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Indian immigration to Italy: Concentration, Internal mobility and Economic crisis

The spatial concentration of the immigrant population has become a concern for local administrations in most European countries, as it is perceived as an obstacle to their better integration in host societies. Indian immigration to Italy began in the 1960s, but large-scale immigration of unskilled labour from Punjab and Haryana (north-western Indian states) began during the 1990s. This influx was formed by young men, who entered Italy in search of economic opportunities and later spatially concentrated in the economically active regions. In this paper, using the municipal registers of inhabitants (*Anagrafe*), residence permit records and the 2011 census data, I will first do a spatial analysis (LISA) of the settlement pattern of the Indians in Italy; second, analyse the internal mobility (through a gravity model) of Indian immigrants compared to other immigrant groups during 2005-2015; and finally, explore the impact of the economic crisis on Indian immigration to Italy.

Keywords: Indian immigration, concentration, spatial analysis, internal mobility, economic crisis, Italy.

Introduction:

At the dawn of the 21st century, Italy, which was traditionally perceived as an emigrant country, emerged as a major recipient of immigrants from 195 countries around the world, including India. According to the National Statistics Institutes (ISTAT) of Italy, the size of the immigrant population (on the basis of citizenship) in Italy increased from 1.12 million in the year 2000 to 5.03 (3.9 did not belong to the EU) in 2016. The immigrant population represents 8.3% of the total population of Italy. The largest immigrant communities in Italy are Romanians (22.9% of total immigrants), Albanians (9.3%), Moroccans (8.7%), Chinese (5.3%), Ukrainians (4.7%), the Philippines (3.2%) and Indians (2.9%). This large influx of immigrants in a very short time has brought a remarkable change in the composition of the host society. It has also posed challenges for the local administration, which was not fully prepared for the better management of immigrants (of different cultures and socioeconomic profiles) in the labour market, housing and the sociocultural sphere (Einaudi 2007).

The Indians, which is the seventh largest group of immigrants in Italy, represent

only 2.99% of the total immigrant population. In 2016, there were 150,436 legal Indian immigrants living in Italy, of which 75% were Sikhs from Punjab and Haryana, 20% were Malayali, mainly Christian Catholics from the state of Kerala, and the rest were Hindus from different parts of India (Lum 2012). After the United Kingdom, Italy is the leading country in Europe in terms of the size of the registered Indian immigrant population. Despite its rapidly growing number over the last decade, very little attention was paid to this group of immigrants in the existing literature and in academic research. The existing studies focus mainly on the description of this immigration process, the Sikh religion and the struggle for identity (Lum 2012, Gandolfi 2007, Denti et al, 2005, Bertolani and Singh 2012), Punjabi culture, gender and family relations (Bonfanti 2015; 2016), and the economic contribution of the Indians to the Italian cheese industry (Sahai and Lum, 2013, Bertolani 2005) and hospital services (Gallo 2005; 2008). But even so, information on the demographic structure, spatial distribution and internal mobility of the Indians in Italy is very scarce. In this paper, I will fill this gap in the current academic literature.

Immigrants, mainly from developing countries like India, follow their social and kinship networks to settle in new destinations (Munshi 2014). It leads to their concentration in some parts of large cities, which are often characterized by low incomes and poor living conditions (Garha et al 2016). In previous studies, the minority concentration and residential segregation of the immigrant group has been perceived as an obstacle in their better integration in the host society (Wilson 1987; Peach 1997; Anderson 2007; Schönwälder 2007; Deborah 1998). According to the theories of socialization, the concentration of immigrants made them less socialized in their new surroundings and due to the lack of good role models, they can isolate themselves from the host society (Musterd and Deurloo 2002). In addition, it prevents them from expanding their network of contacts and limiting them to their own group, which in turn contributes to their social isolation (Waldinger 1997; Jargowsky and Yang 2006). In areas of high immigrant concentration, new immigrants are less motivated to integrate and learn the host country's language and other skills, which affects their upward social mobility (Massey and Denton 1987). Several other authors also underlined the effect of the concentration of immigrants on their income, employment and socioeconomic status (Galster et al. 1999; Clark and Drinkwater 2002). As a result, the concentration of immigrants becomes a concern for local government in most European countries and it has become essential to study the settlement pattern of immigrants and their internal

mobility to avoid the formation of immigrant neighbourhoods, especially when they are characterised with poor living conditions.

In this paper, my main hypotheses are: first, the settlement pattern of Indian immigrants in Italy guided by the availability of job opportunities in different parts of Italy and the presence of their social or kinship network, which provides assistance during the first phase of immigration and settlement; secondly, the internal migration of Indian immigrants during the last decade (2005-2015) worked as a double centre system, where the provinces of Brescia and Rome continued to be the centre of attraction and dispersion of Indian immigrants; and finally, the recent economic crisis has changed the size of influx and causes of Indian immigration to Italy, and the direction of their internal mobility. Therefore, the main objective of this paper is to explore the settlement pattern, level of concentration, internal mobility and the socio-demographic profile of Indian immigrants in Italy.

This paper is structured as follows: the second section, presents the data sources and the methodology. The third section, describes the main characteristics of the recent flow and population of Indian immigrants in Italy. The fourth section, presents the spatial analysis of their settlement pattern in Italy. The fifth section, compares the trends of internal migration of Indian immigrants with the entire immigrant population at the regional and provincial levels. The sixth section, explores the impact of the recent economic crisis on Indian immigrants in Italy. And finally, the seventh section, presents some key findings of this research.

2. Data Sources and Methodology

2.1 Data Sources

To measure the size and scope of the international and internal migration of Indian immigrants in Italy, I used data from the Residence Variation Statistics (*Iscrizioni e cancellazioni all'anagrafe per trasferimento di residenza* in Italian, RVS) from 2003 to 2015. RVS captures the influx of new immigrants (on the basis of citizenship) and registers all internal movements of immigrants and the native population. It also collects information on the main socio-demographic characteristics of immigrants, such as citizenship, place and date of birth, gender, marital status and level of education. It is the most relevant data source to study the immigrant population, but it has also some limitations. For example, it only captures the regular immigrant population, since most of the Indian immigrants in Italy entered irregularly or become irregular after reaching

Italy (Garha and Paparusso 2018), a significant part of them always remained uncounted; secondly, the data is only available up to the provincial level (due to reasons of confidentiality with respect to personal information), therefore, the information on intraprovincial migration (at the municipal level) is not available.

