

MIGRATION FLOWS IN THE EUROPEAN LABOUR MARKETS

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1. Introduction

Over the past decades, European countries have become one of the main destinations of international migration. Northern European countries first and Southern European countries later on experienced the transition from emigration to immigration countries. In the years preceding the global financial and economic crisis, many immigrants were attracted by the European economic growth and increasing job opportunities, even if the majority of them had access only to low-skilled jobs. During the economic crisis, this process, rather than reducing, remarkably increased, due to the political instability in some extra-EU countries. Besides the immigration flows *to* EU countries, the free circulation of people and goods across EU countries favoured also the transition of huge flows of EU citizens *within* European countries, in reason of the differences in the European labour markets in terms of opportunities and rewards. Therefore, immigrants constitute a very heterogeneous population, including both people coming from non-EU countries and EU citizens. They strongly influence the economy of each host country and, even if in many cases this impact can only be estimated, it should be very high on consumptions, on the changes provoked on the labour market, as well as on the economy, especially with reference to highly-qualified immigrants (European Commission, 2006). If managed well, immigration has the potential to address many key challenges facing most European countries, including population ageing, the constantly changing demands of economies and increasing need for competitiveness in the global economy (European Commission, 2008).

However, immigrants constitute one of the most vulnerable segments of population and meet many obstacles to integrate into the host society, contributing to increase social and economic inequalities. European institutions and national governments have therefore to front new challenges and multiply their efforts in managing and favouring migrant inclusion. At this aim, many legislative initiatives have been promoted and immigrants inclusion has been transposed as integral part in the Europe 2020 strategies, because it impacts on the objectives of increase the

employment rates and the educational levels and on the reduction of poverty and social exclusion (Gros and Roth, 2012; Bettin and Cela, 2014).

Even if in a common framework of EU members, European countries show many differences in terms of incidence of immigrants on the local population but also for the difficulties to integrate them into the local society. In addition to the immigrants personal characteristics (language knowledge, skills, educational level, etc.), the severity of the barriers encountered by immigrants depends by the economic conditions characterizing each State member, in particular related to the labour market framework, and by the country capacity to receive and integrate strangers into their own society and institutions. This ability derives from social and political factors also related to the current welfare policies. Therefore, immigrants tend to choose the country where to move in relation to these aspects, even if for reasons of geographical proximity they could be obliged to pass in a country which is different from that they have chosen, remaining sometimes there for various reasons. Many countries are indeed defined “accession countries” because immigrants reach them only as “entrance door” in order to reach richer countries. This is for example the case of Italy, Greece, Spain, and many Eastern and border EU countries.

In this paper, we want to analyze the economic inequalities *within* and *across* European countries, focusing in particular on immigrants, which represent a very vulnerable segment of the population, verifying their potential in terms of labour force and their level of integration into the labour market. In order to discover similarities across countries, a hierarchical cluster analysis allows identifying groups of countries sharing the same characteristics. In a second step, the main determinants of countries heterogeneity in the capacity to integrate migrants and to offer good economic prospects to local population too, have been addressed through a principal component analysis applied to the same indicators. This study could help policy makers of each country to understand their own specific issues, contextualize them in the global European labour market and identify the most efficacious actions and policies to adopt in order to improve immigrants integration, contrasting social exclusion (Esser, 2004).

Results highlight the existence of a very complex framework, due to the high heterogeneity of immigrants’ characteristics and labour market capacities to integrate migrants and favour good conditions also for native-born.

