

Clusters of immigrants and inappropriate treatments

Marina Di Giacomo (Università di Torino)

Giovanni Perucca (Politecnico di Milano)

Massimiliano Piacenza (Università del Piemonte Orientale)*

Gilberto Turati (Università Cattolica)

May 2019

VERY PRELIMINARY DRAFT

Abstract

Social networks and relationships represent a way by which individuals may overcome information asymmetries about how and where to receive a medical treatment. The role of socialization in influencing the utilization of healthcare services is expected to be particularly relevant for individuals belonging to marginal social groups, with difficulties to get informed and to get access through the 'official' channels. The number of foreigners regularly resident in Italy has constantly increased in the last 20 years, and they now represent 8.5% of the total population. This poses serious policy implications concerning the effective communication of the availability and the appropriate provision of medical services to these individuals.

We study how language barriers influence a particular outcome, inappropriate Cesarean Sections, and we show how the immigrant community may help.

We find that: (1) The higher the *number of people from the same country* living in the *same municipality* of the mother, the lower the probability to observe inappropriate CS; (2) the lower the *genetic proximity* of the language spoken by the mother to Italian, the higher the probability to observe inappropriate CS; (3) the lower the *genetic proximity* of the language spoken by the mother to Italian, the higher the *importance of the size of the community* from the same country living at short geographical distance.

Keywords: Immigration, Health Care Appropriateness, Language barriers

JEL Classification: I14; I18; J13; J15

1. Introduction

The problem of potential access to and utilization of healthcare services for some disadvantaged groups (e.g. low income, less educated) received a lot of attention in the literature.

Many studies focused on the UK (Gulliford et al., 2002), North America (Carriere et al., 2000; Barcus and Hare, 2007), Australia (Bamford et al. 1999).

A recent study on the Italian NHS (Perucca et al., 2018) showed that poor utilization of basic health care services is strongly associated to geographical distance from the closest hospital. Moreover, keeping other things constant, this effect is reinforced when patients live in small communities.

This evidence suggests that, apart from pure geographical distance, utilization is influenced by the size of the community in which individuals are embedded.

This because social networks and relationships represent a way by which individuals may get informed about how and where to receive a medical treatment (e.g. Moscone et al., 2012): social interactions help patients overcome information asymmetries and select better hospitals in terms of the quality of the service provided.

The role of socialization in influencing the utilization of healthcare services is expected to be particularly relevant for individuals belonging to marginal social groups, with difficulties to get informed and get access through the official channels. This issue, for instance, concerns the foreign population, for which a further barrier to the access to healthcare is represented by the language spoken and the communication problems they might have.

The number of foreigners regularly resident in Italy has constantly increased in the last 20 years, and they now represent 8.5% of the total population. This poses serious policy implications concerning the effective communication of the availability and the appropriate provision of medical services to these individuals.

First of all, it is necessary to understand whether foreigner citizens are really disadvantaged (in terms of healthcare utilization) compared with Italians (e.g. Perucca et al., 2019) and if *this condition is associated to some characteristics of i) the setting of residence and ii) the culture of origin.*

By defining healthcare “utilization” in terms of quality (appropriateness) of the services received and based on previous literature (focus on birth deliveries), the hypotheses we aim at testing in the present study are the following ones:

1. *The higher the number of people from the same country living at short geographical distance from the place of residence of the patient, the higher the quality of the treatment she/he will receive;*
2. *The farther (from Italy) the cultural distance of the country of the patient, the lower the quality of the treatment she/he will receive;*
3. *The farther (from Italy) the cultural distance of the country of the patient, the higher the importance of the size of the community from the same country living at short geographical distance.*

2. Literature Review

Two main streams of literature are relevant for the present study.

