the observed income differences may be due to differences in education and skills (Borjas 1989; Mayda 2010). Accordingly, GDP per capita should be adjusted for differences in human capital endowments to more accurately isolate the relative returns to migration (Ruyssen and Rayp 2014; Hatton and Williamson 2010; Mayda 2010; Clark et al. 2007). In other words, when studying migration incentives, it is crucial to distinguish between the effects of human capital and those of income or wages. To account for this, we include the share of the population aged 15 and above

with a medium educational level as a proxy for human capital (HK) at both origin and destination. Based on the aforementioned theoretical premises, we expect the first to have a positive effect on bilateral migration flows, while the latter is expected to have a negative impact.[8] Regarding empirical evidence on Italy at the regional level, Piras (2017) reports mixed results: human capital at the origin acts as a restraining factor, whereas at the destination, it does not significantly attract migrants. Conversely, Piras (2020) finds a positive impact of human capital at the origin and a negative role at the destination, as theoretically expected.

Finally, a novel contribution of this study is the inclusion of a measure of institutional quality, specifically the Institutional Quality Index (IQI) developed by Nifo and Vecchione (2014). The IQI is a composite measure of institutional quality that assesses corruption, governance, regulation, law enforcement, and social participation at the provincial and regional levels. It ranges between zero and one and evaluates five key pillars: (1) Voice and accountability, reflecting citizen participation, civic engagement, and cultural activity; (2) Government effectiveness, measuring administrative capability and infrastructure in health, waste management, and the environment; (3) Regulatory quality, assessing economic openness, business environment, and firm mortality; (4) Rule of law, summarising crime rates, judicial efficiency, tax evasion, and shadow economy; (5) Corruption, tracking crimes against public administration and government oversight interventions. Niffo and Vecchione (2014) find that a higher IQI at the origin restrains graduate migration in Italy, while at the destination, it acts as a pull factor. A similar pattern is expected in our framework. Institutional quality should act as a restraining factor at the origin, as good governance, low corruption, and efficient public services are likely to encourage individuals to remain in their province of residence. At the same time, institutional quality is expected to function as a pull factor at the destination, as higher-quality institutions foster trust, provide more reliable and efficient services, and create better economic and social opportunities for potential migrants.[9]

To conclude this Section, it is difficult to envisage differential effects for the above-mentioned explicative variables between Italians and foreigners and females and males. A model based on micro-level data with individual-level characteristics could potentially help to identify differentiated effects by nationality and gender. Our aggregated dataset lacks these variables that would enable a more precise and detailed assessment of how migrants respond to the demographic and macroeconomic variables employed in this study. For this reason, we refrain from making conjectures regarding the magnitude of the estimated coefficients for the various migrant groups analysed. In a sense, we remain a priori agnostic, allowing the data to speak for itself and to indicate whether, and to what extent, the responsiveness of different groups of internal migrants varies. To this end, Tables 1 and 2, which provide the empirical

[8] Due to the unavailability of provincial-level data on educational attainment, we uniformly assigned the educational level calculated at the regional level to all provinces within each respective region. We acknowledge that this might be a limitation, but no other data is available to proxy for provincial human capital.

[9] One may wonder to what extent institutional quality itself might be influenced by past migration flows. We deem this is unlikely to occur due to the smoothness with which institutions at the provincial level vary and the long time required for migrants to induce a significant variation in institutional quality.

results, include a formal test of coefficient differences that we highlight and discuss accordingly.

5 Descriptive Analysis of Interprovincial Flows

As stated in the Introduction, we perform a separate analysis of internal flows by studying two samples. The first is the full bilateral sample that covers all bilateral interprovincial migration flows (excluding intraprovincial migration). The second is the sample of internal flows from the Southern to the Centre-north provinces.

For the full bilateral sample, interprovincial migration flows and rates are shown in Fig. 2a, b, respectively. Over the sixteen years under investigation, total migration flows averaged approximately 536,000 annually, occasionally exceeding 600,000 in 2012 and 2019. Italians accounted for the majority (83.19%), while foreigners accounted for 16.81%. Regarding gender distribution, males slightly outnumbered females, representing 51%. Notably, foreigners exhibited significantly higher interprovincial migration rates than Italians: 2.65% versus 0.84%. These findings align with existing literature, which suggests that foreigners tend to be more geographically mobile than natives (Finney and Catney 2012; Friedberg and Hunt 1995; Schündeln 2014).

For the South-to-Centre-North sample, total migration flows amounted to approximately 116,000, peaking in 2019 at 134,000 changes of residence (Fig. 3a). When disaggregated by nationality, 89.76% of migrants were Italian, and 10.24% were foreigners. This indicates a higher share of Italians in the South-to-Centre-North flows than the full bilateral sample. Differences also emerge when examining interprovincial migration rates by nationality and gender (Fig. 3b). Among foreigners, migration rates were initially the highest but declined until 2009. This was followed by a period of relative stability lasting until around 2015–2016. Toward the end of the observation period, a slight upward trend appears to have resumed.