2. The data and the methodological framework

European countries show very different scenarios in relation to their capacity to attract and integrate foreign citizens, as well for the general characteristics of their labour markets. In order to analyze this framework, the indicators chosen include

some immigrants' human capital characteristics and some measures of labour market vulnerability calculated on migrants and in terms of gap with native-born (Tab. 1). Data refer to the year 2014 and come from the Labour Force Survey (LFS), currently the main European source for comparable multidimensional socio-economic statistics on employees and working conditions. The 2014 LFS wave contains an ad hoc module on the situation of immigrants. Further, with the aim to analyze the changes occurred in the years of economic crisis on the migrants conditions, the same indicators have been calculated also with reference to the 2008 wave of LFS, including the same ad hoc module on immigrants. It should be interesting to verify which countries gain resources in terms of human capital by the mobility of workers and which countries instead lose. Unfortunately, data allow to identify the immigrant's origin only for macro-groups of countries. Anyway, we can compare the characteristics of migrants coming into each EU country in relation to their education level and to the education level attained by their parents (indicators 1.1 and 1.2). As suggested by Damas de Matos and Liebig (2014), labour market outcomes tend to improve with higher levels of educational attainment. However, the improvement is weakest among immigrants – irrespective of gender – who arrived as adults, since they have educational credentials from abroad which host-country employers have trouble assessing and labour markets substantially downgrade. In order to analyze the performance reached by immigrants on the labour market, the indicators selected are the unemployment rate and, for working immigrants, the employment rates, the share of them with a temporary contract and the share of immigrants working part-time but which would work full time. These indicators are also calculated in terms of the gap in relation to the corresponding values for the local population, which represents the benchmark for the assessment of their inclusion (OECD, 2015). Indeed, there would be countries where the conditions of migrants on the labour market is not satisfactory but in line with that of the native-born and countries where, instead, they could experience better global conditions, but with high gaps with respect to the native-born citizens. A high gap could indeed reveal the hostility or the incapacity of the host country to integrate immigrants. Conversely, as highlighted by the European Commission (2016), for some labour market indicators, there are countries where the foreign-born population has outcomes that are similar or better than the native-born. Finally, as integration implies the full substitutability of workers with the same characteristics, regardless their origins, we compare European countries in relation to the levels of horizontal and vertical segregation on the labour market. Segregation is a labour market outcome, which contrasts with the concept of integration. Horizontal segregation attains to the different distribution of employees across the economic sectors while vertical segregation to the clustering of a vulnerable category of workers (immigrants) at

the bottom of occupational hierarchies. While in the field of the gender gap, segregation measures the consolidated perpetuation of stereotypes linked to the gender roles, in the immigration studies the information on the occupational distribution and its changes over time allows to understand how immigrants affect economic growth and how they adjust to a host country both in economic and social terms (Green, 1999). The measure of segregation is based on the Gibb's index (1965), which allows the comparison across countries with different distribution of workers across the economic sectors and occupations:

$$DS = \sum_{i=1}^j \left[\left(\frac{M_i/T_j}{\sum_{j=1}^j (M_j/T_j)} \right) - \left(\frac{F_i/T_j}{\sum_{j=1}^j (F_j/T_j)} \right) \right] \frac{1}{2} \quad (1)$$

where for horizontal segregation, M_i and F_i are, respectively, the numbers of males and females working in the j th economic sector and $T_j = M_j + F_j$ while in the vertical segregation index the professional qualifications are considered.

Table 1 – Indicators on the migrants' condition on the labour market and basic descriptive statistics.

Indicators	2008 ^(*)		2014	
	Mean	Std	Mean	Std
<i>Human capital characteristics</i>				
1.1 % of high-educated migrants	24.43	9.07	29.84	11.04
1.2 % of migrant with at least 1 high-ed. parent	18.07	8.57	24.96	12.81
<i>Labour market condition</i>				
2.1 % of unemployed migrants	5.65	3.02	9.93	5.75
2.2 % of employed migrants	64.18	12.22	63.42	9.04
2.3 % of migrants with a temporary contract	17.35	13.98	17.30	12.10
2.4 % of migrants in involuntary part-time (%)	29.28	23.98	41.88	25.27
<i>Labour market conditions in comparison with native-born</i>				
3.1 Gap in unemployment rates (migrants/native-born)	1.54	0.65	1.57	0.59
3.2 Gap in employment rates (migrants/native-born)	0.98	0.16	0.97	1.26
3.3 Gap in temporary contracts (migrants/native-born)	1.51	0.79	2.01	1.46
3.4 Gap in involuntary part-time (migrants/native-born)	1.46	0.99	1.66	0.94
<i>Work segregation</i>				
4.1 Horizontal segregation index	30.85	13.04	26.39	11.72
4.2 Vertical segregation index	-	-	29.06	12.90

^(*) The 2008 data exclude Croatia, Finland, Iceland and Malta because of lack of information on these countries. Also the information for the vertical segregation index for 1998 is missing.

