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INDICE

COULD THE BASS MODEL BE APPLIED TO ITALIAN EMIGRATION?

Francesca Bitonti, Angelo Mazza, Salvatore Strozza

1. The new Italian emigration

In recent years, the outward Italian emigration had considerably grown compared to the 80s and 90s, when the phenomenon was indeed ongoing, yet at a smaller scale. Current emigration presents specific peculiarities, configuring a situation different from the past, which in literature is known as "the new Italian emigration". Among the novelties of the new outcoming flow, there is an increased share of women and well-educated individuals leaving the country (Colucci, 2018; Strozza and Tucci, 2018; Fondazione Migrantes, 2020).

Furthermore, although the Southern regions continue, as in the past, to contribute to the outgoing movements, recently the more advanced northern Italy has become the main outflow area, recording since 2007 more consistent negative migratory balances than in other regions of the country (Bonifazi, 2018; Strozza and Tucci, 2018). This could imply that the financial crisis that occurred in 2007-2008 and the worst economic situation in the rest of Italy have pushed the Northerners to move abroad (De Rose and Strozza, 2015). In addition, this could suggest that the geographical proximity to the other European countries and the greater dynamics of the northerners compared to the southern Italians in catching the new opportunities offered by the EU integration process could have acted as a further push factor for the individuals living in the North.

Another relevant feature is that the destinations that Italian migrants choose mainly converge to the EU and EFTA countries, such as United Kingdom, Germany, Switzerland, and France (Bonifazi, 2018). One plausible explanation of this trend is that the economic crisis could have boosted the EU unification process aimed at ease European mobility and integrate the labour market (Livi Bacci, 2014; De Rose and Strozza, 2015; Pugliese, 2018).

Finally, the new Italian emigration appears to be paired with a change in attitude towards international migration. The availability of new communication and transport technologies could have overcome several of the previous barriers hindering movements in the past, allowing Italians, especially the youngsters, to approach international mobility in a novel and more confident way (Tirabassi, 2018).

Roughly speaking, the technological advancements had empowered the Italian citizens with new means to shorten both the physical and psychological distance from their homeland.

Overall, the interaction among the global economic downturn, the EU integration process, and the change in attitude towards outward mobility appear to have shaped a new migration behaviour that has diffused across Italy. The spreading of new practices and ideas among the individuals of a given population usually pertains to the diffusionist theory, a well-established framework in the theoretical area of sociology and demography (Casterline, 2001). Our objective here is to propose an interpretation of the new Italian emigration in the light of diffusionism. The specific tool we have implemented to analyse the Italian phenomenon is the Bass model (Bass, 1969), a typical model extensively implemented in literature to study the diffusion of new ideas and behaviours.

Note that our proposal is that of a "toy model", i.e., a simplistic model used to provide insights into whether some mechanism might explain complex real-world phenomena. Toy models are extremely simplified, representing only a small number of causal or explanatory factors; typical examples are the Lotka–Volterra model in population ecology and the Schelling model of segregation in the social sciences. Toy models usually do not perform well in prediction and empirical adequacy; they serve other epistemic goals.

The diffusionist theory and the Bass model will be introduced in the next section. The third section will outline data and methods. The fourth section will discuss the empirical results, and the fifth one will synthetically point out some conclusions and limitations of this work.

2. The diffusionist perspective and the Bass model

The diffusionist paradigm finds its roots in the field of social sciences. It has gained progressive theoretical structure through time to explain the diffusion of new ideas and practices (also called "innovations") among the members of a specific community (Rogers, 1962; Strang and Meyer, 1993). The basic idea of diffusionism is that the interplay of social influence mechanisms, as interpersonal information exchange, social norms, and emulative processes, shape individual action. The ground diffusionist considerations deal with the sociological concepts of "collective behaviour", "social contagion", and "contagious beliefs" (Coleman, 1994, pp.197-240). The "Ready, Willing, and Able" paradigm, initially proposed by Coale (1973) and successively operationalized by Lesthaeghe and Vanderhoeft (2001), conceptualizes the preconditions that should be satisfied to ensure the spread of a new demographically relevant behaviour, while the mechanisms of social influence

determine the success and timing of the diffusion process (Montgomery and Casterline, 1996).

Many social phenomena have been analysed through the lens of diffusionism, such as the emergence of protest movements (McAdam and Rucht, 1993; Chabot and Duyvendak, 2002; Soule, 2004; Rane and Salem, 2012) and the spread of violence (Myers, 2000; Garcia and Wimpy, 2016).

The diffusionist view has found extensive application also in the demographic studies. In particular, the need to find a plausible explanation for the decline in marital fertility across Europe that occurred during the past decades has brought to the initial application of the diffusionist concepts in the area of demography. In the 80s, the Princeton European Fertility Project and the World Fertility Survey were the two seminal works suggesting that a demographic phenomenon such as the fertility decline could have been influenced by the spread of new birth control practices and new ideas of family among people (Coale and Watkins, 1986; Tolnay, 1995; Cleland, 2001). After that, the diffusionist vision has found wide application, especially in the study of fertility choices and family planning (Lesthaeghe, 2010; Alvergne *et al.*, 2011; Bengtsson and Dribe, 2014; Vitali *et al.*, 2015). The diffusionist paradigm has also been applied to other demographically and health-related studies, such as the promotion of public health campaigns aimed at combatting the spread of diseases like HIV-AIDS, and of health-damaging behaviours as smoking, alcohol, and drug abuse (Rogers, 1995; Backer and Rogers, 1998; Svenkerud *et al.*, 1998; Rogers, 2002; Barker, 2004; Bertrand, 2004; Haider and Kreps, 2004; Abraham and Roman, 2010; Ramseyer Winter, 2013). After all, as stated by Vitali and Billari (2017), "The diffusionist perspective can be applied in general to demographic change. In particular, diffusion mechanisms can be in place whenever there is an innovation in demographic behaviours". In our work, we attempt to conceptually and empirically find a diffusionist interpretation to the novel emigration flow involving Italy lately.

The Bass diffusion model (Bass, 1969) has been extensively applied in economics and market research to study and forecast the diffusion of innovative behaviours, products, and ideas in a social system. The model represents a first attempt to provide a mathematical framework to the ideas of the sociological driving forces of adoption proposed by Rogers in his seminal work (Rogers, 1962). The Bass model consists of a simple first-order differential equation

$$Y'(t) = \left(p + \frac{q}{m}Y(t)\right)\big(m - Y(t)\big) = p\big(m - Y(t)\big) + q\,\frac{Y(t)}{m}\big(m - Y(t)\big) \qquad (1)$$

where the variation of adoption $Y'(t)$ over time is proportional to the residual susceptible population $\big(m - Y(t)\big)$, with m being the constant overall susceptible population, and $Y(t)$ the cumulative adoptions at time t. Rearranging the left-hand

side equation (1) it is possible to notice that the instantaneous adoptions $Y'(t)$ is the result of the sum between two components, the *external* one governed by parameter p and the *internal* one modulated by q. Parameter p is the so-called coefficient of innovation, representing the effect of the external influence to adopt, that includes mass media communications and public campaigns, e.g. awareness and prevention health campaigns. Parameter q is the coefficient of imitation and reflects the interpersonal influence individuals can exert on each other to adopt. So, two categories of adopters emerge: the innovators, i.e., those engaging in the new behaviour because of their ability to keep up-to-date, and the *imitators*, i.e., those who are mainly guided by interpersonal communication. While the diffusion process depends on the external component alone at the very early stages, later innovators, by activating the internal source of influence, may trigger an avalanche effect. The proposed closed-form solution of the Bass model is the following:

$$Y(t) = \mathrm{m}\frac{1-e^{-(p+q)t}}{1+\frac{q}{p}e^{-(p+q)t}} \tag{2}$$

The basic Bass model and its extensions have found empirical applications not only in market studies but also in the demographic and epidemiological fields: e.g. to analyse the diffusion of oral contraception (Sharif and Ramanathan, 1981), to clarify the dynamics in vaccination propensity and address public health policy (Onofrio, Manfredi, and Poletti, 2012; Kahana and Yamin, 2021), and to study the diffusion of disease-related information during an epidemic outbreak (Gündüç, 2019).

The fit of the Bass model to empirical situations can have a twofold research purpose: the extrapolation objective, typical of marketing studies, to forecast and monitor the future adoption of a product (Massiani and Gohs, 2015; Fan, Che, and Chen, 2017), and the interpretative objective, aimed at explaining the processes under analysis and possibly convey meanings and results of interest (Guidolin and Mortarino, 2010; Furlan, Guidolin, and Guseo, 2016; Bunea *et al.*, 2020). In the present work, we intend to follow the second approach to offer a diffusionist perspective and interpretation of the new Italian emigration process. In Bass terms, we propose to adapt the ideas of external and internal influence to the recent emigration flow to shape the figures of innovative and imitative choices to emigrate. In our thoughts, the Italian stagnation, combined with the spread over media of information about the more favourable labour market and the better living conditions in some EU countries, might have acted as external drivers of influence. On the other end, the information conveyed by actual emigrants about their foreign experience and the possibility to be better-off could have triggered word-of-mouth effects and

emulative behaviours. Holding onto this perspective, we fit the Bass model to the Italian figures in the attempt of shading new lights on the recent out-migration flow.

