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(Eds)

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Introduction

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Annals of CRISEI 2020 – Volume 1 – brings together selected contributions by some scholars of the Centro di Ricerca Interdipartimentale in Sviluppo Economico e Istituzioni (CRISEI) for the year 2020. This year the research activity carried out by CRISEI scholars has covered a variety of topics, including the economics of migration. Therefore, this volume focuses on the effects of migration, at micro- and macroeconomic levels, both in the home and host countries.

The first contribution *"Assimilation and Health of Immigrants in Italy"* by Tiziana Venittelli analyzes the relationship between immigrants' cultural assimilation to the host country and their well-being. The author considers the case of Italy and uses survey data on the socio-economic inclusion of immigrants collected by the Italian National Institute of Statistics in 2011. She provides empirical evidence that assimilation to Italian society increases immigrants' psychological well-being, measured by mental health status, as well as their general well-being, captured by the opinion on life satisfaction. Contrary, assimilation does not affect physical well-being. Overall, these results shed light on potential mechanisms that explain the positive association between immigrants' integration to the host country and their economic performance.

The second contribution *"The Effects of Cultural Workforce Diversity on Firms' Financial Performance: A panel-data analysis from Italian Agricultural Sector."* by Roberta Misuraca explores the impact of cultural workforce diversity on the performance of firms in the Italian agricultural sector. To address this research question, the author runs an empirical analysis based on a panel of 7,634 farms observed during the period 2012-2017. The relationships between immigration flows, firm's performance in terms of total sales, and family management are considered. The main findings shows that cultural workforce diversity has a positive impact on firm's performance, and that this effect is stronger in family firms.

In the third contribution entitled *"The Effects of Immigration on the Receiving Countries: A Critical Survey of the Literature"*, Roberta Misuraca presents a review of the existing studies regarding the impact of birthplace diversity related to immigration flows on the economy of the host countries. In the first part of the article, the author investigates the macroeconomic effects of immigration flows, focusing on the impact on wages and employment via the modification of technology adoption and accumulation of human capital. In the second part, she analyzes the strand of literature that considers the impact of immigration on firm outcomes, paying special attention to the effects of workforce diversity on firm's performance. On the last point, due to the growing relevance of immigrant workers

in agriculture, particular emphasis is deserved to the the impact of immigration on firm's performance in the agricultural sector.

Lastly, the work *"Long-Run Migration Effects: A Literature Reassessment"* by Viviana De Falco reviews the literature on the long-run effects of migration. After a brief overview of the theory underlining the reasons to migrate, the author provides an extensive review of the empirical articles on the topic. The reviewed papers are divided into four main categories: effects on sending countries, effects on receiving countries, effects on both countries and internal migration. The main aspects considered in the article are brain drain and self-selection, for home countries, and the impact of migration on the labor market and wage gaps, as well as cultural assimilation and diversity, for host countries.

Assimilation and Health of Immigrants in Italy

Tiziana Venittelli

Abstract

This study investigates the relationship between immigrants' assimilation to the host country and their psychological well-being. Using data collected by the Italian National Institute of Statistics in 2011 and building up an index for the social and economic inclusion of immigrants in Italy, I find that assimilation to Italian society positively affects immigrants' health status and their opinion about life satisfaction. The study sheds light on the potential mechanisms behind the positive association between immigrants' integration to the host country and their economic performance, pointed out by recent empirical research on Italy.

Keywords: Migration, Assimilation, Health, Life satisfaction

JEL classification: F22, I15, J15, Z10

1 Introduction

A growing empirical literature in economics has recently explored the influence of the socio-cultural inclusion of foreigners in destination country on their economic well-being. Most of these studies find a positive relationship between immigrants' identification with the host country and their employment status, wages, and life satisfaction (Mason, 2004; Pendakur and Pendakur, 2005; Constant and Zimmermann, 2008, 2009; Battu and Zenou, 2010; Casey and Dustmann, 2010; Nekby and Rodin, 2010; Bisin et al., 2011; Patacchini and Zenou; 2012; Drydakis, 2013; Gorinas, 2014; Islam and Raschky, 2015; Delaporte, 2019; Cai and Zimmermann, 2020). Similar results have been recently found also for Italy (Carillo et al., 2021a, 2021b).

A number of theoretical contributions shed light on the mechanisms through which identification with a group or society may be conducive to higher economic performance of individuals, such as self-esteem and psychological well-being (Akerlof and Kranton, 2000 and 2005). However, empirical analyses on the link between identification with the host country and psychological well-being are less common in economics, while they are more extensively performed in cross-cultural psychology (Berry et al., 1987; Olneck, 1995; Phinney,1995; Liebkind, 1996; Berry, 1997; Nesdale et al., 1997; Phinney et al., 1997; Cameron, 1999; Phinney et al., 2001; Nesdale and Mak, 2003; Downie et al., 2004).

In this chapter I examine whether immigrants' cultural assimilation to the host society affects their subjective psychological, physical and general well-being.

Using survey data collected by the Italian National Institute of Statistics (ISTAT) in 2011 on the socio-economic inclusion of immigrants living in Italy, I find that assimilation to Italian society increases immigrants' psychological well-being, as measured by their mental health status. Moreover, I find that also the general well-being of foreigners, captured by their opinion on life satisfaction, increases as a consequence of the process of assimilation to Italy. The study provides evidence of a null effect of assimilation on physical well-being (that I measure with physical health status). Furthermore, in line with other recent works that focus on the integration of immigrants in Italy (Carillo et al., 2021a, 2021b), I find that also the attachment to the home country culture positively affects the general and psychological well-being of immigrants.[1]

The chapter is structured as follows. In section 2 I describe the data and discuss descriptive statistics. Sections 3 and 4 report the empirical model and the results, respectively. Finally,

[1] I find no correlation between the attachment to the home country and immigrants' physical health status.

section 5 concludes.

2 Data and descriptive statistics

For the purpose of this analysis I use data provided by Italian National Institute of Statistics (ISTAT) in 2011. This is a survey on the social integration of immigrants in Italy, which includes a lot of information about their life style, cultural preferences, customs and opinions. The questionnaire is distributed in different sections providing information on foreigners' family – current and previous partners, children and parents in Italy and abroad, request for family reunification; education and career path – in relation to the number and type of languages spoken, all the educational qualifications and professional training courses attended in Italy or abroad, the current and previous jobs both in Italy and abroad; the complete immigration pathway - current and past immigration to Italy and/or to other countries. Finally, the last sections focus on discrimination, health, integration, security and contacts with Italian police.

The final sample I used consists of 13,445 foreigners, classified as individuals who were born abroad and with foreign citizenship.[2] They mainly come from Europe (60% of the sample) - in particular from Romania (23.5%) and Albania (13.7%). The others are from Africa (20%) - mainly from Morocco (9.9%) - from Asia (13.3%) – mainly from Philippines (2.8%) and China (2.6%) - and from Central and South America (6.5%). Only 0.2 % are those coming from North America and Oceania.

According to descriptive statistics in Table 1 males are 44.4 % of the sample; the average age falls between 35-39 years (the 5th age class). More than 70% declare to have at least a high school diploma (31%) or a higher education degree (43%). Half of the immigrants in the sample are married; on average foreigners have 1.2 children. Around 60% are Christians (from whom 25.6% are Catholic), slightly less than 30% are Muslims, 5.5 % declare they have no religious affiliation, while the remaining 5% are classified among other religions. About 63.8% have a job at the time of interview (independently whether full or part time and as employee or self-employed). Most of them live in the South of Italy (45.3%), another large part is in the North (37.5%), while those who reside in the Centre are about 17.2% of the sample. Foreigners placed in big city, i.e. Torino, Milano, Venezia, Genova, Bologna, Firenze, Roma, Napoli, Bari,

[2] I exclude the other categories - i.e. the second generation of immigrants, those who obtained the Italian citizenship, the stateless people and finally those who were Italian at birth and currently foreigners - because of the lack of information related to these groups in many sections of the questionnaire.

Palermo, Catania, Cagliari, are about 25%; another 25% live in small municipalities (<= 10,000 inhabitants), the rest is in medium municipalities with more than10,000 inhabitants.

Table 1 Descriptive statistics

	Observations	Mean	Std. Dev.	Min	Max
Mental health index	13445	537.363	69.300	126	704
Physical health index	13445	544.934	60.456	140	677
Life satisfaction	13445	7.625	1.580	0	10
Proud to be a foreigner	13445	0.551	0.497	0	1
Male	13445	0.444	0.497	0	1
Age class	13445	35-39	2.264	15-19	55+
No education	13445	0.082	0.275	0	1
Compulsory	13445	0.067	0.250	0	1
High school	13445	0.317	0.465	0	1
BA degree +	13445	0.431	0.495	0	1
Married	13445	0.512	0.500	0	1
Children (#)	13445	1.236	1.276	0	11
Catholic	13445	0.256	0.436	0	1
Other Christian	13445	0.344	0.475	0	1
Muslim	13445	0.286	0.452	0	1
Buddhist	13445	0.022	0.148	0	1
Hindu	13445	0.016	0.125	0	1
Sikh	13445	0.011	0.102	0	1
Other	13445	0.009	0.094	0	1
No religion	13445	0.055	0.228	0	1
Employed	13445	0.638	0.481	0	1
Big city	13445	0.247	0.431	0	1
City(>10000 inhabitants)	13445	0.507	0.500	0	1
City(<=10000 inhabitants)	13445	0.247	0.431	0	1
North	13445	0.375	0.484	0	1
Centre	13445	0.172	0.377	0	1
South	13445	0.453	0.498	0	1

2.1 Assimilation index

To capture immigrants' assimilation to the Italian society and culture I create an index using the principal component analysis, that sums up different dimensions affecting foreigners' attachments to Italy. In particular, I exploit both subjective and objective measures on the knowledge of Italian[3], the frequency of speaking Italian with family members and friends[4], the years spent in Italy, having an Italian partner, having a job in Italy, the opinion on the

[3] I exploit two survey questions: "How well do Italians understand when you speak Italian with them?" and "How much do you understand when someone speaks Italian to you?". Respondents can choose among four options: 1 = Not at all, 2 = Only a little, 3 = Enough, 4 =Very much.

[4] I exploit two survey questions: "Which language do you speak most often with your family? and "Which language do you speak most often with your friends?". I create two dummy variables equal to one if the respondent answers "Italian" and zero otherwise.

importance of obtaining the Italian citizenship[5], the intention to stay in Italy[6], the frequency of eating Italian food[7] and watching Italian television[8], and the opinion of immigrants on "feeling at home" in Italy.[9] Descriptive statistics on the variables used for the assimilation index are reported in Table 2.

Table 2 Descriptive statistics for assimilation index variables

	Observations	Mean	Std. Dev.	Min	Max
Feel good in Italy like at home	13445	0.381	0.486	0	1
Years in Italy	13445	10.221	6.642	0	67
Ita. Language:the others understand me	13445	3.400	0.801	1	4
Ita. Language: I understand the others	13445	3.420	0.787	1	4
Cooking Italian food	13445	0.313	0.464	0	1
Watching Italian television	13445	2.754	1.517	0	4
Intention to stay in Italy	13445	0.693	0.461	0	1
Italian partner	13445	0.102	0.303	0	1
Importance of Italian citizenship	13445	0.706	0.455	0	1
Speaking Italian in family	13445	0.315	0.465	0	1
Speaking Italian with friends	13445	0.521	0.500	0	1
Employed in Italy	13445	0.638	0.481	0	1

Table 2 shows that about 38% of the sample declared to feel "at home" in Italy. On average, immigrants have spent 10 years in Italy, and probably this is the reason why they have achieved a good level of Italian knowledge (reaching an average score of 3.4, in a range between 1 and 4). A substantial part of the interviewees declared that Italian is the language they speak the most within the family (31.5%) and with friends (52%). About 64% have a job. As expected, having an Italian partner is not very common, involving about 10% of the sample. Just under 70% intend to stay in Italy permanently; a same percentage declared that it is important to obtain Italian citizenship; furthermore, 26% would be willing to give up their citizenship for the Italian one (not showed in the table). Finally, immigrants seem to be quite informed about the news in Italy through television (reaching an average score of 2.8, in a range from 1 to 4) and a significant part of them (31%) appreciate Italian food, declaring to eat it as predominant meal. Thus, consistently with the data reported in Table 2, foreigners living in Italy seem to be experiencing a process of assimilation to the host country, which could positively affect their

[5] I create a dummy equal to one if the respondent answers "Yes" to the question: "Is it important for you to receive the Italian citizenship?" and zero otherwise.
[6] It is a dummy equal to one if the interviewee declares she is planned to stay in Italy permanently, and zero otherwise.
[7] It is a dummy equal to one if the interviewee declares to eat predominantly Italian food.
[8] The variable indicates the frequency with which she watches Italian news on television, on a scale from 0 - which corresponds to "Never" - to 5 - which corresponds to "Every day".
[9] The survey question asks: "Do you agree with the following sentence: I feel good in Italy like at home?". I create a dummy equal to one if the respondent answers "I totally agree" and zero otherwise.

well-being, as I investigate in the next section.

According to the principal component analysis, variables that contribute the most to the assimilation index are those regarding immigrants opinion about the Italian citizenship, the intention to stay in Italy, the feeling of being "at home" in Italy, speaking Italian within the family, having an Italian partner and eating Italian food (the correlation score is greater than 0.30 for each of these variables).

3 Empirical model

To investigate the relationship between assimilation to the Italian society and immigrants' well-being, I estimate the following equation, using *Ordinary Least Squares* (OLS):

$$Y_{\text{inmc}} = \alpha + \beta\, Assimilation_{\text{inmc}} + \gamma X_{\text{inmc}} + \delta_{\text{n}} + \mu_m + \lambda_{\text{c}} + \varepsilon_{\text{inmc}}$$

where subscript *i* denotes the individual, *n* is the individual's birth place, *m* indicates the macro-area where she currently lives in Italy (North, South and Centre of Italy), and *c* is the type of municipality (large, medium and small).

I use different outcome variables in this study. First, *Y* represents immigrants' health, measured by two different indexes provided by ISTAT, which refer to both mental and physical health.[10] Furthermore, I use the individual's general life satisfaction, as additional outcome.[11] *Assimilation* is the main independent variable, represented by the index of immigrants' assimilation to Italian culture and society, as described in the subsection 2.1. *X* is the vector of the other covariates at individual level. It includes immigrants' gender (*Male*), age class (*Age*)[12], education[13], marital status (*Married*), number of children (*Children*), employment status and religious affiliation.[14] A crucial point in examining the factors explaining immigrants' well-being is represented by their attachment to the home country - which I capture using the variable *Proud to be a foreigner*, a dummy equal to one if the interviewee answers "Very much" to the question "How proud are you to belong to your country of citizenship?".

[10] Detailed information on the health indexes is available on the ISTAT website: https://www.istat.it/.

[11] I exploit the survey question: "How satisfied are you currently with your life as a whole? Respondents can assign a value from 0 to 10 (where 0 is "Not satisfied at all" and 10 is "Very satisfied").

[12] The variable comprehends nine classes of age: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55+.

[13] I include four dummies, which indicate the highest level of education achieved by the respondent (*No education* -the reference category, *Compulsory*, *High school*, *BA degree +*).

[14] The religious affiliation includes dummies for: *Catholic*, the reference category, *Muslim*, *Other Christian*, *Buddhist*, *Hindu*, *Sikh*, other religions (*Other*), and *No religion.*

In fact, this variable could affect the psychological status of the foreigner in the host country, and her self-esteem, therefore serving as a relevant control variable in the analysis under study. To account for cultural characteristics related to the ethnic group the respondent belongs to and that could affect simultaneously her assimilation to Italy and well-being, I include a set of dummies indicating the individual's birth place (δ_n). These variables correspond to the country of origin only for the most representative ethnic groups in the sample, while for the others it is represented by the continent of origin or by the specific macro-area of the birth continent.[15] Finally, I add dummies for the macro-area of Italy where immigrants live - μ_m - (North, Centre and South), and for the type of municipality (λ_c,), to take into account all the environmental factors (natives' attitudes towards foreigners, local wealth, public policies in favour of immigration) potentially influencing the relationship between assimilation and well-being.

4 Results

Table 3 reports the OLS estimates of the relationship between immigrants' life satisfaction and health and their assimilation to Italy. In column (1) I regress the mental health index on the assimilation index, conditional on the individual-level control variables and the other dummies accounting for immigrants' place of birth, the macro-area in which they live and the municipality type. I find a positive statistically significant correlation between foreigners' attachment to Italy and their psychological well-being. Moreover, I find that also the strong identification with the citizenship country is positively associated with mental health; the coefficient associated with the variable *Proud to be a foreigner* is positive and statistically different from zero. Thus, the analysis reveals the crucial role of the identification not only with the host country, but also with the home country, in explaining immigrants' psychological well-being in Italy.

[15] As for immigrants who come from European countries, for example, I exploit the following birth place: Albania, Macedonia, Moldova, Poland, Romania, Ukraine, other Central Eastern European countries, other European Union countries, other European countries.

Table 3 Health, Life satisfaction and Assimilation

	(1) Mental health index	(2) Physical health index	(3) Life satisfaction
Assimilation index	5.999***	-0.128	0.162***
	[0.580]	[0.501]	[0.013]
Proud to be a foreigner	3.991***	0.849	0.261***
	[1.204]	[1.026]	[0.027]
Male	2.043	0.842	-0.191***
	[1.324]	[1.125]	[0.029]
Age	-3.326***	-6.704***	-0.087***
	[0.327]	[0.327]	[0.007]
Compulsory	-5.231*	-1.665	-0.182***
	[2.735]	[2.579]	[0.064]
High school	-1.944	2.404	-0.012
	[1.851]	[1.648]	[0.041]
BA degree +	-3.062*	2.873*	0.031
	[1.743]	[1.536]	[0.039]
Married	2.508*	6.845***	0.211***
	[1.346]	[1.192]	[0.029]
Children (#)	-0.714	-2.238***	0.042***
	[0.604]	[0.598]	[0.013]
Muslim	-7.804***	-0.352	-0.245***
	[2.114]	[1.789]	[0.048]
Other Christian	-4.066**	-1.550	-0.161***
	[1.818]	[1.587]	[0.039]
Buddhist	-0.784	2.168	-0.201**
	[4.113]	[3.129]	[0.095]
Hindu	-8.294	3.505	-0.311***
	[5.053]	[4.274]	[0.120]
Sikh	4.803	0.431	0.217
	[6.650]	[5.014]	[0.151]
Other	-10.238	-1.763	-0.186
	[6.572]	[5.666]	[0.144]
No religion	-1.776	0.916	-0.209***
	[2.788]	[2.260]	[0.065]
Employed	5.030***	15.292***	0.166***
	[1.444]	[1.342]	[0.032]
Nationality FE	yes	yes	yes
Macro-area FE	yes	yes	yes
City type FE	yes	yes	yes
Observations	13445	13445	13445

Other recent studies for Italy (see Carillo et al., 2021a, 2021b) have already shown the influence of immigrants' identification with both the origin and destination country on their economic well-being. However, to the best of my knowledge, this is the first study providing evidence of the positive effect of both assimilation to the host country and attachment to the sending country on health outcomes in Italy. In column (2) I regress immigrants' physical well-being on their identification with the Italian society. I do not find any statistically significant correlation between the physical health and the assimilation index. Furthermore, also the foreigners' strong identification with their citizenship country seems to be uncorrelated with physical health. This would be in line with the cross-cultural psychology literature that

highlights the major role of immigrants' identity in influencing the psychological well-being of foreigners, rather than the physical one. Finally, column (3) reports the estimates on the relationship between assimilation and immigrants' life satisfaction. I find that foreigners with a higher degree of assimilation to Italy experience greater life satisfaction with respect to people with lower assimilation levels. Being proud of the own sending country is also positively associated with the general level of satisfaction. These results are consistent with those provided for the mental health case; this is probably due to the fact that life satisfaction represents an assessment on the general conditions of an individual in the host country, with implications mainly related to the individual's psychological well-being.