First, the literature on appropriateness in the health care. Caesarean section rate is the indicator commonly used to measure healthcare services inappropriateness both in the literature (e.g. Gruber et al., 1999 for US; Francese et al., 2014 and Di Giacomo et al., 2017 for Italy) and by policy makers (e.g. annual report by Italian Health Ministry, WHO surveys). Being a surgical treatment, caesarean section shows a large cost differential and is usually better priced than vaginal delivery (appropriate treatment in normal situations).

In the medical and socio-economic literature (e.g. Bollini et al., 2009) there is some evidence of inequalities in the provision of maternal healthcare services between immigrant and non-immigrant women, including, for instance, differences in the percentage of caesarean sections.

Some scholars suggest that for immigrants also non-clinical factors, e.g. education and culture, may help explain these differences (e.g. Morris et al 2005, Wadsworth, 2013). There is some evidence that immigrant women have more difficulties to get informed on the more appropriate service (vaginal vs caesarean birth delivery) through the official channels.

The second stream of literature deals with the economic impact of immigration (Bojas, 1995, Dustman et al., 2016). Italy has only recently (last 30 years) become a destination country of migration flows. Moreover, unlike other European countries with past colonies (UK, France, Spain), the nationalities of migrants to Italy is extremely heterogeneous.

In Piedmont, the region under study, the resident population with non- Italian citizenship increased from 130,000 (3% of population) to 390,000 (9% of population) units between 2002 and 2012 (Istat, 2013).

These flows inevitably generate pressures on the economic system of the region and the provision of essential services (education, healthcare).

3. Data and descriptive evidence

Our main data source is the CEDAP (Certificato di assistenza al parto, literally Delivery Certificate) database, collecting data on all women giving birth within the administrative borders of the Piedmont Region, in North Western Italy. The delivery certificate is introduced by the Italian Health Department in 2001.¹ It allows the collection of homogenous, comparable and high-quality statistical data, relating to all birth events, occurring in public and private hospitals or any other facility (e.g. midwifery units, birth centres, home births) on the Italian territory. The midwife or the doctor who attended the birth are in charge of filling the form, within ten days from the delivery. The certificate is compulsory and it contains a rich set of information about the socio-demographic characteristics of the parent(s), the course of the pregnancy, the labor, the childbirth and the newborn health status.

For our purposes, we use data about all mothers who delivered between 2002 and 2012. The final sample consists of 390,370 women and 21% of them are considered as immigrant, i.e. holding a non Italian (foreign) citizenship.

Figure 1 shows the share of immigrant women by hospital in Piedmont, comparing the 2002 (the first year in our sample) to 2012 (the last available year). All birth deliveries are in public hospitals and the share of immigrant women by hospital increased (doubled) over the period 2002-2012 (from 13% to 27%).

Figure 2 displays that native and foreign women are different on many respects: immigrant women are younger (Figure 2, panel A), less educated (Figure 2, panel B) and less employed (Figure 2, panel C) than Italian women.

Finally, figure 3 reports the main areas of origin of immigrant women, giving birth in Piedmont. Within Western Pacific, the largest community is from China; the largest community in South East Asia is Indian; within Europe, the largest communities are from Romania, Albania, Moldavia; the

¹ Italian Department for Health, Ministerial Decree n. 249, July 16th, 2001.

largest community in Eastern Mediterranean is from Morocco; the main American communities are from Peru, Brazil and Ecuador; while the main African countries are Nigeria and Senegal.

4. Methodology

We model the probability to observe inappropriate cesarean sections (CS) focusing on the subsample of immigrant women, whose pregnancies are non-pathological. Moreover, we focus on women giving birth between the 37th and 41st gestational week (term pregnancies), over the period 2007-2012.

The identification of medical appropriateness of CS is based on Robson score, an indicator of clinical risk²:

- Low appropriateness: Robson class 3 and 4 (multiparous women)
- Medium-high appropriateness: Robson class 1 and 2 (nulliparous women) and 6 to 10 (anomalies).