3. Data and methods

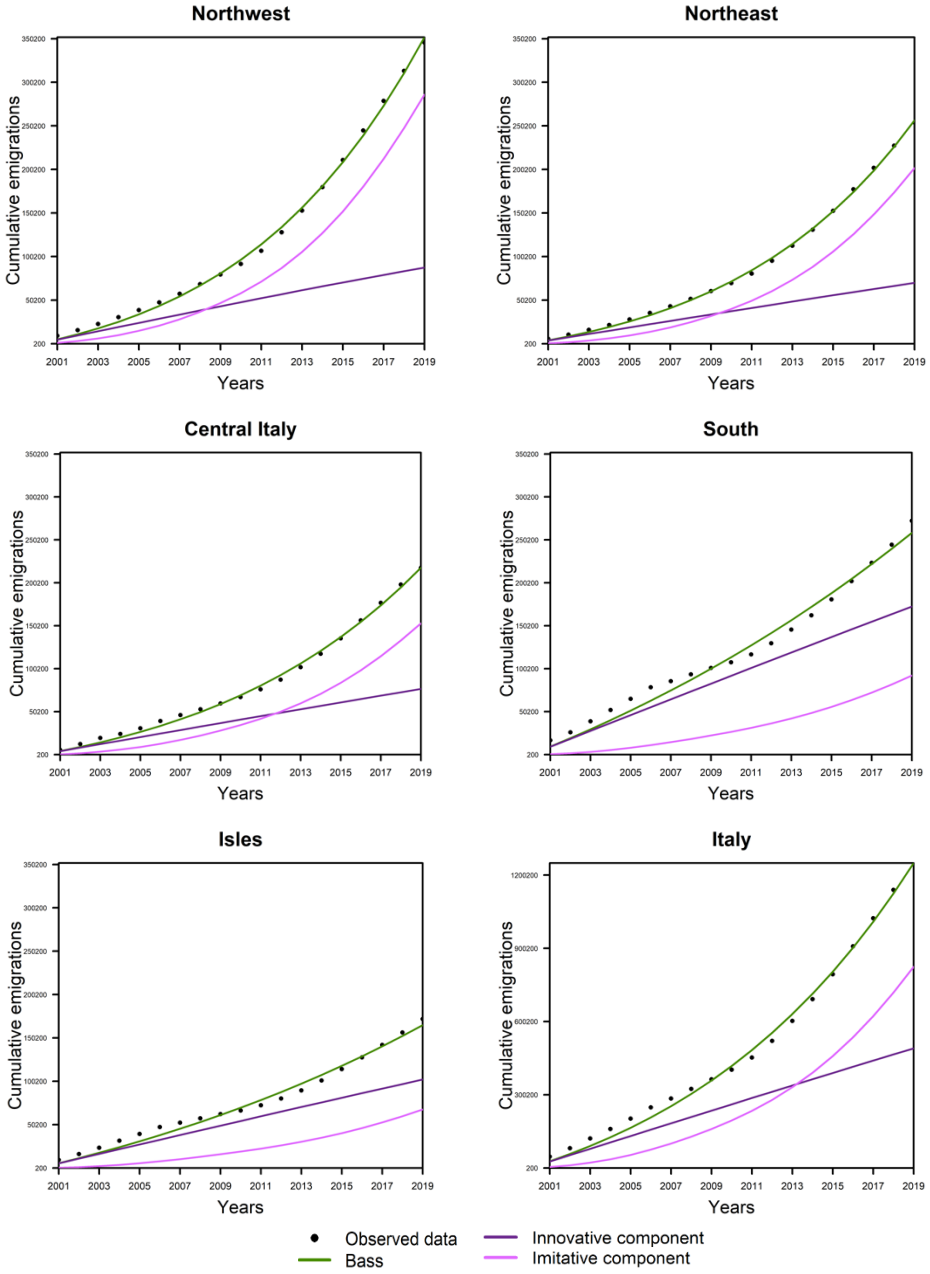
Annual counts of Italian citizens who emigrated from 2001 to 2019 were retrieved from the Italian National Institute of Statistics (Istat) repository. Outgoing counts were available for the five macro-areas of departure (previous residence): Northwest, Northeast, Centre, South, and Isles. Data at hand suffer from some intrinsic issues, which are more noticeable in the Southern areas than in the Northern ones. One significant flaw in data is that, although mandatory, many emigrants miss to enroll in the Register of Italians Resident Abroad (AIRE – *Anagrafe degli Italiani Residenti all'Estero*); this causes an underestimation of the outgoing flows. Eventually, data corrections due to routine surveillance activities lead to peaks in the time series of movements, making model estimations less reliable.

The Bass model has been fitted using NLS estimation, separately for Italy and each of the five macro-regions. Implementing the "BASS.standard" function of the DIMORA package in the R software, we automatically estimated all the model parameters *p*, *q*, and *m* (Zanghi, 2021).

4. Bass model application and discussion

The results of the Bass model fit are displayed in Figure 1. Based on the cumulative emigrations for 2001-2019, we notice a larger and faster outflow from the Northern areas. In particular, the Bass model captures the well-known North-South duality in emigration dynamics. Whereas in the Northern regions, the external component of diffusion has already paved the way to the internal component, the diffusion process is still mostly led by the external component in the South. In Bass terms, the situation in the South is in its early stage, with innovative drivers dominating the diffusion process. Conversely, the Northern areas seem to have entered a more mature phase, dominated by interpersonal communication and imitation. The Central Italy shows an intermediate situation compared to the South and North, having reached the prevalence of the imitative component over the innovative one but later than the northern regions.

Figure 1 – *Bass model fitting for the Italian macro-areas and entire Italy.*



The goodness of fit, shown by the relative MSE in Table 1, exhibits a North-South variation, with higher figures in North and Central Italy than in South Italy and Isles. This result could be the consequence of the flaws in the data mentioned before, which are generally more frequent in the Southern regions.

Table 1 – *Goodness of fit for the Bass model in different Italian macro-areas*

Area	Relative MSE
Northwest	0.28251
Northeast	0.19443
Central Italy	0.32371
South	0.76642
Isles	0.68600
Italy	0.32906

5. Conclusions and limitations

Progresses in the EU integration, technological advances, and the 2007 financial crisis have accelerated the spread of novel and peculiar migratory behaviors in Italy, characterized by an increased attitude towards international mobility. This process started in the Northern regions of Italy and is gradually taking place in the Southern areas also.

We proposed an interpretation of the new trends in Italian out-migration flows within a diffusionist paradigm. The Bass model allowed us to distinguish between the two driving forces of adoption, i.e., an innovative force that dominates diffusion processes at their early stages and an imitative force that leads at later stages.

For the period 2001-2019, the Bass models fitted for the different regions of Italy showed imitative dynamics to be prominent in Northwest, Northeast, and Central areas. In contrast, innovative dynamics are still prevailing in the South and Isles. Higher relative MSE in Bass models fitted for Southern regions revealed higher proportions of Southern migrants delaying or failing to enroll in the register of Italians living abroad.

In addition to the data collection issues, our work presents some other limitations mainly due to the lump sum consideration of the maximum number of emigrants *m* (also called "carrying capacity"). The *m* parameter has been indeed estimated via NLS procedure, instead of being held fixed *a priori*. This could have generated an over estimation of the asymptotic migrant population.

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SUMMARY

Could the bass model be applied to Italian emigration?

Objectives. Our work is a first attempt at verifying whether the diffusionist theory - a framework extensively employed in the demographic literature to interpret the spread of new ideas and practices - can adequately and meaningfully explain migration decisions and related migration data.

Methods. We test whether the Bass model can properly fit the new Italian emigration when working with absolute values. In this sense, we propose interpolation applications for the different Italian macro-areas, separately.

Results. The Bass model detects geographic differences in the underlying dynamics governing the new emigration flows. In Bass terms, the diffusion of the new emigratory behaviour travels at two different speeds in the Northern-Central Italy and in the South. The forces governing the pace of diffusion also reveal a geographic heterogeneity, presenting North-South divergences.

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IMMIGRANTS' POLITICAL ENGAGEMENT: ATTITUDES AND BEHAVIORS AMONG IMMIGRANTS IN ITALY BY COUNTRY OF ORIGIN

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1. Introduction

Broadly speaking, political incorporation involves the extent to which immigrants have been integrated into a host country's political processes and structures. The earliest form of political incorporation was the legal right to remain in a nation; the most advanced form is the ability to influence government policies, especially by holding high political office (Hochschild and Mollenkopf, 2009). Since political incorporation is not only a result but also a process, it gradually manifests itself along a continuum, starting with legalisation and naturalisation, passing through participation in non-electoral and electoral forms of politics and ending when the group of immigrants participates in the formulation and implementation of government policies. Citizenship and voting are the primary components of political incorporation. The political incorporation of immigrants in host countries is closely linked to a country's citizenship regime.

In Italy where there is a particularly restrictive citizenship regime that is firmly anchored to the principle of *ius sanguinis* which provides the right to vote only to national citizens[1], the possibility of full political incorporation of the more than 5 million foreigners currently residing in the country is precluded.

The acquisition of citizenship still represents the most powerful integration measure for immigrants. Possession of Italian citizenship is a necessary condition for voting and running for election and for ensuring equal rights and political representation. Since most immigrants in Italy are excluded from this important institutional channel of participation, our analysis will focus on the extra-electoral political activities through which immigrants exercise their citizenship (Bloemraad, 2006). Our study seeks to contribute to research on the determinants of immigrant

[1] In the most recent ten years, approximately 1.5 million people have become Italian citizens by naturalisation. In 2018, Italy was the second highest EU country to grant citizenship (112,500; 17%) after Germany (116,800; 17%). In 2019, there were 127,000 acquisitions, and in 52.7% of cases, they were women (Idos, 2020).

political engagement and incorporation, which is still lacking in Italy (Ortensi and Riniolo, 2020; Pilati, 2016).