6 Results

The estimation results are presented for the full bilateral sample of Italian provinces (Table 1) and the sample of migration flows from Southern to Centre-Northern provinces (Table 2). Both distinguish between Italians and foreigners, and between females and males. The formal test comparisons of the estimated coefficients are reported at the bottom of the tables.

6.1 Full Bilateral Flows

The results presented in Table 1 provide new insights into the determinants of interprovincial migration in Italy for the full bilateral sample. The analysis highlights how sociodemographic, economic, and labour market factors exert heterogeneous effects

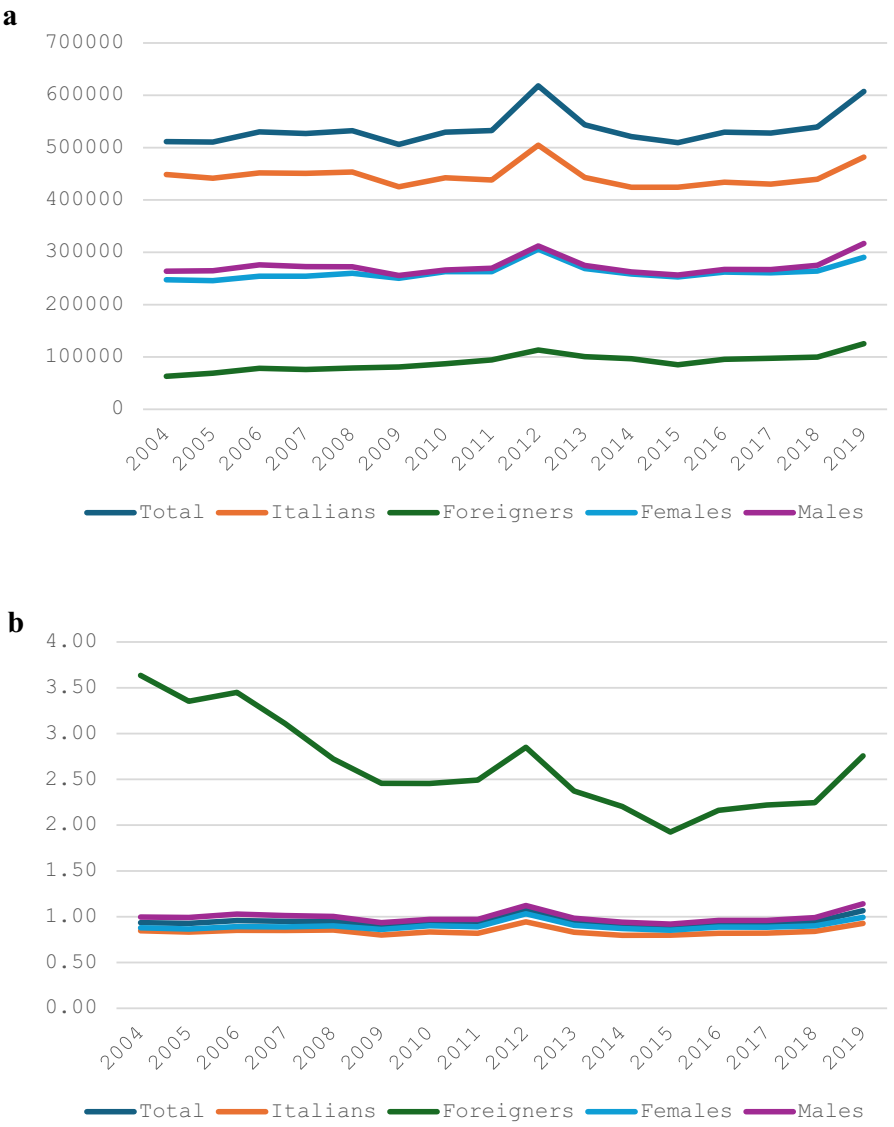

Fig. 2 a. Interprovincial migration flows (Full bilateral sample). **b.** Interprovincial migration rates (Full bilateral sample)

depending on migrants' citizenship and gender, thereby reinforcing the idea that Italian internal mobility is not a homogeneous phenomenon.

