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**Education, Reputation or  
Network?**

**Evidence from Italy on  
Migrant Workers  
Employability**

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**Susanna Mancinelli, Giovanni Ponti**  
and **Nora Piva,** University of Ferrara

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#### Summary

The strong adverse selection that immigrants face in hosting labour markets may induce them to adopt some behaviours or signals to modify employers' beliefs. Relevant mechanisms for reaching this purpose are personal reputation; exploiting ethnic networks deeply-rooted in the hosting country; and high educational levels used as an indirect signal of productivity. On this last point, the immigrant status needs a stronger signal compared to that necessary for a local worker, and this may lead the immigrant to accept job qualifications which are lower than those achievable through the embodied educational level. This could explain the *over education* problem that characterizes many countries, Italy included. The aim of the paper is to investigate whether the above mentioned mechanisms are adopted by immigrants in Italy, a crucial country for EU immigration flows, and if they are useful in increasing immigrants' likelihood of employment. The empirical analysis has been conducted using the dataset from a national Labour Force Survey which provides information on 6,860 documented immigrants. We estimate a logit model for immigrants' likelihood of being employed, focusing on the above mentioned mechanisms: reputation, ethnic networks and educational level. Moreover we concentrate on the interaction effects of the mechanisms and investigate whether one of them wins on the others. Results show that each of the three mechanisms is statistically and economically significant and exerts positive influence: all factors contribute to increasing the immigrant's probability of being employed. Anyway, a high level of education increases the probability of being employed more than the belonging to ethnic networks deeply-rooted in Italy. The specific embodied capital of workers matter relatively more. This is relevant for labour public policies in this specific realm since the human capital lever is a possible direct target of various public policies and private human capital investments.

**Keywords:** Educational Qualifications, Migrant Networks, Immigrant Employability, Reputation, Segmented Labour Markets

**JEL Classification:** D82, J24, I2, F22

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## Education, Reputation or Network?

### Evidence from Italy on Migrant Workers employability

#### Abstract

The strong adverse selection that immigrants face in hosting labour markets may induce them to adopt some behaviours or signals to modify employers' beliefs. Relevant mechanisms for reaching this purpose are personal reputation; exploiting ethnic networks deeply-rooted in the hosting country; and high educational levels used as an indirect signal of productivity. On this last point, the immigrant status needs a stronger signal compared to that necessary for a local worker, and this may lead the immigrant to accept job qualifications which are lower than those achievable through the embodied educational level. This could explain the *over education* problem that characterizes many countries, Italy included.

The aim of the paper is to investigate whether the above mentioned mechanisms are adopted by immigrants in Italy, a crucial country for EU immigration flows, and if they are useful in increasing immigrants' likelihood of employment. The empirical analysis has been conducted using the dataset from a national Labour Force Survey which provides information on 6,860 documented immigrants. We estimate a logit model for immigrants' likelihood of being employed, focusing on the above mentioned mechanisms: reputation, ethnic networks and educational level. Moreover we concentrate on the interaction effects of the mechanisms and investigate whether one of them wins on the others. Results show that each of the three mechanisms is statistically and economically significant and exert positive influence: all factors contribute to increasing the immigrant's probability of being employed. Anyway, a high level of education increases the probability of being employed more than the belonging to ethnic networks deeply-rooted in Italy. The specific embodied capital of workers matter relatively more. This is relevant for labour public policies in this specific realm since the human capital lever is a possible direct target if various public policies and private human capital investments.

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## 1. Introduction

In the last twenty years international migrations have been characterised by sustained increase and deep changes, that have especially involved the countries of Southern Europe, modifying their role from emigration areas to hosting countries mostly for people coming from the less developed areas of the world. This phenomenon has regarded also Italy, where the migration phenomenon has reached a considerable weight. Actually, in 2008 the foreign presence in Italy has been evaluated in more than 4 million people, with a percentage of undocumented people evaluated of about 8,7%. Documented workers are 1,5 million and, including the moonlighting, migrant workforce sums up at 2 million units. Foreign people in Italy are, moreover, characterized by an average age of 32 years (versus 44 years of Italians). For what concerns education level, 49% of foreigners holds at least a college degree, versus 33,2% of Italians.