Based on available data and according to other scholars (Berger *et al*., 2004; Eggert and Giugni, 2010; Jacobs and Tillie, 2004), we consider both political behaviours and attitudes as crucial dimensions of political engagement. In particular, we want to test the role of the country of origin with respect to political engagement. This variable is of particular interest in the case of Italy, given the heterogeneity of the immigrant population. Immigrants from different countries of origin migrate to Italy for many reasons, have distinct cultural experiences and experience different forms of settlement and inclusion. We wondered if country of origin would influence the type and extent of immigrant political incorporation in Italy, even after other important explanatory variables for political engagement were controlled. We expected that different countries of origin would affect political incorporation in diverse ways.

2. The country-of-origin effect on immigrant political engagement

Research on the determinants of immigrants' political incorporation has flourished in both the US context and in that of North-western European countries. Several theories have been advanced and different explanatory models have been identified. Only a few scholars have analysed the influence of country of origin on political engagement (Bilodeau, 2008; Bueker, 2005) and unfortunately, their limited attention to immigrants from only some parts of the world (such as Latin America for US studies) had significantly limited the generalisability of their results.

McAllister and Makkai's (1992) study of Australian immigrants showed that newcomers from countries with a shorter democratic history (from Southern Europe, Eastern Europe, the Middle East and Southeast Asia) demonstrated a more authoritarian political vision compared to the population of Australian origin and immigrants from Northern Europe and the United Kingdom. In Canada, Harles (1997) indicated that immigrants from Laos referred to their pre-migration political experiences to justify their reluctance to participate and discuss politics. In the United States, Bueker (2005) indicated that immigrants from undemocratic regimes were less likely to vote as compared with those from democratic countries. Finally, Bilodeau (2008) in his comparative study of Canada and Australia found that immigrants who experienced authoritarianism prior to their arrival in the host country were more reluctant to participate in unconventional forms of activity, especially the signing of petitions. Overall, the evidence suggests a systematic correlation between immigrants' political attitudes and behaviours and their countries of origin.

Previous studies have concluded that immigrants from the most distant countries, from hostile political regimes or, in general, when return to the country of origin is hindered are more likely to acquire citizenship and participate in politics than immigrants from societies with fewer barriers to return (Bueker, 2005). Other scholars have argued that similarities between the home country and the host country lead to greater levels of political incorporation. Moreover, immigrants who have experienced democratic elections in the origin country will be more likely to engage in host country politics as compared to their counterparts. Lastly, migrants from EU countries have both faster access to citizenship and free movement between Member States; therefore, they are more likely to be incorporated in host country politics. Based on the available data and starting from the suggestion of examining 'other types of political activity as measures of political integration between and across multiple country of origin groups' (Bueker, 2005, 136), we analysed the relationships between country of origin and political engagement among eleven immigrant groups in Italy (from three countries and eight areas of origin) to test the role of the country of origin on both political interest and political participation beyond voting. We expected that the geographical distance and the political environment of the country of origin would impact the immigrant's level of political integration in Italy. Country of origin also indirectly influences political incorporation by mediating the effect of other characteristics. There are still few works aimed at understanding how different characteristics interact with the country of origin to influence political engagement.

Despite the strict rules governing the acquisition of citizenship, the number of individuals of immigrant origin is increasing, although their political engagement is currently under-researched in Italy (Riniolo and Ortensi, 2021). Turning to intergenerational differences, existing research suggests that first generation immigrants face obstacles to political engagement related to language barriers and the difficulty in acquiring citizenship (Wong *et al*., 2011). Conversely, second generation immigrants tend to experience fewer barriers. Therefore, we expect that next to other control variables, second generation immigrants are more likely to engage in politics than are their first generation counterparts. In other words, we expect that for second generation immigrants, the socialisation process that occurs thanks to school attendance and speaking the Italian language mitigates the country-of-origin effect.

3. Data and methods

We used data from the multipurpose survey on 'Social Condition and Integration of Foreign citizens (SCIF)'. The Italian National Institute of Statistics (ISTAT) designed this source of data in its system of multipurpose household surveys in 2011–2012. It collects data on families with at least one foreign citizen. Respondents represent more than 25,000 individuals. SCIF data provide information on foreigners' political integration and allows the exploration of less studied fields, such as attitudes towards acquisition of Italian citizenship, social trust, and political involvement of respondents. Our analysis is focused on foreign citizens at birth (both born abroad and born in Italy) who are aged 15 and over, corresponding to 16,851 cases.

In order to study foreigners' political engagement, two separate dependent variables were considered. On the one hand, the SCIF survey provided information on a respondent's interest in Italian politics. This is a categorical variable equal to 1 if the individual is interested in Italian politics and equal to 0 otherwise. On the other hand, the survey allowed us to measure political participation beyond voting. Specifically, political participation was measured considering the following five types of nonvoting activities: giving money to a political party, listening to political debates, taking part in political meetings, taking part in political demonstrations and volunteering for a political party. The political participation variable is equal to 1 if migrants engaged in at least one activity, otherwise we assigned 0.

This contribution focuses on two target variables. First, we included in our models a covariate on migratory generation that was measured as a dichotomous variable equal to 0 for first generation (G1) immigrants (83.2% of respondents) and to 1 for children of immigrants who arrived in Italy before age 18 (born in Italy are included), hereafter generation 1.5 (G1.5). The second target variable was country of origin measured by the variable of citizenship at birth. In order to assure significant and robust results, we considered the first three countries of citizenship at birth: Romania (21.4%), Albania (10.3%) and Morocco (9.8%). We regrouped the remaining countries of origin into larger categories with a sufficient size for the statistical analysis. Therefore, we differentiated between Eastern Europe EU (4.4%), Eastern Europe not EU (14.0%), North Africa (4.4%), other Africa (6.2%), far East Asia (7.1%), other Asia (8.2%), Latin America (8.6%) and More Developed Countries (5.6%).

The weighted data reported in Table 1 indicate that about half of the sample (52.2%) is interested in Italian politics, although only about one in ten respondents (10.8%) declared that they will participate (beyond voting) in Italian politics. While there are no differences between G1 and G1.5 in political participation (both nearly 11% of political participants), G1 immigrants have a higher percentage of

individuals interested in Italian politics than do G1.5 immigrants (53.8% and 44.7%, respectively). As expected, both for interest and political participation, the highest percentages were those of More Developed Countries (MDCs). Conversely, Asians (from both Far East and other Asia) show the lowest rates of political interest and participation. Considering specific nationalities, while the Albanians have a percentage of political participation above the national average (12.1%), the Romanians placed third – last place – in the ranking (9.1%).

Table 1 – *Summary statistics: column percentages and percentages of interested and participating in politics by country of origin and migratory generation.*

Migratory generation and Country/area of origin	%	%interest in politics	%political participant
G1	83.2	53.8	10.8
G1.5	16.8	44.7	10.7
Romania	21.4	53.1	9.1
Albania	10.3	55.7	12.1
Morocco	9.8	48.4	10.2
Eastern Europe EU	4.4	58.2	11.4
Eastern Europe NOT EU	14.0	56.0	10.6
North Africa	4.4	54.1	11.5
Other Africa	6.2	50.4	13.7
Far East Asia	7.1	29.7	5.8
Other Asia	8.2	37.9	8.0
Latin America	8.6	60.4	11.1
MDCs	5.6	72.8	21.5
Total	100.0	52.2	10.8

Source: our calculations on SCIF data. Weighted data.

In order to verify whether there are country of origin and migratory generational differences in the overall level of political engagement both in terms of political interest and participation, we performed a set of logistic regressions estimated and presented in the form of average marginal effects (AME) to compare the coefficients of ethnic groups in different models (Mood, 2010). In this case, we opted to run the regressions on unweighted data in order to study the mechanisms behind immigrant-specific differences and to control for several variables. Three different models were proposed: Model 1 refers to the whole sample, while in Models 2 and 3, the regressions were repeated on the G1 and G1.5 subsamples, respectively.

In addition to the variables previously described and in accordance with the existing literature, we included four sets of independent variables in our regressions.

The *structural variables* included in the model were gender, age, geographical area of residence, educational level and occupational status. To evaluate the role of *situational variables*, we included variables for living in a partnership and number of children. Regarding *migration-related variables*, we included information on

naturalisation, attitudes towards Italian citizenship and Italian language proficiency. Finally, the *group-related variables* were feeling at home in Italy and social trust variables.

4. Results

Table 2 shows the probability of being interested in Italian politics in the form of average marginal effect. Model 1 synthesises the results of the full model. While the descriptive analysis in Table 1 indicates that the first generation has a higher percentage of interest in politics as compared to generation 1.5, the average marginal effect in Table 2 shows the opposite result. Next to the control variables, generation 1.5 has a higher probability of becoming interested in Italian politics as compared to its counterpart. With reference to the country of origin, all other things being equal, we find that compared to Romanians, individuals from Asian countries have a lower probability to be interested in politics. Conversely, respondents from MDCs, Eastern Europe and Latin America have a higher probability of political interest as compared to Romanians.

The results in Model 1 confirm the central role played by structural factors. Migrant women have a significantly lower propensity to be interested in Italian politics as compared to migrant men. Compared to migrants who reside in Northern Italy, those residents in the Southern part of the Peninsula have a lower probability of political interest. Moreover, we find that the probability of being interested in Italian politics is positively associated with increasing age but with a decreasing rate and is also positively associated with increasing levels of education. Unemployed migrants have less probability of being interested in Italian politics as compared to their counterparts. Considering situational variables, having three or more children tends to inhibit the probability of being interested in politics, although being married or living in a partnership does not change the likelihood of being interested in Italian politics. Turning to migratory-related and group- related variables, we find that those who are more integrated (specifically, who have a good knowledge of the Italian language, are naturalised, feel at home in Italy and have social trust) have a greater probability of being interested in Italian politics as compared to their counterparts.