One of the most striking findings is the divergent role of population size for Italians and foreigners at both the origin and destination. The population at the origin is positively associated with migration flows for Italians (0.848) but has a very strong negative effect on migration flows for foreigners (−2.294). Notice that for total migrants, the

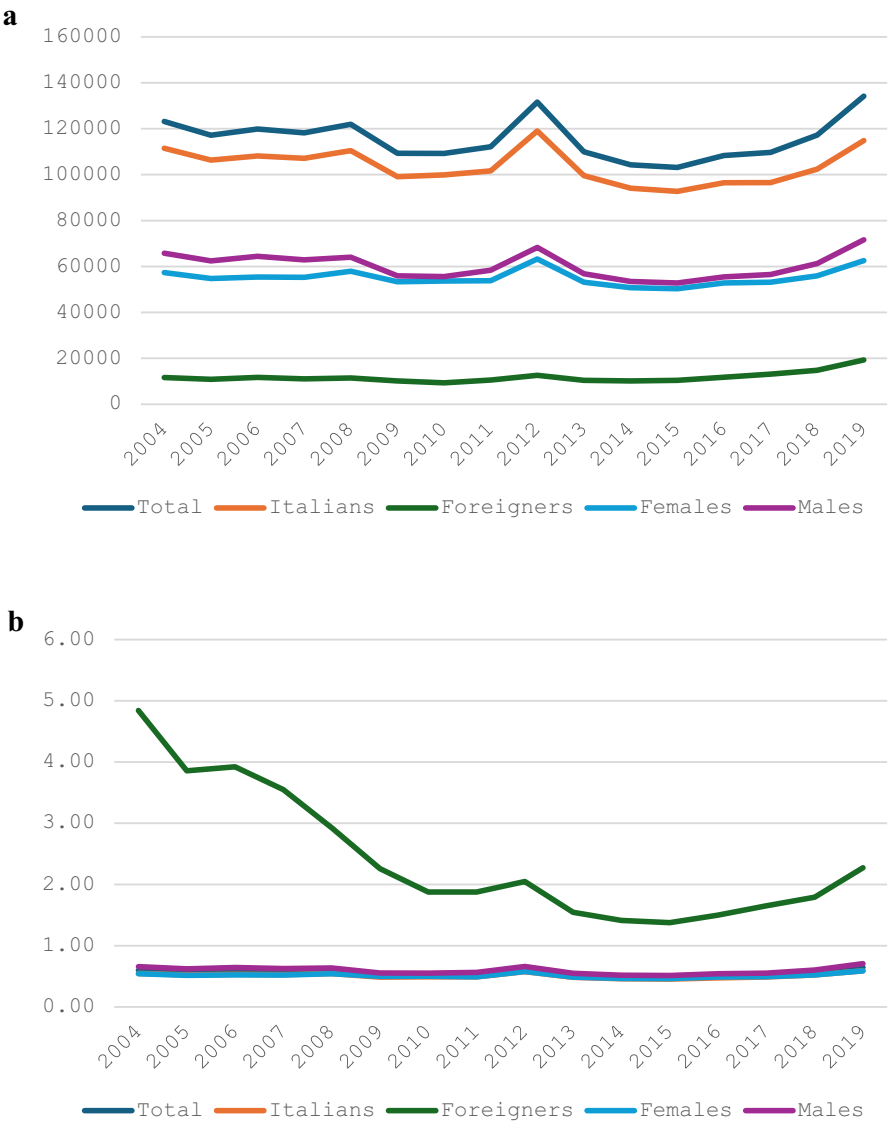

Fig. 3 **a**. Interprovincial migration flows (South to Centre-north sample). **b**. Interprovincial migration rates (South to Centre-north sample)

estimated elasticity is positive and statistically significant (0.281). Female migrants are influenced by population (0.507), while males are not. At the destination, the population acts as a mass variable for total migrants (0.822), Italians (1.096), females (0.909), and males (0.767). Conversely, the estimated elasticity for foreigners is negative and statistically significant (−0.650).

Table 1 Interprovincial migration flows (Full bilateral sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Italians	Foreigners	Females	Males	Total	Italians	Foreigners	Females	Males
	Variables at the origin					Variables at the destination				
ln(POP)	0.281**	0.848***	−2.294***	0.507***	0.052	0.822***	1.096***	−0.650**	0.909***	0.767***
	[0.140]	[0.147]	[0.224]	[0.138]	[0.151]	[0.155]	[0.160]	[0.285]	[0.150]	[0.169]
SH_FOR	0.005*	−0.013***	0.075***	0.001	0.009***	−0.012***	−0.012***	−0.031***	−0.011***	−0.013***
	[0.003]	[0.003]	[0.005]	[0.003]	[0.003]	[0.003]	[0.003]	[0.005]	[0.003]	[0.003]
ln(GDP)	−0.873***	−0.795***	−0.968***	−0.792***	−0.931***	0.542***	0.642***	0.046	0.505***	0.576***
	[0.079]	[0.079]	[0.105]	[0.080]	[0.079]	[0.062]	[0.067]	[0.094]	[0.061]	[0.065]
UNRATE	−0.004***	−0.007***	0.019***	−0.005***	−0.003***	−0.004***	−0.005***	0.006***	−0.006***	−0.002**
	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]
HK	0.018***	0.019***	0.011***	0.013***	0.016***	0.004*	0.009***	−0.027***	0.009***	−0.001
	[0.003]	[0.003]	[0.004]	[0.002]	[0.002]	[0.002]	[0.003]	[0.004]	[0.002]	[0.002]