Turning to the other covariates, I find that immigrants who belong to the older age classes experience a lower well-being, in terms of both health, either mental or physical, and life satisfaction. As expected, increasing age has a strong influence on the physical health and less influence on the individual opinion about life satisfaction. I do not find statistically significant differences between males and females, in term of health, but males are less satisfied about their life than females. Regarding the effect of education, having a BA (or a higher) degree influences positively the physical health condition of immigrants, but negatively the mental one. This is probably due to the over-education phenomenon, resulting from the very few labor market opportunities offered to immigrants, even if high-educated, which increases psychological distress. Finally, the correlation with life satisfaction is positively but statistically insignificant. As expected, having a job increases an immigrant's psychological, physical and general well-being; indeed, all the outcomes are positively associated with the employment status. Also, being married is positively correlated with all three measures of well-being, while the number of children increases only people life satisfaction; in fact, it is uncorrelated with mental health and is negatively associated with physical health. Finally, I find that professing a religion different than the Catholic one influences negatively mental health (in the case of *Muslim* and *Other Christian*) and life satisfaction (in the case of *Muslim*, *Other Christian*, *Buddhist, Hindu* and *No religion*).

5 Concluding remarks

In recent years, an increasing number of studies in economics have been focusing on the economic consequences of the process of integration of foreigners in the host country. They mainly investigate the effect of integration on employability, wages and, only in a few cases, on immigrants' life satisfaction. However, little is known about how integration influences the psychological and physical well-being of immigrants. In this paper I explore the relationship between immigrants' assimilation to the host country culture and their well-being, measured by physical and mental health as well as by life satisfaction. Using the 2011 ISTAT survey on the social and economic inclusion of immigrants living in Italy, I find that individuals with higher level of assimilation to the Italian society are more satisfied about their life and are also characterized by better psychological well-being. Moreover, the study also provides evidence that immigrants' who reveal strong attachment to their sending country experience higher life satisfaction and better mental health.

Interestingly, the findings of this study provide useful insights into the mechanisms that would drive the results emerging from other recent studies looking at the integration of immigrants in the Italian context (see Carillo et al., 2021a, 2021b). In particular, their main finding, according to which a better economic performance is realized by immigrants who strongly identify with the host and/or home country, could be explained by the greater psychological well-being associated with strong attachment to the host and/or the home country, i.e. the main result of the present study.

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The Effects of Cultural Workforce Diversity on Firms' Financial Performance: A panel-data analysis from Italian Agricultural Sector

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Abstract

We present an empirical analysis aimed to investigate the interrelationship among the immigration flows, in terms of cultural diversity, firm's financial performance, and family management of business in Italian agricultural sector. Specifically, this contribution attempts to explore the influence of immigrant workers in a within-firms setting, on firm's financial performance, measured through the total sales of firms, as well as the influence of family business management as relevant contextual factor in this previous relationship. To address it, we run an empirical analysis by using a panel data of 7634 farms, spanning across the period 2012-2017 from the Italian Farm Accountancy Data Network (FADN). This study shows a positive impact of cultural workforce diversity on firm's financial performance, at firm-level.

Keywords: Cultural diversity; family firms; firm performance; agricultural sector.

1. Introduction.

In this paper we analyze the effect of immigrants on firms' performance by taking into account their effect on workers' cultural diversity. To address this, we test the hypothesis for which the relationship between cultural workforce diversity and firm's performance (measured as increase in sales), is moderated by some their characteristics: family firms. We sustain that the management style is different in these. To test our hypothesis, we run an empirical analysis where, using a panel data of 7634 farms, spanning across the period 2012-2017 from the Italian Farm Accountancy Data Network (FADN). Italian agriculture sector represents an excellent case study for several reasons. As with many European countries, Italy has undergone important changes in the composition of its population, since that it represents one of the most important immigration inflow countries (Frontex, 2018). Furthermore, agriculture sector is generally characterized by cyclical and seasonal labor demand. As a result, immigrant workers, representing a highly mobile workforce and more productive than native one (Baldoni et al., 2017), constitute a relevant force in agriculture sector, allowing meeting its seasonal labor demand (Hanson and Bell, 2007). Immigrant workers are also used to replace native workers in less skilled jobs (Grossman 1982; Card 2005, 2001; Borjas 1995, 1999; Ottaviano e Peri 2006), generally characterized by bad working conditions and low wages. Klocker et al. (2018) stated that migrant workers' knowledge constitutes a relevant resource for climate change adaptation in agricultural production. The key role occupied by immigrants in agriculture in bringing expertise realizing productivity improvements also within the wider rural economy, is also reported by other studies and in other contexts (Hanson and Bell, 2007; Kasimis et al. 2003; Kasimis and Papadopoulos 2005; Labrianidis and Sykas, 2009). This circumstance makes the Italian agricultural sector and the immigrant workforce operating in agricultural firms particularly suitable for our purpose. Also, in line with Cox (1994) and Cox and Blake (1991), we used the migrant workers within firms to refer to cultural workforce diversity. We have found a positive impact of immigrant workers on firms' financial performance operating in the agricultural sector. This study fills a void in the existing literature, focusing on the empirical effects of cultural diversity of organizational workforce, distinct from its management, on firm financial performance. We contribute to the existing literature in several ways. First, this study contributes to a firm level understanding of relationship between cultural diversity at the level of organizational workforce and firm financial performance; second, it provides a theoretical framework underling the concept that the benefits of cultural workforce diversity depend on the context.

In this article, we first introduce the hypotheses development and the methodology; from there, the relationship between cultural workforce diversity and firm's financial performance is explored in

conjunction with the selected organizational characteristics of firms. Afterwards, we present our results and we conclude with implications for research.

2. Hypothesis development

Consistent with most of academic research, cultural workforce diversity is broadly defined as any attribute that people use to define themselves, and that is identified by specific surface-level characteristics (Trandis et al., 1994; Gudmundson and Hartenian, 2000). Therefore, cultural workforce diversity implies the presence of a variety of people in terms of different characteristics or observable attributes such as a race, nationality, gender, age, or education (Cox, 1994; Harrison et al., 1998; Milliken and Martins, 1996; Kossek and Zonia, 1993; Richard, 2000). Milliken and Martins (1996) also defined cultural diversity as a variety of point of views respect to which things differ (Cox, 1994; Harrison et al., 1998; Kossek and Zonia, 1993; Richard, 2000). Cox (1994) use the cultural diversity concept to refer to people with different group affiliations of cultural significance, in one system (Richard, 2000). In this study, the term cultural workforce diversity refers to workforce from different countries and culture with different point of views and beliefs, that provides different experiences and knowledge to the firm. In other words, we adopt the concept of birthplace diversity, according to which workers born and trained in different countries may provide to firm cultural heterogeneity and different skills (Alesina et al. 2016; Parrotta et al. 2014). In this study, we analyze cultural workforce diversity seen as the presence of different points of views within the firm (Milliken and Martins, 1996; Trandis et al., 1994; Gudmundson and Hartenian, 2000). Consistent with this, we consider a firm as a unique bundle of different elements, tangible and intangible (assets, information, knowledge, capabilities), wherein the cultural diversity of workers, whose different perspectives and knowledge, is able to create positive effects on the firm's financial performance. This varied genetic heritage, once assembled within the firm's environment, generates multiple positive effects, such as spillover effects between workers, which generates mutual learning within the workforce. The latter lead towards an adaptive learning process, that is the child of previous experiences that each of the workers carries on in the organizational context (Achutan Nair and Sreedharan, 1986). We also sustain that people with job knowledge may be more involved in the context, drawing upon their previously acquired skills, which in turn has a positive impact of their work performance and thus on firm financial performance.

We therefore hypothesize:

Hypothesis 1: A culturally diverse workforce is associated with a positive financial performance of firms.

2.1.The moderating role of organizational characteristics

To exploit the benefits of cultural workforce diversity, firms need to implement policies and management practices that foster a diverse workforce. Firms also need an organizational culture that fosters diversity. Based on this reasoning, few studies argue that the success of diversity orientation strategy within firms is contingent on firm characteristics (Harrison et al, 2002; Holzmuller and Kasper, 1990; 1991; Kilmann, 1985). These studies suggest that some organizations tend to promote cultural diversity, by encouraging employees to associate with outgroup members, developing a multicultural diversity orientation climate in which the form of acculturation is pluralism, integration of such an attitude into the informal organization is established, prejudices and discrimination are eliminated, and organizational identification between majority and minority is present, and so interpersonal conflict is low or absent (Zahra and Covin, 1995; Cox, 1991). In addition, however, and this is what this study focuses on, management practices that foster cultural workforce diversity - including training, coaching, mentoring (Schimdt and Hunter, 1998) – have an indirect, moderation role to play. Firms with particular characteristics or management styles are able to make a diverse workforce boost firm performance even more than other types of firms with dissimilar management styles.

In the section below, we will analyze the role of family management of firm in the relationship between cultural diversity and firm's financial performance.

2.2.Relevance of family business management as relevant contextual factor in the relationship between cultural workforce diversity and firm's financial performance

Past studies show that family involvement in the family business has an important impact on the firm financial performance (Chrisman et al., 2002; Basu and Altinay, 2002; Robinson and Hogan, 1993). Some studies show that family businesses make firms more successful (Butler, 1991; Upton and Heck, 1997; Ariarah, 1993; Rodhes and Butler, 2004: Fratoe, 1986), while others show that the impact is negative (Kets de Vries, 1993; Morris, 1989). We submit that these contrasting findings can be explained if and when the impact of family-owned management style is not a direct but an indirect, moderating one. Family-owned firms are managed differently, and therefore other assets that a firm might have – such as a culturally diverse workforce – can be leveraged.

Based on this reasoning, high quality of social interactions among employees, and among management and employees positively impacts the work environment of workers (Wang et al., 2019).

We therefore hypothesize:

Hypothesis 2: The relationship between culturally diverse workforce and firm's financial performance is positively moderated for family-owned firms.

3. Research design

The aim of this contribution attempts to explore the influence of immigrant workers, in a within-firms setting, on firm's financial performance, measured through the total sales of firms, as well as the influence of family business management as relevant contextual factor in this previous relationship. In this section, we describe the research setting, the data collection and data analysis.

3.1.Research setting

This study was conducted using firm-level data from the agriculture sector. We have chosen agriculture sector because it is mostly characterized by cyclical and seasonal labor demand, wherein immigrant workers who represent a highly mobile workforce (Grossman 1982; Card 2005, 2001; Borjas 1995), are able to play a relevant role in meeting seasonal labor demand (Hanson and Bell, 2007), also given the declining employment of natives in agriculture. The immigrant workers, indeed, tend to replace native ones in less skilled activities in agriculture sector (Borjas, 1995; 1999; Ottaviano & Peri 2006). Further, immigrant workers are more likely to accept bad working conditions and low wages.

In the agriculture sector where jobs generally require less skilled people, but with more experience and traditional knowledge, the immigrant are more productive than native ones (Baldoni et al., 2017). As a consequence, firms tend to search in the immigrant labor market (Baldoni et al., 2017; Lalonde and Topel, 1997; Clemens, 2013).

On the same argument, Klocker et al. (2018) noted that the culturally diverse workers within farms play a role as "environment builders". The immigrant workers, indeed, are carriers of relevant traditional knowledge, that represent a new resource for the environmental change in the agriculture sector (Sumerville and Sumption, 2009). Furthermore, we choose Italian agriculture as, in the last decades, the Italian agriculture sector has undertook important changes in the composition of its human capital. Italy represents, indeed, one of the most important inflow countries (Frontex, 2018). Moreover, Italian agriculture is a strong heterogeneous sector, with relevant geographical specificity, that represents a better representation of minority workforce (Ievoli and Macrì, 2008; Macrì et al., 2017). Therefore, agriculture, especially Italian agriculture sector, seems to represent a relevant

sample, in order to investigate the relationship between cultural workforce diversity and firm's financial performance.

Given the wide data availability, we used FADN (Farm Accountancy Data Network) data set to explore the main relationship. Based on this reasoning, the main purpose of this contribution is to detect the impact of cultural workforce diversity, measured through the share of immigrant workers on total workers of farm, in terms of Annual Working Unit, on firm's financial performance, in Italian agriculture, at firm-level. To understand the presence and the role of immigrant workforce in agriculture a panel data analysis has been performed. The hypotheses developed above were tested by fixed-effects regression analysis, that allows us to identify the within unit variation, using a data set constructed from FADN Italian sample. This data set refers to the unbalanced sample of 7634 farms, observed during the 2012 – 2017 time span. Firm fixed effects and year dummies are included in all specifications, in order to capture all the other firm characteristics not included in our analysis that, in absence of further specifications, they could make emerge a spurious relationship.

Additionally, the availability of FADN data might be inaccurate in representing the real immigrant workforce in Italian agriculture sector: the number of immigrant workers employed in agriculture could be largely underestimated, due to the presence of undeclared workers. Regarding to the structural source of endogeneity, our farm dataset only embeds regularly registered employee contracts, representing a problem of omitted variables. Moreover, concerning to further sources of endogeneity, previous studies suggest that immigrant are mostly employed in large (and more productive) firms (Baldoni et al., 2017). This represents for us a problem of reverse causality.

In order to face endogeneity in our empirical model, we present generalized method of moments (GMM) model, that it is able to take into account the possible endogeneity comes from omitted variables bias and reverse causality.

3.2.Data collection

The analyses used to test the hypotheses in this contribution relied on data from FADN Italian sample. The FADN sample, Farm Accountancy Data Network, is a network data from farms for the determination of income and business analysis of agricultural organizations. The FADN data set includes only professional farms, which carry out market-oriented activities. The data set collects an average of 1000 data items for farm, every year, for the European countries. Consistent with the purpose to improve the knowledge of agriculture sector, it gives information such as land use activities, animal activities, input-output costs, farm characteristics. The data set also includes only farms that have an economic size, measured in terms of Standard Gross Margin, of more than 8000

Euro since 2014. This threshold changes over the years, but it tends to identify the same firm size. Based on this reasoning, in the FADN sample we find only farms which are representative of a sub-sample of professional and commercial Italian farms (Sotte, 2006).

In this contribution, data was gathered at provincial level over a 6-year period, 2012-2017 (with 7634 observations). However, in order to face multicollinearity in our interaction models, since the panel does include discontinued repeated observations in time, we aggregate and treat them as a mean centering over the aforementioned period.

In order to validate our initial concepts, we focused on several specific datasets: 1) farm characteristics; 2) economic data; 3) cost of labor; 4) workforce. This sample provides relevant information, as general characteristics of farm, localization, amount of land in terms of hectares, type of farm activities, age and gender of farmers; summary information of workforce, as total hour worked per farm and total hour worked of immigrant per farm. Also, it provides important information about the economic size of farms, as total farm revenues, revenues from activities complementary to agriculture, direct costs and current costs.

Dependent variable

The dependent variable is a measure of firm's financial performance (*Sales*). It is measured by the total sales of firm, in Euro, over the period 2012-2017. This measure is composed by business sales revenues and operating aid (EU). In the second step, the logarithm of sales has been calculated, in order to compare the results and to face skewness. The total sales are a widely used measure of organizational performance (Christensen et al., 1985; Cavusgil, 1984; Hester, 1985; Huselid, 1995). The primary advantage of this measure is that it provides a single measure that can be used to compare firm's performance as well as to enhance comparability with prior studies. Moreover, the logarithm of sales also reflects firm's efforts disassociated from variation in employees and capital markets. In prior works, models specify performance as the logarithm of net sales per employee or net income per employee, although less frequently used measure (Huselid, 1995; Ichiniowski, 1990; Pritchard, 1992).

Independent variable

Organizational research has broadly defined cultural workforce diversity as presence of different point of views or characteristics within firms (Milliken and Martins, 1996; Trandis et al., 1994; Gudmundson and Hartenian, 2000). Following Cox (1994), Cox and Blake (1991), Trax et al. (2012), we used the migrant workers within firms to refer to cultural workforce diversity. Thus, in this work cultural diversity has been defined such as amount of immigrants employed by the firm. We focus, therefore, on all persons who are employed by the firm, distinguishing between native and non-native workers. Our independent variable, *Cultural Workforce Diversity*, is expressed as a share of

immigrant workers on total workers*, in terms o*f Annual Working Unit (AWU), that it is the total hours worked per firms, yearly*;* in this formula, 1 *AWU* is equal to 1800 hours worked (Baldoni et al., 2017). The independent variable relates to cultural diversity in organizational workforce.

Moderating variables

A moderating variable is discussed below.

Based on the assumption that the family management of firms tends to promote a relevant cultural diversity orientation environment that encourages the benefits associated with cultural diversity, this measure provides a straightforward test of the magnitude of this relationship. *Family Firms* is a dummy variable, that it assumes value =1 in case of family management of firm. This variable indicates the direct management of firms by family members.

Furthermore, in order to face the multicollinearity in our interaction models, we calculate the mean-centering of variables in the moderator analysis. This procedure may also enhance the interpretability of data.