The results of Model 2, which refers to the subsample of G1 migrants, confirm all the evidence described in Model 1. The only difference from the previous model is that in Model 2, those with one child have a (slightly) higher probability of being interested in Italian politics than those without children. In other words, first generation migrants drive the results of Model 1. In the case of G1.5 migrants (Model 3), the variables are generally less significant. Specifically, the differences between

areas or countries of origin are not significantly different from the reference modality (Romanians).

Table 2 – *Binary logistic regression: the likelihood to be interested in Italian politics.*

Independent variables	Total		G1		G1.5	
	AME	p-val	AME	p-val	AME	p-val
Migratory generation (Ref. First generation)						
G1.5	0.192	**	…		…	
Country of origin (Ref. Romania)						
Albania	0.101		0.043		0.237	
Morocco	-0.013		-0.101		0.243	
Eastern Europe EU	0.253	**	0.263	**	0.311	
Eastern Europe NOT EU	0.245	***	0.287	***	0.095	
North Africa	0.142		0.131		0.055	
Other Africa	0.031		0.040		-0.137	
Far East Asia	-0.646	***	-0.708	***	-0.341	
Other Asia	-0.323	***	-0.411	***	0.114	
Latin America	0.348	***	0.390	***	0.153	
MDCs	0.593	***	0.670	***	-0.189	
Gender (Ref. Male)						
Female	-0.542	***	-0.623	***	-0.195	**
Age	0.087	***	0.073	***	0.164	***
Age Squared	-0.001	***	-0.001	***	-0.001	***
Residence geographical area (Ref. Northern Italy)						
Central Italy	0.309	***	0.272	***	0.501	***
Southern Italy	-0.432	***	-0.460	***	-0.301	**
Educational level (Ref. Low)						
Medium	0.474	***	0.472	***	0.343	**
High	0.923	***	0.912	***	0.910	**
Occupational status (Ref. Employed)						
Not employed	-0.190	***	-0.182	***	-0.069	
Married or living in partnership (Ref. No)						
Yes	0.042		0.023		0.078	
Number of children (Ref. Having no children)						
Having only one child	0.077		0.123	*	-0.461	**
Having two children	-0.024		0.012		-0.346	
Having three or more children	-0.175	**	-0.146	*	-0.468	
Italian Proficiency (Ref. Low)						
Medium	0.442	***	0.430	***	0.566	***
High	0.772	***	0.745	***	1.000	***
Naturalization and attitude toward Italian citizenship (Ref. Naturalized)						
Not naturalized willing to acquire Italian citizenship	-0.058		-0.234		0.238	
Not naturalized unwilling to acquire Italian citizenship	-0.376	***	-0.554	***	-0.101	
Feeling at home in Italy (Ref. No)						
More not than yes	0.239	*	0.227	*	0.380	
More yes than not	0.110		0.098		0.254	
Yes	0.370	***	0.361	***	0.507	
Social trust (Ref. No)						
Yes	0.221	***	0.242	***	0.100	
Costant	-2.586	***	-2.001	***	-4.599	***
Pseudo R2	0.110	***	0.114	***	0.104	***
N	16,851	***	14,182	***	2,669	***

*Note: *p<0.1, **p<0.05, ***p<0.01.*
Source: our calculations on SCIF data. Unweighted data.

Table 3 – *Binary logistic regressions: the likelihood of participating in Italian politics. Unweighted data.*

Independent variables	Total		G1		G1.5	
	AME	p-val	AME	p-val	AME	p-val
Migratory generation (Ref. First generation)						
G1.5	0.468	***	…		…	
Country of origin (Ref. Romania)						
Albania	0.264	**	0.380	**	-0.330	
Morocco	0.129		0.198		-0.372	
Eastern Europe EU	0.232		0.312	*	-0.297	
Eastern Europe NOT EU	0.229	*	0.299	**	-0.219	
Other Africa	0.583	***	0.669	***	-0.004	
North Africa	0.290	*	0.372	*	-0.343	
Far East Asia	-0.413	*	-0.469	*	-0.450	
Other Asia	-0.050		-0.057		-0.114	
Latin America	0.345	**	0.472	***	-0.455	
MDCs	0.948	***	1.093	***	-0.161	
Gender (Ref. Male)						
Female	-0.381	***	-0.418	***	-0.176	
Age	0.075	***	0.079	***	0.093	**
Age Squared	-0.001	***	-0.001	***	-0.001	*
Residence geographical area (Ref. Northern Italy)						
Central Italy	0.311	***	0.289	***	0.417	*
Southern Italy	-0.369	***	-0.415	***	-0.118	
Educational level (Ref. Low)						
Medium	0.525	***	0.552	***	0.454	**
High	0.831	***	0.838	***	0.765	*
Occupational status (Ref. Employed)						
Not employed	-0.171	*	-0.205	**	-0.057	
Married or living in partnership (Ref. No)						
Yes	0.005		-0.003		-0.044	
Number of children (Ref. Having no children)						
Having only one child	-0.036		-0.004		-0.330	
Having two children	-0.220	**	-0.232	**	-0.061	
Having three or more children	-0.271	**	-0.295	**	-0.146	
Italian Proficiency (Ref. Low)						
Medium	0.225	**	0.234	**	0.052	
High	0.468	***	0.419	***	0.659	*
Naturalization and attitude toward Italian citizenship (Ref. Naturalized)						
Not naturalized willing to acquire Italian citizenship	-0.038		-0.168		0.236	
Not naturalized unwilling to acquire Italian citizenship	-0.347	*	-0.461	**	-0.166	
Feeling at home in Italy (Ref. No)						
More not than yes	-0.363	**	-0.423	**	0.163	
More yes than not	-0.605	***	-0.634	***	-0.335	
Yes	-0.424	**	-0.457	***	-0.122	
Social trust (Ref. No)						
Yes	-0.142	*	-0.140	*	-0.151	
Costant	-3.840	***	-3.773	***	-4.145	***
Pseudo R2	0.066		0.071		0.061	
N	16,851		14,182		2,669	

*Note: *p<0.1, **p<0.05, ***p<0.01.*
Source: our calculations on SCIF data.

Moreover, while the other structural and situational variables remain significant and influence the interest in Italian politics in the same way described in Models 1 and 2, the migratory-related and group-related variables lose statistical significance. Therefore, for migrants who arrived in Italy before the age of 18, Italian proficiency, naturalisation (and the attitude toward Italian citizenship), feeling at home in Italy and social trust become irrelevant in determining political interest.

Table 3 summarises the probability of participating in Italian politics beyond voting. The three models that compose this table refer to the same subsamples described with reference to Table 2. As expected, these regressions confirm most of the evidence already described with reference to political interest. However, some interesting differences emerged as compared to the previous analysis.

Considering the whole sample (Model 1), respondents in this regression who came from Asia had a lower probability of participating in Italian politics than did Romanians. However, in the case of the political participation dependent variable, in addition to Eastern Europeans, Latin Americans and MDCs, migrants from Africa also had a significantly higher probability to participate in Italian politics as compared to Romanians.

The other structural, situational and migratory-related variables of Table 3 show similar effects in comparison to those already described with reference to Table 2. Conversely, in the case of political participation, the group-related variables have AMEs of the opposite sign as compared to the regressions with the dependent variable of political interest (compare Tables 2 and 3). Our results indicate that feeling at home in Italy and having social trust play a negative role in political participation. This result seems to indicate that contrary to political interest, political participation (beyond voting) of migrants mainly has the connotation of protest, and for this reason, the lower the sense of belonging and trust in the host country, the greater the political participation of respondents.

Model 2 relating to G1 migrants indicates evidence like Model 1. In Model 3 referring to G1.5, the role played by the variables of ethnic origin, gender, occupational status, number of children, naturalisation, feeling at home in Italy and social trust become statistically irrelevant.

5. Conclusion

According to our results, the country-of-origin effect on migrant political engagement is confirmed in the Italian context; however, it loses its strength in the case of second-generation migrants. On the one hand, evidence emerged which indicates that migrants from countries with a history of democracy are not always more inclined to engage in Italian politics as compared to their counterparts.

Moreover, the geographical distance and the difficulty of returning to the country of origin does not always lead to a greater political engagement in Italy. On the other hand, the assimilative hypothesis seems to be confirmed, namely that more integrated individuals – who have spent more time in Italy, who have good Italian proficiency and who have acquired Italian citizenship – will engage more in politics compared to their counterparts.

The migratory generation plays a central role in determining immigrants' political engagement. While descriptive analysis indicated that G1 has a higher percentage of political interest next to the control variables, the average marginal effect from logistic regressions proved that G1.5 has a higher probability of interest in Italian politics. Furthermore, of particular significance for G1.5 in determining political engagement are migratory-related and group-related variables. However, these variables lose statistical significance in the case of G1.5 migrants.

The main limitation of our analysis is that due to the small number of respondents, we had to jointly consider all individuals who arrived before the age of eighteen. In other words, we could not distinguish individuals born in Italy from decimal migratory generations (second generation, 1.75, 1.5 and 1.25 generations, the last three corresponding to migrants who arrived before age 6, between the ages of six and 12, and between the ages of 13 and 17, respectively) who could have political behaviours very different from each other. Thanks to the progressive absolute and relative increases of second-generation immigrants in Italy, future research should fill this gap by proposing distinct analyses for decimal migratory generations.