To study the stock and settlement pattern of Indian immigrants, I used the data from the Municipal Register of inhabitants (Anagrafe) and the Residence Permit register (Permesso di Soggiorno). Both sources are administrative registers that collect information of all legal residents of the municipality, including immigrants. The municipal register collects and incorporates information on all population movements caused by natural events such as birth and death, or demographic changes caused by migration. At the individual level, it collects information about the age, sex, place of birth, nationality, municipality of residence and time of registration of all inhabitants. For the study of the immigrant population, its main limitations are: the data is only collected on the basis of current nationality. When an immigrant receives Italian nationality, he/she is included in the Italian population and removed from the list of immigrants. Therefore, it becomes very difficult to separate the Indian immigrants with Italian nationality from native Italian population. Secondly, it does not capture irregular immigrants, which leads to the underestimation of the Indian immigrant population. And finally, the immigrant population is very mobile and changes their residence frequently for jobs and other purposes, and often does not register at all places of residence. Therefore, it creates a big problem for the administration to keep an accurate record of the resident immigrant population in each municipality. Despite all shortcomings, it is the most reliable data source over the stock of immigrant population in Italy.

The Residence Permit register, which is maintained by the police authorities, provides information about the legal status of immigrant population (long-term or short-term residents) and the reasons of immigration. The main limitations of this database are: it always shows the high number of immigrants compared to the municipal register because many immigrants after receiving the residence permit move to other countries to work and stay (Garha and Paparusso 2018); secondly, immigrants can lose their residence permit, if they lose their job in Italy; and finally, a small number of immigrants with a residence permit issued never come to Italy for work.

To study other sociodemographic characteristics, I used the 2011 census of population and housing data. In Italy, the census is held every 10 years, so the last census was held in 2011. The census data includes the people of all nationalities, with legal

residence permit and habitual residence in the country. The data collected contains information on age, sex, household structure, level of education, economic activity, place of residence, country of birth, and nationality.

2.2 Methodology

The methods of the study had two parts. In the first part, a descriptive analysis of Indian immigration to Italy was done to describe the main characteristics of recent flow and stock of Indian immigrant population to Italy. In the second part, I did spatial analysis with "Global and Local tools of Spatial Autocorrelation". According to ISTAT, in 2016 Italy was divided into 20 administrative regions, which were composed of 110 provinces and these provinces were divided into 8,046 municipalities. Data on the immigrant population are only available up to the municipal level, so in the present work, I consider municipality as the basic unit of spatial analysis. In 2016, Indian immigrants were settled in 4,068 Italian municipalities.

The first measure of spatial autocorrelation was introduced in 1950 by Moran in order to study stochastic phenomena, which are distributed in space in two or more dimensions. To examine the local autocorrelation, I have used the index proposed by Luc Anselin (1995) i.e. LISA (local indicator of spatial association), which can be seen as the local equivalent of Moran's I. The sum of all local indices is proportional to the (global) value of Moran's statistic. The local value of a LISA is computed as:

For each location, LISA values allow for the computation of its similarity with its neighbours and also to test its significance. Five scenarios may emerge: first, locations with high values with similar neighbours (high-high), also known as hot spots; second, locations with low values with similar neighbours (low-low), also known as cold spots; third, locations with high values with low-value neighbours (high-low), potential spatial outliers; fourth, locations with low values with high-value neighbours (low-high), potential spatial outliers; and fifth, locations with no significant local autocorrelation. These specific configurations can be first identified from a scatterplot showing observed values against the averaged value of their neighbours. This so-called Moran scatterplot is

a useful exploratory tool. Once a significance level is set, values can also be plotted on a map to display the specific locations of hotspots and potential outliers.

To analyse the internal mobility of Indians in Italy I used a 'gravity model'. In the previous studies, it is widely applied in the empirical analyses of the flow of goods and services, particularly within the field of international trade (Fotheringham and O'Kelly, 1989). It also provides satisfying results in studies on internal and international migration flows to describe and predict the degree of interaction between geographical areas (Lamonica and Zagaglia 2008; 2013; Casacchia et al. 2010b; Kim and Cohen 2010). The model considers the migratory flows, as directly proportional to the product of the masses (measured in terms of origin and destination resident population) and inversely proportional to the distance (or to a function of the distance) between the place of origin and the place of destination. The classic formulation of the gravity model is the following:

$$F_{ij} = \alpha \frac{P_i^{\beta_1} \cdot P_j^{\beta_2}}{d_{ij}^{\beta_3}}$$
 (2)

Where, i is the area of origin and j is the area of destination, Fij is the migratory flow between i and j, Pi and Pj are the respective population masses, and dij is a measure of the distance between i and j. We have computed the distance between the provincial geographical barycentre, adopting the triangular and spherical definitions of distance. The gravity model with multiplicative errors is then specified as follow:

$$F_{ij} = \alpha \frac{P_i^{\beta_1} \cdot P_j^{\beta_2}}{d_{ij}^{\beta_3}} \varepsilon_{ij}$$
 (3)

Considering the natural logarithm of both sides of the equation, and considering $ln\alpha$ equal to $\beta 0$, the linear model is:

$$\ln F_{ij} = \beta_0 + \beta_1 \ln P_i + \beta_2 \ln P_j - \beta_3 \ln d_{ij} + \ln \varepsilon_{ij} \dots (4)$$

It may be estimated by a linear regression using the ordinary least squares method (OLS). Furthermore, the model has been modified considering in a simultaneous model by using dummy variables gender (men/women) and period of stay (before crisis or after crisis). With this modification, I obtained a simultaneous and comparable estimation of the effects of gender and economic crisis on the internal mobility of Indian immigrants.