The high education level of migrants is a phenomenon already exploited in many recent works about migration (Barringer, Takeuchi and Xenos 1990, Borjas 2003, Battu and Sloane 2002, Devillanova and Frattini 2006, Gross and Schmitt 2006). What emerges with strength is a situation of over education: migrant workers holds higher education levels than local workers for same job positions.

Usually the inclusion of foreign people in the host country comes with an attitude of residents often not in favour of immigration, although the socio-economic benefits of the phenomenon are very often visible and clear even at first sight. This negative attitude exerts its effects in the labour market, where adverse selection factors undermine the proper matching between supply and demand.

The adverse selection that can be met by migrants in hosting labour markets may induce them to adopt some behaviours or signals to modify employers' beliefs. Relevant mechanisms at reaching this purpose are: personal reputation, belonging to ethnic networks deeply-rooted in the hosting country, and high education levels as an indirect signal of productivity. On this last point, the immigrant status needs a "stronger" signal than that necessary for a local worker, and this may lead the immigrant to accept lower job positions. This could explain the *over education* problem highlighted above.

The main aim of the paper is to investigate whether the mentioned mechanisms are adopted by immigrants in Italy, and if they are useful levers in increasing migrants' likelihood of employment.

The empirical analysis has been conducted using an official dataset provided by the National Institute of Statistics (ISTAT), collecting information about 6860 documented immigrants in Italy. We estimate a *logit* model for immigrants' likelihood of being employed, focusing on the above mentioned mechanisms: reputation, ethnic networks and education level. Moreover we concentrate on the interaction effects and the marginal effects of the mechanisms and investigate whether one of them wins on the others.

The paper is organized as follows. Section two is devoted to the conceptual framework that will constitute the basis for the empirical analysis. In section three the database and the social context are presented. Section four comments on and presents the empirical framework, focusing on the drivers of employability for migrants in our sample and on the interaction effects and marginal effects of reputation, migrant networks and education level as levers of migrants' employability. The last section concludes the paper by summarising results and offering some insights for policy making.

## 2. Conceptual framework

The mismatch between education level and job position in migrant workers has been pointed out by many authors<sup>1</sup>, who, for different countries and situations, have verified a higher education level in migrant workers compared with local workers for same job positions.

In the human capital theory higher levels of education have positive impacts on the advancement of minorities, increasing their likelihood of more satisfying jobs, higher incomes and career prospects<sup>2</sup>. Nevertheless in presence of a phenomenon of over education, the predictions of the human capital

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<sup>1</sup> Barringer, Takeuchi and Xenos (1990) for Asian migrants in Us, Borjas (2003) for the US, Battu and Sloane (2002) for UK, Devillanova and Frattini (2006) for irregular migrants in Italy, Gross and Schmitt (2006) for France. In some countries, as Australia, over education has been exploited by a proper legislation of welcoming more educated immigrants (Kifle, 2008)

<sup>2</sup> Berg (1969), Parsons (1968). See Peterson (1971), Sklare (1971) and Sung (1967) for the economic achievements of high educated minorities as Jews and Asian Americans.

theory do not fit well. In the structural critique<sup>3</sup> to the human capital theory, the existence of structural barriers prevents migrants from obtaining a job coherent with their education level.

A fundamental element for the inclusion of foreign people in the host country is the attitude of residents, which is often not in favour of immigration, although the socio-economic benefits of the phenomenon are very often visible and clear even at first sight if not from specific micro and macro analyses. This negative attitude exerts its effects in the labour market, where adverse selection factors undermine the proper matching between supply and demand from the very beginning, even influencing migrant's likelihood of entering the labour market.

Migrants aim at modifying employers beliefs by adopting mechanisms that may mitigate or tackle such adverse selection effects.