Source: Authors' ad hoc elaborations on Labour Force Survey (years 2008 and 2014).

The comparison of the average values for indicators in Tab. 1 in the 2008-2014 years highlights a pronounced increase in the unemployment and involuntary part-time rates and in the share of high educated immigrants. However, unemployment rates increased especially in the Mediterranean countries, while in Germany and Slovakia they decreased. Mostly stationary the immigrants' condition in

comparison to the native born, even if an increase in the share of migrants with temporary contracts can be highlighted.

The statistical methodology considered more appropriate in order to compare European countries and discover similarities and contraposition across them is the hierarchical cluster analysis and the Principal Component Analysis (PCA) applied to the same set of indicators¹. PCA is here used to complete the analysis, because it allows the user, on the one hand, to visually find variables that are characteristic for specific sample groups and, on the other hand, to get other information on the country proximity in relation to the more relevant factors driving the groups formation (Lattin et al., 2003). Cluster analysis is a method for ordering samples in a dendrogram (“tree diagram”), where samples with the highest correlations are grouped together while samples with small correlations are widely separated. The choice to put cluster analysis before PCA derives from the consideration that cluster analysis in its groupings considers all the variance in the dataset, as compared to the 60–90% variance typically represented by the first few PCs of a PCA (Middleton, 2000; Xue et al., 2011). The multivariate measure used for country-pair comparisons is the Euclidean distance while as agglomeration method between clusters we used the average between linkage method, which is based on a central measure of location accounting for all elements within each cluster (Sneath and Sokal, 1973). Through PCA, the dataset is re-expressed in a rotated coordinate system in which as much variance as possible is explained by the first few dimensions. PCA is particularly useful in examining correlations among variables in the original dataset, since it chooses the new axes to lie along directions of highest correlation (Gotelli and Ellison, 2004). The varimax rotation allows identifying the most important factors on the basis of the country grouping (for more details see for example Zani and Cerioli, 2007).

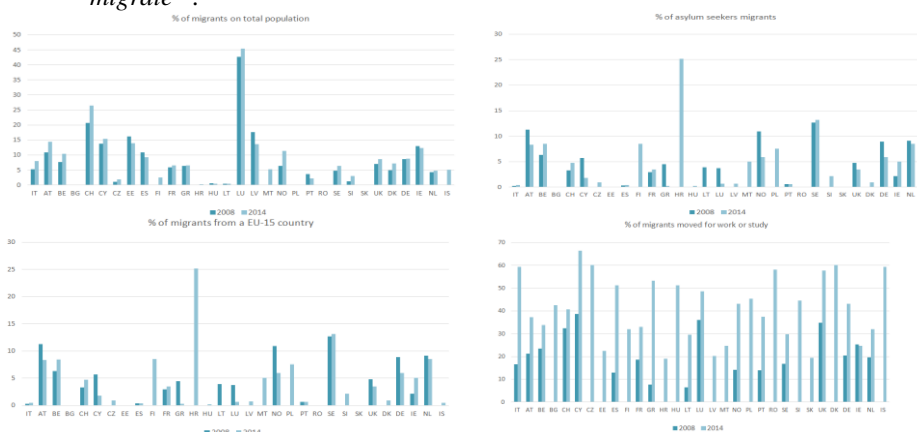
3. Results

Eurostat defines a migrant as “a person who is outside the territory of the State of which they are nationals or citizens and who has resided in a foreign country for more than one year irrespective of the causes, voluntary or involuntary, and the means, regular or irregular, used to migrate” (European Commission, 2014). This classification includes both EU and extra-EU citizens, as well as asylum seekers and refugees. European countries show very different patterns in relation to the consistence of migrants and their personal characteristics. Their impact on the native-born population is very high in accession countries like Cyprus and Estonia,