3. Indian immigration to Italy: An overview

The pioneer Indians entered Italy as a British imperial army (mostly Sikh soldiers) during the Second World War (Bedi 2011), but they did not settle permanently in Italy. In the 1960s a regular flow of businessmen (related to the expansion of the commercial links of the Italian automotive industries in India), students of theology (in churches and catholic convents), priests, nurses and domestic workers entered Italy and began to settle here permanently (Sahai and Lum 2013). In the coming decades, due to their high demand, the influx of Malayali Catholic nurses (residents of the state of Kerala, India) increased significantly and they settled in Rome (Gallo 2005). The massive immigration of unskilled labour from the states of Punjab and Haryana began during the 1990s. Most of them were irregular low-skilled immigrants, who after the imposition of strict borders controls in the United Kingdom and other countries in northern Europe, decided to settle in southern Europe (Saha 2009). Due to the possibilities of regularization, easy access to the labour market for undocumented immigrants in low-skilled occupations, fewer border controls, and the absence of deportation schemes, most of them attracted to Italy, Spain, Greece and Portugal (Garha and Domingo 2017). Once the pioneer immigrants settled, they started to bring their friends and family members to settle in southern Europe. According to Sahai and Lum (2013), India immigration to Italy can be divided into three phases, in the first phase (1957-1984), leather and textile workers from north India entered Italy. In 1984, their number was around 12,000 individuals. The second phase (1985-90), begins when several Indians (mostly Punjabi Sikhs) took advantage of asylum facilities available in Germany, the United Kingdom, Italy and Spain, and entered as refugees. Italy admitted 32,000 asylum-seekers during the period of 1985-1990. During the third phase (1992-2010), most of the Indians entered directly or indirectly as agricultural workers. In all the phases mentioned above, I have added a recent phase of family reunification (2010-present). After 2014, the influx of immigrants for 'family reunion' increased three times than the influx for work.

3.1 Flow and stock of Indian immigrants in Italy

According to ISTAT, the annual flow of Indian immigrants to Italy doubled in the last 14 years, from 5,345 immigrants in 2003 to 11,762 in 2016 (Fig. 1). This flow has witnessed a significant increase in the period 2003-2005, which was partly due to direct immigration from India, and partly due to the process of legalization of irregular immigrants, who were already living irregularly in Italy. This increase followed a sharp decline until 2007. From 2007 to 2011, despite the economic crisis in Italy, the flow of Indian immigrants

increased three times with a high annual growth rate. In 2011, it reached its peak with 15,067 immigrants admitted only in this year. After 2011, the flow began to decrease and now it is around 11,000 immigrants per year. The most important characteristics of this flow were its young age structure and male predominance. As in the North Indian society, males are still considered as breadwinners, therefore, the initial flow was mainly composed of young males. The proportion of females increased, when these males began to bring their families from India to settle permanently in Italy. During the period of economic crisis, due to the generalized uncertainty in employment and high unemployment, Indian immigrants stopped bringing their families and the flow of females decreased. After 2011, the flow of male also began to decline rapidly and settled at around 7,000 in the last three years. While the flow of females after a small decrease until 2013, began to increase at a regular rate and reached 5,000 in 2016.

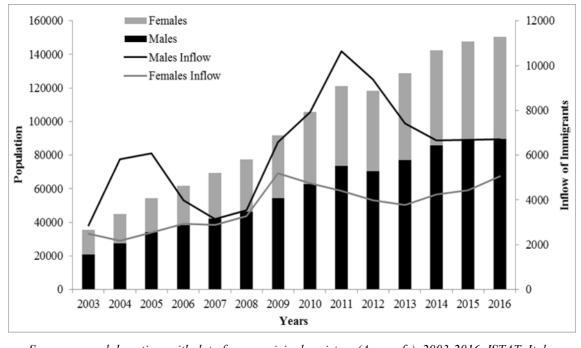


Figure 1. Annual inflow and stock of Indian immigrants to Italy, 2003-2016.

 $Source: own\ elaboration,\ with\ data\ from\ municipal\ registers\ (Anagrafe),\ 2003-2016,\ ISTAT,\ Italy.$

This regular influx of Indian immigrants has contributed to the formation of the seventh largest immigrant community in Italy. According to ISTAT, in 2003 the number of registered Indian immigrants in Italy was 35,518. It increased rapidly to 121,036 individuals in 2011. After 2011, under the impact of the economic crisis and the shortage of job opportunities, many Indians emigrated from Italy to other countries, some of them also returned to India. Consequently, despite the largest influx of Indian immigrants in 2011, the size of the Indian immigrant population declined to 118,409 individuals in 2012.

After this small decrease, the size of the Indian community began to grow rapidly in the ensuing years and reached its maximum (150,436 individuals) in the year 2016 (Fig. 1). Like the flow, the stock of Indian immigrants was also characterized by the predominance of young men. In 2011, the proportion of women in the total population was 40.5%. The number of women only exceeds men in the older age groups (over 60 years). According to the age structure, the majority of the population (66.1%) was in the working age group (16-49 years) and the proportion of youth (0-15 years) and the elderly (over 50 years) was of 30% and 3.9%, respectively (Fig. 2).

□ Females ■ Males Population (%)

Figure 2. The age structure and sex composition of Indian Immigrants in Italy, 2011.

Source: own elaboration with the data from Italian census of population and housing, 2011.

3.2 Socio-demographic profile of Indian Immigrants

The Indians in Italy form a very diverse immigrant community in terms of origins, religions, causes of emigration, education, occupation, legal and civil status. The majority of the Indian immigrants in Italy had their origin in three states of India, namely, Kerala in the south, Punjab and Haryana in the north. Most emigrants from Kerala belong to the Catholic religion and migrated through the church to serve in the Christian institutes (Kodoth and Jacob 2013), while most of the emigrants from Punjab and Haryana belong to the Sikh religion and their main objective of immigration was economic (Tatla 1999). According to the 2011 Census, 20% of the Indian immigrants in Italy were illiterate and almost 40% had an education below the secondary level. The proportion of illiterates and university graduates among women was greater than men. Differences in origins have

also affected their participation in the labour market. 62% of the total Indian immigrant population (over 15 years old) was economically active, in which 90% had permanent or temporary employment and 10% were unemployed and looking for work. The inactive population (38%) was composed mainly of Sikh women, who were engaged in domestic chores. In the total active population, 28.8% were employed in agricultural, forestry and fishing activities, 37.8% in industrial jobs and 33.4% in services. The proportion of women in the total active population was only 14.3% and they were mainly dedicated to the service sector.