For each year, both a Linear Probability Model (LPM) and Multilevel logit regressions (ASL and Municipality of residence of the mother used as 1st and 2nd level, respectively) are estimated:

$$Prob(Inappropriate\ CS) = Prob(CS = 1 \ \& \ Robson\ Class = 3\ or\ 4) = \alpha + \beta (N.\ Compatriots) + \gamma (Similar - Language) + X\delta + \varepsilon \quad (1)$$

where the probability to observe inappropriate CS, i.e. a CS with Robson class equal to 3 or 4, depends on:

1) Number of people from the same country living at short distance (*N. Compatriots*). We compute the number of compatriots within the same municipality of residence of the woman and within a distance of 15 km from the municipality of the woman;

2) Genetic proximity between the language spoken by the woman and the Italian tongue (*Similar-Language*). We use an online database on quantitative comparative linguistics

² The Robson Classification (Robson, 2001) aims at giving a clinically relevant, objective, and comparable framework for classifying women admitted for delivery, according to their obstetric conditions. The ten classes are mutually exclusive and they are mainly based on presentation (cephalic, breech, other), parity (number of previous deliveries), labour (spontaneous, induced, or past C-Sections), delivery week (gestational age), single or multiple pregnancy. Low risk birthing women (single child, cephalic presentation, spontaneous labor and delivery week greater than 37) are in Robson class 1, while high-risk pregnancies are grouped in subsequent classes (e.g., women experiencing pre-term births and previous C-sections are in class 10).

(www.elinguistics.net) to obtain this measure. The proximity is measured on 1-100 scale, where languages are:

- highly related if the score is between 1 and 30;
- medium related for a score between 30 and 50;
- unrelated or remotely related languages if the score is larger than 50.

3) interaction between 1) & 2)

4) controls (matrix X in equation (1) for socio-economic (age, education, occupational and marital status, citizenship of father) and clinical characteristics (weight, pathologies, previous CS, alcohol and cigarettes consumption) of women.

5. Results

We separately estimate equation (1) for each year between 2007 and 2012.

Tables 1 and 2 present results for the OLS estimation. Tables 3 and 4 show the estimation results for the multilevel model where ASL and Municipality of residence of the mother are used as 1st and 2nd level, respectively.

For both models and almost all the years the findings confirm our initial hypothesis:

1. The higher the *number of people from the same country* living in the *same municipality* of the mother, the lower the probability to observe inappropriate CS;
2. The lower the *genetic proximity* of the language spoken by the mother to Italian, the higher the probability to observe inappropriate CS;
3. The lower the *genetic proximity* of the language spoken by the mother to Italian, the higher the *importance of the size of the community* from the same country living at short geographical distance.

6. Conclusion and policy implications

Our results are still preliminary and we aim at improving our analysis on a number of grounds:

- Estimation on the pooled sample and update to the most recent years.

- Use of instruments for the presence of foreign people from the same country (possible endogeneity).
- Extension of the analysis to differences in prenatal care (e.g. access to gynaecological services and screening tests) and birth outcomes (e.g. Apgar score)

7. References

- Bamford, E. J., Taylor, D. S., Hugo, G. J., Dunne, L. , Symon, B. G. and Wilkinson, D. 1999. Accessibility to general practitioners in rural South Australia: A case study using geographic information system technology. *Medical Journal of Australia*, vol. 171, p. 614-616.
- Barcus HR, T Hare. 2007. Healthcare Utilization, Deprivation, and Heart-Related Disease in Kentucky. *Southeastern Geographer*, Vol. 47(2), p. 202-221.
- Bollini P, Pampallona S, Wanner P, Kupelnick B. 2009. Pregnancy outcome of migrant women and integration policy: a systematic review of the international literature. *Social Science and Medicine*, vol. 68(3), p. 452-61.
- Borjas GJ. 1995. The Economic Benefits from Immigration. *Journal of Economic Perspectives*, Vol. 9(2), pp. 3-22.
- Carriere KC, LL Roos, DC Dover. 2000. Across time and space: variations in hospital use during Canadian health reform. *Health Services Research*.
- Di Giacomo M, M Piacenza, L Siciliani, G Turati. 2017. Do public hospitals respond to changes in DRG price regulation? The case of birth deliveries in the Italian NHS. *Health Economics*, vol. 26(s2), p. 23-37.
- Dustmann C, U Schönberg, J Stuhler. 2016. The Impact of Immigration: Why Do Studies Reach Such Different Results? *Journal of Economic Perspectives*, vol. 30(4), p. 31-56.
- Francesse M, M Piacenza, M. Romanelli, G Turati. 2014. Understanding inappropriateness in health spending: The role of regional policies and institutions in caesarean deliveries. *Regional Science and Urban Economics*, vol. 49(C), p. 262-277.
- Gruber J., J. Kim and D. Mayzlin. 1999. Physician Fees and Procedure Intensity: The Case of Cesarean Delivery. *Journal of Health Economics*, vol. 18(4), p. 473-490.