Table 1 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Italians	Foreigners	Females	Males	Total	Italians	Foreigners	Females	Males
	Variables at the origin					Variables at the destination				
IQI	−0.005	−0.011	0.085	−0.005	−0.010	−0.027	−0.045	0.138*	−0.037	−0.017
	[0.036]	[0.040]	[0.064]	[0.037]	[0.038]	[0.046]	[0.048]	[0.084]	[0.044]	[0.050]
Obs	177,491	177,476	177,250	177,466	177,477	177,408	177,401	177,163	177,386	177,393
P-R-sq	0.952	0.947	0.854	0.927	0.928	0.952	0.947	0.850	0.927	0.927
	Test for equality of estimated coefficients									
		Italians vs foreigners		Females vs males				Italians vs foreigners		Females vs males
ln(POP)	z-value	11.716		2.224		z-value		5.342		0.627
	P >|z-value|	(0.000)		(0.026)		P >|z-value|		(0.000)		(0.531)
SH_FOR	z-value	−15.835		−1.784		z-value		3.028		0.522
	P >|z-value|	(0.000)		(0.074)		P >|z-value|		(0.002)		(0.602)
ln(GDP)	z-value	1.319		1.233		z-value		5.179		−0.801
	P >|z-value|	(0.187)		(0.218)		P >|z-value|		(0.000)		(0.423)
UNRATE	z-value	−14.350		−1.176		z-value		−4.505		−2.448
	P >|z-value|	(0.000)		(0.240)		P >|z-value|		(0.000)		(0.014)
HK	z-value	1.760		−0.933		z-value		7.652		3.242
	P >|z-value|	(0.078)		(0.351)		P >|z-value|		(0.000)		(0.001)
IQI	z-value	−1.279		0.103		z-value		−1.902		−0.289
	P >|z-value|	(0.201)		(0.918)		P >|z-value|		(0.057)		(0.773)

Robust standard errors clustered at origin-destination in brackets. ***$p < 0.01$, **$p < 0.05$, *$p < 0.1$. Population and GDP per capita are in logs. The lower panel of the table reports z-values and two-sided p-values (in parentheses) for the equality of estimated coefficients between Italians and foreigners and between females and males. See the main text for further details. The `ppmlhdfe` user-written Stata routine was used (Correia et al. 2020).

Table 2 Interprovincial migration flows (South to Centre-north sample)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Italians	Foreigners	Females	Males	Total	Italians	Foreigners	Females	Males
	Variables at the origin					Variables at the destination				
ln(POP)	0.937***	0.882***	0.357	1.249***	0.694**	0.323	0.350	1.088*	0.328	0.435
	[0.265]	[0.284]	[0.468]	[0.286]	[0.271]	[0.287]	[0.275]	[0.643]	[0.284]	[0.312]
SH_FOR	0.036***	0.021***	0.089***	0.034***	0.037***	−0.010*	−0.007	−0.022	−0.011*	−0.009
	[0.007]	[0.008]	[0.015]	[0.008]	[0.007]	[0.006]	[0.006]	[0.014]	[0.006]	[0.007]
ln(GDP)	−0.510***	−0.570***	−0.004	−0.472***	−0.549***	0.836***	0.936***	−0.008	0.790***	0.843***
	[0.072]	[0.078]	[0.145]	[0.079]	[0.075]	[0.110]	[0.113]	[0.212]	[0.113]	[0.114]
UNRATE	−0.007***	−0.008***	0.005**	−0.007***	−0.006***	−0.019***	−0.017***	−0.023***	−0.019***	−0.018***
	[0.001]	[0.001]	[0.002]	[0.001]	[0.001]	[0.003]	[0.003]	[0.006]	[0.003]	[0.003]
HK	0.012***	0.016***	−0.022**	0.001	0.016***	−0.025***	−0.022***	−0.058***	−0.012***	−0.027***
	[0.005]	[0.005]	[0.009]	[0.004]	[0.004]	[0.004]	[0.004]	[0.010]	[0.004]	[0.004]

Table 2 (continued)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Total	Italians	Foreigners	Females	Males	Total	Italians	Foreigners	Females	Males
	Variables at the origin					Variables at the destination				
IQI	−0.115**	−0.103*	−0.109	−0.110**	−0.102*	0.091	0.052	0.448**	0.111	0.112
	[0.050]	[0.054]	[0.104]	[0.055]	[0.053]	[0.094]	[0.090]	[0.210]	[0.092]	[0.103]
Obs	39,945	39,942	39,910	39,941	39,940	42,639	42,639	42,593	42,637	42,635
P-R-sq	0.929	0.928	0.662	0.889	0.895	0.926	0.925	0.655	0.887	0.892