Control variables

The estimation models are developed to provide unbiased estimates of the relationship between cultural diversity and firm's financial performance. Based on this reasoning, the selection of control variables is based on a review of the prior works. Thus, we focus on those variables to be able to affect this relationship, in order to control for the systematic variance that it is not due to our main variables. We control for *Machine Opportunity Cost (M.O.C.)* that is the cost of using farm machines within the production processes, in Euro; in order to face the skewness, we used the central position of variable. This variable is cited in many researches as having a relevant impact on firm's performance (Koch and McGrath, 1995). This measure may allow organizations to increase the productivity of their workers, conversely; it is also an important factor to take into account since it is a measure of workforce replacement.

We also control for *Organic Farms, Disadvantages Economic Area, Young Farmers* and *Machinery. Organic Farms* was measured by a dummy variable, that assumes value =1 if the farm implements an organic process. In the main literature, the effects of organic farms on firm's performance are controversial (Tzouvelekas et al., 2015; Bayramoglu et Gundogmus, 200; Lansink et al, 2002). In general term, they are generally associated to higher degree of technology newness (Lansink et al., 2002; Kumbhakar et al., 2009). This circumstance implies that the organic agriculture is on average more efficient but less productive than other (conventional) farms.

Disadvantages Economic Area (D.E.A.) was measured by a dummy variable, that assumes value = 1 when the farm is located in a disadvantaged economic area. Several studied considered the influence of the firm's geographical location on firm's performances, like motivating factors for

entrepreneurship, potential presence of geographic spillover effects and higher public funding (Shoobridge, 2006; Baldoni et al., 2017).

Young Farmers was measured by a dummy variable, indicating whether the owner is under 40 years old. The presence of younger owner is considered a relevant factor able to impact on firm's performance, although the previous findings are still controversial. According to literature, we sustain that young people are more willing to accept the environmental change, in general and within firm (Jackson et al., 1991; O'Reilly et al., 1989). Young people are also more inclined to bear risks, destroying old behavioral patterns (Don Gudmundson and Hartenian, 2000).

Finally, we control for *Machinery*, that it is a measure of total firm' purchases of machinery and plant, expressed in Euro. Purchases of machinery and plants are generally assumed to have a direct effect on financial performance, because of economies of scale, es. (Shepherd, 1975; Winn, 1977)

3.3. Data Analysis

Descriptive statistics, with the basic attributes of our sample, and correlations between variables are presented in Table 1. Our sample contains mainly small-sized firms. The average number of hours worked per farm, yearly, is 3812. In the sample analyzed, total immigrant workforce represents more than 30% of total salaried workforce in the sample. However, a FADN data representativeness issue needs to be stressed here: it is likely that the presence of immigrant workforce can be underestimated in some regions, where the presence of not regularly employed workforce is higher, especially in seasonal activities. Even in presence of data reliability issues, analysis gives some interesting information about the presence of immigrant workforce in Italian agriculture. These results also suggest that the incidence of immigrant workforce represents a relevant contribution to Italian agriculture sector, first of all in the seasonal activities where they are most occupied. Before we test our hypotheses, we analyze the relationship between the incidence of immigrant workforce and firm's financial performance, in Italian agriculture (table 1).

Formally, the relation exists and suggests the presence of link among these variables, although correlation does not imply causation. Thus, the direction of this relationship needs to be tested. Table 1 provides the correlations among study variables.

	Variables	Mean	SD	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
(1)	*M O.C.*	20.389	9.897	1.000							
(2)	*Young Farmers*	13,2%	.339	0.024*	1.000						
(3)	*Organic Firms*	13%	.34	0.029*	0.087*	1.000					
(4)	*D.E.A.*	46,3%	.498	-0.030*	-0.059*	-0.090*	1.000				
(5)	*Machinery*	10.256	1.486	0.0893*	-0.019	-0.517*	0.052	1.000			
(6)	*Cultural Workforce Diversity*	.32	.145	0.018*	0.011*	-0.004	-0.019*	0.144*	1.000		
(7)	*Family Firms*	49,1%	.5	0.022*	0.001	-0.136*	-0.051*	-0.281*	-0.121*	1.000	
(8)	*Sales*	32.581	56.181	0.040*	0.020*	0.011*	0.130*	0.122*	0.289*	-0.346*	1.000

Table 1. Descriptive statistics and correlations among variables ** show significance at the 0.05*

4. Results and Discussion

In this section, we first present the results of the regression model, related to the research questions. Also, we describe the mechanisms adopted in order to reach our results. Subsequently, we discuss the main implications of this contribution, so that we define the most relevant relationships, emerging from the data.

4.1.Results

The fixed-effects results of the static models are presented in Table 2. This contribution implements a hierarchical regression model. In order to face multicollinearity in the interaction models, we computed the mean-centering of the variables in the moderator analysis, in all models. The dependent variable is the log of sales (Sales). We first examined the control variables effects on firm's financial performance (Sales) in Model 1. Then, we added the main variable (Cultural Workforce Diversity) in Model 2. As hypothesis 1 suggests, the presence of culturally diverse workforce, in a within-firm setting, positively impacts on firm's financial performance: hypothesis 1 is supported. These models show that more heterogeneous workers employed by firms may enhance the firm's level of sales, improving firm's financial performances.

Hypothesis 2 predicts that the relationship between culturally diverse workforce and firm's financial performance is positively moderated by presence of family business management. We find a not significative effect for family firms moderating Cultural Workforce Diversity. Therefore, hypothesis 2 is not supported.

D.V. *Sales* Variable	(1)	(2)	(3)	(4)
Machine Opportunity Cost	-.000356 (.0008)	-.000371 (.0008)	-.0003235 (.0008)	-.00046579 (.0007)
Young Farmers	-.028307* (.0281)	-.029365 (.0277)	.-.0283614 (.0279)	-.0388901* (.0272)
Organic Farms	.023251 (.0339)	.0203578 (.0338)	-.0189267 (.0338)	.0094918 (.0330)
Disadvantaged Economic Area	.419218*** (.3013)	.422194*** (.3012)	.4221344*** (.3011)	.6253675*** (.2964)
Machinery	.0156730*** (.0058)	.0149355** (.0058)	.0149558** (.0058)	.01082146* (.0057)
Cultural Workforce Diversity		.0014409*** (.0004)	.0014055*** (.0004)	.0021877*** (.0005)
Family Firms			-.0575516 (.0366)	-.0377058 (.0357)
Cultural Workforce Diversity*Family Firms				-.00149881 (.0049)
Constant	10.689646*** (.1687)	10.699721*** (.1687)	10.688145*** (.1683)	10.886861*** (.1646)
Observations	7634	7634	7634	7634
R2	.076344	.0105317	.11616	.1846
F	6.61475	7.62569	7.1047	277.677
Year Dummies	Yes	Yes	Yes	Yes
Altimetry	Yes	Yes	Yes	Yes

*Table2. Fixed-effects regression analysis. * p<.1; ** p<.05; *** p<.01. Standard errors are clustered by firms. All regressions contain year dummies and altimetry variables*

4.2.Robustness Checks

Table 3 include a number of robustness checks. Column 1 shows the baseline equation; in column 2-5 we include additional control variables, in order to test the persistence of a positive contribution of immigrant workforce to firm's financial performance. Columns 2-3 include the farm specializations and the altitude of farms. The positive impact of culturally diverse workforce on firm's financial performance seems to be confirmed by the presence of the high value of the statistically significant

parameter. In column 4 we control for the legal forms of farms: the additional controls are significant and our main relationships do not change. Finally, in column 5 we include the size of farms in terms of hectares. Even though this specification seems to absorb the significance of our main relationships, immigrant workforce continues to play a relevant role on the firm's financial performance and all our hypotheses are supported. Nevertheless, as Table 3 shows, our findings are robust in all specifications. Table 4 contains robustness checks based on GMM estimators. Estimating the main relationships through a dynamic panel data model with Arellano-Bond estimator, allows us to consider the possible endogeneity of the Cultural Workforce Diversity into account. Column (1) repeats the baseline equation, without control variables, using the lagged dependent variable *(Sales t-1; Sales t-2)* and the lagged independent variable (*Cultural Workforce Diversity t-1*) in order to take into account the serial correlation over time. Column (2) repeat the previous equation introducing the control variables. The results obtained differ slightly to the ones obtained with the fixed-effects specifications; the coefficient for lagged independent variable (*Cultural Workforce Diversity t-1*) is statically positively significant in the two columns. This suggests that even accounting for endogeneity, the results are still robust: culturally diverse workforce play a relevant role in explaining the financial performance of firms. Additionally, when assuming persistence of *Sales* over time, results does not change.

D.V. *Sales* Variable	(1)	(2)	(3)	(4)	(5)
Machine Opportunity Cost	-.00046579 (.0007)	-.00041447 (.0008)	-.0004419 (.0007)	-.00046006 (.0007)	-.00026261 (.0008)
Young Farmers	-.0388901* (.0272)	-.04025611 (.0277)	-.0399934 (.0277)	-.04036587 (.0272)	-.03247237 (.0279)
Organic Farms	.0094918 (.0330)	.00948837 (.0338)	.0060333 (.0331)	.00910101 (.0330)	.01224519 (.0338)
Disadvantaged Economic Area	.6253675*** (.2964)	.8134601*** (.3012)	.8015266*** (.2965)	.83279675*** (.2963)	.72449441*** (.3011)
Machinery	.01082146* (.0057)	.01066451* (.0058)	.01099616* (.0057)	.01044819* (.0057)	.00815202 (.0058)
Cultural Workforce Diversity	.0021877*** (.0005)	.0021849*** (.0004)	.00198151*** (.0004)	.00219268*** (.0005)	00197964*** (.0004)
Family Firms	-.0377058 (.0357)	-.03734063 (.0309)	-.038176 (.0002)	.0686645 (.0797)	-.03290895 (.0002)
Cultural Workforce Diversity*Family Firms	-.00149881 (.0049)	-.00149934 (.0050)	-.0016667 (.0050)	-.0010119 (.0050)	-.00267114 (.0050)
Arable crops		-.1156775 (0088)	-.11482766 (0089)		
Polyculture		.01515709 (.1211)	.0153255 (.1210)		
Flat land			.0001015* (.0005)		
Legal forms					
Limited-Liability Partners				.17457004** (.0709)	
Private-Limited Company				.2259167*** (.0726)	
Public-Limited Company				-.0355927 (.0773)	
Large					.1715965*** (.0275)
Small					.1537561*** (0277)
Constant	10.886861*** (.1646)	10.977462*** (.1677)	10.976687*** (.1656)	10.856392*** (.1643)	10.85582*** (.1681)

Observations	7634	7634	7634	7634	7634
R2	.1846	.06375	.064453	.063802	.091278
F	277.677	27.628	24.9491	28.506	72.972
Year Dummies	Yes	Yes	Yes	Yes	Yes
Altimetry	Yes	Yes	Yes	Yes	Yes

*Table 3. Fixed-effects regression analysis. * p<.1; ** p<.05; *** p<.01. Standard errors are clustered by firms. All regressions contain year dummies and altimetry variables.*

D.V. *Sales* Variable	**(1)**	**(2)**
Machine Opportunity Cost		.0066197 (.0001)
Young Farmers		-.0029234 (.0562)
Organic Farms		.01664571 (.0515)
Disadvantaged Economic Area		.737302*** (.3206)
Machinery		.001535 (.0116)
Sales t-1	-.4505855*** (.0251)	-.3836601*** (.0255)
Sales t-2	-.1201849*** (.0250)	-.10133056*** (.0250)
Cultural Workforce Diversity	.00296197*** (0009)	.00353398*** (0009)
Cultural Workforce Diversity t-1	.00168659*** (.0007)	.00082763* (.0007)
Family Firms	-.09962179 (.0877)	-.04335524 (.0878)
Cultural Workforce Diversity*Family Firms	-.00892219 (.0114)	-.00486449 (.0114)
Constant	17.001558*** (.046)	16.64695*** (.047)
Observations	1501	1501
Number of groups	751	751
Robust S.E.	yes	yes
Wald Chi2	314.95	326.97
Number of instruments	18	22

Year Dummies	Yes	Yes
Altimetry	Yes	Yes

*Table 4. Arellano-Bond GMM specifications. * p<.1; ** p<.05; *** p<.01. Robust Standard errors. All regressions contain year dummies and altimetry variables.*

4.3.Discussion

In this article, we have introduced the notion of cultural workforce diversity, that implies the presence of different observable attributes, such as gender, age or race within the organizational workforce. Following the example of Cox (1994) and Cox and Blake (1991), we have considered the immigrant workforce, employed by the firms, a good sample to refer to cultural workforce diversity.

Consistent with *H1*, we found that the presence of immigrant workforce was positively and significantly related to a higher level of firm' sales. At first, without considering the context, this study shows a positive impact of cultural workforce diversity on firm's financial performance. In the agriculture sector where skillness is not linked to human capital accumulation (i.e., education) but more to experience and traditional knowledge, immigrants, even if considered less skilled people, they have more experience and traditional knowledge (Baldoni et al., 2017). Therefore, our results also prove that the immigrants may be carriers of different perspectives and knowledge, which once assembled within the firm's environment, are able to create multiple positive effects, such as spillover effects between workers. Furthermore, the presence of workers with a varied genetic heritage may generate an adaptive mutual learning process, in a within-firm setting, among workforce. An explanation for this result could be derived by considering that according to past literature studies (see Kanter, 1983; Bantel and Jackson, 1989, Cox and Blake, 1991; Nemeth, 1985), an increase in cultural workforce diversity within a firm may also expand the number of ideas available, promoting creativity and innovation. Additionally, another explanation may be that the presence of cultural workforce diversity may increase the sensitivity of firms to other cultures, so to reach a new target market, enhancing the financial performances.

Our study extends the results reported in Richard (2000), as we tested the positive association between cultural (not only racial) diversity and financial firm's performance. Indeed, one of contribution of our study is to clarify that cultural workforce diversity as not uniquely tied to the hiring of a racially

diverse workforce but incorporating many different aspects of diversity impacts financial firm's performance. Additionally, this mechanism could serve as a catalyst for other processes. Indeed, the greater integration of foreign workers into a firm-context is able to lead to higher information sharing, which in turns allows for reciprocal spillover effects. This is consistent with Nahapiet and Ghoshal (1998), who argue that the multicultural network of relationship in a within-firm setting will enable workers to create a climate of information sharing, which will enhance the levels of intellectual capital within organization.

This study has also explored the moderating effects of family management of business on the relationship between culturally diverse workforce and firm's financial performance (see HP2). Models do not support the hypothesis 2 according to which family business is able to positively moderate the effect of cultural workforce diversity on firm's financial performance.

The contribution of this study is to have considered the relevance of firms' characteristics as relevant contextual factors in the relationship between cultural workforce diversity and firm's financial performance. As a result, human resources represent a relevant asset within organizations, since they are able to determine organizational success (Savari et al., 2013).

5. Conclusions

The purpose of this study is to deepen insight into the relationship between cultural diversity and firm's performance. More specifically, this contribution attempts to explore the moderating roles of family management of business on the previous main relationship. Therefore, it attempts to elucidate the appropriate inner environment, at firm level, which can generate a positive effect of immigrant workforce on firm's performance, measured through the total sales of firms. This contribution evaluates the role of immigrant workers on the Italian agriculture by exploiting farm-level data, using a panel data analysis.

Immigrant workers emerge as a relevant and growing component of Italian agriculture, which are able to amplify the positive effects of human capital on firm's financial performance. We also sustain that non-farm firms with a diverse cultural workforce that are able to implement a cooperative atmosphere characterized by high level of social capital will see their performances improve considerably (Savari et al., 2013; Leana and Van Buren, 2013). Our results are consistent with mainstream literature, that points out social capital's role to promoting exchange of ideas, sharing knowledge, creativity and better organizational performance (Kohtmaki et al., 2004; Zakaria et al., 2004). Therefore, our findings highlight the relevance of appropriate inner environment wherein

social capital can be created and renewed.

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The Effects of Immigration on the Receiving Countries: A Critical Survey of the Literature

Roberta Misuraca

Abstract

The international trend of a sustained level of immigration led to increasing attention about the economic impact of immigration flows on both the sending and the receiving countries. We provide a review of the existing literature regarding the economic impact of birthplace diversity caused by immigration flows on the host countries, from two points of view. We will investigate the macroeconomic effects of immigration flows through changes on the wages and employment levels in the labor market, via a modification of technology adoption and the accumulation of human capital. Secondly, we will analyze the strand of literature that paid great attention on the impact of immigration at firm-level, by focusing on the effects of growing workforce diversity on firm's performance. Furthermore, given the growing relevance of immigrant workers on the agricultural sector, we will focus on the impact of immigrations flows, in terms of culturally workforce diversity, on firm's performance in agricultural sector.