¹ Similar results were obtained applying the cluster analysis to the principal components obtained through PCA. For sake of brevity, these results are not reported but eventually available on request by authors.

but also in little countries like Austria, Switzerland, Latvia and Ireland. Particular is the case of Belgium and Luxembourg, where the majority of migrants are citizens of other European countries, which in the most of cases work for the Communitarian organisms. Excluding Spain, Portugal, Estonia and Latvia, the comparison 2008-2014 in the share of immigrants on total population shows a pronounced increase everywhere. The same trend concerned the share of migrants moved to study or work. The increase results very high in Germany, Denmark and Norway – exerting a strong attraction for the solidity of their economies and the effectiveness of their welfare systems – but also in countries like Italy and many Eastern Countries. Those requiring asylum have instead a not negligible incidence on total immigrants in Croatia, Sweden, Belgium and Finland (Fig. 1). Anyway, the flows of these immigrants change quickly in relation to the government orientation, the militarisation of the route through Europe and the development in Turkey, Greece and Macedonia.

Figure 1 – *Descriptive statistics on immigrants consistence, provenience and reason to migrate^(*).*



^(*) No information is available for Croatia, Finland, Iceland and Malta for 2008.

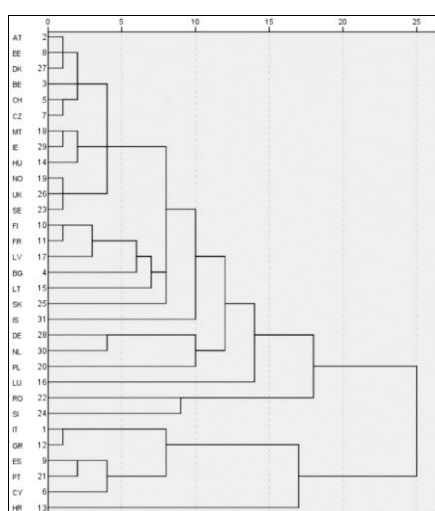
Source: Authors' ad hoc elaborations on Labour Force Survey, years 2008-2014.

It is important to mention that the populations of some new EU member states (such as Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, the Slovak Republic and Slovenia) show high percentages of people which are classified as foreign-born only as a result of border changes or nation-building in the late 20th century, mainly related to the fall of the Iron Curtain. Consequently, the foreign-born are an aging group and the share of nationals among the foreign-born tends to be high. The overall size of the foreign-born population in 2014 differs widely, ranging from 3% in the Slovak Republic and Poland to 15% and above in Estonia, Slovenia, and Latvia. These facts should also explain why the

asylum seekers represent more than the 25% of total immigrants in Croatia.

The hierarchical cluster analysis applied to 31 European countries for 2014 clearly highlights the existence of four groups, while other two countries remain isolated from each other because their characteristics in terms of migrants are totally different from the others, i.e. Croatia and Luxembourg (Fig. 2).

Figure 2 - Dendrogram of the hierarchical cluster Euclidean distance – average linkage (between groups) method.



Source: Authors' ad hoc elaborations on Labour Force Survey, year 2014.

While Luxembourg is a small country where the incidence of high-educated non native-born mainly working for the communitarian bodies is high, in Croatia – a very young nation state, part of the former Yugoslavia – migrants come mainly from neighbouring countries such as Serbia, often as refugees and asylum seekers. In the most of cases, they show low human capital characteristics and live in extremely misery conditions. The Southern European countries of Italy, Greece Spain, Portugal and Cyprus are mainly “accession countries” for immigrants coming mainly from Mediterranean countries. Due also to the bad labour market conditions suffered by the local population, immigrants experience high unemployment rates and low human capital characteristics, even if the gap with the locals is low (see for example Castellano and Rocca, 2017).