Reputation is definitely the major factor migrants may use when entering the labour market. A migrant may then base his reputation and competitive advantage on two distinct mechanisms. The first one structures "personal reputation" on the specific experience and curriculum vitae the worker accumulates over time if staying in the same labour market. The second one relies on the so called 'migrant networks', or complex webs of interpersonal links that join migrants with 'older' migrants and non migrants in the locations of origin and arrival, through family, friendship and ethnic connections (Massey, 1988). From the employer point of view, the link with other employees that have provided a good effort and behaviour is a criterion of selection and valuation. We may refer to the theory of 'statistical discrimination' (Becker 1959, Arrow 1972, 1973, 1998; Phelps 1972, Heckman 1998), by which one applies to a single individual the characteristics of the network the worker belongs to.

A further mechanism aimed at modifying employer's beliefs is the use by workers of the education level as an indirect signal of workers productivity (Spence, 1973; Riley, 1979). The migrant status makes necessary a stronger signal compared to the resident competitor. This often induces or forces the migrant to step down from the proper segment of labour markets, descending to a lower market in terms of education levels. This explains in part the phenomenon of over education we commented on above. More in detail, the education signal sent to the market should be even stronger for newcomers<sup>4</sup>, migrants without a solid reputation and networks as embodied assets, or migrants belonging to communities for which the social attitude is specifically negative<sup>5</sup>.

On the basis of the considerations made above, our aim is to analyse the behaviour of migrants in the Italian job market. We want particularly verify the extent to which the highlighted mechanisms are exploited by migrants and the way they affect the likelihood of being employed.

### **3. Data and description of the socio-economic context**

In order to fulfil the aims of this work the analysis is carried out by examining an official dataset provided by the National Institute of Statistics (ISTAT)<sup>6</sup> of 6,860 migrant units, regularly living in Italy. More specifically, in order to empirically analyse the determinants of employability for the sample, we only consider potential 'workforce' units, people between 15 and 75 years (87% of the sample). The sample possesses the following features. Women are the 57.3% of workforce. Main countries of origins, besides Germany and Switzerland, EU countries placed at third and first positions in the ranking, are: Albania, Romania (when writing the most numerous communities in Italy) and Morocco. Those three constitute the 20% of the total. 55.7% of migrants live in Northern Italy. Their average age is 38 years, and 59% of them are married. Some other descriptive statistics are useful to sketch the overall socio economic framework under analysis. As far as the labour market is concerned, 57.6% of the people is employed, 35% is inactive and 6.6% unemployed. Among employed, 40% is working in

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<sup>3</sup> See, among others, Barringer, Takeuchi and Xenos (1990).

<sup>4</sup> Which is in line with the idea that the first international migrants usually do not come from the bottom of the community hierarchy, but from the middle ranges (Massey, 1988).

<sup>5</sup> E.g. Africans and Romanian in Italy, compared to southern Americans who are more easily accepted for cultural and crime-related reasons.

<sup>6</sup> Data are not publicly free. We bought from ISTAT a sufficient amount of data for the analysis in 2006. Data stem from the Labour workforce survey ISTAT carries out every three months on employed and unemployed people. We got the first semester of 2006. Future analyses may further exploit panel based structure of the data. One problem is the unbalanced nature of labour force workers survey due to the partial rotation (turnover) of the panel semester by semester.

services, 36% in industry and the rest in agricultural sector. 85% of them have a job with a tenure track (not atypical job) position.

Finally, regarding education we note that 45% possess primary or high school diploma, 39% a secondary school degree and 11% a University Laurea degree or even Master/PhD<sup>7</sup>. If we look at job positions of employed workers in the sample, having in mind as comparison the shares of education attainments, we observe that 75% of migrants are 'blue collars' (table 1), with a striking difference between Italians and migrants. Further, it is evident that migrants occupy a non coherent job compared to education levels: 34% of them with university degree and 69% of people with a diploma are blue collar (Tab. 2). Over education then emerges as a stylized fact on which our reasoning may revolve around. Migrants then tend to embody, taking as parameter a similar job/position in the market, higher education levels.