Keywords: Migration flows; labor market; workforce diversity; agricultural sector

1. Introduction

In the last decades, about 3% of the World population permanently lives outside their birthplace; over 27 million people permanently resident in European Union countries were foreign citizens, representing around 7% of the total European population (European Union, 2012). However, the migration phenomenon does not represent a new element: in recent times, indeed, the international migrations have undoubtedly changed the main characteristics, but the strength with which it has manifested itself remained unchanged over the decades. In this overview, we provide a review of the existing literature on the implications of the immigration on the main economic dynamics in the receiving countries. We will therefore investigate, initially, the macroeconomic effects of immigration flows is able to exert on the host country, through changes on the wages and employment levels in the labor market (Aydemir and Borjas, 2007, Card, 2001; 2005, Ottaviano and Peri, 2008, Peri and Sparber, 2009) and through an analysis of immigration impact on growth, via a modification of technology adoption or accumulation of human capital (Borjas, 1985; Chiswick 1978; Galor and Stark, 1994; Brezis and Krugman, 1993; Dolado et al., 1994). Subsequently, we will analyze the strand of literature that paid great attention on the impact of immigration on firm's performance, focusing on the effects of growing workforce diversity within firms, at firm-level (Korn et al., 1992; Smith et al., 1994; Wiersema and Bantel, 1992; McGrath, 1984; McLeod and Lobel, 1996; Bantel and Jackson, 1989; Carr, 1993; Cox and Blake, 1991). Finally, according to official statistics, regarding to which the immigrant workers mainly employed in the agricultural sector (Baldoni et al., 2017), we will focus on the impact of immigrations flows, in terms of culturally workforce diversity, on firm's performance in agricultural sector. Traditionally, the migration debate has paid great attention on the labor market effects of immigration flows in the host countries, focusing, first of all, on the possible mechanisms through immigration is able to impact on wages and employment levels in the host country's labor market (Aydemir and Borjas, 2007, Card, 2001; 2005, Ottaviano and Peri, 2008, Peri and Sparber, 2009). Accordingly, the seminal studies assumed that the labor factor can be considered as constituted by immigrant and native workers (Grossman, 1982) and these two types of workers are initially perfect substitutes. Recently, the migration literature has focused its attention on the existence of an internal distinction between the different job inputs made by immigrant workers and native workers, distinguishing between skilled and unskilled labor (Altonji and Card, 1991; Dustmann et al., 2005, Card 2001, Borjas, 2003; Aydemir and Borjas, 2007). These models stress the idea that the effects of immigration on the receiving countries depend on the level of substitutability / complementarity between native and immigrant workers, as well as on availability of human capital deriving from incoming migratory flows (Ortega 2008, Ortega and Peri 2009; Bellini, Ottaviano et

al., 2009). This circumstance tends to identify a degree of ambiguity in the literature, which is mostly due to two main topics: the different degree of substitutability between immigrants and natives in the labor market, in terms of different level of skills and, secondly, on the role of human capital. Moreover, a further strand of literature has paid great attention to the assimilation of immigrants within the host country in terms of convergence of incomes and employment levels (Chiswick, 1978; Carliner, 1980; Åslund and Rooth, 2007; Angrist and Kugler, 2003; Kerr, 2011). This assimilation is generally studied through a comparison within receiving labor market, looking at the employment and wage levels between immigrants and natives at two different point of times: at the time they enter in the host country and during of their permanence. Subsequently, some authors proposed alternative adjustment models, which take into account the mix of outputs or the degree of technology in production (Gaston and Nelson, 2000; Leamer and Levinsohn, 1995; Woodland, 1982; Ethier, 1984). The starting point of the analysis of immigration impact on growth, through technology adoption, is the presence of economies that produce different types of goods, which differ in terms of capital intensity and of a different use of skilled and unskilled labor. The key element, in these studies, relates to the level of flexibility in the output mix in the receiving country, which allow to modify the production structure adapting to the changed characteristics of the labor market. Subsequently, in order to investigate the overall effect that the immigration phenomenon is able to exert on the main dynamics in the receiving countries, we will analyze the impact of the presence of immigrant workers, in terms of culturally diversity workforce, on firm's performance, at firm-level. Previous studies have attempted to relate cultural workforce diversity to positive performances (Carr, 1993; Cox and Blake, 1991; Johnson, 1999) however they limit to consider the degree of cultural diversity within top management teams, neglecting to consider the effect of the degree of diversity of the entire workforce. Indeed, they have analyzed the effect of the cultural diversity of the top management teams, concluding that firms with more varied cultural backgrounds in their top management teams were more positively associated with positive returns and sales growth (Smith et al., 1994; Korn et al., 1992). Nevertheless, the effect of cultural workforce diversity has been mainly studied on other firm's outcomes than organizational performance. For example, past studies have shown that a cultural workforce diversity can increase turnover rates, internal conflicts and interpersonal communication issues (Sacco and Smith, 2003; McMillan et al., 2003; Kochan et al., 2003). Similar results have been reported when organizational workforce diversity specifically regards cultural aspects of workers, such as religion or traditions (Dwyer, Richard and Sheperd, 1998; O'Reilly et al., 1989; Pelled, 1996; Pelled et al., 1999; Thomas, 1993; Tsui et al., 1992). Finally, as previously said, according to official statistics which show that the immigrants workers tend to be mainly employed in the agricultural sector (Baldoni et al., 2017), we will analyze a little strand of literature that focuses on the relations

between the immigration flows and the agricultural sector. However, studies related to the effect of cultural workforce diversity on firm performance in agricultural sector remain poor and with contradicting results; moreover, some of these, have analyzed samples of farms too small to allow any generalization (Taylor and Martin, 1997; 2003; Devadoss and Luckstead 2008). In general terms, the literature tends to identify a positive relationship between the immigration phenomenon and the productivity of the agricultural sector (Bove and Elia, 2017; Klocker et al, 2018; Hanson and Bell, 2007; Kasimis et al, 2003; 2005; Labrianidis and Sykas, 2009; Gomez-Tello and Nicolini, 2017). In this overview we will proceed as follows: in Section 2 we focus on the macroeconomic effects of immigration on the receiving country, mostly focusing on the impact that the immigration flows are able to exert on the host country's labor market; Section 3 analyze the microeconomic effects of immigration on the receiving country, in particular, the impact of the presence of immigrant workers, in terms of culturally diversity workforce, on firm's performance, at firm-level. Finally, section 4 is devoted to the impact of immigration on firm's performance on the agricultural sector.

2. The effects of immigration flows on receiving country: a macroeconomic approach.

A large part of the literature has paid great attention to the impact that the flows of immigrants are able to exert on the main economic dynamics of the receiving country (Ortega, 2008, Ortega and Peri, 2009; Bellini, Ottaviano, Chiswick, 1978, 1988, Borjas 1985, 1998, Galor and Stark, 1994, Brezis and Krugman, 1993 Aydemir and Borjas, 2007, Card, 2001; 2005, Ottaviano and Peri, 2008, Peri and Sparber, 2009). Traditionally, this literature has focused on the impact that immigrants generate on the labor market (Aydemir and Borjas, 2007, Card, 2001; 2005, Ottaviano and Peri, 2008, Peri and Sparber, 2009); in more recent times, the debate has moved in the direction of analyzing the influence that the migratory phenomenon has on the economy of the host countries, through changes in the availability of human capital (Ortega 2008, Ortega and Peri 2009; Bellini, Octavian, Chiswick 1978, 1988, Borjas 1985, 1998, Galor and Stark, 1994, Brezis and Krugman 1993). However, studies related to the impact of migration flows on the receiving labor market show contradicting results. Historically the migration literature noted that the effect that immigrants are able to have on the host country economy depends on the level of substitutability / complementarity between native worker and immigrant, in terms of different levels of skills, highlighting the possibility of immigrant workers replacing the native ones. In general terms, as we will see later, when, in the receiving country's labor market, imperfect substitutability (complementarity) between native and immigrant workers is assumed, immigration increases the wages of the natives; while, if perfect substitutability between the two categories of workers is assumed, immigration reduces the wages of the natives.

Thus, in a context in which labor is considered heterogeneous, the key element in order to assess the effects of immigration on the labor market in the receiving country is the relative degree of substitutability / complementarity between immigrant worker and native worker, and consequently the circumstance that they have high or low levels of education. Subsequently, by analyzing the human capital channel, Dolado, Goria and Ichino (1994) elaborate a growth model in which the migrant inflow modifies the human capital accumulation of the country: the authors, distinguishing between different levels of immigrant skills, and find that when immigrants have a low level of human capital have an overall negative effect on the growth and on the income of the host country. Conversely, Ortega and Peri (2009) find that immigration is able to exert a positive effect on the growth rate of GDP, even if they have a low level of skill if the native have high level of human capital. From this point of view, therefore, literature tends to distinguish between different types of immigrant workers, characterized by different grades of specialization and different levels of education, including them as a part of an economic model, aimed at explaining the partial effects from different points of view: on the side of native workers, in terms of complementarity / substitutability; and the general effects, in terms of human capital and technology to be implemented (Gang and Rivera-Batiz, 1994; Borjas 1995, 1999; Ottaviano and Peri 2006; D´Amuri, Ottaviano and Peri , 2010; Bellini, Ottaviano, Chiswick, 1978; Card, 2009).

Therefore, in order to take into account the economic impact of immigration on the labor market in the host country, it is possible to identify two main arguments:

- The different degree of substitutability between immigrants and natives in the labor market;
- The role of human capital.

2.1.Substitutability and Complementarity

The starting point on the analysis of the effects that immigration exert on the labor market of receiving country is the idea that immigrant workers can be considered complementary or substitute for natives. The logic behind this assumption is that the unskilled immigrant worker can be considered complementary to the skilled worker, generally native, within the production process. So, given two inputs, these workers are considered substitutes if an increase in the supply of one input decreases the price of the other input, and complementary, if an increase of the supply of one input increases the price of the other input (Gang and Rivera-Batiz, 1994). This implies that immigrant workers can be considered substitutes for the native workers with a low level of education and complementary to the native workers with a high level of education (Carillo and Quintieri and Vinci, 1999).

In this sense, Borjas (2009) develops a model aimed to evaluate the effects that immigration has on wages according to substitutability/ complementarity. Starting from an economy in which only two goods are produced, one nationally and the other imported, with capital and labor in a CES production function, Borjas (2009) found that when immigrant and native workers are considered substitutes, immigration has a negative effect on national wages in the short and long-run; when, modifying the hypotheses of the model, Borjas considers the heterogeneity of the labor supply and a different degree of complementarity between native and immigrant worker, immigration has a negative effect on wages regarding to the group of workers who is most affected by an increase in labor supply due to immigration. This suggests the relevance of the skills owned by immigrants in order to understand the effects that the migratory flow is able to have on the host country labor market. However, in a well-functioning economy this mechanism does not causes necessarily a decrease of wages (Card, 2010). Numerous studies pointed out the relevance of distinction between flexible and non-flexible wages (Card, 2016) as well as the importance of context in which the labour can be considered homogeneous or heterogeneous (Ottaviano and Peri, 2008). Ottaviano and Peri (2008) found that that when we consider an imperfect substitutability between immigrant workers and native workers, the effect that immigration is able to have on the host country's labor market is positive. Card (2016) note that a more correct differentiation is that workers are considered as complementary rather than substitutes, since there are linguistic and learning constraints that make the immigrant worker more suitable for manual job, more easily acquired on the host country. Therefore, the substitute / complementary distinction determines considerable changes in the effects that immigration is able to have on the host country's labor market. Along this line, D'Amuri, Ottaviano and Peri (2010) reach the same findings. Therefore, it is possible to identify two different strands in the literature: on the one hand, authors who stress the existence of a negative relationship between immigration and characteristics of the local labor market: here, immigrant and native workers are highly substitutes and immigration has a negative impact on the local labor market (Borjas, 2003; Borjas, Grogger and Hanson 2008; Aydemir and Borjas, 2007). Converserly, authors who highlight the existence of a positive relationship between immigration and the labor market of the host country: immigrant and native workers are considered complementary (Ottaviano and Peri, 2006, 2008; Peri and Sparber, 2009; D'Amuri, Ottaviano and Peri, 2010). In line with these assumptions, Dustmann et al. (2008), Friedberg and Hunt (1995) note that in presence of huge flows of immigrant workers the wages of the natives decreased slightly. In particular, the authors show that an increase in the workforce of around 10% seems to reduce the wages of natives by a share of around 1%. More recent studies reach comparable results (Longhi et al. 2005, 2008 and Okkerse, 2008). Similar trends can also be found in case of sudden and large incoming flows: Card's study on the boatlift Mariel (2009), Hunt's study

(1992) on the incoming flow of Algerians in France, Friedberg's study (2001) on Jewish immigration to Israel. In these researches, the impact on wages is very slow, even when the increases in the available workforce are up to + 10%. The European experience seems to agree these findings, despite different paths for different countries: Gavosto, Venturini and Villosio (1999) for Italy, Haisken-De New and Zimmerman (1999) for Germany, Dolado, Jimeno and Duce (1996) for Spain, Winter-Ebner and Zweimuller (1996) for Austria, Carrigton and De Lima (1996) for Portugal. Along this line, DeNew and Zimmermann (1999) show that the presence of immigrant workers in Germany, if at first implies a decrease in the wages of unskilled (substitute) workers, subsequently, it leads to an increase in the wages of skilled (complementary) workers. In the same direction, Brücker and Jahn (2010) show that an increase in the immigrant workforce in Germany, in the early 1990s, led to a decrease in the wages of native workers comparable to estimates of the US experience; D'Amuri et al. (2010) find that no effect can be found in the wages of the natives: the greater supply of immigrant workforce seems to impact only on the wages of the immigrant workers. In the mainstream migration literature, the effects of immigration on the receiving labor market are also analyzing by considering the impact on the employment levels of native workers in the receiving country (Zimmermann, 1994; Bauer and Zimmermann, 1999; Brücker and Jahn, 2010; Borjas, 2003, 2009; Angrist and Kugler, 2003). Zimmermann (1994) shows that it is not possible to find considerable evidence of the presence of negative effects of immigrant flows on employment. Also, Bauer and Zimmermann (1999) show that an increase in the share of immigrant workforce in Europe to about 1% determines an increase in unemployment of just 0.2; in the same direction, Brücker and Jahn (2010) found that 1% increase in the labor supply in the host country leads to an increase in unemployment of less than 1%. Conversely, Borjas (2003, 2009) underlines the existence of important depressive effects on the employment levels of the native worker as a consequence of the increase in the labor supply, due to immigration flows. However, these negative effects tend to occur more in Europe than in US (Angrist and Kugler 2003). Angrist and Kugler (2003) suggest that this effect is due to the persistence of linguistic differences between the immigrant and native worker, which are able to determine a different degree of substitutability between the immigrant workers and the native workers, that represents a relevant constraint able to generate differences in the employment levels in the labor market.Generally, the migration phenomenon is not able to exert important depressive effects on the labor market in receiving country; negative effects, where present, tend to be small and mostly limited to employment areas where immigrant and native workers tend to be substitutes (Okkerse, 2008). Again, the point is that the limited substitutability between immigrant and native workers may guarantee a protection from the depressive effects deriving from a large flow of immigrant workforce on the employment and wage levels in the native labor market. Based on this reasoning, Peri and Sparber (2009) elaborate

a model in which immigrant and native workers with low levels of education do not compete in the local labor market. The basic idea is that immigrants and natives are more likely to perform different tasks. This differentiation is based on the principle of comparative advantage, according to which immigrants are generally carriers of specific skills. So, Peri and Sparber (2009) note that the existence of comparative advantage in different production-tasks leads to a change in firm specialization, increasing the overall productivity. Therefore, given the large supply of immigrant workforce, the host country will tend to specialize in the production activity in which the employment of immigrants is greater (in general manual activities) and the related wages will gradually decrease. According to this, immigration is able to influence the economic performance of the receiving country through an increase of labor productivity due to a change in production specialization. As suggested by Peri and Sparber (2009), the reason of this findings must be found in the high transferability of manual tasks, which are less subject to linguistic constraints. Thus, in presence of immigrant workers, even with different educational levels, they will modify the relative supply within the reference group, generating a depressive effect on wages with regard to manual activities (for unskilled workers) and in relation to mathematical-analytical activities (for skilled workers) (Peri and Sparber, 2009). The central point of this analysis is the different degree of complementarity between two categories of workers. Along this line, Ferrar, Green and Riddel (2006) find that immigrants with lower communication skills cannot compete for the same job positions as natives (i.e. managerial ones), leading to what has been defined in the literature as "*skills downgrading*" (Dustmann, Frattini and Preston, 2008). Finally, the migration debate has paid great attention to the absence of no crowding-out effect on the labor market in the host country in a perfectly segmented labor market (Daveri and Venturini, 1993). The basic idea is that in presence of a perfectly segmented labor market, immigrant workers tend to find employment in those activities refused or no longer carried out by natives: this ensures that no crowding-out effects occur and wages will remain unchanged. Furthermore, an increase in unskilled immigrant workforce will lead to an improvement in complementary inputs, i.e. capital and highly qualified workforce (Carillo, Quintieri and Vinci, 1999).

2.2. The role of human capital

In recent years, the debate on immigration enriched with a new component. A large strand of the literature has paid great attention to the effect that the immigration is able to have on the main economic dynamics of the host country (Ortega 2008, Ortega and Peri 2009; Bellini, Ottaviano, Pinelli and Prarolo 2009). The basic idea is that immigration involves an immediate and huge injection of workforce into the economy of the receiving country, influencing the quantity and quality of human capital available.

From a theoretical perspective, the effect that the immigration phenomenon is able to exert can be analysed from two different points of view:

- Through a modification of traditional growth models;
- Through the "accounting approach".

The first approach, starting from a modification of the Solow-Swan growth model, considers two distinct situations: the hypothesis in which the immigrant has low or zero levels of human capital: in this case, an increase of population due to higher inflows leads to low growth rates of GDP per capita, given the dilution of physical capital; conversely, in the hypothesis in which the immigrant is carrier of high levels of human capital (e.g. high-skilled) (Benhabib 1996) the impact on growth in the host country could be positive, due to a balancing in the dilution of physical capital. The second approach consists in estimating the effects that immigration has on the GDP per capita, looking at the effect that the phenomenon has on each component, modifying, for example, the TFP through an improvement in the efficiency of the production process (given the hypothesis of complementarity between immigrant and native workers) (Ortega and Peri 2009).In order to take into account the economic impact of immigration flows, via human capital, migration literature analysed five areas of interests (Carillo, Quintieri e Vinci, 1999). So, the immigration is able to impact on human capital through:

- Assimilation process: the permanence of the immigrant on host country leads to processes of knowledge acquisition, that in the long run, is able to stimulate the assimilation of human capital (Borjas 1985; Chiswick, 1978; Friedberg, 1996; Lalonde and Topel, 1991). When immigrant arrives in the host country, he brings a fixed set of skills. Subsequently, immigrant tend to gradually adapt these skills to the host country labor market, ensuring an increase in his human capital level;
- Human capital accumulation processes in the host country (Chiswick, 1988; Galor and Stark, 1994). The basic idea is that immigrants can contribute to the accumulation of human capital in the receiving country, through the influence that they are able to exert on the level of knowledge of the native worker. Chiswick (1988) notes that the different degree of substitutability / complementarity between immigrant and native workers implies that immigration generates different effects on human capital accumulation of native workers. He also suggests that, when occupational mobility is allowed, immigration generates higher levels of earnings for native workers and, in tur, a rise in the stock of human capital. Conversely, Galor and Stark (1994) note that

the immigration flows are able to modify the accumulation levels of human capital in the host country only when the average level of human capital of immigrants differs considerably from that of the populations in the receiving country. So, the greater the human capital which immigrant workers are carriers, the more the economy of the receiving country will converge to a steady-state characterized by a higher level of human capital.

- The "brain-drain" effect: that is the positively impact of high-skilled immigrant workers on the economy of the receiving countries (Harque and Kim, 1995; Carrington and Detragiache, 1998). The basic idea is that, since generally the immigrants tends to be the best skilled individual in his country (Carrington and Detragiache 1998), in the long run the immigration of human capital can lead to important differences in growth rates in the country of departure and in the host country, as result of a decrease in outgoing human capital and an increase in incoming human capital.
- Changes in the levels of investment in physical capital and in its sectoral allocation (Brezis and Krugman, 1993; Burda and Wyplosz, 1992).
- The effects on the growth rate (Barro and Sala-i-Martin, 1992; Dolado et al., 1994; Carillo e Vinci, 1999).

2.3.The immigrants' assimilation process.