According to marital status, 49.8% of the total Indian immigrants were married and 47.7% had never married (the proportion of women who never married was only 37.6%). The proportion of divorced, separated and widows was less than 3%. The high proportion of the married population shows the success of family reunification and the community building process in Italy. The number of mixed couples (Indian men or women married to Italian groups or other immigrant groups) was very low (less than 1%).

In Italy, the registration of immigrants in municipal registers depends on their legal status, so we have no information about the number of irregular immigrants of Indian origin living in Italy. According to the Residence Permits data, on January 1, 2016 there were 169,394 residence permits granted to Indian immigrants, in which the proportion of men and women was 61% and 39%, respectively. In all the residence permits issued, 45% were short-term and 55% were long-term permits. For the Indians in Italy, the process of acquiring citizenship is difficult and prolonged, which includes proof of uninterrupted regular legal residence for 10 consecutive years in Italy. This is the reason why only 18,420 Indian immigrants in the last 4 years have achieved Italian nationality.

4. Spatial distribution of Indian immigrants in Italy

According to ISTAT, in 2016, most of the Indians were settled in the north-western part of Italy, where notably the Lombardy region was home to a third of the total number of Indian immigrants registered in Italy (Table 1). This concentration correlated positively with the availability of low-skilled jobs in this region. The second main concentration was in the north-eastern part, where the Emilia-Romagna and Veneto regions were the major settlements of Indian immigrants. In the central part, the Lazio region, which includes the capital city of Rome, owns most of the Indian immigrants. Due to their poor economic condition and high unemployment, very few Indians have settled in the

southern part of Italy. In the south, the regions of Campania and Calabria were home to a small number of Indian immigrants. Some of them also settled in the island provinces of Sicily and Sardinia.

Table 1. The territorial distribution of Indian immigrants and their proportion in total population and total immigrant population of Italy in 2016.

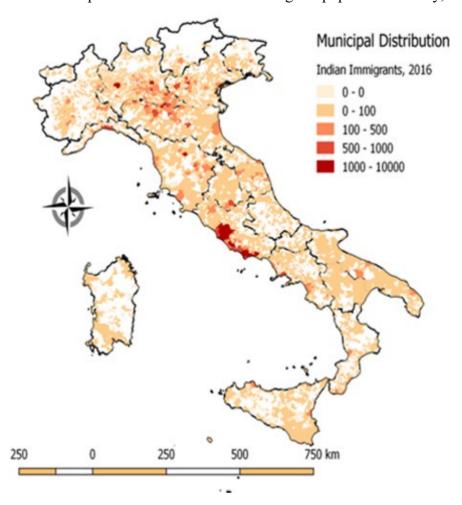
Geo. Regions	Admin. Regions	Provinces	Indian	Prop.	Prop.
Geo. Regions	Admin. Regions	Fiovilices	Immigrants	Total Imm.	Total Pop.
North-West (56,070)	Lombardy (49,529)	Milan	2,825	0.63	0.08
		Bergamo	10,856	8.65	0.98
		Brescia	15,028	9.18	1.18
		Cremona	6,922	16.81	1.92
		Mantua	9,385	17.89	2.27
North-East (37,414)	Emilia-Romagna (17,453)	Reggio nell'Emilia	6,078	3.27	0.39
		Parma	3,887	6.39	0.87
	Veneto (15,620)	Vicenza	6,315	7.13	0.73
		Verona	4,863	4.54	0.53
Centre (36,965)	Lazio (24,777)	Rome	13,702	2.59	0.32
	Lazio (24,777)	Latina	10,003	20.74	1.74
	Tuscany (6,347)	Arezzo	2,155	5.81	0.62
	ruscarry (0,547)	Florence	1,846	1.43	0.18
South (17,380)	Campania (7,155)	Caserta	2,443	5.62	0.26
	Campania (7,155)	Salerno	2,271	4.45	0.21
	Calabria (4,315)	Reggio de Calabria	3,422	4.45	0.22
Islands (2,627)	Sicily (2,049)	Messina	800	2.84	0.13
Italy			150,456	2.99	0.25

Source: own elaboration, from Municipal registers "Anagrafe", 2016, ISTAT, Italy.

If we compare the territorial distribution of Indian immigrants with that of the native population and the total immigrants at the provincial level, in Latina the proportion of Indian immigrants was 20.7% of the total immigrant population and 1.74% of its total resident population. The provinces of Mantua and Cremona, with a very prosperous dairy and cheese industry, also had a significant proportion of Indians in their total immigrant population, i.e. 17.9% and 16.8%, respectively. Brescia, Bergamo, Vicenza and Parma regions also have a significant proportion of Indian immigrants in their total immigrant population (Table 1), the concentration of small industries in these provinces is the main reason for the high proportion of Indian immigrants in their total population.

At the municipal level, the municipality of Rome was at the top with 9,669 registered Indian immigrants, followed by the municipalities of Brescia (2,197), Terracina (1,922), Sabaudia (1,835) and Aprilia (1,211) (Map 1). Except Brescia (in the Lombardy region), all other municipalities in the first five were part of the Lazio region. It shows the high concentration of Indian immigrants in a few municipalities in the centre

of Italy. During the last decade, the settlement pattern of the Indians has remained similar. In 2004, Rome and Brescia were the main centres of attraction for Indian immigrants. These initial settlements have functioned as gateways for new immigrants and have grown in size with the steady influx of immigrants from India. In recent years, with a greater demand for manual labour in agriculture, the province of Latina emerged as a large recipient of Indian immigrants.



Map 1. The municipal distribution of Indian immigrant population in Italy, 2016.

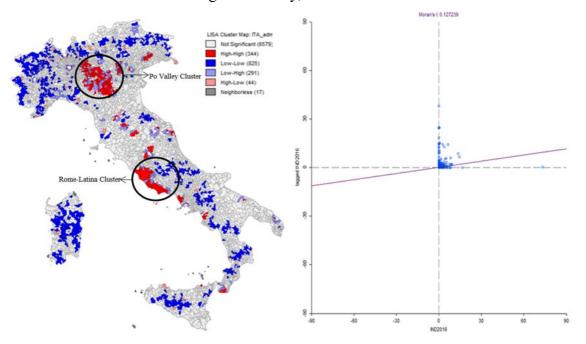
Source: own elaboration, with data from municipal registers, 2016, ISTAT, Italy.