Tab. 1: *job positions of Italians and migrants in our sample*

Job position	Migrants in the sample (%)	Italians (%)
Blue collar	75,3	34,7
White collar	19,8	27,1
Director/head	4,9	38,2
Total	100,0	100,0

Source: Istat (2007), own elaborations

Tab. 2: *Education levels and job positions of migrants in our sample*

Job	Education level (%)			
	High	Medium	Basic	No education
Blue collar	34,0	68,5	92,3	94,3
White collar	38,1	27,9	7,2	5,7
Director/head	27,9	3,6	0,5	0,0
Total	100,0	100,0	100,0	100,0

Source: Istat (2007), own elaborations

The phenomenon of over education is even clearer if we subdivide migrants in those coming from developed and less developed areas of the world. The latter present stronger mismatch between education level and job position in the market (tab. 3). We note that for individuals coming from more developed areas a positive correlation between education and job levels is implied. Foreigners having high education are either white collar (55%) or head positions (42%), while less educated are for the great majority blue collars (87%). The opposite is true for migrants coming from less developed areas: 61% of high educated is blue collar; 23% white collar and only 18% in head positions. For those having a medium education level, the difference is also striking: 55% of migrants coming from more developed areas is white collar, 84% of those born in less developed areas is blue collar. From any angle and perspective, then, over education in the job market is an issue worth studying.

Tab. 3: *Distribution by job, country and education level*

Job	Education (%)			
	High	Medium	Basic	No education
	<b>More developed areas</b>			
Blue collar	3,2	37,6	86,2	100,0
White collar	55,1	54,6	13,8	0,0
Director/head	41,7	7,9	0,0	0,0
Total	100,0	100,0	100,0	100,0

<sup>7</sup> We note that in data from Italy's General Census of Population the same percentages for Italians were 56%, 26%, 7%.

<i>Less developed areas</i>				
Blue collar	60,5	84,4	94,5	94,8
White collar	22,8	14,1	4,9	5,2
Director/head	16,7	1,5	0,6	0,0
Total	100,0	100,0	100,0	100,0

Source: Istat (2007), own elaborations

Starting from the mismatch between high education level and jobs migrants get in the Italian marketplace, we comment on the fundamental issue at the basis of the present work. If in fact, education (certification) and then in general the education level, does not represent the means by which a migrant obtain a coherent job, it is necessary to analyse if education is a mechanism adopted by migrants, in substitution or together with reputation, to modify Italian employers' beliefs, just for entering the labour market.

The aim is to verify the extent to which mechanisms such as education and reputation are exploited by migrants in Italy as levers of employability, and the way they affect the likelihood of being employed.

#### 4. Empirical analyses

##### 4.1 The empirical model

In order to analyze the drivers of employability for migrants in our sample, we describe the empirical/econometric framework. We use a basic logit model, estimating the likelihood of being employed<sup>8</sup>. The logit model we use as framework is then in brief:

If  $y = \{y_i\}, y_i \in \{0,1\}, i = 1, \dots, T$ , where  $y_i$ , is a binary dependent variable, and T sample size T.

The logit model assumes:

$$\Pr(y_i = 1) = \frac{\exp[f(x_i)]}{1 + \exp[f(x_i)]}$$

Where  $x_i = (x_i^1, \dots, x_i^k)$  is the regressors vector and  $f(x_i) = \alpha_0 + \sum_{j=1}^k \alpha_j x_i^j$ .

The dependent variable of our empirical model is the binary index EMP (assuming value 1 if the migrant is employed)<sup>9</sup>. Among covariates (described also in table 4), we focus mainly on those factors that capture ways used to modify employers beliefs.

We define in the comments below 'marginal effect of variable X<sup>i</sup>' the partial derivative of f (not of the estimated probability) with respect to X<sup>i</sup>. We will then deal with proper marginal effects after commenting on the main results of the logit estimates.

<sup>8</sup> Further analyses may be carried out extending the reasoning to order logit models that take into account the type of jobs people get.

<sup>9</sup> We refer to table 4 for a summary of variables used in the analysis.