Some authors have investigated the immigrants' assimilation process in the host country, in terms of convergence of incomes and employment levels (Chiswick, 1978; Carliner, 1980; Åslund and Rooth, 2007; Angrist and Kugler, 2003; Kerr, 2011). This assimilation is generally studied through a comparison within receiving labor market, looking at the employment and wage levels between immigrants and natives at two different point of times: at the time they enter in host country and during of their permanence.

In this regard, Chiswick (1978) and Carliner (1980) note that the time horizon of assimilation can be identified in about 15 years, also providing a theoretical overcoming in about 30 years, coeteris paribus. However, recent studies reversed these findings (Bell 1997, Grant 1999), focusing on the role played by the change in the composition of the immigration flows (Borjas, 1985; Yuengert, 1994; Chiswick, 1986; LaLonde and Topel, 1991; Card, 2005; Lubotsky, 2007; Baker and Benjamin, 1994). Indeed, the hypothetical change in the composition of immigration flows is able to lead to important changes in the immigrants' assimilation process, distancing the possibility of convergence over time.

A key factor for determining the non-convergence of immigrant workers' incomes over time with respect to native workers concerns the fact that these flows seem to be characterized by immigrants with lower levels of education and skills (Borjas, 1985, 1995, 199; Yuengert 1999). Similar results seem to be found also regard to European immigration (Bell, 1997; Grant, 1999; Edin et al, 2000; Constant and Massey 2003; Dustmann and Fabbri, 2003; Dustmann, 1994; Dustmann and van Soest, 2002). With regard to the causes under the wage adjustment between immigrants and natives, a large strand of literature points out the relevance of linguistic and educational component as main elements of this convergence (Chiswick 1991; Borjas, 1994, Dustmann and Fabbri, 2003; Dustmann, 1994; Dustmann and van Soest, 2002). If the migration literature has repeatedly stressed the importance of linguistic improvements of the immigrant during his stay on the host country or the importance of creating relationships (Chiswick, 1991; Borjas, 1994; Dustmann and Fabbri, 2003; Dustmann, 1994; Dustmann and van Soest, 2002), little importance has been attached to the hypothesis that convergence depends on the economic conditions of the host country in the historical moment of immigration. Åslund and Rooth (2007) show that the immigrant workers during the recession of the 90s tend to have lower wage levels, even after 7 years from the entry. According to the authors, the reason must be found in the precarious economic conditions in which the country (Sweden) was at the time of the arrival of the immigrants, which seems to negatively influence future wages over time, not only of the immigrant worker but also of the native worker. However, similar studies conducted in the United States and Canada do not confirm these findings (Nakamura, 1994; Chiswick et al., 1997; McDonald and Worswick, 1998; Chiswick and Miller, 2005). In the same direction, regarding to the assimilation process of employment levels between immigrant and native workers, the basic idea is that there are some forms of convergence of the employment levels of the immigrant worker with respect to the native worker due to an increase in the length of stay of the immigrant in the receiving country. Angrist and Kugler (2003) shows that immigrant workers tend to have lower employment rates than native ones. However, this study shows a convergence over time: the differentials tend to be greater for more recent cohorts, progressively decreasing for older cohorts. According to Angrist and Kugler (2003), these trends reflect a deterioration in the quality of immigrant flows compared to the older cohorts, and also a better level of linguistic and cultural adaptation over time. Angrist and Kugler (2003) also note that a relevant portion of immigrants today is made up of asylum seekers. This circumstance lowers the employment rate of the immigrants on the receiving country. Furthermore, Borjas (1995) points out the persistence of permanent gaps over time and consequently the absence of convergence. According to the author, the reason of these findings must be found in the persistence of linguistic and cultural gaps, as well as in a progressive worsening of the quality of the most recent cohorts of incoming migrants. Finally, a strand of literature

identifies in the origin country of immigrants the key factor of a possible convergence in the labor market in the host country (Arai, Regner and Schröder, 2000; Sarvimaki, 2010; Chiswick, Cohen and Zach, 1997). This is particularly true in the case of the European experience (Nekby, 2002; Edin and Åslund, 2001). Nekby (2002) shows an absence of convergence in the employment levels of immigrants and native, however, when the immigrant worker comes from neighboring (Nordic) countries, employment levels tend to converge. According to the author, the reason for this must be found not only in persistent differences on the supply-side: the higher level of education, typical of immigrants from other Nordic countries, as well as the greater linguistic competence, but also in important differences on the demand-side: forms of discrimination by the employer, accentuated by the presence of asymmetric-information that encourage risk-adverse behaviors by employers.

2.4.The effects on the growth rate

The starting point, in order to understand the role that the immigration flows are able to have in the growth process through a modification of human capital, can be found in a modification of the traditional Solow-Swan growth model by Mankiw, Romer and Weil (1992). The authors consider two distinct hypotheses:

1. Immigrants have no human capital;

2. Immigrants have different degrees of human capital.

In the first hypothesis, Mankiw, Romer and Weil (1992) show that immigration reduces income per capita, through the dilution of physical capital. Considering immigration as an event that exogenously increases the population (increasing n in the equation), it generates a negative effect on the GDP growth per capita, since this mechanism generates a modification of the right-part of Solow-Swan equation. In this perspective, the authors consider immigrant worker and native worker as perfect substitutes in the production. The second hypothesis considers immigrants as having different degrees of human capital. According to Mankiw, Romer and Weil (1992) the key factor for determining the effects that immigration is able to exert on the main economic dynamics of the receiving country consists in identifying the threshold level of human capital of which the immigrant is a carrier: if the immigrant has a low level of human capital, immigration will tend to have a negative impact on the growth of the receiving country, due to a dilution of the physical capital: the level of output in steady-state is reduced due to the increase in population, given large immigration flows; if immigrant, on the other hand, is carrier of high level of human capital (compared to the

native), the impact of immigration could be positive (Mankiw, Romer and Weil, 1992; Dolado, Goria and Ichino, 1994; Benhabib , 1996; Friedberg and Hunt, 1995). In the same direction Dolado, Goria and Ichino (1994). The authors, starting from a modification of the work of Mankiw, Romer and Weil (1992), elaborate a model in which immigrants are considered as a workforce able to influence the accumulation of human capital and the rate of population growth. Therefore, given a production function with only three production factors: labor, physical capital and human capital, characterized by constant returns to scale, immigration is part of the model as an element able to modify the accumulation of human capital and to affect the population growth rate. Dolado, Goria and Ichino (1994) reach the same conclusion as Mankiw, Romer and Weil (1992): in presence of immigrants with low or zero levels of human capital, immigration has a negative effect on the output and growth of the receiving country; conversely, in presence of immigrants with high levels of human capital, immigration has a positive effect on output and on growth rate of income in the host country. In general terms, Dolado, Goria and Ichino (1994) show that the overall effect that immigration is able to exert depends on the share of human capital held by immigrants compared to the share held by natives. So, the effect will be positive if the average human capital owned by immigrants is greater than the average human capital owned by natives. In this perspective, the authors consider immigrant worker and native worker as perfect substitutes in the production. Conversely, Barro e Sala-I- Martin (1992) show that immigration has a negligible effect on the income growth per capita. Probably, the reason for this different result must be found in the choice of Barro and Sala-I-Martin (1992) not to take into account the immigrant human capital, as element able to explains the positive effect of immigration on the main growth dynamics in the receiving countries (Carillo, Quintieri e Vinci 1999). Empirically, diversity is generally measured by ethno-linguistic fractionalization (Easterly and Levine, 1997; Alesina et al., 2003; Fearon and Laitin, 2003) or through ethno-linguistic polarization indices (Esteban and Ray, 1994; Reynal-Querol, 2002). The traditional ethno-linguistic fractionalization index measures the probability that two randomly individuals come from the population belong of two different groups (Alesina et al., 2002). If ethno-linguistic fractionalization index assumes value equal to 1 when each person belongs to a different group; conversely, the ethno-linguistic polarization index assumes value equal to 1 when each person belongs to the same group. In general terms, at macro level, the use of ethno-linguistic fractionalization index is associated to negative outcomes in terms of economic growth (Easterly and Levine, 1997), quality of government (Alesina and La Ferrara, 2005; Fearon and Laitin, 2003), presence of democratic institutions (Collier, 1991, 2001) or social activities and trust (Putnam, 1995; Alesina and La Ferrara, 2005). The reason is that ethno-linguistic fractionalization index is generally correlated with variables of interest and tends to lead to different results when he is used

to test growth or economics dynamics (Alesina et al., 2002). So, since it seems to closely correlate with GDP per capita and geographic variables, as latitude. The ethno-linguistic fractionalization is greater in poorer countries, which are closer to the equator (Easterly and Levine, 1997). Based on this reasoning, Alesina et al. (2013) elaborate an intrapopulation diversity's index based on people' s birthplaces, according to which people born in different countries are likely to have been educated in different systems, have been exposed to different life experiences, developing different skills and abilities. Alesina et al (2013) note that the traditional ethno-linguistic fractionalization index and the birthplace index tend to lead to different results, since they are completely uncorrelated. The authors find that an arise of immigration flows (measured by birthplace's index) is positively correlated to economic growth measures in the receiving country.

2.5.The "Accounting Approach"

Consists in estimating the effects that immigration is able to have on GDP per capita, looking at the effect that the phenomenon has on each component, through a modification of TFP, due to an improvement in the efficiency of the production process, given the hypothesis of complementarity between immigrant and native workers (Ortega and Peri 2009); also, affecting the accumulation of physical capital through a modification of the capital-labor ratio, in the short-run. Ortega and Peri (2009) note that an increase of immigration flows could lead to an increase in the employment rate, an increase in the accumulation of physical capital, while no effect would have on TFP growth, in the host country. Along this line, Ortega (2008), Felbermayr, Hiller e Sala (2010), Sparber (2010). In general terms, these studies attribute to the immigrant human capital and to the population growth, due to larger incoming flows, the power to affect the GDP rate growth per capita, according to the modalities that we have seen in the previous paragraph. However, in the accounting approach the central point is that it estimates the effect that immigration has on each component of the GDP per capita, after calculating the derivative of the logarithm of the GDP per capita, once the production function has been specified.

2.6.The effects on Aggregate Productivity

Another strand of literature has paid great attention to the impact that immigration flows is able to exert on the levels of investment in physical capital and in its sectoral allocation (Brezis and Krugman, 1993; Burda and Wyplosz, 1992). The starting point of this field of studies is the internal distinction between the different job inputs owned by immigrant and native workers, distinguishing between low-skilled and high-skilled workers (Altonji and Card, 1991; Dustmann et al., 2005, Card

2001, Borjas, 2003; Aydemir and Borjas, 2007). The basic idea is that if the flows of immigrants differ considerably in terms of human capital from native workers, this new flow of incoming workers will induce a change in the overall composition of the skill stock in the labor market in the receiving country. Therefore, if immigrants have low or zero education levels, this condition will lead to a displacement between the labor supply and the minimization of the costs of labor demand, for different types of work, given the existing wage and output levels. This circumstance is able to induce an excess of supply of unskilled workers, at the current wage rate. As suggested by Dustmann, Glitz, Frattini (2008), this mechanism will bring about changes in wages and employment levels for different types of skills. Therefore, the central point of the analysis is that immigration will affect the wage levels of native workers in the receiving country if the distribution of skills of immigrant workers differs considerably from the native workforce. If the distribution of skills between immigrant and native workers tends to equalize, Dustmann et al. (2008) note that the labor supply is completely elastic, therefore the immigration will lead to an increase in the size of the economy of the receiving country, through an increase of output, without effects on the wages and employment levels of native workers. Some authors proposed alternative adjustment models that take into account the mix of outputs or the degree of technology (Gaston and Nelson, 2000; Leamer and Levinsohn, 1995; Woodland, 1982; Ethier, 1984). These models show that in presence of economies that produce different types of goods, which differ in terms of capital intensity and in terms of a different use of skilled and unskilled labor, the excess of unskilled labor supply, as a result of larger incoming migratory flows, at first, will lead to a reduction in the wage levels of unskilled native workers, and also will lead to a decrease of unit cost of production, with regard to the sector that employs a greater share of unskilled labor. So, given the hypothesis of fixed-cost, this mechanism will lead to an increase of profit in the sector that employs unskilled workforce, compared to the sector that employs skilled workers. In a perfectly competitive market, the higher profit will induce the firms to enter in this market, expanding the demand for unskilled workers. As suggest by Dustmann et al., (2008) this will lead to an increase in the wages of unskilled workers. Therefore, if, in the short run, the effect of immigration in the receiving country could be to lower the wages of native workers with low levels of education, given the hypothesis of perfect substitutability between native worker and immigrant; in the long run, these wages could rise again, returning to a condition of initial equilibrium, pre- immigration (Gaston and Nelson, 2000). So, the key element in this analysis relates to the level of flexibility in the output mix, in the economy of the receiving country, which should allow the firms to modify their production structure adapting to the changed characteristics of the labor market. However, it is necessary that there are more exchanged goods in the economy than production factors (Leamer and Levinsohn,

1995).Immigration is able to impact on the main economic dynamics of the receiving country also through technology. The basic idea refers to a presence of differentiated production of goods in the receiving country, characterized by different technological levels and by a different use of skilled and unskilled workforce; firms also freely vary the technology implemented in order to produce the same quantity of output. The starting hypothesis, once again, refers to an increase in the supply of unskilled labor as a result of large incoming migration flows. Given this change in the labor supply, firms can choose the technology to implement in order to absorb this excess of unskilled labor, due to immigration. Dustmann et al. (2008) show that the change in the technological structure implemented by the firm will allow the economy of the receiving country to absorb the excess of unskilled workers, without causing significant changes in the wage levels or in the productive structure of the receiving country. Recently, a strand of literature has shown that in contexts characterized by large incoming migratory flows of high-skilled workers, the presence of an excess of high-skilled labor supply led to a greater and faster implementation of some specific technologies, e.g. the use of computers or automation in production (Lewis, 2005, Beaudry et al., 2006; Doms and Lewis, 2006). Based on this reasoning, some studies estimate the relationship between the share of human capital, deriving from immigration flows, and the firm investments in physical capital (Brezis and Krugman, 1993; Burda and Wyplosz, 1992). Brezis and Krugman (1993), starting from the hypothesis of increasing returns at the level of the economy as a whole, affirm that an exogenous increase in the supply of labor due to larger incoming migratory flows, in the short-run, generates a negative impact on the real wages; in the long-run, the effect on wages and on the level of investments is positive. This trend will lead to a change in the capital-labor ratio, and if interest rates are assumed to be the same globally, this will lead to a further increase in wages. The authors also show that immigration, leading to an increase in the available workforce in the receiving country, generates an upward sloping aggregate labor demand curve and an increase of investments in physical capital. In the same direction, Burda and Wyplosz, (1992) find that, in the presence of large immigration flows, the economy of the receiving country could reach levels of accumulation of human and physical capital higher than the socially optimal level. This circumstance is able to amplify the productivity and growth gap between host and home countries. In general terms, the literature on the effects that immigration is able to exert on productivity in the receiving country is rather controversial. On the one hand, Peri et al. (2015), Albarràn et al. (2017) show evidence of a positive effect of high-skilled immigrant workers on the TFP of the receiving country in the United States; conversely, Rye et al. (2010) find that immigration phenomenon is one of the main factors able to negatively impact on the productivity of the receiving country, representing a relevant source of unfair competition, especially in case of unskilled irregular immigrant workers (Edwards and

Ortega, 2017). Brunello et al., (2017), Stark et al., (2017) show that, when immigrant and native workers are complementary in production, immigration induce an increase in the productivity of the sectors that employ high-skilled workers (generally natives) and, in turns, generates an increase in their incomes, as a result of a modification, in the long run, of the native's tendency to acquire more skills in order to distinguish himself from the immigrant worker: returns to education increase and wages also increase. In the same direction, Hunt (2012) shows that, in relation to some US school districts characterized by large inflows of immigrants, natives in the long run tend to develop opposing practices compared to immigrants. So, Hunt (2012) note that American children increase school attendance, tend to complete higher degrees of education, or choose different study areas. In the long run, this mechanism has a positive effect on the productivity of firms located in those districts. Similar adjustment methods characterize firms. Some studies show that firms are likely to change their technology in response to a change in the labor supply (Accenturo et al. 2012; Bettin et al. 2012; Arcangelis et al. 2015, Lalonde and Topel 1997; Devadoss and Luckstead 2008; Clemens, 2013).

3. The effects of Immigrants on the receiving country: a microeconomic approach

3.1. Workforce diversity and firm's performance

Another field of recent research regards the effect of immigration, in terms of cultural workforce diversity, on performance at firm-level. These studies focused on human resource practices, strategical decision-making processes, managerial characteristics and cultural aspects of workers, as elements favoring the management of workforce diversity within firms. Regarding to the impact of the workforce diversity on firm performance, the main literature suggests that having a culturally diverse workforce within firm implies both advantages and disadvantages (Trandis et al., 1994; Milliken and Martins, 1996). Consistent with most academic research, workforce diversity is broadly defined as any attribute that people use to define themselves, identified by specific surface-level characteristics (Trandis et al., 1994; Gudmundson and Hartenian, 2000). Therefore, cultural workforce diversity implies the presence of a variety of people in terms of different characteristics or observable attributes such as a race, nationality, gender, age or education (Cox, 1994; Harrison et al., 1998; Milliken and Martins, 1996; Kossek and Zonia, 1993; Richard, 2000). Milliken and Martins (1996) also defined diversity as a variety of point of view respect in which things differ (Cox, 1994; Harrison et al., 1998; Kossek and Zonia, 1993; Richard, 2000). Cox (1994) use the diversity concept to refer to people with different group affiliations of cultural significance, in one system (Richard, 2000). Along this line, Accenturo et al. (2012) attempts to estimate the impact that the immigration phenomenon is able to exert on

productivity at firm-level. Analyzing a sample of Italian manufacturing firms, the authors find that the supply of unskilled workforce, due to larger incoming migratory flows, implies a change in the technological choice of the firms: the rate of investment in machinery increases and this relationship seems to be more significant in presence of smaller and technologically less advanced firms. In the same direction Bettin et al. (2012) find that a sudden and huge increase in the availability of unskilled labor induces a change in the production process of the Italian firms, which are more likely to deviate towards firms and sectors of production with low skills content and implement technologies with a lower technological content. About this, Acemoglu (2002) states that a change in the availability of workers, characterized by different level of education or specific skills, could lead companies to substantially change their technological choice, in order to take advantage of the huge availability of labor force. Acemoglu's position is suitable for the migration phenomenon. Lewis (2011) note that, given a greater labor supply specialized in manual activities (typically Mexican immigrants), firms tend to show a greater inclination towards production with a lower technological skills; indeed, the presence of immigrant workforce with low or zero education levels leads to an increase in the supply of unskilled workers on the labor market of the receiving country; this could lead firms to deviate to low-skill production sectors or to implement technologies with a lower technological content in order to exploit the excess of low-cost labor, for example, through a greater investments in machinery. Lewis (2011) also show that these adjustments are able to mitigate any negative effects on wages, increasing the productivity of the abundant factor and, in turn, the degree of efficiency of this sector. In the long run, this mechanism is able to lead to an overall increase in the average wages of immigrant and native workers. As previously seen, regarding to the impact of cultural workforce diversity on firm's performance, the main literature suggests that having a culturally diverse workforce within firms implies both advantages and disadvantages (Trandis et al., 1994; Milliken and Martins, 1996). Accordingly, Cox and Blake (1991) focus on six areas where the management of cultural workforce diversity is able to create conflicting effects: 1) costs, 2) resource acquisition, 3) marketing, 4) creativity, 5) problem-solving, 6) organizational flexibility. In particular, Cox and Blake found that more culturally diverse workforce has a positive impact on the quality of decision making: the presence of different points of view may improve the quality of decisions and the problem-solving process within firms (McGrath, 1984; Watson et al., 1993; McLeod and Lobel, 1996). They also assert that an increase in cultural workforce diversity is likely to expand the level of ideas available, create a marketplace of different perspectives, promoting creativity and innovation (Kanter, 1983; Bantel and Jackson, 1989, Cox and Blake, 1991; Nemeth, 1985). Along this line, other studies also show that the presence of multicultural environment within firms lead to greater openness to diversity, making the system more fluid and more able to react to environmental changes (Naomi et al., 1982; Lambert, 1977).