The strongest integration of migrants on the local labour market concerns the most numerous group 2 (Tab. 2), whose countries show low levels of horizontal and vertical segregation and unemployment, but high gaps with the local population. Finally, the group formed by Poland, Germany and the Netherlands

show intermediate levels of integration in relation to the levels of segregation and global labour market conditions while Romania and Slovenia highlight the highest gap against migrants in temporary contracts. The indicators which mainly contributed to these results, according to the ANOVA test and Eta index, are the segregation indexes, the involuntary part time and unemployment rates.

Table 2 – *Groups of countries derived from the hierarchical cluster analysis. Mean values for the variables included into the analysis. Year 2014.*

Groups of countries	Variables codes											
	1.1	1.2	2.1	2.2	2.3	2.4	3.1	3.2	3.3	3.4	4.1	4.2
1.IT-CY-ES-GR-PT	18.7	14.3	17.6	58.2	31.1	74.4	1.36	1.03	.88	2.07	38.2	36.0
2.AT-BE-BG-CH-CZ-EE-FI-FR-HU-LT-LV-MT-NO-SE-SK-UK-DK-IE-IS	33.1	25.3	8.1	66.3	12.3	39.4	1.61	.97	2.34	1.50	21.0	23.4
3.HR	21.9	22.6	22.2	42.3	9.0	90.0	1.71	.77	.54	4.90	50.1	71.1
4.LU	46.8	37.4	6.1	68.7	9.4	19.8	2.46	1.08	.89	1.18	19.6	61.2
5.PL-DE-NL	29.5	45.2	6.5	64.5	32.0	18.9	1.33	.93	1.63	1.53	24.3	21.5
6.RO-SL	22.9	13.4	8.6	55.7	16.1	0.05	1.50	.88	3.54	1.02	42.8	39.1
Statistical significance groups (ANOVA)	.048	.007	.001	.036	.003	.000	.643	.384	.148	.004	.000	.000
Eta index (association groups)	.587	.673	.750	.602	.708	.866	.346	.425	.515	.695	.767	.897

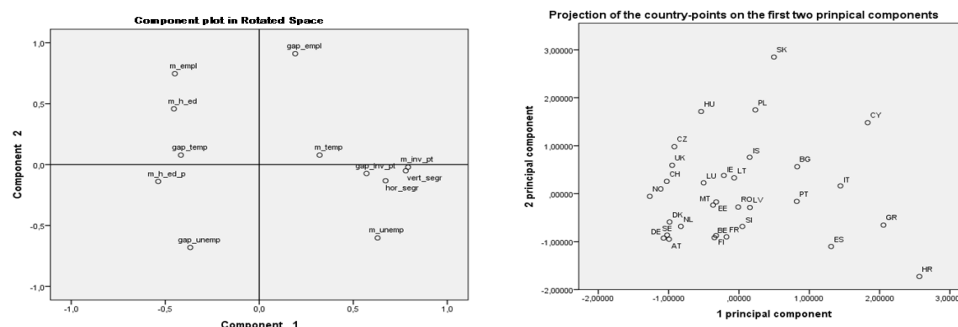
^(*) The variable codes are defined in Tab. 1.

Source: Authors' ad hoc elaborations on Labour Force Survey, year 2014.

Through ACP, the projection of variable-points on the first two components, which together account for more than a half of the total variability, show the contraposition, on one side, of the segregation indexes, unemployment and involuntary part-time rates with the migrants' human capital characteristics and the gap in temporary contracts and in the unemployment rates (Fig. 3). On the other side, the unemployment indicators are opposed to the employment rates. Therefore, the first axis accounts for the different levels of migrants integration, because it is lower in countries with the highest segregation and unemployment rates and higher in countries where immigrants have higher human capital characteristics. According to the II axis, the employment indicators are opposed to the unemployed ones. The projection of the country-points on the first two components widely confirms these highlights. The first axis opposes in fact countries where immigrants experience the worst conditions, such as Croatia and the other Mediterranean countries (with the exception of France) to the main attractors as Norway, Switzerland, Sweden the United Kingdom and Germany. According to the II axis, countries with the highest unemployment rates (as Croatia) and/or the highest gaps with with local population (as Austria) are in contraposition with the countries with the opposite characteristics (mainly Slovakia, Poland, Hungary and

Cyprus). In the right side, at the bottom of the plot we find therefore countries where immigrants experience globally the worst conditions, i.e. Croatia and the group of Mediterranean countries.