	Test for equality of estimated coefficients					
		Italians vs foreigners	Females vs males		Italians vs foreigners	Females vs males
ln(POP)	z-value	0.960	1.408	z-value	−1.056	−0.252
	P >|z-value|	(0.337)	(0.159)	P >|z-value|	(0.291)	(0.801)
SH_FOR	z-value	−3.955	−0.263	z-value	1.025	−0.304
	P >|z-value|	(0.000)	(0.793)	P >|z-value|	(0.305)	(0.761)
ln(GDP)	z-value	−3.432	0.710	z-value	3.932	−0.330
	P >|z-value|	(0.001)	(0.478)	P >|z-value|	(0.000)	(0.741)
UNRATE	z-value	−4.799	−0.802	z-value	1.095	−0.151
	P >|z-value|	(0.000)	(0.423)	P >|z-value|	(0.274)	(0.880)
HK	z-value	3.644	−2.641	z-value	3.346	2.597
	P >|z-value|	(0.000)	(0.008)	P >|z-value|	(0.001)	(0.009)
IQI	z-value	0.056	−0.100	z-value	−1.736	−0.003
	P >|z-value|	(0.955)	(0.920)	P >|z-value|	(0.083)	(0.998)

The share of foreigners at the origin and destination also reveals important asymmetries. At the origin, a higher share of foreigners increases outflows of foreigners (0.075) and males (0.009), while it reduces mobility for Italians (−0.013) and has no effect on females. For total migrants, the estimated coefficient is positive (0.005) and statistically significant at a moderate level of significance. The positive coefficients for foreigners and males at the origin support the hypothesis that these two groups of migrants may be crowded into poor social and labour conditions. At the destination, by contrast, a higher share of foreigners has negative effects on all groups, with stronger effects for foreigners (−0.031) compared to Italians (−0.012), and similar effects for females (−0.011) and males (−0.013). For total migrants, the estimated coefficient is −0.012. The negative coefficients at the destination suggest that a higher concentration of foreigners may signal increased competition for low-skilled jobs, potentially deterring further migration, independent of nationality and gender (Grubanov-Boskovic and Natale 2017; Ambrosini 2013).

For all migrant groups, economic conditions shape internal migration flows as theoretically expected. GDP per capita at the origin is always negatively associated with outflows, indicating that prosperity discourages migration. In contrast, at the destination, it is positively associated with inflows, confirming the role of economic opportunity as a pull factor. Nevertheless, the differences between Italians and foreigners are again significant: while Italians respond strongly to origin and destination GDP per capita (−0.795 and 0.642, respectively), foreigners' mobility is affected by origin GDP per capita (−0.968), but not by destination GDP per capita. Similar results regarding the absence of a positive effect of economic variables on foreigners at the destination have been found by Melguizo and Sanchis (2025) and Melguizo and Royuela (2020) for Spain. Overall, this pattern suggests that foreigners may be concentrated in lower-skilled sectors with limited responsiveness to macroeconomic cycles, which aligns with the dual labour market hypothesis (Bauder 2006; Piore 1979). Conversely, no statistically different estimates emerge between female and male migrants.

The unemployment rate is always highly statistically significant and exhibits divergent effects between Italians and foreigners. As theoretically expected, at the origin, higher unemployment stimulates outflows for foreigners (0.019) but, and this result is puzzling, discourages mobility for total migrants (−0.004), Italians (−0.007), females (−0.005) and males (−0.003), highlighting a segmented response to labour market distress.[10] These results indicate that foreign residents are sensitive to worsening labour market conditions, likely reflecting their more precarious economic position. This tendency can be interpreted through the labour market segmentation theory, which positions migrants in more precarious and substitutable occupational niches. By contrast, Italians appear less inclined to migrate, a pattern that may be linked to higher homeownership rates, housing costs and stronger familial attachments that constrain geographic mobility (Bonifazi et al. 2020; Cannari et al. 2000). This dynamic is consistent with theories of social embeddedness, which hold that higher homeownership rates and dense familial ties act as place-based anchors that limit responsiveness to

[10] A negative role of the unemployment rate at the origin is found by Basile et al. (2021) for Italian internal migrants with primary school educational level.

labour market fluctuations. At the destination, unemployment deters internal mobility for all groups but for foreigners (0.006). This asymmetry might reflect structural barriers: whereas Italians may avoid moving to provinces with weak labour demand, foreigners might accept such risks given their restricted labour market opportunities and reliance on ethnic niches. It also might reflect the unobserved characteristics of foreigners who choose to move into high-unemployment areas.