Furthermore, another potential benefit is that attracting employees from different cultural groups may increase the probability of hiring higher skilled workers, improving the capacity of firm to compete (Behibo, 1997). Finally, scholars pointed out that firms with a culturally diverse workforce may have a better sensitivity to other cultures, better understanding of buying decisions of minority culture in order to reflect the target market that they are attempting to reach. This implies that firms with a more cultural diversification of employees may develop a good reputation in terms of favorability and have greater success in the global marketplace (Redding, 1998, Morrison, 1992). However, the study of Pelled et al. (1999) also suggests that the presence of a culturally diverse workforce may increase the integration costs of workers within organization. Other studies limit to consider the cultural diversity within top management teams, focusing on the characteristics of business leaders and entrepreneurs and on managerial factors, that are necessary for the organizational success (Brush and Chaganti; 1998; Cooper et al., 1994; Greene et al., 2001; Manolova et al., 2002). Along this line, Salomon and Shark (2003) showed that cultural diversity in senior management team tends to lead to positive financial performance. Scholars such as Siciliano (1996) have also argued that higher levels of corporate social performance are associated to greater diversity with the management team. In other words, these studies report that firms with higher level of cultural diversity in their top management teams are associated with more positive financial and business performances. Most of the existing research in the cultural workforce diversity focuses on human resource practices, strategical decision-making processes, managerial characteristics and cultural aspects of workers, as elements favoring the management of cultural workforce diversity within the firm. Some studies found a positive impact of cultural (racial) diverse workforce on organizational performance of firms, in terms of organizational goals, programs and responses (Johnson, 1999). Furthermore, Richard (2000) found a positive relationship between cultural (racial) diversity of workforce, business strategy and financial performance in the banking industry, in terms of added insight and more sensitivity of minority culture within firms, but only when organizations are pursuing a growth strategy. Richard (2000) also found a negative relationship between racial diversity and financial performance when the firms are pursuing a downsizing strategy. In this case, firms follow a diversity management strategy that promote efficiency and cost containment. In general terms, firms with a culturally heterogenous workforce tend to be more creative, more cooperative, more flexible and more open to diversity, since they create value that it is rare and difficult to emulate. However, as explained above, the presence of a culturally diverse workforce within firms generates both advantages and disadvantages. Some studies conclude that more homogeneous groups within firms perform better than heterogeneous groups: having a culturally diversified workforce does not necessarily produce benefits on firms' performances (e.g.Thomas, 1999). Other studies have found that the presence of more heterogeneous individuals within firms increase a cost of managing cultural

diversity (Bergmann and Krause, 1968; Schwartz, 1989; Cox and Nkomo, 1991; Trost,1990); since, when culturally diverse workers are hired, the organization is faced with integration and communication problems, such as misunderstanding or coordination costs (Larkey, 1996). Cultural diversity may also hinder the effectiveness of decision making, since it may increase stereotyping, interpersonal conflicts, turnover and absenteeism (Jehn et al, 2000; Pelled, 1996; Tsui et al, 1992). Consequently, these processes are able to interfere with the efficiency and performances of firms (Milliken and Martins, 1996). Based on this reasoning, decision quality within organization seems to be better when neither excessive diversity nor homogeneity is present (Shepard, 1964). In general, even if the decisions making process tend to be better when the cultural heterogeneity inside firms increases, evidence of positive effects only occurs after lagged periods, suggesting a sort of stickiness in the transmission mechanism of the cultural diversity to firm's performance. (Milleken and Martins, 1996; Motwani et al., 1993; Watson et al., 1993). Williams and O'Really (1998) noted that these findings tend to emerge over time: the positive effects of culturally diversity on firm performance tend to emerge slowly; the firms need time to adjust its strategy to diversity goals. Among studies analyzing the effects of immigrants on firms' performance are Hjort, (2014), Trax, et al. (2015) Brunow et al. (2015). Also, these papers consider the effects of immigrants on firms' performance, by focusing on the effects of cultural diversity derived from immigrant workers on firms' performance. They reach similar conclusions of the above strand of literature since they stress that in particular in case of "birthplace diversity", the non-linearity of cultural diversity effect is more likely, since the positive effects due to cultural heterogeneity and skill complementarities could be larger, but also the costs derived from communication and integration of immigrants are higher (Trax et al. 2012). In such cases, the net results will depend on some organizational characteristics that may reduce or enhance the positive effects deriving from the cultural diversity and skill complementarities. Trax et al. 2015, find that a larger size of foreign workers enhances the worker productivity at regional level. Hjort (2014), analyzing productivity in a flower production in Kenya, shows that the presence of ethnic diversity, able to lead to discrimination between the different groups, negatively impacts on firm's productivity. Also, Alesina et al., (2016), in order to elaborate an intrapopulation diversity index more feasible than the traditional ethno-linguistic fractionalization index, create and adopt the concept of birthplace diversity, according to which workers born and trained in different countries may provide to firm cultural heterogeneity and different skills (Alesina et al. 2016). Brunow et al., (2015) find that the birthplace diversity positively impacts on firm performance in Germany, especially in manufacturing and high-tech industries at regional level, also highlighting the positive role of skill complementarities and regional spillover effects.

3.2.Workforce diversity and firm's innovation.

Workers diversity caused by immigrants may affect firms' performance also through the innovation activity, even if at this regard the literature does not reach univocal results (Ozgen et al., 2013; Parrotta et al., 2014). In general terms, there are several channels through immigration is able to impact on firm's innovativeness. Some studies tend to attribute to immigrant characteristics such as entrepreneurship, youthfulness and creativity, which have positive impact on innovation. The argument put forward is that people from different backgrounds possess diverse perspectives, valuable ideas, enhancing creative solutions and thus stimulate innovations within firms (Watson et al., 1993; Hong and Page, 2001; 2004; Osborne, 2000). Additionally, Ozgen et al., (2013) note that, if innovation in the host country is constrained by scarcity of high-skilled workers, the immigration flows can lead to an increase of innovation rate in the receiving country. Parrotta et al. 2014, by running an empirical analysis on innovation performance of firms in Denmark, find that the size of immigrant workers facilitates the patenting activity of firms. Ozgen et al (2013) analyze the firm tendency of innovation in Netherlands and find that the workforce diversity, in terms of birthplace diversity, has a positive impact on innovation process, increasing the likelihood to innovate. Gurin et al. (2014) show that the group diversity might widen the horizon of workforce, increasing the problem-solving capacity of firms. Along this line, Alesina and La Ferrara (2005) note that the diversity within firms facilitates the flexible problem-solving implementation. However, the presence of culturally diverse workforce within firms can lead to potentially adverse effects on economic performance. Heterogeneity can create communication barriers and enhances conflicts among workers (Lazear, 1999). Also, diversity might cause misunderstanding in the workplace, negatively impacting on firm's performance (Lazear, 2000; Basset-Jones, 2005). Parrotta et al., (2014) argue that the presence of culturally diverse workforce within firms, creating misunderstanding problems, is able to generate uncooperative behaviors, that negatively impacts on the probability to innovate of firms. Based on this reasoning, Ozgen et al., (2013) note that these kinds of criticality are more likely to impact on firm's innovation, since that this activity usually involves interactions among workers. Di Tomaso et al., (2007) refer to "diversity dilemma" in order to explain the ambiguous effect deriving to implement a diversity approach within firms: if innovation is more likely in the heterogeneous groups, the communication decreases with increasing diversity.

In the end, there is no general agreement in literature on the direction of the effect of diversity on firm's innovation. The literature offers no clear findings regarding the effects that a presence of culturally diverse workforce is able to have on firm's innovativeness.

3.3. Workforce diversity and firm's performance: the role of human resources strategy.

As we have seen above, the effect of birthplace diversity caused by the presence of immigrants is not linear, when there is a low level of diversity, a further increase in it has positive effects on firm's performance, when there is too much diversity, it may have detrimental effects. However, the sing of birthplace diversity depends not only on its level, but also on some organizational characteristics of firms and on the chosen strategy in manage human resources. In order to better capture the benefits of cultural workforce diversity, firms need to implement a diversity orientation strategy. This is characterized by the introduction of some human management practices which favor the creation of a diversity culture, allow for the presence of pluralism and of a full degree of integration. Based on this reasoning, some studies argue that the success of diversity orientation strategy within firms is contingent to the situation (Harrison et al, 2002; Holzmuller and Kasper, 1990; 1991; Kilmann, 1985). These researches suggest that some organizations tend to promote cultural diversity, by encouraging employees to associate with outgroup members, developing a multicultural diversity orientation climate, in which the form of acculturation is pluralism, the integration into informal organization is full, the prejudice and discrimination are eliminated, the organizational identification between majority and minority is full and the degree of interpersonal conflict is low or absent. (Zahra and Covin, 1995; Cox, 1991). Consistent with this, Zahra and Covin (1995) also argue that the creation of cultural diversity orientated context enhances organizational flexibility and fluidity, increases the capacity of firms to react to changes and consequently has more positive effects on firm's financial performance. In this direction, other studies noted that the benefits of cultural workforce diversity can depend on the diversity management of firm in terms of training, coaching, mentoring and other diversity development activities (Schimdt and Hunter, 1998). Thus, the context is to be considered an important factor as it could have different implications on the diversity orientation of firm, determining the positive impact that a diverse workforce might have within an organization. However, although most of the literature recognize the importance to create a diversity orientation environment at firm-level, little empirical research has examined the role of the organizational context in the relationship between workforce cultural diversity and firm's financial performance.

3.3.1. The effect of Family firms and small firms' management strategy

Some studies analyze the role of firm' size and family management of firm as contextual factors able to effect on the relationship between cultural workforce diversity and firm's performance, at firm-level. In general terms, these studies have suggested that cultural workforce diversity affects firm' s outcomes through the implementation of diversity strategies and practices within the firm, that include promoting cultural diversity, compensation programs and other policies that consider the diversity implications in

the decision process within firms (Harrison et al, 2002; Holzmuller and Kasper, 1990; 1991; Kilmann, 1985; Gaertner et al., 1994; Rynes and Rosen 1995; Brickson, 2000; Chatman et al., 1998; Cox, 1991). From a wider point of view, the main literature shows that large firm characteristics have a positive impact on firm's performance. Large firms are able to better exploit economies of scale, has more market power and finally have more facilitated access to financial markets (Leibeinstein, 1976; Barkema and Vermeulen, 1998, Penrose, 1959). Typically, large firms have a more intense production, tend to standardize their activities, showing higher turnover across workforce (Baldoni et al., 2017). In their context, workforce, many times, carry out alienating activities that do not allows the creation of social relations; moreover, the high rate of turnover sharpens this evidence (Wu et al., 2008). Additionally, the potentially absence of informal relations with the top management keeps the context far away from the accumulation of social capital (Karahanna and Preston, 2013). In other words, the size of the firm may change the management perspectives on the relationships with workers (Young, 2005). Large firm characteristics such as higher level of technological development in the enactment of human resource strategies, high degree of formal communication and high grades of formalization of working procedures, may impact on the minority workforce "perceptions" about how the firms support the diversity, which in turn may negatively influence individual work performances (Zappa and Zavarrone, 2009; Kochan et al., 2013). Another strand of literature has paid great attention to the relevance of family business management as relevant contextual factor in the relationship between cultural workforce diversity and firm's performance. Past studies have shown that family involvement in the family business has an important impact on the firm performance (Chrisman et al., 2002; Basu and Altinay, 2002; Robinson and Hogan, 1993). Regarding this relationship, the findings are controversial. Some studies show that family businesses make firms more successful: the costs of monitoring are less, the incentives to maximize the firm value are boosted and the long-run economic survival of firms also improves (Butler, 1991; Upton and Heck, 1997; Ariarah, 1993; Rodhes and Butler, 2004: Fratoe, 1986). On the other hand, in family firms the presence of any conflict, as for instance originated from nepotism, can lead to managerial behavior that can offset the benefits of reduced costs, clouding future goals (Kets de Vries, 1993; Morris, 1989). Moreover, research also suggests that family firms tend to face additional barriers in accessing bank loans (Smallbone et al., 2003; Ram and Deakins, 1995; Chen and Cole, 1988), have higher administration costs (Smallbone et al., 2003; Martin and Carter-Hill, 2000), promote an internal structure in which the authority definition is confusing (Smallbone et al., 2003) that might negatively impact firm's financial performance (Jones et al., 1993; Deakin et al., 1994; Bates, 1996; 1997). Nevertheless, family firms are used to rely on "self-help" when relevant institutions are lacking (McMillan and Woodruff, 2002). Within family firms the access to resources does not occur mainly through formal channels, but rather through informal, private social

networks (Arregle et al., 2007; Gedajlovic et al., 2012; Peng, 2003; Peng and Jiang, 2010) which can provide an advantage to the management of workforce diversity (Ram and Hillin, 1994). Therefore, at the presence of a more heterogenous workforce, a family context can give employees the perception of a fair treatment and encourage diversity orientation strategies, pluralism and full degree of integration. Indeed, family firms are good in developing and exploiting their social capital since their stable human resource base fosters long-run, reciprocal relationships (Gedajlovic and Carney, 2010). They also put emphasis on informal relationships within their firm (Banalieva, Eddleston & Zellweger, 2015) giving them ad advantage in the integration process with minority groups. We hypothesize that this "shorten" mechanism of interactions is prodromal of another nested process: the information sharing channel is faster within family firms. The higher degree of information, in turns, is able to allows for reciprocal spillover effects, foreign workers to be better integrated into the productive process, to become part of an increasing family more easily, sharing their history and all the ethical values of the organization. Family leaders are also best in committing their resources with a "handshake" (Miller et al., 2009) and to use trust and reciprocity as principles upon which to develop their social capital. Their characteristics are able to commit their firm's resources with a "handshake" since exchange partners see the leaders as stable representatives of their firms with the power to make commitments and the ability to honor them (Miller et al., 2009). In this circumstance, family leaders may intentionally encourage a positive workers' perception as a part of network, a sense of confidence and mutual obligations that influence professional success, facilitate knowledge sharing and stimulate intellectual capital and innovation. These processes are enables to improve firm's performance (Uzzi, 1997). Based on this reasoning, high quality of social interactions among members can affect work environment and job satisfaction of workers. Thus, they may voluntarily build interpersonal ties, wherein social learning and sharing knowledge are more likely to diffuse. Sharing knowledge, indeed, needs specific work environment characterized by trust and reciprocity, where social interrelationships between workers, with shared norms and values, allow to release the social capital effects on the organization's functioning (Wang et al., 2019). Among studies linked to workforce diversity, some studies concentrated on the relationship between ethnic minority firms and its performance (Dyer and Ross, 2000; Smallbone et al., 2003; Ram et al., 2000; Ram, 1997; Crick and Chaudhry, 1997; Chaganti and Greene, 2002). These businesses tend to be situated in specific ethnic communities, identifying predominantly ethnic neighborhoods, with specific products or services that are targeted at fellow ethnic identity (Chimbos and Agocs, 1983; Kaplan, 1997; Lee, 1999). Also, some studies tend to link factors, as absence of barriers to entry or geographical locations to firm performance. Some minority communities predominate in sectors as a restaurants, personal services or construction (Butler and Greene, 1997; Razin and Light, 1998; Anthias, 1983). Jones et al. (1992) noted that ethnic business may face a number of issues that can hinder the

performance, including stemming, labor intensive practices, under costed labor, discrimination at organizational level.