Table 4 – Description of dependent and independent variables

Acronym	Description
EMP (b)	Employment status (1 employed)
GEND (b)	Gender, 1 if male
AGE	Age of workers
CIV1 (b)	1 if widow
CIV2 (b) <sup>10</sup>	1 if married
CIV3 (b)	1 if divorced
ZONE1,2,4,5(b)	Geographical Dummies (1north east, 2north west, 4south, 5islands) <sup>11</sup>
EDUC1,3,4(b)	Educational level dummies (1PhD and university, 3secondary school, 4no level) <sup>12</sup>
RES	Years of staying in the country <sup>13</sup>
COUNTRY <sub>1-16</sub> (b)	14 main dummies capturing countries of origins of the workers <sup>14</sup>

(b) Means Binary

Tab. 5: Dummies for the first 15 countries in the sample

	Country
Country_1	Switzerland
Country_2	Albania
Country_3	Germany
Country_4	Romania
Country_5	France
Country_6	Morocco
Country_7	Macedonia
Country_8	Argentina
Country_9	Polonia
Country_10	Ukraine
Country_11	Belgium
Country_12	Brazil
Country_13	Philippines
Country_14	UK
Country_15	Tunisia
Country_16	Residual 112 countries (22,287 migrants in the sample)

## 4.2 Employability analysis

We now comment on the main results deriving from econometric analyses (table 6<sup>15</sup>). Among individual features, we find many significant drivers of employability. Being male increases the likelihood of finding a job, as well as AGE exerts a positive influence, with an interesting concave dynamics: the benefit of getting older shows plausible diminishing marginal effects over time.

The likelihood instead decreases for married women (the coefficient is that linked to CIV2), while it increases for married men (CIV2\*GEND captures this result). Finally, employability is logically higher in north east Italy, and lower in the South and Islands (Sicily, Sardinia), the less developed areas of the country<sup>16</sup>.

The signal provided by the factor EDUC is statistically significant and confirms what proposed above. In particular, higher education levels increases the likelihood of being employed, while lower ones or no title at all decrease that probability. Then, it means that if on the one hand education levels are not drivers of job positions, they assume a key meaning for employability as such.

Education levels are a way migrants use to influence and modify employer's beliefs.

<sup>10</sup> An interaction term between CIV2 and GEN is also created.

<sup>11</sup> Central Italy is the excluded one.

<sup>12</sup> College is the excluded factor.

<sup>13</sup> 1 means less than one year, 11 more than eleven.

<sup>14</sup> See table 5. Tunisia is the excluded factor.

<sup>15</sup> All regressions present high statistical performances in terms of fit and correctly predicted values.

<sup>16</sup> We remark that the value added per capita ranges from values of around 23000-30000€ in the north and 12-14000€ in the south.



Reputation is captured here by the factor RES, which is included in association to its squared term, and by the country of origins dummies COUNTRY<sub>1-14</sub>. RES as well as AGE shows a significant and economically plausible couple of positive and negative terms, identifying a concave relationship: marginal benefits of staying in the country fade away over time.

The country of origin also exert as expected the following influence on employability. Positive links to EMP are shown for Switzerland, Albania, Romania, Ukraine, Philippines; those are mostly representing very strong regarding inclusion and large ethnic groups in Italy, apart from Swiss people<sup>17</sup>. Summing up, being part of an embedded and historically present community increases the individual likelihood of being employed. Albanians and Philippines are associated to quite low or absent education level (around 60% of those workers). 64% of migrant from Philippines have lived in Italy for 10 years and more (table 7). Migrants coming from such places tend to adopt reputation strategies in a comprehensive meaning in order to affect employer's beliefs and increase employability opportunities.