- Gulliford M, Figueroa-Munoz J, Morgan M, Hughes D, Gibson B, Beech R, Hudson M. 2002. What does 'access to health care' mean? *J Health Serv Res Policy*, Vol. 7(3), p. 186-8.
- Moscone, F, Tosetti, E. and Vittadini, G. 2012. Social interaction in patients' hospital choice: Evidence from Italy. *Journal of the Royal Statistical Society. Series A: Statistics in Society*, Vol. 175 (2), p. 453 - 472.
- Perucca G, M Piacenza, G Turati. 2019. Spatial inequality in access to healthcare: evidence from an Italian Alpine region. *Regional Studies*, Vol. 53, p. 478-489.
- Robson. 2001. *Res Clin Obstet Gynaecol*, Vol. 15, p. 179–194.
- Wadsworth J. 2013. Mustn't Grumble: Immigration, Health and Health Service Use in the UK and Germany. *Fiscal Studies*, vol. 34(1), p. 55-82.

Figure 1. Share of immigrant women by hospital in piedmont: 2002 vs 2012 (birth deliveries)

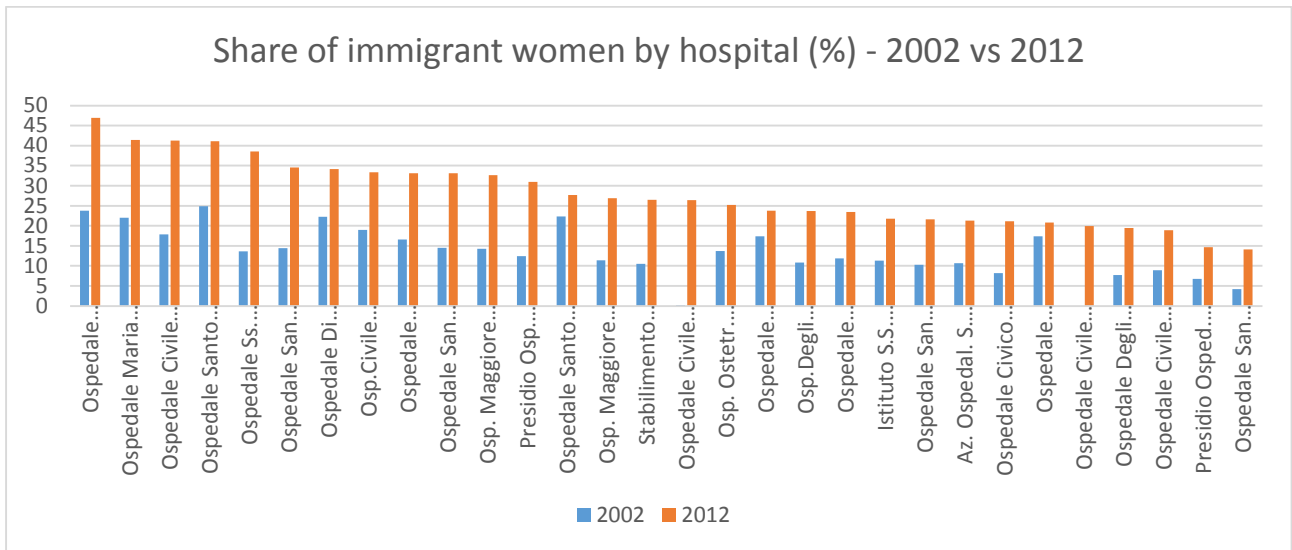
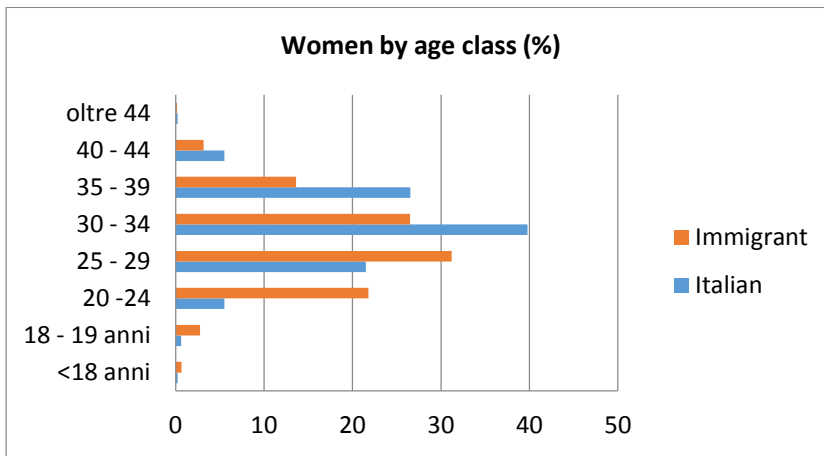
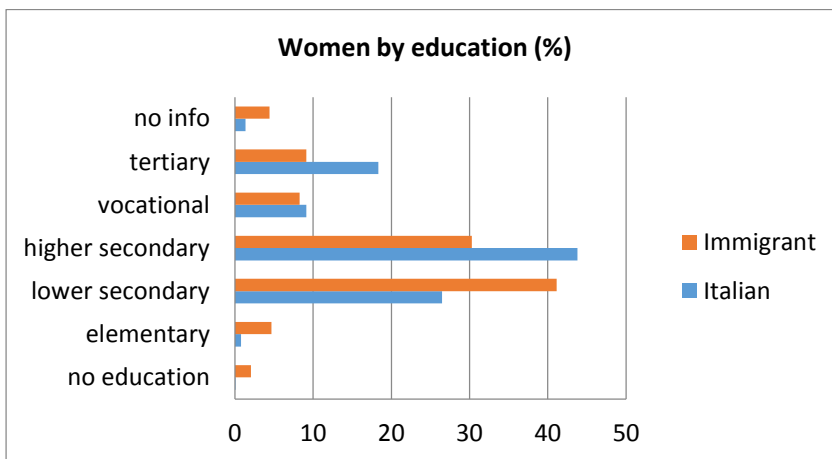


Figure 2. Differences between Immigrant and Italian women, at delivery.