Significant effects emerge for human capital. At the origin, consistent with theoretical expectations (Ruyssen and Rayp 2014; Hatton and Williamson 2010; Mayda 2010; Clark et al. 2007), the estimated coefficients are always positive and highly statistically significant. Moreover, while females (0.013) and males (0.016) display nearly comparable coefficients, a difference emerges between Italians (0.019) and foreigners (0.011), with the former showing greater responsiveness than the latter. Conversely, at the destination, the estimates exhibit an unexpected positive coefficient for total migrants (0.004), as well as for Italians and females (both equal to 0.009). In contrast, for foreign migrants, it is negative (− 0.027), in line with theoretical expectations. These results align with previous research that found that human capital influences internal mobility in Italy (Fratesi and Percoco 2014; Piras 2017, 2021).

By contrast, the institutional quality index is less relevant. Measured at both the origin and the destination, the estimated sign is negative for total migrants, Italians, females, and males, but it is statistically insignificant. Regarding foreigners, a positive and mildly significant coefficient (0.138) is found at the destination.

Empirical results can be summarised as follows. Origin population size increases Italian outflows but sharply reduces foreign ones, while at destinations it boosts all groups except foreigners. The share of foreigners also has asymmetric effects: it encourages the internal mobility of foreigners but deters Italian migration at origins; at destinations, it discourages all groups, especially foreigners, likely due to labour-market competition. Economic factors behave largely as expected but differ by migrant status. Higher GDP per capita at the origin lowers outflows for all, while at the destination GDP per capita pulls Italians but not foreigners, and influences females and males alike. Unemployment shows the clearest divide: rising origin unemployment pushes foreigners away but unexpectedly reduces Italian mobility, hinting at strong territorial ties. At the destination, unemployment deters all groups except foreigners, who may be willing to tolerate riskier labour markets. Human capital promotes outflows for all, more strongly for Italians; at destinations, it attracts Italians and females but discourages foreigners. Overall, institutional quality has a minimal impact, with a weak positive effect on foreigners at destination locations.

In synthesis, our results indicate a stratified geography of internal mobility in Italy, where citizenship and gender intersect to produce distinct migration patterns, as evidenced by the differentiated estimated coefficients. This is particularly relevant in the comparison between Italians and foreigners, as the estimated coefficients for population size, the share of foreigners, the unemployment rate, and human capital at origin, as well as all variables at the destination, differ significantly from a statistical point of view. Gender-based differences appear less pronounced: in this case, only the estimated coefficients for population size and the share of foreigners at origin, along with the unemployment rate and human capital at destination, exhibit statistically significant variation.

6.2 South to Centre-North Flows

Table 2 presents regression results for migration flows from the Southern to the Centre-Northern provinces of Italy. Also, for this sample, the results reveal an interplay between structural economic factors, demographic composition, and migration dynamics, which are shaped by both gender and nationality.

Larger populations at the origin are positively associated with outmigration. The estimated coefficients are statistically significant for total migrants (0.937), Italians (0.883), females (1.249), and males (0.694), but not for foreigners. Conversely, population at the destination shows limited significance, except for foreigners, for whom the estimated positive association (1.088) suggests that immigrants from the South are more attracted to larger urban centres with greater labour demand in the Centre-north.

The share of foreigners reveals one of the most salient findings. At the origin, a higher proportion of foreign residents is consistently associated with higher outflows; responsiveness is lower for Italians (0.021) than for foreigners (0.089), and similar for females (0.034) and males (0.037). This result supports the hypothesis that migration decisions are embedded in network dynamics: all groups residing in the South are more likely to move to the Centre-northern provinces, possibly because of job competition. In terms of statistical significance, this push effect is stronger for foreigners than for Italians, but similar for females and males. Conversely, at the destination, the share of foreign residents has negative effects, although mostly insignificant or barely significant, indicating potential competition effects or saturation of labour niches, which is consistent with segmented labour market theory.

GDP per capita at origin and destination strongly shapes mobility patterns, providing strong evidence of economic motivations in migration decisions. At the origin, it negatively affects outmigration among Italians (−0.570), but not among foreigners. Economic development has a negative influence on females (−0.472) and males (−0.549). These results confirm that lower levels of local economic development in the South push individuals to seek better opportunities in the Centre-north. At the destination, higher GDP per capita levels act as a strong pull factor, particularly for Italians (0.936), whereas for foreigners the estimated elasticity is not statistically different from zero. This finding is consistent with dual labour market theory, which suggests that migrant workers are disproportionately concentrated in non-cyclical, low-wage segments of the labour market and, as a result, exhibit lower responsiveness to macroeconomic fluctuations compared to native workers (Fullin and Reyneri 2011; Reyneri 2004). Analogously to what happens at the origin, females (0.790) and males (0.843) are similarly influenced by GDP per capita at the destination. Hence, the level of economic development does not affect females and males differently.