Tab. 6: *logistic regression (1)*

Logistic regression		Number of obs = 5986	
		Prob > chi2 = 0.0000	
		Pseudo R2 = 0.2744	
		Log likelihood = -2959.6365	
EMP	Coef.	z	P> z
GEND	0.7931047	7.67	0.000
AGE	0.4143748	24.46	0.000
AGE <sup>2</sup>	-0.0052088	-25.67	0.000
CIV2	-0.9536369	-9.38	0.000
CIV2*GEND	1.632011	11.29	0.000
CIV3	0.6488868	4.22	0.000
CIV1	0.013926	0.07	0.946
ZONE1	0.1764397	1.75	0.080
ZONE 2	0.2895298	2.90	0.004
ZONE 4	-0.522632	-4.84	0.000
ZONE 5	-0.4017026	-2.85	0.004
EDUC1	0.2436025	2.20	0.028
EDUC3	-0.4363291	-6.07	0.000
EDUC4	-0.3684178	-2.34	0.020
RES	0.3220897	4.56	0.000
RES2	-0.0179987	-3.68	0.000
Country_1	0.5883272	2.12	0.034
Country_2	0.6675524	2.38	0.017
Country_3	0.2748442	0.98	0.327
Country_4	1.061223	3.64	0.000
Country_5	0.3328498	1.12	0.262
Country_6	0.1576163	0.54	0.591
Country_7	0.0248208	0.07	0.941
Country_8	0.4171235	1.27	0.204
Country_9	0.5051599	1.55	0.122
Country_10	1.451889	4.04	0.000
Country_11	0.45233	1.35	0.179
Country_12	0.3518658	1.01	0.312
Country_13	2.074475	5.29	0.000
Country_14	0.5126857	1.50	0.135
Country_16	0.5504545	2.10	0.035
_cons	-8.797021	-18.63	0.000
		Positive predictive value	Pr(D +) 77.34%
		Negative predictive value	Pr(~D -) 72.50%
		Correctly classified	75.43%

<sup>17</sup> 98% of those have Italian citizenship.

As far as Romania and Ukraine are concerned, instead, we note a high education level which is typical of eastern EU migrants (around 65% with college degree and above) and a period of staying generally shorter than five years. We observe that the education level is a key factor to compensate for a generally lower reputation (the period of staying is shorter; moreover eastern EU, mainly males, do not benefit from positive attitude depending on high crime rates brought about by such communities, including the critical issue of ‘gypsies minorities’ coming from Romania that live in Italy), at least if compared to Philippines, who are highly integrated even for religious reasons (catholic religion).

Tab. 7: Education and years of permanence in Italy (*for those arising relevant in the analysis*)

Country	Education (%)			Years of permanence in Italy (%)			
	Medium high	Basic	Total	1-5 years	5-10 years	>10 years	Total
Albania	34,0	66,0	100,0	30,4	39,6	30,0	100,0
Philippines	41,6	58,4	100,0	14,2	21,2	64,6	100,0
Romania	63,3	36,7	100,0	49,3	35,9	14,8	100,0
Ukraine	65,8	34,2	100,0	54,7	34,2	11,1	100,0

Source: own elaboration from Istat data (2006)

### 4.3 Education level, personal reputation or network?

It is now worth analysing more in depth three mechanisms that may be adopted to affect the set of employer’s beliefs: personal reputation, membership to a well integrated community, education level. Table 8 presents the results of an additional econometric exercise, based on a reduced number of covariates, but focusing on new variables and some factor’s interactions we describe in brief.

Among new variables specifications, PR1 is a dummy that associates the value 1 to the first 15 communities in terms of size. Differently from the 14 dummies we used above, we now rely on the effective size of communities in Italy. Such 15 countries<sup>18</sup> represent 37.3% of people in our sample.

EDUCAT is instead a dummy assuming value 1 if the worker holds at least a college degree.

We then insert in the analysis interactions between mechanisms, specifically interactions between RES, PR1 and EDUCAT.

The regression below in table 8 shows the following main facts. PR1 is statistically significant and positive in its sign: the economic meaning is that belonging to strong migrant network increases employability. This result confirms and makes more robust what we also found above. RES is again relevant as commented on above. EDUCAT re-confirms the value of possessing high level degrees. The factors we analysed in the first regression are all emerging significant even if slightly modified. We will below focus on their ranking in terms of economic significance, by calculating the effective marginal effects on the probability of being employed.

Let us focus now on the interaction terms we test in the regression.

First, PR1\*RES captures the eventual difference in reputation effects between workers belonging or not to dense ‘migrant networks’ such as those envisaged. Its coefficient is negative and significant, showing that RES increases the probability of employment relatively less for people belonging to strongly integrated communities. In order to measure the overall effect<sup>19</sup> we should sum the two coefficients linked to RES and PR1\*RES; it is positive and significant. Belonging to network and being in the country for a long time increases employability, though with a joint effect which is lower than those associated to the single factors we analyse (RES and PR1).