4.1 Spatial Analysis with LISA

To measure the concentration of municipalities with a high population of Indian immigrants, I applied a widely used measure of spatial autocorrelation, namely the Moran Index. At the national level, in 2016, the value of the Moran index was 0.127, which shows a positive spatial autocorrelation between municipalities with a high or low number of Indian immigrants. Therefore, we can expect groups of municipalities with high (hot spots) and low (cold spots) numbers of Indian immigrants in different parts of Italy. In the LISA maps, I have identified two large clusters of municipalities (hot spots) with a

high concentration of Indian immigrants in Italy (Map 2). The first cluster, which was in northern Italy, I called 'Po Valley cluster' (because it was located on the plains of the Po River). It was composed of the provinces of Brescia, Bergamo, Cremona and Mantua in the Lombardy region, and the provinces of Reggio nell'Emilia and Parma in the Emilia Romagna region. The second cluster, 'Rome-Latina cluster', includes the province of Rome and Latina in the Lazio region of central Italy.

Map 2. The LISA maps and Moran's scatter plot of the spatial distribution of Indian immigrants in Italy, 2004 and 2016.

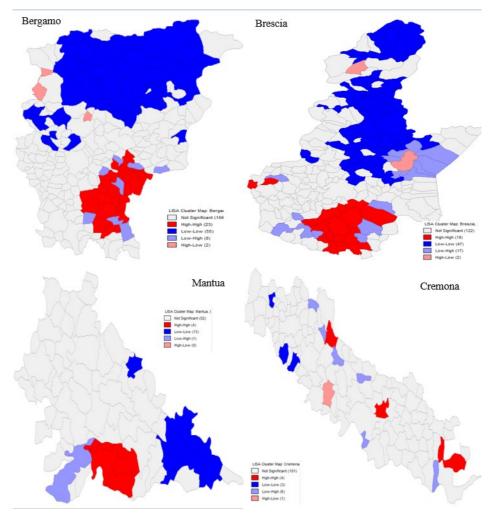


Source: own elaboration, with data from municipal registers, 2016, ISTAT, Italy.

In 2016, the Po valley cluster was the largest and home to 35% of the total Indian immigrants in Italy. The province of Brescia, which was made up of 206 municipalities, had the largest number of Indian residents. The value of the Moran index for the province of Brescia was 0.23, indicating a positive spatial autocorrelation among municipalities with a high number of Indian immigrants. Most of the Indians settled in the southern part of Brescia, where the municipalities of Vobarno, Leno, Ghedi, Montichiari and Palazzolo sull'Oglio form a mini cluster. The number of Indian immigrants settled in the north of Brescia was very small. After Brescia, Bergamo was the second province with a high concentration of Indians. It had the Moran index of 0.496, which shows a highly positive spatial autocorrelation. In Bergamo, almost all the Indians were concentrated in the southeastern municipalities of Castelli Calepio, Telgate, Romano Di Lombardia, Trescore Balneario and Villongo. In the Po valley cluster, the province of Mantua and Cremona had the largest proportion of Indians in its total immigrant population, but they are

dispersed in many municipalities. Therefore, the values of the Moran Index for Mantua and Cremona were very low, i.e. 0.22 and 0.01, respectively. In Mantua, most of the Indians settled in the south of the Municipality of Suzzara, Viadana and Luzzara. In Cremona, the Indian population was equally distributed in municipalities not very close to each other, so there was no clustering.

Map 3. The LISA maps of Indian immigrants in the provinces of Po Valley cluster, 2016.

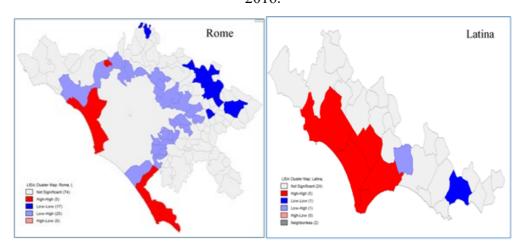


Source: own elaboration, with data from municipal registers, 2016, ISTAT, Italy.

The Roma-Latina cluster had 18.8% of the total Indian immigrant population in Italy. In 2016, the province of Rome had 121 municipalities, but most of the Indian immigrants were concentrated in the capital region. The municipality of Rome had the highest number of Indian immigrants (70%) in the province of Rome. The Moran's scatter plot shows a very weak negative spatial autocorrelation of -0.03. The negative spatial autocorrelation for the geographic distribution of any variable across a map shows that high values of that variable tend to be geographic neighbours of low values, intermediate

values tend to be geographic neighbours of intermediate values, and low values tend to be geographic neighbours of high values. In the province of Rome, the LISA cluster map shows that the municipality of Rome was surrounded by many municipalities with low values, which makes a low-high outlier around the municipal limits of Rome. The province of Latina had the highest degree of clustering with a Moran Index value of 0.48. Here, the municipalities of Sabaudia, Terracina, Fondi and Aprila form a big hot spot in the southwest of the province, which can be seen in the LISA cluster map.

Map 4: The LISA maps of Indian immigrants in the provinces of Rome-Latina cluster, 2016.



Source: own elaboration, with data from Municipal registers "Anagrafe", 2016, ISTAT, Italy.

4.2 Factors shaping the spatial distribution of Indians in Italy

The settlement pattern of the Indian immigrants in Italy was guided by the concentration of employment opportunities and their social networks. At the regional level, the concentration of industries in northern Italy was a major attraction for Indian immigrants. Almost half of the Indian immigrants were settled in the north-western and north-eastern regions and were employed in the food processing and the leather goods manufacturing industry. The Parmesan cheese industry in the Po Valley region now depends heavily on Sikh workers involved in all stages of cheese production, from milking cows to transporting milk and processing cheese (Sahai and Lum, 2013). Similarly, the leather industry in Vicenza has also attracted a large number of Indian workers. While in the Centre (the capital region of Rome) and in the Islands regions, where the tourism industry is the main source of employment, half of the Indian immigrants were employed in the hospitality and service sector. Especially, in the Island region, three quarters of the total population were employed in different services. In addition to tourism, in southern Italy, since agriculture is the main occupation for the native population, it has also attracted

many low-skilled and irregular Indian immigrants. The south has the highest proportion of Indian immigrants engaged in agriculture; here the provinces of Caserta, Salerno and Reggio di Calabria had the highest concentration of Indians (Fig. 3).