The results for the unemployment rate at the origin are puzzling, as they were for the full bilateral sample. The expected positive coefficient is found only for foreign migrants (0.005), while the estimated coefficients for all the other groups are negative and highly statistically significant. Similar results have been found by Bonifazi et al. (2020) for Italy and by Clemens and Hart (2018) for a sample of EU countries. Various motives explain this counterintuitive result. Among them are risk aversion and family and community ties of potential migrants, who may choose to stay near family or in

familiar environments, even when labour market conditions are poor. Additionally, informal economies in high-unemployment provinces may provide survival strategies that are not captured in official statistics. Finally, mismatches between job availability at the destination and migrants' skills at the origin could explain it. On the contrary, at the destination, the negative association between unemployment and migration is strong and consistent across all groups, implying that all migrant groups avoid areas with depressed labour markets and indicating a substantially higher sensitivity to labour market conditions.

The results regarding human capital partly align with theoretical expectations, but for foreign migrants at the origin. More specifically, for total migrants (0.012), Italians (0.016), and males (0.013), higher levels of human capital at the origin are associated with increased outmigration, consistent with theoretical expectations. Conversely, for foreigners, the estimated coefficient is negative (−0.022) and turns out insignificant for females. At the destination, for all groups, the estimated parameters have the expected negative sign and are highly statistically significant. In addition, it is worth noting that the estimates are statistically different: Italians (−0.022) compared with foreigners (−0.058) and females (−0.012) compared with males (−0.027).

The institutional quality index at the origin demonstrates remarkable consistency, with negative, statistically significant coefficients across almost all groups, except for foreigners, for whom it is insignificant. This pattern suggests that enhanced institutional efficacy in Southern provinces serves as a mechanism to inhibit migration, effectively mitigating South to Centre-north migration trajectories. At the destination, institutional quality displays the expected positive sign, but it is statistically significant only for foreigners (0.448). These findings suggest that Italians leaving the South attach greater importance to institutional quality at the origin, while foreigners prefer provinces with better public services provided by local governments, greater citizen participation and engagement, cultural activities, and lower corruption levels (Niffo and Vecchione 2014; De Haas 2010).

In summary, larger origin populations generally stimulate outflows, especially among Italians and females, while the size of the destination population is a primary factor for foreigners. The share of foreigners at the origin is highly influential, as more foreign residents lead to outmigration across all groups (most strongly for foreigners), reflecting network and competitive dynamics. At the destination, the presence of foreigners plays only a minor role, limited to total flows and females. Economic factors remain central. Higher GDP per capita in Southern provinces reduces Italian and gender-specific outflows but not foreign ones, while higher levels of GDP per capita in the Centre-north provinces strongly attract Italians, females, and males but not foreigners. Unemployment at the origin again diverges from expectations: only foreigners leave when joblessness rises, whereas Italians and both genders appear less mobile, likely due to family ties. At the destination, unemployment consistently deters migration for all. Human capital shows mixed effects. At the origin, it increases outmigration among Italians and males, but not among foreigners. At the destination, higher human capital operates as a stay-away factor for all groups, with foreigners more sensitive than Italians and males more than females. Finally, institutional quality at the origin lowers outflows for all except foreigners, while at the destination, it attracts only foreigners, who appear particularly responsive to governance and service quality. All

these findings underscore the relevance of dual labour market theory (Bauder 2006; Piore 1979) and network theory (Massey et al. 1993) in explaining the differentiated nature of internal migration along the South to Centre-north migration corridor.

To conclude, the empirical evidence highlights heterogeneous migration patterns along the South–to–Centre-North corridor, particularly comparing Italians and foreigners. Relative to foreigners, the estimated coefficients for Italians differ significantly with respect to the share of the foreign population, GDP per capita, unemployment rate, and human capital at the origin, as well as GDP per capita, human capital, and institutional quality at the destination. Gender-based comparisons reveal broadly similar patterns between female and male migrants; however, differences emerge in the sensitivity to human capital, both at the origin and destination.

7 Discussion and Conclusion

A gap in migration research is the scarcity of nationality- and gender-disaggregated analyses of internal migration flows. The predominance of aggregate data utilisation has resulted in the systematic obfuscation of nationality- and gender-specific determinants underlying migratory decision-making processes.

More broadly, empirical investigations quantifying nationality- and gender-based differentials remain substantially constrained, primarily due to data limitations. The present study capitalises on the availability of comprehensive bilateral migration flow data for Italian provinces, stratified by gender and nationality. This facilitates a clearer examination of push and pull factors, as well as stay-at-home and stay-away factors, that influence bilateral internal migration patterns. Furthermore, extant literature has accorded insufficient attention to institutional determinants in explicating Italian internal migration phenomena. Indeed, economic and demographic variables have traditionally dominated the analytical landscape of migration research concerning Italy. However, few empirical investigations within the Italian context incorporate institutional quality as a determinant factor of internal migration trajectories.

The results presented in this paper highlight how sociodemographic, economic, and labour market factors exert heterogeneous effects depending on migrants' gender and citizenship, demonstrating that internal mobility is not a homogeneous phenomenon but is shaped by structural inequalities, opportunity constraints, and social networks.