Panel A. Age classes



Panel B. Education level



Panel C. Employment status

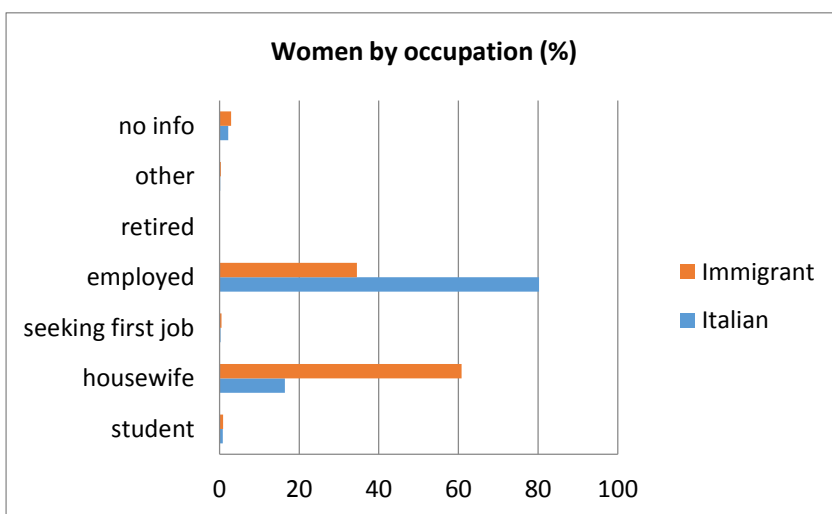


Figure 3. Area of origin of immigrant women.

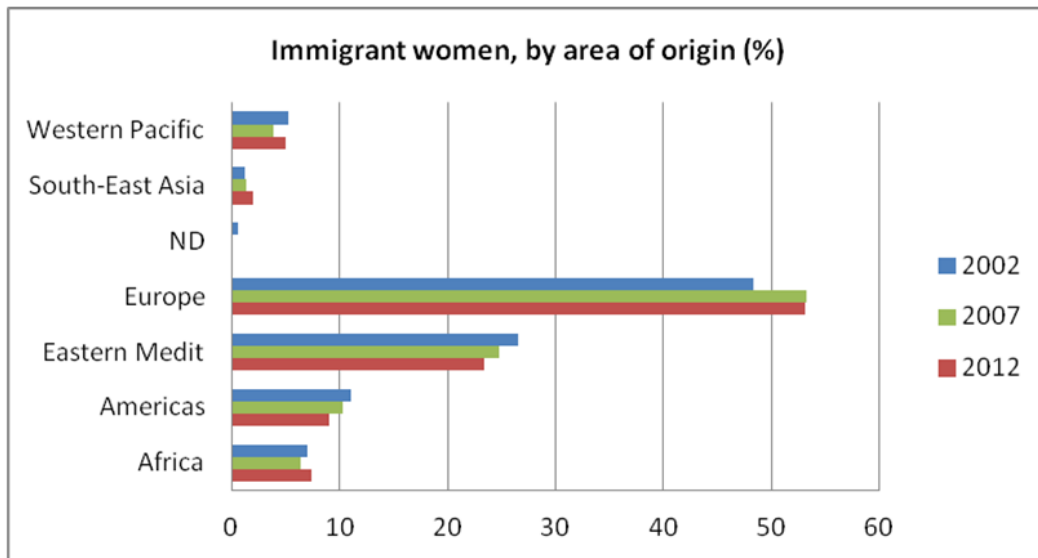


Table 1. OLS results for years 2007-2008-2009. Robust standard Errors in Parenthesis.

2007					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.016**	-0.022***	-0.024***	-0.021***	-0.024***
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
N. Compatriots within 15Km	0.003	0.006	0.004	0.003	0.001
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
Medium related language	0.008	-0.006	0.012	0.014	0.011
	(0.022)	(0.022)	(0.021)	(0.021)	(0.021)
Not related Language	0.108***	0.080***	0.083***	0.089***	0.078***
	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
N. Compatriots same city *Not related Language				-0.017	
				(0.017)	
N. Compatriots within 15Km*Not related Language					0.030
					(0.034)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	6,529	6,529	6,529	6,529	6,529
2008					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.003	-0.007*	-0.012***	-0.009**	-0.012***
	(0.004)	(0.004)	(0.004)	(0.005)	(0.004)
N. Compatriots within 15Km	-0.010*	-0.009	-0.013**	-0.014**	-0.015***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Medium related language	0.006	-0.019	-0.007	-0.004	-0.008
	(0.022)	(0.022)	(0.021)	(0.021)	(0.021)
Not related Language	0.098***	0.063***	0.062***	0.075***	0.054***
	(0.013)	(0.014)	(0.013)	(0.014)	(0.014)
N. Compatriots same city *Not related Language				-0.036**	
				(0.015)	
N. Compatriots within 15Km*Not related Language					0.049
					(0.031)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	7,075	7,075	7,075	7,075	7,075
2009					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.002	-0.006	-0.007*	-0.006	-0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
N. Compatriots within 15Km	-0.010*	-0.009*	-0.011**	-0.011**	-0.010*
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Medium related language	-0.011	-0.039*	-0.007	-0.007	-0.006
	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)
Not related Language	0.083***	0.054***	0.057***	0.060***	0.065***
	(0.013)	(0.013)	(0.013)	(0.014)	(0.014)