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SUMMARY

Immigrants' political engagement: attitude and behaviours among immigrants in Italy by country of origin

The persistent lack of voting rights in Italy for immigrants and the rigid citizenship regime based on jus sanguinis preclude immigrants from formal political participation. However, there are other forms of political participation practiced by immigrants. This article analyses the characteristics that are associated with immigrants' non-formal political participation in Italy. A target variable in our analyses is the country of origin of immigrants. The prevailing scientific literature has highlighted that immigrants' countries of origin play an important role in their psychological, social, economic and political behaviour. The country of origin and the associated background can in both repressive political systems and pre-migration discrimination have a negative effect on political attitudes and the behaviour of immigrants in the host country. Using data from the 'Social condition and integration of foreign citizens' (SCIF) survey conducted by the National Statistical Institute (ISTAT) in 2011–2012, our paper examines the determinants of immigrants' political engagement in Italy with a focus on both country of origin and migratory generational differences. Using logistic regression models, we explored the engagement differences in immigrant groups in Italian politics as determined by taking an interest in Italian political issues and by participating in different non-electoral political activities, controlling for the main variables used in the literature. Moreover, our data allowed us to investigate the differences in political engagement by migratory generation. The results confirm the country-of-origin effect in spurring political engagement. In general, immigrants from more developed countries, Eastern Europe and Latin America are more interested in Italian politics than are those from African and Asian countries. Moreover, next to other control variables, being in the second generation increases the likelihood of engaging in politics as compared to the first generation.

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DIFFERENZE NORD/SUD NELLA RELAZIONE TRA CONDIZIONE LAVORATIVA E FECONDITÀ IN ITALIA

Giammarco Alderotti

1. Introduzione

La condizione lavorativa è sempre stata considerata tra i principali predittori della fecondità nei paesi occidentali e ha assunto un ruolo ancora più centrale nel corso degli ultimi decenni, caratterizzati da importanti cambiamenti nel mercato del lavoro globale (come l'aumento della partecipazione femminile al mercato del lavoro, o la diffusione del precariato). Vari studi demografici hanno sottolineato come l'incertezza (oggettiva e soggettiva) derivante dalle suddette trasformazioni del mercato del lavoro influisca negativamente sulla fecondità, sia pur con differenze importanti a livello di genere e di contesto (Blossfeld *et al*., 2006, Vignoli *et al*., 2020a). Se da una parte la ricerca demografica degli ultimi anni ha prestato attenzione alle differenze nella relazione tra lavoro e fecondità in contesti nazionali caratterizzati da diverse politiche di welfare, dall'altra, le caratteristiche regionali nei singoli stati hanno ricevuto minore interesse. In questo contesto, l'Italia si presenta come un caso di studio interessante per un'analisi regionale, poiché caratterizzata da un forte gradiente geografico riscontrabile anche in termini di lavoro e fecondità. Storicamente, le regioni meridionali sono quelle economicamente più svantaggiate e con fecondità più alta, contrapposte a quelle settentrionali più forti economicamente e con fecondità più bassa. Tuttavia, negli ultimi decenni si è verificata un'inversione nei *trend* di fecondità, con le regioni del Nord Italia che hanno iniziato a presentare tassi di fecondità più alti rispetto alle regioni del Sud Italia a partire dalla seconda metà degli anni 2000 (Zambon *et al*., 2020). Per quanto riguarda l'ambito lavorativo, a partire dagli anni Novanta il paese è stato investito da una deregolamentazione parziale e selettiva che ha causato una segmentazione del mercato del lavoro e provocato un aumento della diseguaglianza sociale e delle difficoltà per i giovani di inserirsi nella società del lavoro e di compiere la transizione alla vita adulta (Barbieri and Scherer, 2009; Esping-Andersen and Regini, 2010).

In mancanza di studi recenti che analizzino a livello sub-nazionale la relazione tra lavoro e fecondità a livello individuale, e alla luce dei cambiamenti sociali ed economici che hanno avuto luogo negli ultimi anni, questo studio analizza l'effetto

della condizione lavorativa sulla transizione alla genitorialità separatamente per il Centro-Nord e per il Sud Italia.

2. Lavoro e fecondità

La partecipazione al mercato del lavoro è associata positivamente alla fecondità in maniera piuttosto trasversale tra gli uomini, mentre l'intensità e il segno della relazione tra lavoro e fecondità cambiano significativamente tra le donne. In una meta-analisi, Matysiak e Vignoli (2008) sintetizzano la letteratura demografica sul tema dell'associazione tra lavoro e fecondità tra le donne e i loro risultati suggeriscono la presenza di una forte eterogeneità, imputabile principalmente alle differenze istituzionali tra i paesi considerati: l'incompatibilità tra lavoro e famiglia è meno forte nei paesi in cui le istituzioni supportano le madri lavoratrici (tipicamente i regimi socialdemocratici, come Danimarca, Norvegia, Svezia e Finlandia, o socialisti, come Repubblica Ceca, Ungheria e Polonia), mentre è massima nei paesi con *welfare* familistico (come Italia e Spagna), caratterizzati da mercati del lavoro fortemente regolamentati e supporto insufficiente ai genitori lavoratori. Non è solo la partecipazione o meno al mercato del lavoro a incidere sui comportamenti di fecondità. Anche tra chi lavora, gli episodi di incertezza lavorativa – generalmente operazionalizzata in ambito demografico attraverso il tipo di contratto (a tempo determinato vs. indeterminato) e/o gli episodi di disoccupazione – possono influenzare le scelte di vita quali entrare in un'unione stabile o avere un figlio, dal momento che generano incertezza sul futuro e minano la stabilità economica (Scherer, 2009). In un'altra meta-analisi, Alderotti *et al*. (2021) analizzano la relazione tra incertezza lavorativa e fecondità in Europa e concludono che il lavoro a tempo determinato è associato negativamente soprattutto alla fecondità delle donne, mentre la disoccupazione ha effetti particolarmente negativi sulla fecondità tra gli uomini. Inoltre, in linea con le sopracitate differenze relative agli assetti istituzionali, gli autori individuano nei paesi del Sud Europa quei contesti in cui l'esposizione all'instabilità lavorativa influisce con maggiore intensità sulle scelte riproduttive individuali.

2.1. Lavoro e fecondità in Italia

Storicamente, l'Italia è caratterizzata da una bassa partecipazione femminile al mercato del lavoro. Anche se il tasso di occupazione tra le donne è aumentato notevolmente negli ultimi anni (dal 33,5% nel 1977 al 49,5% nel 2018, dati Istat), la percentuale resta relativamente bassa rispetto ad altri paesi europei. Inoltre, il tasso

di occupazione è più basso tra le donne con figli. La partecipazione al mercato del lavoro da parte della popolazione maschile è invece mediamente più alta, anche se si è ridotta negli ultimi decenni (dal 74,6% nel 1977 al 67,6% nel 2018). La deregolamentazione del mercato del lavoro iniziata negli anni Novanta con le leggi Treu (L.196/1997) e Biagi (L.30/2003) ha facilitato la diffusione dei contratti di lavoro a tempo determinato, che in poco tempo sono arrivati a costituire il 15% circa dei contratti di lavoro dipendente, con una crescita tra le più veloci d'Europa. La deregolamentazione ha anche rinforzato la divisione tradizionale tra "insiders" del mercato del lavoro – ovvero i lavoratori a tempo indeterminato – e "outsiders", caratterizzati da situazioni lavorative instabili, garanzie e sussidi scarsi o inesistenti, particolarmente diffusi tra le donne e i lavoratori giovani (Ferrera, 2000). La letteratura demografica che studia la relazione tra lavoro e fecondità in Italia disegna un quadro in cui l'incertezza lavorativa influisce negativamente sulla fecondità di uomini e donne, anche se all'interno della coppia è la condizione lavorativa dell'uomo che conta di più ai fini delle decisioni riproduttive. Lo studio di Santarelli (2011) mostra che le coppie in cui lavora solo l'uomo hanno probabilità maggiori di avere il primo figlio in Italia, mentre le donne che lavorano diventano madri più raramente di quelle che non lavorano. Vignoli e colleghi (2012) trovano che un aumento di reddito di uno dei due membri della coppia è correlato a una maggiore probabilità di avere il primo figlio, anche se l'effetto è più forte se è il reddito dell'uomo ad aumentare. Tuttavia, per quanto riguarda la stabilità lavorativa, è più probabile che siano le coppie in cui entrambi i membri hanno un contratto di lavoro a tempo indeterminato ad avere un figlio rispetto alle coppie in cui uno dei due ha un lavoro precario. L'effetto negativo dell'incertezza lavorativa sulla transizione al primo figlio è stato quantificato in un rinvio del primo figlio da parte del 7% delle donne e del 5% degli uomini (Vignoli *et al*. 2020b). Anche le analisi di Barbieri *et al*. (2015) su diversi paesi europei suggeriscono che l'instabilità lavorativa comporti un ritardo nelle decisioni di fecondità nei paesi dell'Europa meridionale (Italia e Spagna), mentre tali decisioni risultano poco o affatto correlate al contesto lavorativo in altri contesti istituzionali.