The gender dimension reveals the significant impact of labour market structural characteristics and social policy frameworks on shaping migration flows. The citizenship dimension emphasises that foreigners exhibit substantially greater spatial mobility than Italians (Piras 2026). This result potentially facilitates more expeditious economic recovery from labour market disequilibria and, more comprehensively, may catalyse economic convergence within a national context historically characterised by persistent socioeconomic divergence between the Southern and Centre-northern macro-areas. Furthermore, the observed differential mobility patterns could help mitigate labour market rigidities, thereby offering a more favourable perspective regarding the socioeconomic contribution of migrant populations within host countries.

As regards the full bilateral sample, the central finding is that the Italian internal migration system is deeply structured by citizenship, moderately by institutions, and

only weakly by gender. Population size at the origin stimulates Italian outflows but strongly discourages foreign ones, while acting as a positive mass factor at the destination for all groups except foreigners. Similarly, the share of foreigners generates asymmetric effects: at the origin, it encourages foreign mobility and deters Italian migration, whereas at the destination, it discourages migration for all, likely reflecting competition for low-skilled jobs. As generally found in previous studies (Piras 2021, 2017; Etzo 2011), economic variables generally behave as expected, but with notable differences by migrant status. Higher GDP per capita at the origin reduces outflows for all groups, and destination GDP per capita attracts Italians, but not foreigners. Unemployment rates display the clearest divide: rising unemployment at the origin pushes foreigners to leave but unexpectedly reduces mobility among Italians, suggesting stronger place-based ties and structural constraints. At the destination, unemployment deters mobility for all except foreigners, who may accept riskier labour markets due to limited alternatives or reliance on ethnic niches. Human capital generally promotes migration from the origin for all groups, though Italians respond more strongly than foreigners. At the destination, human capital attracts Italians and females but discourages foreigners. Institutional quality shows limited relevance overall, with only a weak positive effect for foreigners at the destination.

With reference to the South to Centre-north sample, larger populations at the origin tend to stimulate outmigration for most groups, particularly Italians and females, while population size at the destination is largely irrelevant, except for foreigners. The share of foreigners plays a central role: at the origin, a higher concentration of foreign residents increases outflows for all groups, especially foreigners, reflecting strong network and competitive pressures. At the destination, however, a higher foreign presence plays a marginal role only for total flows and females. Economic variables remain key drivers. GDP per capita in Southern provinces discourages outmigration for Italians and both genders, but not for foreigners (although the estimated coefficient is correctly signed). In contrast, higher GDP per capita in the Centre–north strongly attracts Italians, as well as males and females, yet it does not significantly influence foreign migrants. Unemployment at the origin again produces unexpected patterns: only foreigners respond as theoretically expected, while Italians, females and males appear less mobile in the face of joblessness, potentially due to family ties, and informal economic coping strategies. At the destination, unemployment uniformly reduces migration, signalling aversion to depressed labour markets for all groups. Human capital exerts mixed effects. Higher levels of human capital at the origin encourage outmigration for Italians and males but not for foreigners, while females show no significant response. At the destination, higher human capital levels universally deter migration, though foreigners exhibit stronger sensitivity than Italians, and males more than females. Thus, the reaction of internal migration flows with respect to human capital is broadly coherent with theoretical predictions. Finally, institutional quality at the origin consistently reduces migration for all groups except foreigners, suggesting that stronger institutions help retain Southern Italian residents, females and males. At the destination, better institutional environments attract only foreigners, indicating their particular sensitivity to governance quality, public services, and social integration conditions.

A better understanding of nationality- and gender-specific determinants of internal migration can significantly enhance policymakers' capacity to formulate coherent labour market and migration strategies that utilise available policy instruments more effectively. Systematically identifying and ranking the migration drivers associated with nationality and gender within a given national context yields critical insights for evidence-based policy design. In this context, the finding that foreign nationals respond to provincial unemployment rate differentials, whereas Italians do not, offers a potentially valuable mechanism for mitigating local labour market rigidities, especially in light of the country's long-lasting socioeconomic divide between Southern and Centre-northern macro-areas.

Although this study enhances our comprehension of internal migration in Italy, recognising its limitations and outlining directions for future inquiry remains crucial. To begin with, the analysis overlooks key sociodemographic variables, notably migrants' age and educational attainment. Incorporating these dimensions into the study of internal migration could yield a more refined and holistic understanding of migratory behaviour. Such disaggregation would illuminate the extent to which mobility decisions are shaped by age and education. Second, and subject to data availability, future research should aim to replicate and extend these findings across other national settings to assess the generalisability of the results presented in this study. These considerations offer a valuable foundation for future research.

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Data Availability Statement The data analysed in this study are all publicly available. In any event, the author will make the full dataset supporting this study's findings available upon reasonable request.

Declarations

Conflict of interest The authors reported no potential conflict of interest.

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