N. Compatriots same city residence*Not related Language				-0.009	
				(0.013)	
N. Compatriots within 15Km*Not related Language					-0.040
					(0.027)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	7,252	7,252	7,252	7,252	7,252

Table 2. OLS results for years 2010-2011-2012. Robust standard Errors in Parenthesis.

2010					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.006*	-0.010***	-0.013***	-0.011***	-0.013***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)
N. Compatriots within 15Km	-0.001	-0.000	-0.003	-0.003	-0.002
	(0.005)	(0.004)	(0.004)	(0.004)	(0.004)
Medium related language	-0.047**	-0.082***	-0.060***	-0.059***	-0.060***
	(0.021)	(0.021)	(0.019)	(0.019)	(0.019)
Not related Language	0.092***	0.069***	0.064***	0.070***	0.069***
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.017	
				(0.012)	
N. Compatriots within 15Km*Not related Language					-0.024
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,132	8,132	8,132	8,132	8,132
2011					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.007**	-0.012***	-0.012***	-0.010***	-0.012***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)
N. Compatriots within 15Km	0.000	-0.001	-0.002	-0.002	-0.002
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
Medium related language	-0.005	-0.040*	-0.009	-0.008	-0.009
	(0.022)	(0.022)	(0.020)	(0.020)	(0.020)
Not related Language	0.078***	0.041***	0.039***	0.046***	0.040***
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.020*	
				(0.012)	
N. Compatriots within 15Km*Not related Language					-0.007
					(0.025)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,068	8,068	8,068	8,068	8,068
2012					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.001	-0.004	-0.007*	-0.004	-0.007*
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
N. Compatriots within 15Km	-0.005	-0.005	-0.006	-0.007	-0.005
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Medium related language	-0.020	-0.039*	-0.024	-0.022	-0.023
	(0.021)	(0.021)	(0.019)	(0.019)	(0.019)
Not related Language	0.068***	0.034***	0.030**	0.041***	0.041***
	(0.013)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.035**	

				(0.014)	
N. Compatriots within 15Km*Not related Language					-0.060**
					(0.027)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,057	8,057	8,057	8,057	8,057

Table 3. Multi-level estimation results for years 2007-2008-2009. Robust standard Errors in parenthesis.

2007					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.033***	-0.029***	-0.041***	-0.038***	-0.041***
	(0.010)	(0.010)	(0.010)	(0.010)	(0.010)
N. Compatriots within 15Km	-0.002	0.000	-0.002	-0.003	-0.003
	(0.012)	(0.012)	(0.012)	(0.012)	(0.012)
Medium related language	-0.003	-0.011	0.001	0.004	-0.000
	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)
Not related Language	0.106***	0.079***	0.077***	0.091***	0.072***
	(0.014)	(0.014)	(0.014)	(0.015)	(0.015)
N. Compatriots same city*Not related Language				-0.037**	
				(0.017)	
N. Compatriots within 15Km*Not related Language					0.026
					(0.034)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	6,529	6,529	6,529	6,529	6,529
2008					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.008	-0.007	-0.016***	-0.016***	-0.016***
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
N. Compatriots within 15Km	-0.009	-0.007	-0.011	-0.011	-0.011
	(0.007)	(0.007)	(0.007)	(0.007)	(0.007)
Medium related language	0.007	-0.014	-0.006	-0.006	-0.007
	(0.023)	(0.022)	(0.021)	(0.021)	(0.021)
Not related Language	0.099***	0.064***	0.060***	0.077***	0.052***
	(0.013)	(0.014)	(0.013)	(0.014)	(0.014)
N. Compatriots same city*Not related Language				-0.052***	
				(0.016)	
N. Compatriots within 15Km*Not related Language					0.044
					(0.032)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	7,075	7,075	7,075	7,075	7,075
2009					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.010*	-0.011**	-0.015***	-0.015***	-0.014***
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
N. Compatriots within 15Km	-0.008	-0.007	-0.008	-0.008	-0.007
	(0.006)	(0.006)	(0.006)	(0.006)	(0.006)
Medium related language	-0.017	-0.040*	-0.013	-0.013	-0.011
	(0.023)	(0.023)	(0.022)	(0.022)	(0.022)
Not related Language	0.082***	0.053***	0.053***	0.064***	0.062***