Figure 3 – Indicators and countries projection on the first two components obtained through the Principal component analysis on the indicators listed in tab. 2. Test KMO significant at .000. Varimax rotation.



Source: Authors' ad hoc elaborations on Labour Force Survey, year 2014.

4. Conclusions

In the last decade, European labour markets were invested by two main shocks: the global financial and economic crisis and the huge flows of migrants. These facts are also strictly connected, because the economic crisis exacerbated the economic inequalities across European countries, favoring migration within them. On the other side, the increase in the local unemployment rates should have contributed to the decrease in the migrants' expectation to find a job and then to move. However, the contextual political instability which characterized many Middle East and African countries favored, despite the economic crisis, an increase in the immigrants flows. Actually, around 25 million persons born in a third country (TCNs) are currently living in the European Union (EU), representing 5% of its total population. They contributed to increase the multi-ethnicity and richness in diversity of cultures of European societies opening to new opportunities and challenges. In this paper an analysis of the potentials and conditions of immigrants in the labour markets of 31 European countries has been made. The results highlight very different scenarios across countries and very different degrees of labour market vulnerabilities involving both immigrants and the local population. While in countries like Luxembourg immigrants are in most of cases high-educated EU citizens working for the European Union Offices, in Croatia they are above all asylum seekers from the neighbouring countries, living in very precarious conditions (Gregurović and Mlinarić, 2012). However, even in these cases

immigration could contribute to the local development.

Many European countries result hardly involved for a great consistency of immigrants only for their geographical positioning. This is the case of the Southern European countries, particularly hit by the crisis and therefore chosen by migrants especially as accession countries to the most richer countries of central Europe. Sometimes they remain locked there or sited elsewhere. In many cases, however, they move to Mediterranean countries with the aim to stay. Indeed, more than a half of them moved to Mediterranean countries to study or to work. Anyway, even in the EU framework, the economic disparities across countries are in many cases significant. For example, in 2014, the unemployment rate and the share of involuntary part-time of Italian local workers were higher than the corresponding rates for UK and German immigrants. These facts explain why many EU countries continue to be, besides immigration countries, also emigration countries. Very different the workers' economic condition in UK, Sweden, Hungary, Switzerland and the Netherlands. The solidity of their economies made these countries particular attractive for many types of immigrants, especially the high-qualified and high educated coming from other developed European countries. In some countries immigrants continue to live in very precarious conditions, experiencing different forms of discrimination. The high segregation on the labour market could be a clear signal, but this data should be interpreted also in light of the migrants' human capital characteristics. At the same way, a high gap in the unemployment and temporary work rates should represent the clearest evidence of different treatment received by immigrants and native-born.

It is therefore necessary to focus on the integration of immigrants, accepting the possibilities they create and sustain transnational social spaces linking them to the countries of origin or other migrant communities abroad, either European or overseas (Kuti 2012). Indeed, in countries where the integration policies are inspired to consider immigrants as a source of labour and as a way of solving labour shortage, their outcomes on the labour market are better and immigrants result also better settled into the host society (Eydal and Ottósdóttir, 2009).

A better management of labour market migration promises greater gains for migrants, countries of origin and countries of destination.

Integrating migrants means allowing them to participate in the host society at the same level as natives, is an active, not a passive, process that involves two parties, the host society and the immigrants, working together to build a cohesive society.