4. The effects of Immigration on the performance of firms in the Agricultural sector

According to official statistics (Istat, 2016), immigrant workers tend to be mainly employed in the agricultural sector (Baldoni et al., 2017), representing about 20% of total workforce. Some studies (Somerville and Sumption, 2009; Hanson and Bell, 2007) argue that the immigrant workers provide a cheap workforce, also representing a highly mobile workforce (Baldoni et al., 2017) and often constituting a key element in agriculture sector, allowing meeting its seasonal labor demand (Hanson and Bell, 2007). Immigrant workers are also used to replace native workers in less skilled jobs, (Grossman 1982; Card 2005, 2001; Borjas 1995, 1999; Ottaviano e Peri 2006) like agriculture tasks, generally characterized by bad working conditions and low wages. Based in this reasoning, in this section we analyze the little strand of migration literature that focuses on the agricultural sector and on its relations with the immigration flows. However, studies related to the effect of cultural workforce diversity on firm performance in agriculture remain poor and with contradicting results; moreover, some of these, have analyzed samples of farms too small to allow any generalization (Taylor and Martin, 1997; 2003; Devadoss and Luckstead 2008). In general terms, the literature tends to identify a positive relationship between the immigration phenomenon and the productivity of the agricultural sector (Bove and Elia, 2017; Klocker et al, 2018; Hanson and Bell, 2007; Kasimis et al, 2003; 2005; Labrianidis and Sykas, 2009; Gomez-Tello and Nicolini, 2017). Bove and Elia (2017) show that the positive impact of the immigration flows on agricultural productivity can be due to the circumstance that immigrant workers are carriers of new perspectives and different and innovative set of knowledge, able to stimulate technological innovation, also contributing to the increase of local initiative. Furthermore, as authors pointed out, this effect tends to be more relevant in developing countries. According to the authors, the existence of a positive relationship between immigration and productivity, in agricultural sector, is due to higher degree of multiculturality, given the increase in incoming migratory flows, able to impact positively on the accumulation of human capital, stimulating mutual learning within the group. This circumstance determines an increase in the rate of technological progress in the receiving country. Along this line, some studies (Lazear, 1999; Hong and Page, 2001; Hamilton et al., 2003; Trax et al., 2015) also highlight the role played by the loss of trust within groups characterized by high levels of heterogeneity, as an element that negatively affect this relationship. Gomez-Tello and Nicolini (2017) analyze changes in the composition of workforce, due to large and sudden incoming migratory flows in Spain, that are able to affect the productivity level of agricultural sector in the host country. The authors

find that immigration leads to productivity improvements, through the role played by immigrant workers as "environment builders", carriers of heterogeneous skills, able to stimulate communication, increasing the level of adaptation within group. Some studies have paid great attention to the nature of agricultural activity. Accordingly, this literature has investigated the relationships between the immigration flows and the seasonal nature of agricultural production (Hanson and Bell, 2007; Somerville and Sumption, 2009; Taylor and Martin, 1997, 2007; Martin and Taylor, 1998; Devadoss and Luckstead, 2008). These studies show the existence of a positive relationship between the larger incoming migration flows and the productivity of the agricultural sector. The basic idea is that immigration leads to an increase in the workforce availability, highly mobile, that it is absorbed by seasonal labor demand. This circumstance allows farms to sustain production in periods of larger workforce demand. In a similar direction, Siudek and Zawojska (2016), analyzing the flows of immigrant workforce, from Poland to Great Britain, find that immigrant workforce represents a driving force for the farms in the host country, given the low propensity of natives to accept low wages, bad working conditions and temporary contracts (Baldoni et al., 2017). In the same direction, Taylor and Martin (1997, 1998, 2003, 2007) identify a cyclical relationship between immigration and the employment rate in Californian farms. They found that an increase in the number of immigrants leads to an increase in the employment rate within farms, while an increase in the employment rate induces a further increase in incoming migration flows. According to the authors, this could be due to an increase in the demand for unskilled labor, having a seasonal nature of agricultural sector, given the job tasks characterized by low wages and bad working conditions. Furthermore, they show that if, until 1980, an increase in employment in the agricultural sector was associated with a decrease in poverty in the native population, the trend seems to reverse starting from 1990 when, given an increase in the immigration flows and given the larger availability of lower-cost workforce mixed with a lower propensity by the native workers to accept specific agricultural job tasks , an increase in employment in the agricultural sector is associated with an increase in poverty, which, according to the authors, it appears to be moving from the areas of Mexico to rural communities in California. Furthermore, Devadoss and Luckstead (2008) highlight the existence of a negative relationship between an increase of immigrant workforce employment and the native workers employment in the agricultural sector. In this case, an increase in the employment of immigrant workforce in Californian fruit and vegetable production is associated with a decrease in the employment rate of the native workforce: once again, the structural characteristics of agricultural activity (low wages and bad working conditions) seems to be determinants. The authors also find that an increase in the immigrant workforce positively affects the productivity of other production factors, such as capital and inputs. A little strand of literature analyzed the Italian case. This literature focused on the impact that the immigration phenomenon is able to exert on the agricultural

sector's productivity (Ievoli and Macrì, 2008; Macrì et al., 2018; Venturini, 1999; Esposti, 2012, 2014; Baldoni et al, 2017), however, without reaching unanimous consensus. Macrì et al (2018) state that immigrant labor represents a significant component of the overall workforce employed in the Italian agricultural sector, which is present, mostly, in two different sectors: *i)* areas characterized by high seasonal mobility (fruit and vegetable farms located in Southern Italy), due to dynamics previously discussed; *ii)* activities characterized by a structural absence of labor supply, given their intrinsic characteristics (e.g. intensive livestock breeding, mostly located in Northern Italy). According to the authors, the existence of a positive relationship between an increase in the immigrant workforce employed in agriculture and an increase in productivity has to be read in the light of the numerous internal differentiations that characterize Italian farms, also in consideration of the wide differences regarding the use of immigrant labor between the regions. In general, a large part of the literature seems to confirm the existence of a positive relationship between the immigrant workforce and productivity in the Italian agricultural sector (Macrì et al., 2018; Venturini, 1999; Esposti, 2012, 2014; Baldoni et al, 2017). In this direction, Baldoni et al. (2008) pointed out the importance of the immigrant workforce as a key resource of the national agricultural economy, finding the existence of a positive relationship between the number of immigrants and agricultural productivity. However, the authors argue that this positive relationship may be due to pre-existing differences in the productivity levels of the farms than to the contribution of immigrant labor. Finally, Venturini (1999) founds an important negative relationship between the use of irregular immigrant labor, employed in the agricultural sector, and the employment rate of the native workforce, in the same sector: an increase in the employment rate of irregular in agriculture it is associated with a decrease in the number of native workers employed. According to the author, the reason of this is due to the particular cost dynamic which constitutes an incentive for farms to employ low-cost workers, as well as in the structural low propensity of the Italian workers to accept such working conditions (low wages and bad working conditions). Therefore, despite the presence of contradicting results, the literature seems to recognize the immigrant workforce as a key resource on the Italian agricultural sector.

Table 1 shows the main contributions of migration literature that summarize the overall effects that the immigration is able to exert on the receiving countries. Most studies concentrate on the effects of immigration on the Usa, using US census panel data. With regard to European countries, research mostly focused on Germany, while very few are the number of studies that analyze the effect of immigration flows on the main economics dynamics in Italy. In the case of Italy, the main contributions found that the immigrant workers tend to have a positive (or not significative) effects on the host labor market. The results in Table 1 also show that the immigrants workers tend to be substitute for less-skilled workers and seasonal workers. Moreover, the effects seem to be more incisive on employment

than on wages of natives. Furthermore, only a small number of studies found a relevant displacement effect. However, from a general point of view, Table 1 shows that the results are still contradictory with respect to the effects of immigration on the receiving countries.

Tabella 1. Overview of the Migration Literature

Authors	Country	Methodology	Results
Altonji and Card (1991)	USA	Cross-sections (1970 and 1980), first differences, IV	Negative effects on wage; negligible effects on employment and participation
Angrist and Kugler (2003)	EU	Fixed effects panel model with IV (1983–1999)	Negative effects on employment to population ratio native men; no significant effects for women
Baldoni, Coderoni and Esposti (2017)	ITALY	Fixed effect panel model and dynamic model	Positive effects of on farm labor productivity.
Borjas (2003)	USA	Fixed effects panel model (1960, 1970, 1980, 1990, 2000)	Negative effects on earnings
Borjas (1986a)	USA	Fixed effects panel model	Negative wage impact for white men, positive wage impact for black men
Borjas, Freeman and Katz (1996)	USA	Cross-sections (1980 and 1990), first differences	Contradictory results
Bratti and Conti (2013)	ITALY	Ordinary least squares (OLS) and two-stage least squares (2SLS)	No evidence of positive or negative effects on innovation (patent applications)
Card (2001)	USA	Cross-section (1990), IV	Negative effect on employment to population Ratio and negative effect on wages of natives
Card (2004)	USA	Cross-section (1990), IV	No effect on wages of low-skilled natives
Coderoni, Macrì, Cardillo and Perito (2018)	ITALY	Cluster analysis	The incidence of foreign workers is highly diversified with respect to farm typologies, type of contract and geographic location:

			permanent foreigner workers are important in livestock farming, while seasonal workers in farms specialized in permanent crops; the foreign workers are more present in North Italy and in the medium size farm
De New and Zimmermann (1994a)	GERMANY	Random effects panel model, IV (1984–1989)	Negative effect on wages, especially for immigrant workers
De New and Zimmermann (1994a)	GERMANY	Random effects panel model, IV (1984–1989)	Negative effect on wages of high-skilled native workers
Devadoss and Luckstead (2008)	USA	Simultaneous estimation and simulation analysis	Positive effect on farm exports
Dolado, Jimeno and Duce (1996)	SPAIN	First differences with IV (1990–1992)	Positive effects on wages; positive effects on employment
Dustmann, Fabbri and Preston (2005)	UK	Cross-sections; first-differences with IV (1983–2000)	Negative effects on participation rate, employment rate and wages
Gavosto, Venturini and Villosio (1999)	ITALY	Cross-sections (1986–1995), two-stage least squares (2SLS)	Positive effects on wages of native manual workers
Kasimis et al. (2005)	GREECE	Interview; survey	Positive effects on the agricultural and rural restructuring
Lafortune, Tessada and Gonzales -Velosa (2012)	USA	Fixed effects panel model; IV	Positive effects on capital intensive input mix; negative effects on farm size (reduction in farm size) and a shift away from capital intensive crops
LaLonde and Topel (1991)	USA	Panel probit analysis (1984–1989)	Negative effects on wages for new immigrants; less negative for older immigrants; no effects for natives.
Ozgen, Nijkamp and Poot (2012)	EU	Panel analysis (1991-1995; 2001-2005)	Positive effects on patent applications

Ozgen, Nijkamp and Poot (2013a)	GERMANY	Cross- section (2002)	Contradictory effect on innovation
Ozgen, Nijkamp and Poot (2013b)	GERMANY	Cross- section (2002; 2006)	Positive effects on product innovation; no effect on process innovation
Ozgen, Peters, Niebuhr, Nijkamp and Poot (2014)	GERMANY AND NETHERLANDS	Panel data analysis (2001; 2004; 2007; 2002; 2006)	Positive effect on product innovation
Parrotta, Pozzoli and Pytlikova (2014)	DENMARK	Pooled cross-section (1995; 2003)	Positive effect on innovation; positive effects on patent applications
Peri (2011)	USA	2sls panel model; IV	Positive effects on the component of Gross State Product Growth; positive effects on Total Factor Productivity; negative effects on the skill bias of technology
Seifert and Valente (2018)	ITALY; FRANCE	Fixed effect dynamic panel model	Positive effects on farms productivity in terms on labour productivity
Simon, Moore and Sullivan (1993)	USA	Panel data model (1960-1977)	No significant effects on unemployment rate
Taylor and Martin. (1997)	USA	3sls procedure	Circular link between farm employment-immigration- poverty-welfare
Taylor and Martin. (2003)	USA	3sls procedure	Positive effects on farm employment; negative effects on poverty
Venturini and Villosio (2002)	ITALY	Cross-section probit (1993-1997)	No significant effects on unemployment rate
Winter-Ebmer and Zweimuller (1996)	AUSTRIA	Cross-section (1991); first differences (1998-1991)	No effect on earnings

5. Conclusions

In the first decade of the new millennium, the proportion of foreign-born in the EU population has widely increased (Frontex, 2018). In this overview, we provide a review of the literature on the macroeconomic effects of immigration on the receiving country, mostly focusing on the impact that the immigration flows are able to exert on the host country's labor market. Additionally, we analysed the microeconomic effects of immigration on the receiving country, with regard to the impact of immigrant workers, in terms of culturally diversity workforce, on firms' performance, at firm-level. Finally, we focused on the impact of immigration on firm's performance on the agricultural sector. The results of our review of the literature provide evidence that a major understanding of the effects of immigration flows on the receiving countries needs further investigations of the intermediate mechanism able to impact on outcome variables, especially with regard to the role of the proper context. Our contribution also provide evidence about the existence of considerable differences in the way in which researchers conceptualize the diversity of workforce.

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Long-Run Migration Effects: a Literature Reassessment

Viviana De Falco

Abstract

The aim of this paper is to provide a reassessment of the mainstream literature concerning long-run effects of migration. Sending countries are concerned about brain drain and self-selection, while receiving countries have to manage assimilation consequences on their social and economic structures. After a brief overview of theories leading this field of research, a comparison of results is discussed. The reviewed papers are divided into four main categories: effects on sending countries, effects on receiving countries, effects on both countries and internal migration.

1. Introduction

Economists have been interested in migration since the late eighteenth century; firstly, urbanization and then mass migration from the old to the new continents shed new light on people movements (Molloy 2011).

Many theories have been applied to explain the reasons to migrate. The first group of theories concern *neoclassical micro and macroeconomic approaches*. They rely on three branches: the first group of studies assume that migration happens as result of economic development and wage differences (Borjas, 1985; Harris and Todaro, 1970). After the remittances process, in the long-run, decline in the wage ratio would remove incentives for migration. Another group of scholars stress the push and pull factors driving migrants' decisions. De Haas (2010) argues that push factors (natural disasters, civil wars, conflicts, etc.) and pull factors (i.e. standard of living, educational system, services, etc.) attract people form one region to another. Lastly, there are theories about the agent (migrant) cost-benefit decision, related to individual characteristics and intentions (Bauer and Zimmermann, 1998): the larger the expected return to migration, the larger the migration flow is.

The second group of theories is known as the *new economics of migration*. The fundamental of this approach concerns risk: the decision to migrate or not is a family choice and the family chooses which individual is able to migrate in order to diversify the household resources (Stark and Bloom 1985; Stark 1991). Within this framework return migration is considered as a success, as the migrant comes back home with accumulated savings or knowledge (Cassarino, 2004).

The last group of organic theories is represented by *migration system theory*: according to this approach, migration flows become stable over time and space, allowing the settlement of structured networks. Migration is considered like a dynamic process linking in multiple ways countries and regions. Boyd (1989) and Fawcett (1989) describe this system through the exchange of goods, people, services and information between countries.

These theories represent the conceptual framework through which migration has been analyzed during time. In order to categorize the previous topics, the aim of this paper is to provide an assessment on the economic long-term migration literature, by presenting the results achieved for both receiving and sending countries.

As migration is a complex phenomenon, it is composed by multiple dimensions. From an economical point of view, the main questions raising from migration concern the effects on the growth of the countries involved. Brain drain and self-selection, ethnic opposition or integration, holistic assimilation (both economic and cultural) are the most debated topics in this kind of literature (Gheasi and Nijkamp, 2017) and the main findings and theories are reported and discussed in this work.

The paper proceeds as follow: section two describes the effects of migration on home countries,

namely brain drain and self-selection. Section three analyzes studies aimed to investigate the effects of migration on receiving countries in terms of economic growth, labor market, wage gaps and cultural assimilation. A focus on language is provided in this section. Section four addresses the analysis of the impact on both sending and receiving countries, while section five considers some studies on internal migration. Section six concludes.

2. Effects on the sending economies: self-selection and brain drain

Self-selection

The main concern for a host country is related to the identity of new comers. While sending countries are concerned about the loss of human capital, receiving countries are afraid of the *bad quality* of people entering. Abramitzky et al. (2012) investigate self-selection of immigrants from Norway to USA during the age of mass migration (1865-1900); they find ambiguous results for rural population and positive self-selection for urban people. Moreover, they find a back migration equal to 70%; their study of 2013, then, shows the characteristics of Norwegian migrants during that age: no restriction were imposed to US migration at the beginning of the nineteenth Century and costs to migrate were relatively low. As result, poorer emigrants (usually not eldest children, for inheritance issues) were encouraged to move. Several studies consider migrant self-selection in terms of individual values or attitudes; Beck Knudsen (2019) deepens the attribute of individualism among Northern European migrants during the mass migration age; she finds that people who left home came from individualistic household. The effect is that in the short term, individualists migrate and in the long term, home country composition of individualists decreases (she find a loss of individualism equal to -3.7% in Denmark, -9.4% in Sweden and -13.6% in Norway). Spitzer and Zimran (2018) use height distribution of Italian migrants to USA between 1907 and 1925 as a proxy of positive (or negative) selection: their results show that even if selection is apparently negative, the best individuals leave their country to migrate. Furthermore, after the imposition of literacy test in 1917, positive self-selection improves.

A classical growth analysis is conducted by Sequeira et al. (2018), taking into account mass migration effects. Results are divided into short term result and long-run results. In the short term, counties with a larger number of immigrants experience a growth in industrialization share, innovation and an agricultural increase. In the long-run higher incomes, less poverty, less unemployment and greater rates of urbanization and education are reported. No extra social costs result associated with these benefits. The authors find a positive effect persistence on urbanization, education and income. In conclusion, Malamud and Wozniak (2012), take into account the effect of education on migration, using the Vietnam generation as natural experiment. The authors find that higher levels of education

have a significant impact on the likelihood to migrate.

Table 1: Self-selection and migration

Authors	Place	Sample size	Methodology	Effects
Beck Knudsen (2019)	USA (Norway, Sweden, Denmark migrants)	47,758 individuals	Probit/logit	The likelihood to migrate increases with individualism. Reduction of individualists in Denmark: 3.7%; in Sweden: 9.4%; in Norway: 13.6%
Spitzer & Zimran (2018)	USA/Italy	1,108,725 individuals	Z-score regression	Positive self-selection from Southern Italy
Sequeira et al. (2018)	USA	2,935 observations	Panel data	Short-term: counties with a larger share of immigrants experience growth in industrialization, agriculture and innovation. Long-term: less poverty, less unemployment, more urbanization.

Abramitzky et al. (2013)	USA/Norway	25,822 households	Probit, multinomial logit	The profile of the Norwegian migrant: poorer than natives and not eldest child
Abramitzky et al. (2012)	USA/Norway	12,177 households	OLS, panel data	Not univocal results for the self-selection; return rate =70%
Malamud & Wozniak (2011)	USA	5% sample of 1980 USA Census	OLS, 2SLS	Positive relationship between high education and migration

The results for this topic appears multiple and various; both evidence of positive and negative self-selection of migrants are found.

Brain Drain

High-skilled forces open the way to a dramatic question: the shortage of human capital in the sending country. While some authors find negative effects associated with migration, a large part of scholars report positive returns to knowledge extent related to migration. Docquier and Rapoport (2012) implement more comparable measures over time and space of migration and education; they provide two wide literature reviews on the brain drain and highlight the role of the developing countries that could be dramatically hurt by migration of the *best* individuals.

Haque and Kim (1995) apply dynamic growth models to assess that brain drain decreases the growth rate of human capital remaining in home economy leading to a permanent reduction of growth in sending countries while host countries can be affected in a positive or in a negative way. They suggest education should be subsidied until the point of migration. Mountford (1995) employs the Galor and Talor model applied to migration and observes that if the success of migration is not certain and human capital accumulation is endogenous, interaction among human capital accumulation, income redistribution and growth can generate income growth at home.

Finally Bhagwati & Hamada (1974) propose a theoretical framework to analyze brain drain. According to their model, brain drain can generate a loss of welfare for those who remain in their home country if the higher-skilled individuals leave. The authors discuss the opportunity to impose a tax on high-skill migration.