80 70 60 Population (%) 50 40 30 20 10 0 North West Islands North Fast South Regions of Italy ■ Agriculture ■ Industry ■ Services

Figure 3: The major occupation sectors by regions for Indian immigrants' in Italy, 2011.

Source: own elaboration with the data from Italian census of population and housing, 2011.

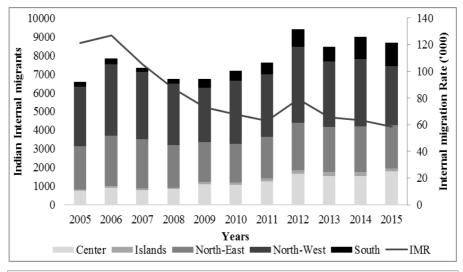
The second most important factor that affected the settlement process of Indian immigrants was social or kinship networks. Most of the people emigrate and settle in the places where they have some relatives or friends, who support them in the search for refuge and work in the first days of the settlement. Cities with a large immigrant population attract more new immigrants. This is one of the reasons behind the rapid growth of the Po Valley and Roma-Latina clusters, where the total number of Indian residents increased from 18,462 and 4,371 in 2004 to 52,156 and 23,705 in 2016, respectively. If we compare the growth of both clusters and the level of concentration of the Indian community, we can conclude that the Po valley cluster was the largest, but the Roma-Latina cluster was growing faster. Second, the drop in the Moran Index value from 0.14 in 2004 to 0.12 in 2016 shows a slight decrease in the concentration of Indian immigrants at national level.

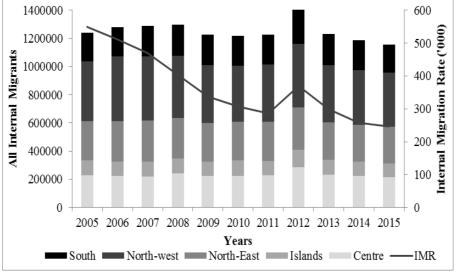
5. Internal Mobility of Indian Immigrants in Italy

The spatial distribution of any foreign population depends on its direct flow and internal mobility in a host country. Recent studies have shown that foreigners have higher internal mobility than the native population (Casacchia et al., 2010a, Bonifazi, 2013). It is partly because immigrants have little or no affiliation to a particular place or city in the host country. In addition, international immigrants have already experienced a migration and, therefore, it is easier for them to migrate again (from Filippo and Strozza, 2011, Silvestre

and Reher, 2014). According to RVS 2005-2015, during the last decade, Indian immigrants have made 85,593 registered internal movements, of which 50,238 (58.7%) were intra-province and 35,355 were inter-provinces. The annual number of movements during the last decade has increased from 6,591 in 2005 to 8,670 in 2015, with a maximum of 9,388 movements registered in 2012. Despite the absolute increase, the internal migration rate has decreased from 121 individuals per thousand in 2005 to 58.6 individuals per thousand in 2015. This can be explained by the success of family reunification policies in Italy, since single people are more likely to migrate compared to families, so with the increase in the number of families, the total population increased, but internal mobility decreased. In 2012 alone, due to the adverse effects of the economic crisis, the rate of internal migration increased, as many people lost their jobs and began to move in search of job opportunities in other areas (Fig. 4).

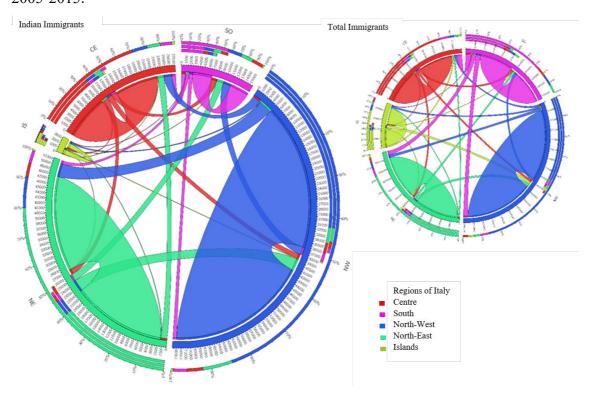
Figure 4: The internal migration (absolute values and migration rate) of Indian and total immigrants in Italy, by regions, 2005-2015.





At the regional level, throughout the study period, the north-western region of Italy had the highest number of registered movements (44%) of Indian immigrants, followed by the north-eastern region (30%). It is directly related to the high concentration of the Indian population and better employment opportunities in these regions compared to the rest of Italy. Most immigrants from the northwest region migrate to the northeast region, it is understandable since people do not like to migrate to faraway places. A significant number of immigrants also move to the northwest region from central and southern Italy. If we compare with the total immigrant population of Italy, Indian immigrants were relatively more mobile in the northern regions and less in the Island region (Fig. 5).

Figure 5: The internal migration of Indian and total immigrants in Italy at regional level, 2005-2015.

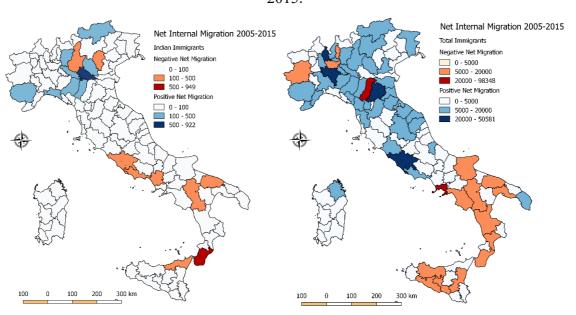


Source: own elaboration with data from Residence Variance statistics, 2005-2015, ISTAT, Italy.

At the provincial level, Indian immigrants have also observed the traditional pattern of native internal migration from southern to northern Italy. During the last decade, all provinces in the south and centre showed negative net internal migration, while in the north, except for Brescia and Verona, all other provinces showed a positive net internal migration. The availability of unskilled jobs in industries were the main factor

of attraction for immigrants, on the contrary, high unemployment in the south was the main reason behind negative net migration. The calculation of net internal migration at the provincial level during 2005-2015 shows that the north-western province of Mantua had the highest net positive migration and the southern province of Reggio di Calabria had the highest net negative migration (Map 5). The province of Mantua has received most of the immigrants from its nearest neighbours i.e. Brescia, which had functioned as a gateway and a place of dispersion for new Indian immigrants. On the contrary, the province of Reggio di Calabria had sent the largest number of Indians to Mantua, Brescia and Reggio nell'Emilia.