References

- ARANGO J. 2013. Exceptional in Europe? Spain's Experience with Immigration and Integration, Migration Policy Institute, Report, March.
- BETTIN G., CELA E. 2014. The evolution of migration flows in Europe and Italy, *Economia Marche Journal of Applied Economics*, vol. XXXIII, n. 1, June, 37-63, Fondazione Aristide Merloni.
- CASTELLANO R., ROCCA A. 2017. Gender disparities in European labour markets: A comparison between female and male employees, *International Labour Review*, Accepted manuscript online: 11 APR 2017 08:51AM EST | DOI: 10.1111/ilr.12052
- DAMAS DE MATOS A., LIEBIG T. 2014. The Qualifications of Immigrants and their Value in the Labour Market: A Comparison of Europe and the United States, Matching Economic Migration with Labour Market Needs, OECD/EU Publishing, Paris, <http://dx.doi.org/10.1787/9789264216501-9-en>.
- ESSER H. 2004. Does the «New» Immigration Require a «New» Theory of Intergenerational Integration?, *International Migration Review*, Vol. 8, No.3, pp. 1126-1159.
- EUROPEAN COMMISSION 2006. An introduction to the EMN Pilot Research Study on the “Impact of Immigration on Europe’s Societies”, March.
- EUROPEAN COMMISSION 2008. Migrant women in the European labour force, current situation and future prospects, Rand Europe Technical Report.
- EUROPEAN COMMISSION 2014. Asylum and Migration, Glossary 3.0. A tool for better comparability produced by the European Migration Network October, European Migration Network.
- EUROPEAN COMMISSION 2016. Research on Migration: Facing Realities and Maximising Opportunities, A Policy Review, Research and innovation.
- GOTELLI N.J., ELLISON A.M. 2004. A Primer of Ecological Statistics. Sinauer Associates, Sunderland, MA.
- GREEN D. 1999. Immigrant Occupational Attainment: Assimilation and Mobility over Time, *Journal of Labor Economics*, Vol. 17, No. 11, pp. 49-79.
- GREGUROVIĆ S., MLINARIĆ D. 2012. The Challenges of Migration Policies in Croatia: Migration History, Trends and Prospects, *AEMI Journal*, No. 10, pp. 99-113.
- GROS D, ROTH F. 2012. The Europe 2020 Strategy Can it Maintain the EU’s competitiveness in the world?, CEPS, Centre for European Policy Studies, ISBN 978-94-6138-124-8.
- INTERNATIONAL ORGANIZATION FOR MIGRATION 2008. World Migration 2008 – Managing Labour Mobility in the Evolving Global Economy, Vol. 4, IOM World Migration Report Series.

- LATTIN, J.M., CARROLL, J.D., GREEN, P.E., GREEN, P.E. 2003. *Analyzing Multivariate Data*, Thomson Brooks/Cole, Pacific Grove, CA.
- OECD 2015. *Indicators of Immigrant Integration 2015. Settling in*, OECD Publishing, Paris.
- SNEATH P.H., SOKAL R.R. 1973. *Numerical Taxonomy*, San Francisco, W.H. Freeman.
- XUE J. LEE C., WAKEHAM S.G., ARMSTRONG R.A. 2011. Using principal component analysis (PCA) with cluster analysis to study the organic geochemistry of sinking particles in the ocean, *Organic Geochemistry*, Vol. 42, No. 4, May, Springer, pp. 356-367.
- ZANI S., CERIOLI A. 2007. *Analisi dei dati e data mining per le decisioni aziendali*, Giuffr  Ed., Milano.

SUMMARY

Migration flows in the European labour markets

In the last decades, European countries were invested by huge flows of immigrants, attracted by the economic prosperity and the free circulation of people and goods, which stimulated also consistent movements of EU citizens within EU. The aim of this paper is to analyze the levels of inequalities and the conditions of immigrants and native born in the European labour markets after the global economic crisis. Through some multivariate statistical techniques, we compare 31 European countries (28-EU countries more 3 EFTA countries, i.e. Norway, Iceland and Switzerland) in relation to various labour market indicators observed in 2014. Data come from the Labour Force Survey. In 2014, the ad hoc module was devoted to the situation of migrants. The main results are also compared with that corresponding for 2008. Results highlight different levels of vulnerabilities and inequalities between immigrants and local population but also across European countries.

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