Table 2: Brain drain

Authors	Place	Sample size	Methodology	Effects
Docquier and Rapoport (2012)			Literature review	
Docquier and Rapoport (2008)			Literature review	
Haque and Kim (1995)			Dynamic growth models	Permanent reduction of growth in the sending country. Controversial effect on the host country. Education should be subsided until the point of migration.
Mountford (1995)			Implementation af the Galor and Talor model for the impact of migration on income and human capital accumulation.	Under certain conditions, the sending country can experience income growth in short and long-run.
Bhagwati and Hamada (1974)			Theoretical model	Introduction of a tax on higher-skilled migrants.

Brain drain can represent a threat or an opportunity for the sending country; it depends on how it is

faced.

3. Effects on the host nations: economic growth, wages and cultural assimilation

This section deals with the most common issues about the migrant impact on the host countries. It mainly focuses on assimilation by considering the economic characters of the migration flow and the cultural topics related to migrants' ethnic backgrounds.

Economic assimilation

Economic assimilation or economic policy striking migrants can have dramatic effects on growth. The studies related to macroeconomic consequences of migration are often focused on the growth of the host countries. Ager and Hansen (2017) investigate how the U.S. restriction in the 1920s influenced American economic system. The results estimate that restriction reduces population growth, the number of children and marriage rate among migrants. Manufacturing productivity declines and natives are push towards jobs with lower wages (different effects appear according to the ethnic origin). These results are significant for highly stroked regions by migration. Abramitzky et al. (2014) conduct a pooled cross-sectional analysis and a panel study on wage convergence. They find that in the cross-sectional analysis wage convergence is not achieved, but in the panel data there are no differences between the two groups. In the long-term natives and migrants climb the occupational ladder at the same speed but they choose different employments.

The work of Hatton and Williamson (1992) is aimed to detect what pushed the individuals into migrate in the late nineteenth century. They detect two forces that act on different phases of the migration life cycle: firstly, demographic transition and later wage convergence ensuing industrialization. Borjas (1985) sheds a light on the migrant earnings by comparing the individuals belonging to the same cohort of birth. His findings point out that wage convergence is slow and not always happens; moreover, present immigrants earn less than historical migrants if compared with natives.

Finally, Borjas (2013) provides a general equilibrium model in which migration is taken into account. The author states that the impact of migration on the equilibrium cannot be assumed *apriori* as it also depends on the other parameters of the model.

Table 3: Economic assimilation and reduction in wage gaps

Authors	**Place**	**Sample size**	**Methodology**	**Effects**
Ager and Hansen (2017)	USA	5,512 individuals	Difference-in-difference	Reduction in population growth, marriages and children among

				migrants. Other effects are group-specific.
Abramitzky et al. (2014)	USA	205,458 individuals	Pooled cross section and panel	Immigrants start with a gap of 450 $ compared to natives but the lack of convergence is not observed.
Borjas (2013)			An analytic description of the Marshallian equilibrium model plus the migration parameter	The impact of migration on labor market cannot be univocal, as it depends on the other parameters of the model.
Hatton and Williamson (1992)	USA	Visa from 11 countries from 1850 to 1923	Multivariate regression	Demographic events and real wages convergence account for a rise of more than 3‰ in the annual emigration rate
Borjas (1985)	USA	5% random sample of population	Intra-cohort cross section OLS analysis	Different coefficient for each ethnic group; wage convergence is not always achieved.

While the positive effect of migration on growth seems to be a matter of common agreement, the wage effect and the ensuing convergence is controversial.

Cultural assimilation

The most common variables employed to assess cultural assimilation are children names and interethnic marriages. Abramitzky et al. (2019) use foreign names as a proxy of cultural persistence and try to assess the speed of migrant cultural assimilation nowadays compared to the past (the age of mass migration). Authors report that the speed of assimilation does not vary over time.

Also Fouka et al. (2019) investigate the cultural dynamics of inclusion and exclusion. Their work aims to understand whether the arrival of new ethnic groups in a country generates previous groups' assimilation. The analysis simultaneously asses the effort put into assimilation by migrants and assimilation equilibrium defined as migrants acceptance by the receiving country. The historical case of the African arrival in USA shows that with new ethnic entrances, the previous migrant ethnic groups increase their effort to assimilate but assimilation equilibrium is reached only by migrants from Northern and Western Europe. Stereotypes concerning Southern and Eastern European migrants however decrease in number.

Tabellini (2018) presents a more comprehensive study as he takes into account political, cultural and economic impacts of migration flow, finding conflictive results: mass migration had a positive effect on the economic extent (increasing economic activities and employment) but it had a negative impact on the political extent, as it increased cultural distance and pushed for the election of conservatory parties. Moreover, it caused tax reduction and limitations in redistribution.

Table 4: Cultural assimilation

Authors	**Place**	**Sample size**	**Methodology**	**Effects**
Abramitzky et al. (2019)	USA	4,696,779 individuals for historical migration 4,934,238 individuals for present migration	OLS and Logit	Different effects decomposed by mother's age at the time of birth; the speed of assimilation does not vary over time.
Fouka et al. (2019)	USA	108 MSAs (statistical	Difference-in-difference	Multiple effects in terms of

		metropolitan areas)		excluded ethnic groups
Tabellini (2018)	USA	540 cities	OLS, 2SLS	Multiple effects

Cultural diversity

Cultural diversity can stimulate mutual knowledge through cultural learning[16] and can facilitate technological improvements (Heine and Roby, 2010). Some studies shed a light on the conflictive side of country cultural difference while other scholars prefer deepen the strengths of diversity.

Sun et al. (2019) study the relationship between cultural differences and entrepreneurship in China. They observe that cities with higher cultural variety (deriving from past immigration) show higher levels of entrepreneurship, above all for small firms in manufacturing sector. Ager and Brueckner (2013) argue that polarization has a negative effect on output per capita; cultural fractionalization has instead a positive effect on output per capita, industrial diversification, tax reduction but not on urbanization. Audretsch at al. (2009) investigate the drivers of entrepreneurship with regard to knowledge and cultural diversity. They find that the most influential determinants are the regional technological level (measured by the employees in R&D) and the regional diversity: if the latter is measured as *sectorial* diversity it has a negative effect on entrepreneurship but it has a positive impact if it is *cultural* diversity (calculated through the migrant share). Finally, Battu and Zenou (2010) test how tight ethnic bonds can affect labor market. Behavioral self-evaluation rising from the Fourth National Survey on Ethnic Minorities in England show that extreme identity attitudes increase the penalty on labor market: the extreme individuals experience a lower probability in finding a job.

Table 5: Cultural diversity and migration

Authors	**Place**	**Sample size**	**Methodology**	**Effects**
Sun et al. (2019)	China	7,440 individuals	OLS, 2SLS	0.1 increase in cultural diversity increases 4.748% new firm formation
Ager & Brueckner (2013)	USA	2,160 individuals	OLS, 2SLS	1% increase in cultural polarization

[16] The authors specify that cultural learning means acquiring information from conspecifics, through social transmission.

				reduces output per capita by around 2.1% and 1% increase in fractionalization increases output per capita by 2.2%.
Battu & Zenou (2010)	England	5,196 individuals	Probit	-6/7% likelihood to find a job if associated with an extreme identity preservation.
Audretsch et al. (2009)	Germany	97 functional regions (unit: labor market)	Panel data and OLS pooled regression	1% increase in cultural diversity increases high-tech entrepreneurship activities by 0.42%

The results from the discussion above report a positive impact of cultural diversity (and migration) on receiving countries; ethnic closure, however, seems to have a negative effect on migrants and does not help assimilation.

3.1 The linguistic distance: an example of cultural persistence

Language plays a crucial role in directing migration flow. Scholars underline that language is a building factor of ethnic networks also by contributing in keeping alive links with sending countries and helping assimilation in host countries. Some studies focus on international diffusion of knowledge; Abramitzky at al. (2014) show how languages can represent idea flows. They use the fall of Communism in Eastern Europe as a natural experiment to test how ideas can spread through languages. In their study they find that while translations between Communist languages decreased by two thirds with the URSS fall, Western-to-Communist translations increased by a factor of 4 and quickly converged to Western levels.

Fouka (2019) reports about the impact of restrictive language politics on German migrants after World War I in some US States, namely Ohio and Canada. The author collects different census data and realizes three proxies to test the backlash of language prohibition in school. The proxies used to measure sense of cultural identity are the number of volunteers among American German natives and in World War II, the number of interethnic marriages and the German name diffusion among the immigrants' children. The results show a decrease in the number of volunteers and an increase in the other two parameters. Other authors focus on the metric employed to assess linguistic distance. Some immigrants indeed look to be less proficient than others and this may be due to different incentives in investing in language, related to migration duration or to the likelihood to attend a language course at home or in the destination country. Nevertheless, language distance can represent a barrier hard to overcome. Chiswick and Miller (2004) provide the first scalar measure of linguistic distance. The assumption followed is linguistic symmetry; through a test-score on a sample of American adults the authors estimate the partial effect of linguistic distance. It is verified that the more home language distant from English, the more English proficiency decreases. In two different studies, Isphording and Otten (2014, 2011) find a new measure that tries to overcome the assumption of linguistic symmetry. The study of 2014 compares different linguistic distance measures in USA and Germany. Some site-specific results are highlighted: either in USA or in Germany, migrants have pain in learning host country language if their home language is distant, but in Germany, the gap decreases over time.
In their work of 2011, the authors find the larger the linguistic distance, the lower is the likelihood to be fluent in the host country language; moreover, the linguistic distance effect is stronger for higher levels of linguistic acquisition. The paper concludes by assuming a positive self-selection for migrants who are geographically more distant from host countries as they have to afford steeper language costs.

Table 6: Linguistic studies on migration

Authors	Place	Sample size	Methodology	Effects
Fouka (2019)	USA (Indiana, Ohio and the neighborhood States)	1,212,775 individuals	Difference-in-difference (more dependent variables to describe the strength of identity)	Multiple effects: Linguistic restriction on wages: no effect; a positive effect on German names among children and on German

				marriages. A negative effect on German volunteer participation in World War II
Abramitzky & Sin (2014)	Former Communist countries	800,000 translation	Diff-in-diff	Translations among Communist languages decrease by 2/3 with the URSS collapse, Western-to-Communist translations increase by a factor of 4.
Isphording & Otten (2014)	USA and Germany	Pooled sample of 514,874 observations	Ordered Logit and linear probability model	The larger is the linguistic distance, the lower is the host language fluency.
Isphording & Otten (2011)	Germany	1,102 observations in 1999 and 1,430 observations in 2001	Ordered Logit	Negative relationship between linguistic distance and reported skills: increase in the distance by one unit decreases the probability

				of reporting highest category of language skills by 0.3 to 0.6%.
Chiswick & Miller (2004)	USA	237,770 males and 243,496 females	Probit	-0.256 for males and -0.263 for females on the likelihood to speak well the destination country language

Regardless of the metric employed to assess linguistic distance, all the reviewed studies agree in finding a negative effect of linguistic distance on language proficiency. As stated before, language issues affect the likelihood to be employed in the host labor market and the choice of the destination country, so migration policies should take this dimension into account.

4. Simultaneous impacts on sending and receiving countries

Few studies on migration simultaneously consider the effect on sending and receiving countries. The main subject area is growth of developed countries (usually the host) and developing countries (usually the sender). Dos Santos and Postel-Vinay (2003) study the migration effects when workers from developing countries can choose whether, when and for how long to migrate. They use two different models, namely steady state and dynamic state considering two periods (young and adults) and two countries (developed and developing countries). The models show that higher skilled migrants choose to stay abroad while temporary migrants, namely the *worst of the best* (Borjas, 1996) return after having accumulated a certain amount of knowledge; in the long-run, the likelihood to emigrate decreases and the likelihood to return increases because of the technological improvements, even if the convergence is not achieved.

Moreover, Foreign Direct Investments (FDI) should be considered among the drivers of the simultaneous migration effects on the sending and the receiving countries. Migrants help FDI by spreading information through spatial networks (they act as a *bridge* between their origin and their host country) and by fostering demand for foreign goods. Several authors investigates the relationship

between FDI and migration and their complementary or substitute nature. Malan (2015) analyses the impact of the West-East FDI flows on the migration flows and conversely, the impact of the East-West migration flow on the FDI. The database considers annual bilateral migration, FDI flows and FDI stocks between fifteen Western European countries and twelve Eastern European countries, over the period 1985-2010 (4,680 observation). The fall of the Berlin Wall is used a natural experiment to test the impact of the migration. Through a two-gravity-equations model, the study shows the existence of a causal relationship between FDI and migration flows: the increase of one unit of the natural logarithm of east-west migration numbers leads to an increase of 63% in the logarithm of west-to-east FDI. The conclusion is that investments and migrations are complements. Kugler and Rapoport (2007) investigates the relationship of complementarity or substitution between FDI and migration by decoupling the effects in the short and in the long run. Their work focuses on three ways through which emigration may affects FDI, both in a positive and in a negative sense:

1. Migration reduces the number of workers in economy and a consequential outflow of capital is generating to compensate this effect;
2. Skilled emigrants that leave their home country reduce the technological level of that country and so FDI inflows in the country decrease;
3. Migrants networks help to overcome informational barriers to FDI.

The authors employ a sample of 55 countries for two periods (1990 and 2000) and find that FDI and migration are contemporaneously substitutes and dynamically complements. In this case, they found that in the manufacturing sector, inflows in the 1990's from the U.S. have a significant positive association with past emigration to the U.S. of individuals with tertiary education from the multinational corporation subsidiary's host country. Also, current FDI inflows from the U.S. are negatively correlated with current emigration by workers with secondary education. The estimates imply that 1% increase in the stock of migrants with tertiary education residing in the US in 1990 is associated with 1% rise in the annual growth rate of FDI inflows throughout the period covered (from 2.6% to 3.6%). Buchardi et al. (2018) analyze the causal effect of the ancestry composition on USA counties foreign and direct investments, sent and received by local firms. They find the persistence of the migration effects: the presence of a defined ethnic group in a U.S. county increases the likelihood of FDI sent and received and seems to operate through a reduction in information frictions. The magnitude of the effect varies according to the instruments used; however 1% increase in the historical presence of an ethnic group leads to 0.2% increase in the FDI from the origin country in 2014.

Table 7: FDI and Migration Flows: mutual influences

Authors	Place	Sample size	Methodology	Effects
Kugler et Rapoport (2007)	USA	55 countries for two periods (1990 and 2000)	OLS, 2LS	1% increase in stock immigrants with tertiary education, 1% increase in FDI in ten years
Malan (2015)	UE	4,680 obs. (15 EU countries, from 1985 to 2010)	Gravity model with instrumental variables	The increase of one unit of the natural logarithm of east-west migration leads to an increase of 63% in the logarithm of west-to-east FDI flows
Buchardi et al. (2018)	USA	612,495 counties for 130 years (1880-2010)	OLS, 2 SLS (on dynamic migration model)	1% increase in the historical presence of an ethnic group leads to 0.2% increase in the FDI from the origin country in 2014

Finally, investments and migration flows seem to affect each other either in the long or in the short term, with different results.

5. Internal migration: regional studies and domestic perspectives

Internal migration involves domestic movements into a country. It can be defined as a major force redistributing the population during development as sectoral composition of economy and geographic distribution of employment change (Kuznets, 1966). Some long-term studies focus on internal migration but very few of them link this kind of movement to international flows. Recent literature points at understanding the self-selection process pushing people to move inside their own home country, preferring some regions to others. Many authors put effort into detect these

preferences and test wage gap as mainly engine of migration[17]. Robinson and Tomes (1982) try to define migrant behavior according to certain individual features. Their findings highlight that potential wage gains (among provinces) do not affect individual migration if self-selection is excluded, otherwise they do (the magnitude of the effect is ambiguous but signs are univocal). Language affects migration in the sense that helps information transfer; furthermore, linguistic skill eases internal mobility, except for the francophones of Quebec (their likelihood to move decreases). Also Borjas (1992) deals with the relationship wages/high skilled workers; he finds that migrant self-selection leads movements if workers live in regions not adequate to their skills. High skilled workers prefer moving where the wage spread is larger while less skilled workers move where wage gap is smaller. Sanchez-Alonso (2000) analyzes the drivers of Spanish internal and international migration during the mass migration era by applying both a cross-sectional and panel analysis on the Census data from 1887 and 1910/11. The author finds that Spanish migration mainly headed to Latin America and started later (at the beginning of the 20th century) compared to other European countries. Local variations are evident: where income is higher, the likelihood to migrate (abroad or in another region) grows: a wage increase equivalent to one standard deviation would increase the rate of provincial emigration by more than 2.2 per thousand. Molloy (2011) tries to deepen the causes of the decline of US internal migration in the last decades. The result of his analysis seems to exclude the traditional socio-economic dimensions that affect the short-term decline in migration, so the author concludes that long-term reasons should be investigated in order to better understand the flow trends. USA still shows higher internal migration rates if compared to Canada or Europe.

Table 8: Internal migration

Authors	**Place**	**Sample size**	**Methodology**	**Effects**
Robinson & Tomes (1982)	Canada	26,437	Structural probit equations model	Self-selection considered, potential wage gains increase the likelihood to migrate.
Borjas (1992)	USA	6,666 individuals	Ordered probit	Positive signs between high skill

[17] See Roy model.

				measures and wage dispersion
Sanchez-Alonso (2000)	Spain	49 provinces	Cross-section and data panel analysis (two Census: 1887 and 1910)	A wage increase of one standard deviation would increase the rate of provincial emigration by more than 2.2 per thousand.
Molloy (2011)	USA	1323 or 1516 individuals (according to the data source)	Panel data (1980-2010)	The author does not find any correlation between the individual socio-demographic or economic features and decline in migration.

The most part of the studies analyzed seem to confirm wage effect on the internal migration, with different effect size, likely site-or-sample related.

6. Conclusion

The long-run effects of migration flows are supported by multiple approaches and multiple theories. The effects of migration on sending countries seem controversial: brain drain can impair home country economic growth but it can also contribute to it through temporary migration (migrants come back with resources and knowledge) or remittances. Even studies on self-selection do not give a univocal answer: according to some authors, migrants are positive self-selected from home country, but other scholars find opposite evidences. In general, the impact on host countries seems to confirm positive migrant contributions, but there is no convergence on the time of positive effects; moreover, some authors report some negative effects even on cultural side. Furthermore, literature seems to agree on the impact of migration of FDI and international trade.

Finally, internal migration seems to be sensitive to wage gaps for high-skilled migrants.

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