Secondly, PR1\*EDUCAT is not statistically significant, at least at a 5% threshold. Its negative sign, when we join PR1 and EDUC, leads to a positive and significant coefficient: belonging to a network and having a high degree increases the likelihood of being employed, with respect to the state of not

<sup>18</sup> From ISTAT data, these countries in 2006 are ordered as follows: Albania, Romania, Morocco, China, Ukraine, Polonia, Philippines, Tunisia, India, Serbia, Perù, Moldova, Ecuador, Senegal, Egypt.

<sup>19</sup> With reference to the people coming from PR1 countries.

belonging to a community network and having a low quality degree, though as before with an economic significance which is lower compared to that of the two single factors accounted separately. Third, RES\*EDUCAT is also not significant, even at 10%. The significant sum of the coefficient shows that high level degrees and long staying in Italy increases employability. As above, the joint effect is less economically significant with respect to the separately accounted factors<sup>20</sup>.

Tab. 8: *logistic (2)*

Logistic regression		Number of obs = 5986	
		Pseudo R2 = 0.2645	
		Log likelihood = -3000.306	
EMP	Coef.	z	P> z
GEND	0.7046045	7.00	0.000
AGE	0.421424	25.89	0.000
AGE <sup>2</sup>	-0.0052769	-26.91	0.000
CIV2	-1.02591	-10.42	0.000
CIV2*GEND	1.675685	11.89	0.000
CIV3	0.6386607	4.31	0.000
CIV1	0.0569196	0.28	0.777
ZONE1	0.1107068	1.14	0.255
ZONE 2	0.2244251	2.30	0.021
ZONE 4	-0.5632523	-5.31	0.000
ZONE 5	-0.4601715	-3.39	0.001
PR_1	0.8717461	4.14	0.000
RES	0.0887429	4.68	0.000
EDUCAT	0.739032	3.25	0.001
PR_1*RES	-0.0482933	-2.17	0.030
PR_1*EDUCAT	-0.2655792	-1.87	0.061
RES*EDUCAT	-0.0115065	-0.52	0.603
cons	-8.451797	-23.29	0.000

Tab. 9: *Linear combinations of variables*

	Coef.	Std. Err.	z	P> z
$RES + PR\_1*RES = 0$	0.0404496	0.0185868	2.18	0.030
$EDUCAT + PR\_1*EDUCAT = 0$	0.4734528	0.1919594	2.47	0.014
$EDUCAT + RES*EDUCAT = 0$	0.7275255	0.2071777	3.51	0.000

We now describe and comment on marginal effects, which add food to the economic explanation of econometric results.

As previously noted, we define here as ‘marginal effect of variable X’ the partial derivative of function  $f$  with respect to  $X^i$  and not of the estimated probability. This choice depends on the fact that we are interested in finding the marginal effects of the statistical significance of variables, and not their quantitative effect on the variation of estimated probability. As usual, the marginal effect is calculated at the average level. We use in this case the average level of EDUCAT (0.498) and PR1 (0.377), while we use the median for RES (11)<sup>21</sup> given the different nature of the variable. Tables below 10 and 11 show marginal effects and their differences.

The marginal effect of PR1, RES and EDUCAT are all significant and positive. The analysis of the differences (evaluated for the same values of the variables, mean and median) may show a ranking of economic significances. Marginal effects even show some insights: EDUCAT possesses a larger size in the coefficient, followed by RES and PR1. We nevertheless note that the only significant difference between levels of coefficients is between EDUCAT and PR1, while in the other two remaining cases the effect is not statistically different. In terms of economic meaning, we may only affirm that

<sup>20</sup> Table 9 shows the economic and statistical significance of the sum of coefficients as commented on in the text.

<sup>21</sup> RES=11 means being in Italy for more than 11 years. 59% of the sample belongs to the state ‘11’.

education level plays a major role compared to that of “migrant network” in generating higher employment likelihood for migrants. All other factors impact with the same economic importance if we compare the relative influences as above; that is, EDUCAT and PR1 and RES and PR1 show impacts which are not different on a joint economic and statistical assessment.