	(0.013)	(0.014)	(0.013)	(0.014)	(0.014)
N. Compatriots same city*Not related Language				-0.029**	
				(0.014)	
N. Compatriots within 15Km*Not related Language					-0.046*
					(0.027)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	7,252	7,252	7,252	7,252	7,252

Notes: ASL and Municipality of residence of the mother used as 1st and 2nd level, respectively

Table 4. Multi-level estimation results for years 2010-2011-2012. Robust standard Errors in parenthesis.

2010					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.006	-0.008*	-0.012***	-0.012***	-0.012***
	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)
N. Compatriots within 15Km	-0.000	0.001	-0.002	-0.002	-0.001
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
Medium related language	-0.046**	-0.079***	-0.059***	-0.059***	-0.059***
	(0.022)	(0.021)	(0.020)	(0.020)	(0.020)
Not related Language	0.091***	0.069***	0.064***	0.070***	0.068***
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.016	
				(0.012)	
N. Compatriots within 15Km*Not related Language					-0.020
					(0.024)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,129	8,129	8,129	8,129	8,129
2011					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	-0.007**	-0.011***	-0.012***	-0.010***	-0.012***
	(0.004)	(0.004)	(0.003)	(0.004)	(0.003)
N. Compatriots within 15Km	0.000	-0.001	-0.002	-0.002	-0.002
	(0.005)	(0.005)	(0.004)	(0.004)	(0.004)
Medium related language	-0.005	-0.038*	-0.009	-0.008	-0.009
	(0.022)	(0.022)	(0.020)	(0.020)	(0.020)
Not related Language	0.078***	0.041***	0.039***	0.046***	0.040***
	(0.012)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.020*	
				(0.012)	
N. Compatriots within 15Km*Not related Language					-0.007
					(0.025)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,068	8,068	8,068	8,068	8,068
2012					
	[1]	[2]	[3]	[4]	[5]
N. Compatriots same city residence	0.000	0.004	-0.001	-0.001	-0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
N. Compatriots within 15Km	-0.005	-0.005	-0.006	-0.006	-0.005
	(0.005)	(0.006)	(0.005)	(0.005)	(0.005)
Medium related language	-0.020	-0.034	-0.023	-0.023	-0.021
	(0.022)	(0.021)	(0.020)	(0.020)	(0.020)
Not related Language	0.068***	0.035***	0.029**	0.037***	0.040***

	(0.013)	(0.013)	(0.012)	(0.013)	(0.013)
N. Compatriots same city*Not related Language				-0.028*	
				(0.015)	
N. Compatriots within 15Km*Not related Language					-0.058**
					(0.028)
Socio-Demographic Controls	Yes	Yes	Yes	Yes	Yes
Medical Conditions Controls	Yes	Yes	Yes	Yes	Yes
N. Observations	8,057	8,057	8,057	8,057	8,057

Notes: ASL and Municipality of residence of the mother used as 1st and 2nd level, respectively