2.2. Il gradiente nord-sud

Tutti gli studi a livello individuale sul nesso lavoro/fecondità in Italia menzionati finora hanno il limite di non considerare adeguatamente le forti differenze regionali che caratterizzano il paese sia dal punto di vista economico-lavorativo che da quello demografico. Tali differenze sono state messe in luce a più riprese e a vari livelli. Tradizionalmente, l'Italia è sempre stata caratterizzata da un modello dualistico che vedeva da una parte le regioni centrosettentrionali più avanzate economicamente e

con bassa fecondità, e dall'altra quelle meridionali, più svantaggiate economicamente e ad alta fecondità. Come mostrato da Vitali e Billari (2017), tale modello inizia a invertirsi – dal punto di vista demografico – a partire dagli anni 2000, quando, dopo aver raggiunto il picco minimo di fecondità negli anni 1990, inizia una leggera ripresa della fecondità a livello nazionale guidata dalle regioni del settentrione. Gli stessi autori hanno studiato le relazioni tra una serie di indicatori (come il PIL, o alcuni indicatori dei processi di secolarizzazione) e il tasso di fecondità totale (TFT), notando come queste cambiano in base all'area geografica. In particolare, mostrano che la relazione tra partecipazione femminile al mercato del lavoro e TFT, negativa fino al 2010, diventa positiva nelle regioni del nord negli anni più recenti. Questo *trend* è in linea con i dati Istat del 2020 che riportano che la percentuale di madri che dichiara di non aver mai lavorato per prendersi cura dei figli si aggira intorno all'11% a livello nazionale, con picchi del 20% nelle regioni del Mezzogiorno, molto al di sopra della media europea del 3,7%. Altri studi a livello macro sulla relazione tra lavoro e fecondità confermano i *trend* descritti finora: Zambon *et al*. (2020) mostrano come l'andamento della fecondità regionale in Italia sia fortemente legata all'andamento economico, con il Nord Italia a fare da traino durante la ripresa della fecondità dei primi anni 2000 (grazie anche al contributo alla fecondità degli immigrati, vedi Caltabiano *et al*. 2009); mentre Cazzola *et al*. (2016) trovano una correlazione negativa tra tasso di disoccupazione e TFT nelle regioni del Centro e del Nord, più forte tra gli uomini che tra le donne.

Le differenze in termini economici e demografici tra il Centro-Nord e il Sud dell'Italia sono note, e gli studi esistenti suggeriscono – almeno a livello aggregato – un certo livello di divergenza nella relazione che lega le dinamiche lavorative a quelle di fecondità. Tuttavia, nonostante l'argomento sia di estrema attualità, la relazione tra condizione lavorativa e fecondità in Italia non è mai stata analizzata a livello individuale con un livello di dettaglio regionale. Lo scopo dello studio è quello di riempire proprio questa lacuna nella letteratura demografica, analizzando la relazione tra condizione lavorativa e transizione al primo figlio tra uomini e donne, separatamente nelle regioni del Centro-nord e in quelle del Sud.

3. Dati e metodi

I dati utilizzati sono quelli dell'indagine "Famiglia e Soggetti Sociali" (FSS) condotta dall'Istat nel 2016. L'indagine contiene informazioni retrospettive sulle storie occupazionali e di fecondità dei rispondenti con dettaglio mensile, permettendo di studiare la relazione tra condizione lavorativa e fecondità nel corso di vita degli individui. I rispondenti nati prima del 1960 sono stati esclusi dal campione poiché hanno vissuto in minima parte – se non affatto – la

deregolamentazione del mercato del lavoro iniziata negli anni Novanta. Per questo motivo, le analisi sono state fatte su individui nati tra il 1960 e il 1998 (che è la coorte più recente disponibile nell'indagine). Inoltre, sono state escluse le osservazioni che riportavano informazioni mancanti circa variabili fondamentali (cioè sulla nascita del primo figlio e/o sulla storia occupazionale). Il campione così selezionato conta 7071 uomini e 7147 donne (per le numerosità relative ai singoli modelli, si veda Tab. A1 in Appendice). Per studiare la relazione tra condizione lavorativa e fecondità, si ricorre all'analisi di sopravvivenza (o *event history*) sulla transizione al primo figlio. Nello specifico, viene utilizzato il modello di Cox. Gli individui entrano in osservazione a partire dai 16 anni ed escono dall'analisi quando hanno il primo figlio o quando raggiungono i 49 anni di età. La variabile dipendente, dunque, è una dicotomica che indica se il rispondente ha avuto un figlio. La variabile indipendente principale è la condizione lavorativa del rispondente, anche questa tempo-dipendente, che permette di distinguere tra lavoratori con contratto a tempo indeterminato, lavoratori con contratto a tempo determinato[1], lavoratori autonomi e non occupati (senza distinzione tra disoccupati e inattivi). Quest'ultima variabile è misurata con un anticipo di nove mesi così da rappresentare la condizione occupazionale del rispondente al momento del concepimento del figlio e non al momento della sua nascita ed evitare analisi anticipatorie. Per quanto riguarda la variabile di stratificazione geografica, si distinguono due gruppi: il Centro-nord (Valle d'Aosta, Piemonte, Liguria, Provincia di Trento, Provincia di Bolzano, Lombardia, Veneto, Friuli-Venezia Giulia, Emilia-Romagna, Toscana, Umbria, Lazio, Marche, Abruzzo) e il Mezzogiorno (Campania, Calabria, Molise, Puglia, Basilicata, Sicilia, Sardegna). Tuttavia, la variabile è costruita sulla base della regione residenza al momento dell'intervista, mentre la relazione tra lavoro e fecondità è analizzata retrospettivamente a partire dal momento dell'intervista (le implicazioni di questo limite sono discusse nella parte finale dell'articolo). A questo proposito, viene sfruttata l'informazione sulla provincia di residenza al momento di ogni episodio lavorativo per individuare chi ha cambiato macroregione di residenza (cioè da Sud a Centro-nord o viceversa) almeno una volta tra 18 e 49 anni. Si noti che questo controllo non individua tutte le migrazioni interne che hanno comportato un cambio di residenza tra le due macro-aree, bensì individua solo quelle collegate ad un cambio di residenza del rispondente in occasione di un determinato episodio lavorativo. Tuttavia, permette di correggere almeno in parte le eventuali distorsioni introdotte dalle migrazioni interne.

[1] La categoria dei lavoratori a tempo determinato comprende anche gli individui con contratto di lavoro parasubordinato di tipo co.co.co. e co.co.pro, data la prevalente precarietà delle loro posizioni lavorative.

L'insieme delle variabili di controllo include il livello di istruzione dei genitori (si considera il più alto tra quello della madre e quello del padre del rispondente: 1 "istruzione primaria", 2 "istruzione secondaria inferiore", 3 "istruzione secondaria superiore o terziaria"); il numero di fratelli e/o sorelle del rispondente (continua); la regione di residenza al momento dell'intervista, e il luogo di nascita (0 "Italia", 1 "estero"). Inoltre, si controlla per alcune variabili tempo-dipendenti, quali il livello di istruzione del rispondente (1 "non ha completato l'istruzione", 2 "istruzione secondaria inferiore o più bassa", 3 "istruzione secondaria superiore", 4 "istruzione terziaria"), lo stato di unione (1 "non in unione", 2 "convivenza", 3 "matrimonio") e il periodo di calendario (1 "prima del 1997", 2 "1997-2008", 3 "dopo il 2008"; gli anni soglia del 1997 e del 2008 sono stati scelti in quanto rappresentano rispettivamente l'inizio - simbolico - dell'era della deregolamentazione del mercato del lavoro in Italia con la legge Treu, e l'inizio della Grande Recessione, eventi che potrebbero aver influito sulla relazione tra lavoro e fecondità).

Tutti i modelli sono eseguiti separatamente per macro-area geografica e genere. Il primo gruppo di modelli distingue soltanto chi lavora da chi non lavora, analizzando le conseguenze sulla transizione al primo figlio. Il secondo gruppo di modelli, invece, scende nel dettaglio del tipo di lavoro, distinguendo tra lavoratori a tempo indeterminato, determinato, autonomi e non-occupati.

4. Risultati

4.1. Lavoro vs. non lavoro

La prima parte delle analisi è rivolta a individuare come cambia la relazione tra lavoro e transizione al primo figlio per genere e macro-area di residenza focalizzandosi sulla dicotomia lavoro/non lavoro.

La Tabella 1 mostra i risultati dei modelli di sopravvivenza sulla transizione al primo figlio. Per ragioni di spazio, sono riportati soltanto i risultati relativi alla variabile sul lavoro. I modelli completi sono riportati in Appendice (Tabella A1). Le analisi mostrano che, al netto dei fattori di controllo inseriti nel modello, al Centro-nord il non-lavoro ha un effetto negativo sulla transizione al primo figlio tra gli uomini, mentre l'effetto tra le donne è praticamente nullo (essendo l'hazard ratio vicino a uno). Per quanto riguarda le regioni del Mezzogiorno, l'effetto negativo del non-lavoro sulla transizione al primo figlio tra gli uomini risulta più grande (hazard ratio = 0,61) e più significativo (p-value < 0,01) rispetto al Centro-nord. Tra le donne, invece, emerge un'associazione positiva tra il non-lavoro e il rischio di avere il primo figlio.

Tabella 1 – *Modello di Cox sulla transizione al primo figlio tra uomini e donne nel Centro-nord e nel Sud. Hazard ratio relativi alla variabile lavoro/non lavoro.*

	Centro-nord			Sud		
	Uomini		Donne	Uomini		Donne	
Lavoro	1,00		1,00	1,00		1,00	
Non-lavoro	0,89	*	0,98	0,61	***	1,14	**

Nota: p<0,10; ** p<0,05; *** p<0,01*
Nel modello sono inclusi controlli per periodo di calendario, numero di fratelli/sorelle, livello di istruzione dei genitori, luogo di nascita, migrazione interna, regione di residenza al momento dell'intervista, livello di istruzione del rispondente, stato di unione.