Tab. 10: *Marginal effects*

	<b>Coef.</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt; z </b>
<i>PR1</i>	0.207996	0.0938993	2.22	0.027
<i>RES</i>	0.4116899	0.0903799	4.56	0.000
<i>EDUCAT</i>	0.5123246	0.0825536	6.21	0.000

Tab. 11: *Differences in marginal effects*

	<b>Coef.</b>	<b>Std. Err.</b>	<b>z</b>	<b>P&gt; z </b>
<i>PR1 – RES</i>	-0.203694	0.1498652	-1.36	0.174
<i>PR1 – EDUCAT</i>	-0.3043286	0.1205864	-2.52	0.012
<i>RES – EDUCAT</i>	-0.1006347	0.127157	-0.79	0.429

## 5. Conclusions

The analysis underlines very important results regarding the adoption and effectiveness of mechanisms adopted by immigrants in Italy in order to modify employer’s beliefs and then their employability. First, it emerges that all factors workers may use as strategic assets in the labour market – reputation, migrant networks and education level – positively influence the probability of being employed. We may infer that such factors in some cases could exert effects as alternative drivers. In fact, we observe that for a part of workers high reputation and network migrants factors compensate the low education levels in driving employability (e.g. Philippines), while in other cases (Eastern EU people) high education levels compensate lower networking and reputation standards. Thus, different migrants use different strategic mechanisms as signals to the labour market and as levers of employability.

Focusing the attention on the three key drivers of employability and interaction effects, it nevertheless does not appear they exclude each other systematically, insofar their combined effects increase the likelihood of being employed. It remains true that the joint effect is lower in its ‘economic size’ as a phenomenon if compared to the two single effects taken separately, and this is true for all three couples examined regarding reputation, migrant networks and education level.

The investigation of marginal effects reveals other insights on the economic relevance of the socio-economic factors we analyse. Based on the three significant marginal effects, the analysis of differences between their levels (the relevance) shows that the only meaningful one is between education and migrant networking. Education level, in the end, plays a major role compared to the still relevant effect of community membership. This results could present a benefit for such migrants (e.g. eastern EU workers) associated to higher education level and somewhat low reputation and weaker community links, depending on the one hand on high effective and perceived crime rates associated to some eastern EU communities and on the other hand on their historically ‘younger’ experience in the Italian labour market. In fact, the eastern EU immigration began after the collapse of the soviet world and intensified since the late nineties. The migrant networking effect may well improve over time, enhancing its employment relevance, which is now greater for historically old communities, such as Philippines among others, which nevertheless suffer from lower education levels. Over a dynamic scenario, such elements of reasoning could also provide food for thought for policy making. In fact, we may expect a relatively increasing stronger weight in the labour market on the side of eastern EU workers, who have also increased more in recent years in terms of size of the population. Weakness could one day emerge for other communities that rely on reputation as the only strategic asset, if eastern EU people strengthen their networking, eventually improve their reputation, and if other communities do not invest in human capital, instead of only using reputation effects as performance drivers. Training, education and labour markets policies should focus on enhancing human capital for relatively weaker migrants in this realm, while other public policies may focus on crime rates and the

lower reputation other migrants suffer from. Public policies tackling market failures could be a part of the solution towards increased employability and more coherent matching between education level and jobs.

This latter point – the mis match- is an ancillary but relevant objective of labour policies that generates high social costs. In the case of migrants, the perpetuating absence of a proper matching between education level and job position could discourage educated people to migrate to Italy, especially when migrant communities increase their stability and their migrant networks in the country. In this case, as the theory of statistical discrimination predicts “it is indeed very easy to say how social segregation can give rise to labour market segregation through network referrals” (Arrow, 1998, p.97). In the presence of such a human capital waste, the risk for the Italian job market is that of losing high educated migrant workers and of perpetuating a situation in which migrants will be employed just in low occupational levels. The present (actual) supply of highly educated migrants in the Italian job market is a chance that deserves much more consideration by policy makers.

Given the migrants have explained and will explain a large part of employment performances of Italy and other EU countries, and labour supply is mainly increasing due to migrants and women entering the labour market, the social cost of lower employability and mismatching are to be mitigated as much as possible.

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