Map 5: Net migration of Indian and total immigrants at provincial level in Italy, 2005-2015.



Source: own elaboration with data from Residence Variance statistics, 2005-2015, ISTAT, Italy.

5.1 Determinants of inter-provincial migration of Indian immigrants

I have applied the "gravity model" to analyse the internal migratory flows of Indian immigrants and other immigrants, using three explanatory variables: the size of the total resident population in the province of origin, the size of the total resident population in the province of destination and the distance between the two provinces. The model hypothesizes that the masses, in this case two populations, affect the size of the migratory flows. In other words, a larger population in the place of origin generates a lower outflow of migrants and a large population in the place of arrival attracts a greater flow of migrants. It is assumed that the distance between provinces has a negative effect on the size of migratory flows: a greater distance between the place of origin and the place

of destination generates a smaller number of migratory flows. An intuitive conclusion is that the effect of distance should be less for foreigners, who are less linked to the place of origin, since they are less linked to the territory.

The gravity model applied to Indian and all immigrants' internal migratory flows shows a determination index (R-squared) of 0.496 and 0.441, respectively. The results of the models in both cases confirm the hypotheses on the role of the explanatory variables: the total population at origin and destination have a positive coefficient and therefore a direct positive effect on the number of migrants, while the negative coefficient of distance reveals the inverse relation between the number of migrants and the distance between provinces. It is interesting to note that for Indian immigrants the distance had less effect than the total immigrants, and the effect of the total origin population was also lesser than the total destination population. While comparing with 'all immigrants' the effect of all explanatory variables was weaker on the total internal migration during the study period (Table 2).

Table 2: Coefficient estimates (with Std. Errors) and index of determination R² for the explanatory

variables of the log-normal gravity model, Indians and Total immigrants, 2005-2015.

	INDIAN IMN	MIGRANTS	ALL IMMIGRANTS		
	Estimate	Std. Error	Estimate	Std. Error	
Intercept	-0.939***	0.049	-3.567***	0.049	
Distance (in KM)	-0.241***	0.003	-0.425***	0.002	
Destination Population	0.241***	0.005	0.506***	0.003	
Origin Population	0.223***	0.005	0.386***	0.003	
Adjusted R-squared	0.496		0.441		

Significance codes: * at 0.1 level, ** at 0.01 level, *** at 0.001

Source: own elaboration with data from Residence Variance statistics, 2005-2015, ISTAT, Italy.

The gravity model does not explain a significant part (50%) of the variability in the matrix of the migratory flows of both Indian immigrants and all other immigrants. This means that other variables play an important role. Then I decided to add two other dummy variables i.e. sex (male/female) and period of stay (before crisis, 2005-2009/after crisis, 2010-2015), to control the effect of 'gender' and 'time' on the internal migration of Indian immigrants in Italy. With the addition of these two variables, the determination

index (R-squared) improved to 0.502 and 0.504, respectively. By taking the reference category females, it shows that males were more mobile than females throughout the period of study (Model 2). It was expected because the number of males is much higher than females and they migrate more often for work reasons. The economic crisis had restricted the internal migration of the Indian immigrants; the internal migration was higher during the 'before crisis period' as compared to 'after crisis period' (Table 3).

Table 3: Coefficient estimates (with Std. Errors) and index of determination R² for the explanatory

variables of the log-normal gravity model, Indians immigrants, 2005-2015.

	Model 1		Model 2		Model 3	
		Std.		Std.		Std.
	Estimate	Error	Estimate	Error	Estimate	Error
	-		-		-	
(Intercept)	0.94***	0.05	1.04***	0.05	1.14***	0.05
	-		-		-	
Distance (in KM)	0.24***	0.00	0.24***	0.00	0.24***	0.00
Destination Population	0.24***	0.01	0.24***	0.01	0.24***	0.01
Origin Population	0.22***	0.01	0.22***	0.01	0.23***	0.01
Sex (ref. Females)			0.17***	0.02	0.17***	0.02
Period (ref. After						
Crisis)					0.10***	0.02
Adjusted R-squared	0.496		0.502		0.504	

Significance codes: * at 0.1 level, ** at 0.01 level, *** at 0.001

Source: own elaboration with data from Residence Variance statistics, 2005-2015, ISTAT, Italy.

6. Indian Immigration during economic crisis

The recent economic crisis (2008) has negatively affected the entire population of Europe, but immigrants were the most affected by unemployment and cuts in social benefits in all countries (Castles and Miller, 2010). The southern European countries, such as Greece, Italy, Spain and Portugal, have registered the highest proportion of the unemployed population of immigrants. Due to the economic crisis, on the one hand, the total influx of immigrants declined, and on the other hand, immigrants who settled in Italy began to emigrate to other countries in search of work and a better life (Fig. 6).

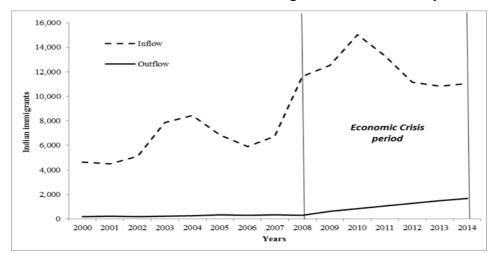


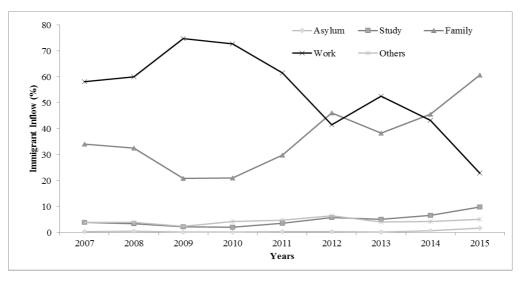
Figure 6: The inflow and outflow of Indian immigrants to and from Italy, 2000-2014.