4.2. Tipo di lavoro

Nel secondo gruppo di analisi, si scende maggiormente nel dettaglio della condizione lavorativa, andando ad osservare la relazione tra il tipo di lavoro svolto e la transizione al primo figlio. La Tabella 2 mostra i risultati relativi agli uomini. Al Centro-nord, avere un lavoro a tempo determinato invece che a tempo indeterminato ha un effetto fortemente negativo sul diventare padri (hazard ratio = 0,75), mentre non c'è relazione statisticamente significativa per quanto riguarda i lavoratori autonomi. Al contrario, nelle regioni del sud Italia non emergono differenze significative nella transizione al primo figlio tra lavoratori dipendenti a tempo indeterminato, a tempo determinato e lavoratori autonomi, mentre resta fortemente negativa e significativa l'associazione tra il non-lavoro e la transizione al primo figlio. Nella Tabella 3 sono riportati i risultati dello stesso modello fatto sulle donne. Nelle regioni del Centro-nord, anche tra le donne si nota una relazione negativa significativa tra lavoro a tempo determinato e transizione al primo figlio (hazard ratio = 0,84, sempre considerando le lavoratrici a tempo indeterminato come categoria di riferimento), mentre non c'è un'associazione significativa con il lavoro autonomo e il non-lavoro. Spostando l'attenzione sulle regioni del Mezzogiorno, osserviamo che resta il non-lavoro l'unica condizione significativamente associata alla transizione al primo figlio tra le donne, con un effetto positivo sul diventare madri. Lavoro a tempo determinato e lavoro autonomo non hanno effetti rilevanti rispetto al lavoro a tempo indeterminato.

Tabella 2 – *Modello di Cox sulla transizione al primo figlio tra uomini e donne nel Centro-nord e nel Sud. Hazard ratio relativi alla variabile sul tipo di lavoro, uomini.*

	Area geografica			
Tipo di lavoro	Centro-nord		Sud	
Lavoro a tempo indeterminato	1,00		1,00	
Lavoro a tempo determinato	0,75	***	1,02	
Lavoro autonomo	0,98		0,89	
Non-lavoro	0,86	**	0,59	***

Nota: p<0,10; ** p<0,05; *** p<0,01*
Nel modello sono inclusi controlli per periodo di calendario, numero di fratelli/sorelle, livello di istruzione dei genitori, luogo di nascita, migrazione interna, regione di residenza al momento dell'intervista, livello di istruzione del rispondente, stato di unione.

Tabella 3 – *Modello di Cox sulla transizione al primo figlio tra uomini e donne nel Centro-nord e nel Sud. Hazard ratio relativi alla variabile sul tipo di lavoro, donne.*

	Area geografica			
Tipo di lavoro	Centro-nord		Sud	
Lavoro a tempo indeterminato	1,00		1,00	
Lavoro a tempo determinato	0,84	**	1,08	
Lavoro autonomo	0,93		0,88	
Non-lavoro	0,95		1,14	*

Nota: p<0,10; ** p<0,05; *** p<0,01*
Nel modello sono inclusi controlli per periodo di calendario, numero di fratelli/sorelle, livello di istruzione dei genitori, luogo di nascita, migrazione interna, regione di residenza al momento dell'intervista, livello di istruzione del rispondente, stato di unione.

5. Conclusioni

Negli ultimi anni la ricerca demografica ha prestato un'attenzione notevole allo studio della relazione tra lavoro e fecondità, individuando nella condizione occupazionale una delle principali determinanti dei comportamenti di fecondità nei paesi occidentali. Tuttavia, nel recente proliferare di studi comparativi che descrivono come il nesso lavoro/fecondità cambi al variare degli assetti istituzionali, le realtà nazionali sono spesso trattate come unità al loro interno omogenee, risultando inevitabilmente in approssimazioni più o meno grossolane a seconda del contesto. In questa cornice, l'Italia si presenta come un caso di studio esemplare, data la diversità che attraversa le sue regioni sia per quanto riguarda la demografia, sia per quanto riguarda il mercato del lavoro. I risultati di questo studio dimostrano che non si può considerare l'Italia come un insieme omogeneo rispetto alle regioni che la compongono. Tra gli uomini, l'associazione negativa tra non-lavoro e

transizione al primo figlio è più marcata nelle regioni del sud Italia, mentre per quanto riguarda il lavoro a tempo determinato, si trova una relazione negativa con la fecondità soltanto nelle regioni del Centro-nord. Le differenze sono ancora più marcate tra le donne: se, da una parte, la non-occupazione non è associata significativamente alla maternità tra le donne del Centro e del Nord, vi è invece un'associazione significativa e positiva tra non-lavoro e maternità nelle regioni del Sud. Inoltre, analogamente a quanto accade per gli uomini, il lavoro a tempo determinato influisce negativamente sulla transizione al primo figlio soltanto tra le donne del Centro-nord. Nel complesso, i risultati delle analisi a livello individuale confermano le associazioni tra lavoro e fecondità individuate dalle analisi a livello aggregato, secondo cui la relazione tra disoccupazione e fecondità è negativa soprattutto tra gli uomini, mentre la relazione tra non-occupazione e fecondità rimane positiva soltanto nelle regioni del Sud (Vitali e Billari, 2017; Zambon *et al*. 2020). Sembra persistere quindi per l'Italia un modello di famiglia in cui la posizione lavorativa e/o economica dell'uomo è più importante di quella della donna, specialmente nelle regioni del Sud dove si fanno più figli proprio quando la donna non partecipa al mercato del lavoro. Lo studio presenta alcune limitazioni relative alla qualità dei dati utilizzati. La prima è che i dati FSS 2016 non permettono di distinguere tra disoccupazione e inattività, perciò si può soltanto parlare di "non-lavoro" – nonostante disoccupazione e inattività abbiano significati profondamente diversi, soprattutto tra le donne. In secondo luogo, la divisione tra individui residenti al Centro-nord e al Sud è fatta sulla base della residenza rilevata al momento dell'intervista, mentre la condizione occupazionale e la fecondità sono rilevate negli anni che precedono l'intervista. Così facendo, gli individui che hanno migrato al Centro-nord dopo aver fatto un figlio mentre vivevano ancora al Sud (o viceversa) contribuiscono alla stima dell'effetto nella macroregione di residenza al momento dell'intervista e non di quella dove si è verificato effettivamente l'evento oggetto di studio (ovvero la nascita del primo figlio). Nonostante la correzione introdotta (controllo per movimenti migratori interni che hanno comportato un cambio di residenza tra Centro-nord e Sud in corrispondenza di un episodio lavorativo), questo problema potrebbe aver causato una distorsione nelle stime. Un' analisi di sensitività effettuata stimando nuovamente i modelli sul campione di tutti gli individui che hanno cambiato almeno una volta residenza tra regioni del Centro-nord e del Sud suggerisce che i risultati sono stabili, poiché evidentemente guidati dalla maggioranza degli individui che non ha cambiato macroregione di residenza. I risultati di questo studio ribadiscono il fatto che considerare la macro-area di residenza degli individui aggiunge un'importante dimensione di eterogeneità allo studio della relazione tra dinamiche del lavoro e fecondità in Italia, non solo a livello macro, ma anche negli studi a livello individuale. I prossimi studi sul tema dovrebbero dare maggior rilievo a questa eterogeneità, evitando, quando possibile,

di trattare la relazione tra fenomeni relativi alla sfera lavorativa e demografica in maniera omogenea a livello nazionale, riconoscendo invece l'esistenza – o meglio, la persistenza – di differenze economiche e sociali tra le due macroregioni italiane.

Appendice

Modelli completi

Tabella A1 – *Modello di Cox sulla transizione al primo figlio tra uomini e donne nel Centro-nord e nel Sud.*

	Centro-nord				Sud			
	Uomini		Donne		Uomini		Donne	
Periodo								
<1997	1,00		1,00		1,00		1,00	
1998-2008	0,97		0,96		0,93		0,87	**
2009-2016	1,09		1,08		1,00		0,94	
Numero di fratelli	1,04	***	1,04	***	1,02		1,06	***
Istruzione dei genitori								
Primaria	1,00		1,00		1,00		1,00	
Secondaria inf.	0,84	***	0,91	**	1,18	**	0,97	
Secondaria sup./terziaria	0,82	***	0,91	*	0,88		0,97	
Luogo di nascita								
Italia	1,00		1,00		1,00		1,00	
Estero	1,18	***	1,24	***	0,95		0,90	
Migrazione interna								
No	1,00		1,00		1,00		1,00	
Sì	1,19	*	1,19		0,73	**	1,10	
Istruzione del rispondente								
Secondaria inferiore	1,00		1,00		1,00		1,00	
Sta ancora studiando	0,56	***	0,43	***	0,53	***	0,48	***
Secondaria superiore	0,95		0,96		0,80	***	1,07	
Terziaria	1,03		0,93		0,93		1,17	*
Stato di unione								
Single	1,00		1,00		1,00		1,00	
Convivente	7,55	***	6,78	***	7,87	***	10,69	***
Sposato/a	18,43	***	16,67	***	28,16	***	27,57	***
Stato occupazionale								
Lavora	1,00		1,00		1,00		1,00	
Non lavora	0,89	*	0,98		0,61	***	1,14	**
Controllo per regione residenza	Sì		Sì		Sì		Sì	
N	4.680		4.669		2.578		2.636	

Nota: p<0,10; ** p<0,05; *** p<0,01*

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SUMMARY

Differences between Northern and Southern Italy in the Relationship between Employment Status and Fertility

This paper analyses the differences in the relationship between employment status and transition to parenthood between Northern and Southern Italy. Despite the relationship between employment and fertility is a research topic of primary interest, scarce attention has been paid to regional differences, in favour of cross-national comparisons. Italy is a particularly interesting case study because of its deep regional differences both in terms of fertility and economic development. Using micro-level high-quality retrospective data, I applied event history analysis techniques to study the relationship between employment status and transition to parenthood separately in the two Italian macro-regions and by gender. Results suggest that men's employment status is especially important for transition to parenthood, while women's non-employment is (still) associated to higher chances of becoming mother in Southern Italy, substantially confirming previous macro-level findings. Time-limited employment is negatively associated to the probability of having the first child only in Northern Italy. All things considered, the study indicates that the relationship between labour market dynamics and fertility differs remarkably between Northern and Southern Italy. Accordingly, future research on this topic needs to take into consideration the substantial heterogeneity among Italian macro-regions.