Source: own elaboration with data from Residence Variance statistics, 2000-2014, ISTAT, Italy

6.1 Effects on flow and stock

Indian immigrants in Italy who were employed in unskilled jobs suffered a major blow from the recent economic crisis. In the ensuing years, a significant number of Indians migrated to other countries and some of them also returned to India. As a result, for the first time in the history of Indian immigration to Italy, the total number of resident Indians decreased by 1% in 2012. The huge difference between the number of residence permit holders (169 thousand) and the actual residents (150 thousand) of Indian origin in 2016, also shows that a significant number of Indian immigrants (19 thousand) with Italian residence permits did not actually live and work in Italy. Not only the direction and size, but also the causes of immigration have also changed. According to the Residence Permit data, the main reason for issuing residence permits to Indian immigrants in 2007 was work (58%), followed by other reasons such as the family reunion (34%) and the study (3%). In 2009, the proportion of workers in the total flow increased to 74%, but later, when Italy entered the period of economic crisis, the proportion of workers decreased to 23%, and immigration for family reasons increased to 61% of the total influx (Fig. 7). This dramatic change, on the one hand, uncovered the poor condition of the Italian economy to absorb more immigrant labour, and on the other hand, showed the success of family reunification among Indians in Italy.

Figure 7: The main reasons for the issuance of Residency permits to Indians in Italy, 2007-2016.

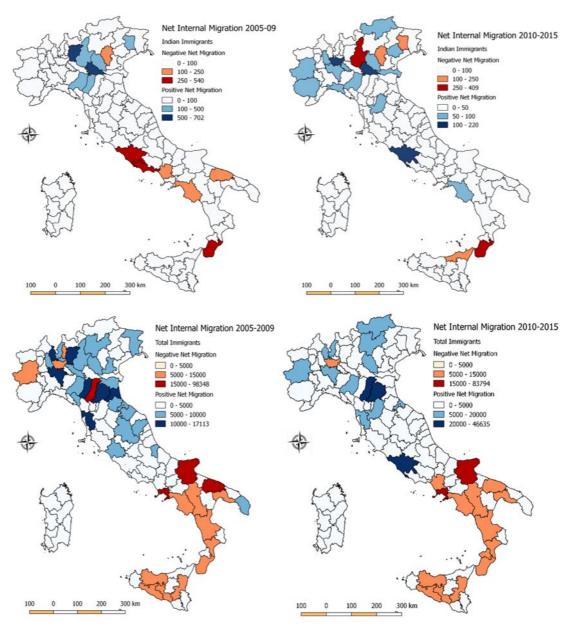


Source: own elaboration with data from Residency permit register, 2007-2015, ISTAT, Italy.

6.2 Effects on internal migration

The pattern of net internal migration at the provincial level before the crisis period was very similar to the internal migration pattern of other immigrants and the native Italian population, that is, from the economically poor southern provinces to the industrialized northern provinces. All the central and southern provinces with a significant number of Indian immigrants, that is, Rome, Latina, Caserta, Salerno, Bari and Reggio di Calabria had negative net migration before the crisis period. While in the north, the provinces of Bergamo, Cremona, Brescia, Mantua, Parma, Reggio Emilia and Pordenone had positive net migration during the same period. In the Northeast region, only the province of Vicenza had a negative net migration before the crisis. But after the crisis period (2010-2015), the trends were reversed and the province of Rome, which was dispersing immigrants to other provinces, emerged as the great recipient of immigrants and registered positive net migration. By contrast, the province of Brescia took the place of Rome and began to disperse people to other provinces, therefore, the net internal migration became negative. During this period, Indian immigrants entered many other northern provinces such as Florence, Torino, Cuneo, Milan, Genoa, Pavia, Lodi, Novara, Bolzano, Rovigo and Treviso (Map 6). Contrary to the Indians, the pattern of internal migration for total immigrants remained the same from south to north, with the exception of the province of Modena, which had positive net migration after the crisis period.

Map 6. The net internal migration at provincial level of Indian and total immigrants before (2005-2009) and after (2010-2015) economic crisis.



Source: own elaboration with data from Residence Variance statistics, 2005-2015, ISTAT, Italy.

7. Conclusion

During the last two decades, the flow of Indian immigrants to Italy has doubled and the size of the Indian community has multiplied five times. With a large number of low-skilled immigrants from the northern Indian states of Punjab and Haryana, the Indian community had a very low socioeconomic profile in Italy. The majority of the Indians had an education inferior to the secondary level and two thirds were employed in low-paid manual jobs. The education obtained in India had a very limited effect on their occupations in Italy. A third of university graduates were also working in low-skilled jobs

in agriculture or industry. The employment rate of women was very low and most of the working women were engaged in domestic services.

The territorial distribution of the Indian immigrants was mainly guided by the availability of work and their social networks. It explains their high concentration in the regions of Lombardy and Lazio, which are economic centres of Italy. The province of Brescia had the largest number of Indian immigrants, but the province of Latina had the highest proportion of Indians (21%) in its total immigrant population. The Moran global index shows a small positive autocorrelation among the municipalities with a high concentration of Indians in 2016, but the value of the index has been decreasing, which shows the dispersion of the population at the municipal level. With the LISA maps, we have identified two clusters of municipalities with a high number of Indian immigrants, that is, the Po Valley cluster and the Roma-Latina cluster. The Po valley cluster was the largest, but the Rome-Latina cluster was growing at a faster pace.

During the study period, the Indian immigrants had recorded less internal migration compared to the total immigrant population of Italy. Internal migration in absolute terms remained almost the same, but the rate of internal immigration declined during the last decade. The gravity model applied to internal migration shows that distance between provinces had a negative impact and the population in the destination and origin provinces had a positive impact on internal migration of the Indian immigrants in Italy. The recent economic crisis had reduced the influx of Indians to Italy and the size and direction of internal migration also changed. Due to the economic crisis and the lack of job opportunities, the main reasons for immigration changed from work to the family reunion.

Due to the lack of data sources, the study of spatial distribution is limited to the municipal level, which is not sufficient to understand the degree of residential segregation. In the future, if we get some more detailed census microdata to the census monitoring level, we can go deeper into explaining the situation of residential segregation or the dispersion of Indian immigrants in different Italian cities. Similarly, the internal mobility data provided by ISTAT was also limited to the provincial level, which hides most of the movements among the municipalities of the same province, again, if we obtain more details at the municipal level we can identify the municipalities that were working as a gateway to attract immigrants from India and disperse to other municipalities in Italy.

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