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MARITAL BREAKDOWNS IN ITALY: RECENT REGULATORY CHANGES AND TERRITORIAL ANALYSIS[1]

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1. Introduction and aim

Union dissolution became a quite common demographic behaviour in many European countries, including Italy, where the separation-divorce dichotomy is still preserved and the household structures are changing and evolving (Mortelmans, 2020; AISP, 2021). Divorce in Italy was made legal in 1970 with the law n. 898, but – differently from many other countries – the process of legal marital dissolution still entails two stages: a period of legal separation followed by divorce. In 1987, the minimum interval between legal separation and divorce was reduced from five to three years. In the following years, a slow and progressive increase in both the number of divorces and legal separations was observed, along with a constant reduction in marriages (see Impicciatore and Guetto, 2020). In the last years, two new laws have further and deeply changed the regulation of legal marital breakdowns in Italy. First, the decree n.132/2014 – made into the law 162/2014 – introduced the possibility of employing extrajudicial agreements for consensual separations and divorces (in this paper we will refer to this as law 1). Therefore, two spouses in agreement can bypass the Civil Court and turn directly to the lawyer or to the Civil Registrar Office through two types of extrajudicial agreements. More precisely ex art. 6 are lawyer assisted negotiations, whereas ex art. 12 are agreements before the Civil Registrar in the absence of patrimonial issues and minor children, or adult children who are legally incompetent, severely disabled or economically dependent. Second, on the 26 May 2015 the law 55/2015 for 'fast divorces' came into effect (here law 2): with this law the minimum distance between legal separation and divorce was further reduced from three years to six or twelve months respectively in case of mutual or judicial separations, respectively.

[1] The paper is the result of the common work of the authors. With respect of the manuscript submitted, Giulia Rivellini contributed to the development of Sections 1 and 5; Antonella Guarneri to Section 2 and 3.1; Francesca Rinesi to Section 3.2 and 4. All authors contributed to define the aim and the final version of the manuscript. The views expressed in this paper are those of the author and do not necessarily reflect those of Istat.

These legislative changes make divorce easier and quicker than before and lead the population towards the adoption of more streamlined, less expensive, and presumably anticipatory changes in the customs and methods adopted to dissolve a marital bond and hence to form new nuclei or families. These changes could influence process of unions' formation that can also have consequences on fertility behaviors. This simple connection could bring in the foreground the interest for normative changes related to union dissolution and for their spread over the Italian territory. In addition to this, marital breakdowns can be considered as any other social phenomenon that occurs in space. The hypothesis that we take up in this work is that what happens in adjacent areas can be inter-correlated or "permeable" to what happens in areas that are geographically close. Several studies highlighted that postmodern behaviours (and union disruption in particular) are not evenly distributed over the country. In particular, union disruptions are more widespread in the North than in the South of Italy (Castiglioni and Dalla Zuanna, 2008; Rivellini *et al*., 2009; Vignoli and Ferro, 2009). Consequently, population studies quite often consider territory in their analyses: geographic information is included in descriptive statistics, graphs, maps, and even as explanatory in regression model or as a hierarchical level in a multilevel data structure (Micheli, 1995). More rarely, however, they explicitly test and consider in the statistical models if there is spatial correlation (Oliveau and Guilmoto, 2005), that is if the behaviour of people who live close to each other tends to be more similar than that of people who live at a greater distance. In this paper, we are interested in detecting geographical difference in the spreading of these new ways of separating and divorcing, which can be considered as innovative behaviours.

More specifically, the following research questions lead our study.

1) Does the spreading of these new behaviours show any territorial specificities or, on the contrary, is the diffusion homogeneous on the Italian territory?
2) Is there empirical evidence about any sub-national areas where extrajudicial separations and divorces are more widespread?

The aim is then two-folds. First, to check the existence of spatial autocorrelation in the incidence of extrajudicial separations and divorces by Civil Registrar Office (ex art.12) over total separations and divorces. Second, to detect (if any) sub-national areas where extrajudicial separations and divorces (ex-art. 12) are significantly more/less widespread than at national level or areas that display a significantly different behaviour than in surrounding areas. The remainder of the paper is organized as follows. Section 2 shows the most relevant changes observed in the trends of divorces and separations, considering some variables of classification. Section 3 gives insights into data and methods. Section 4 shows the results of statistical analyses that are then discussed in Section 5 with some new research perspectives.

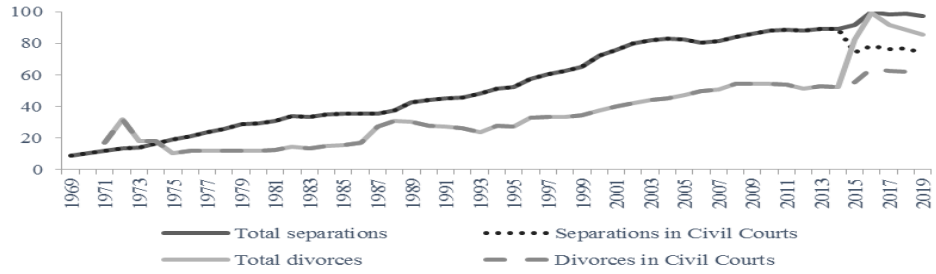
2. Recent trends in marital disruption in Italy

Italian National Institute of Statistics (Istat) disseminates every year the main results of its data collections about separations and divorces. Traditionally these data are collected through a standard statistical questionnaire, which is filled for every final decision issued by Civil Courts. Since 2015, because of the introduction of the extrajudicial agreements for consensual separations and divorces, Istat created a new information flow with the Civil Registrar Offices (see Section 3.1).

Due to the effects of the above-mentioned regulatory changes, a considerable increase in the number of divorces (respectively 99,071 and 82,469 in 2015 and 2016 compared to 52,355 of 2014) is observed (Figure 1). In the same years, the growth in the number of legal separations was less relevant (respectively 91,706 in 2015 and 99,611 in 2016). The annual growth rate for divorces between 2014 and 2016 was 44.6% compared to 5.8% calculated for separations. On the contrary, in 2017 we observed a decrease in the absolute number of divorces: it can be supposed that the conjectural effect of the "fast divorce law" is progressively fading.

More specifically, the law 2 produces a temporally limited change with a visible peak (between 2015 and 2016) that involves all spouses willing to divorce and waiting for the three years' previous interval (spouses separated since 2012). On the other hand, the law 1 seems to produce a more stable over time change. Trends in separations and divorces in a recent future, indeed, should resume going in parallel even if starting from a higher level ("upwards translation", Guarneri *et al*. 2021).

Figure 1 - *Separations and divorces (total and in Civil Courts), Italy – Years 1969-2019 (abs. values in thousands)*

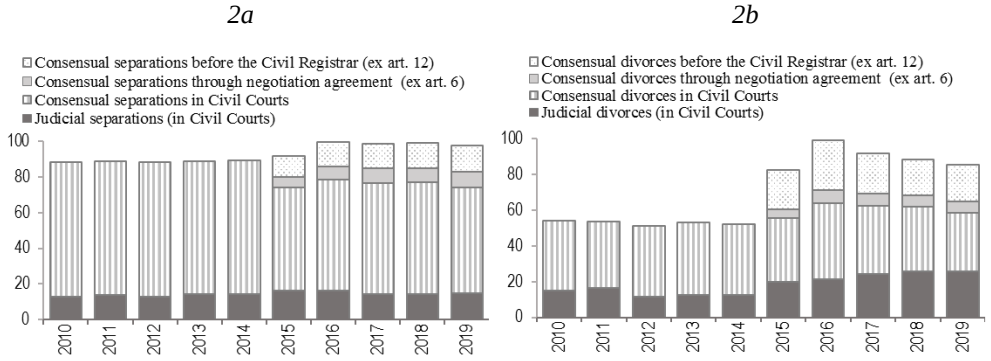


Source: Istat - Administrative data on legal separations and divorces

Furthermore Figure 1 shows the lightening of the workload of the Courts about separation procedures. This direct effect is more difficult to observe for divorces. The delta observed between divorces in Civil Courts and new procedures presumably would have been lower, more similar to that of separations, if the law on fast divorce had not been introduced.

Current data collected by Istat allow distinguishing not only the type of procedure (consensual or judicial) but also the type of extrajudicial agreement (ex-art. 6 or ex art. 12) (Istat, 2021). Figure 2 shows how much greater is the use of new procedures by those who divorce. This happens because in this case a combined effect of law 1 and 2 is observed and because the absence of minor children is - on average - higher in divorces.

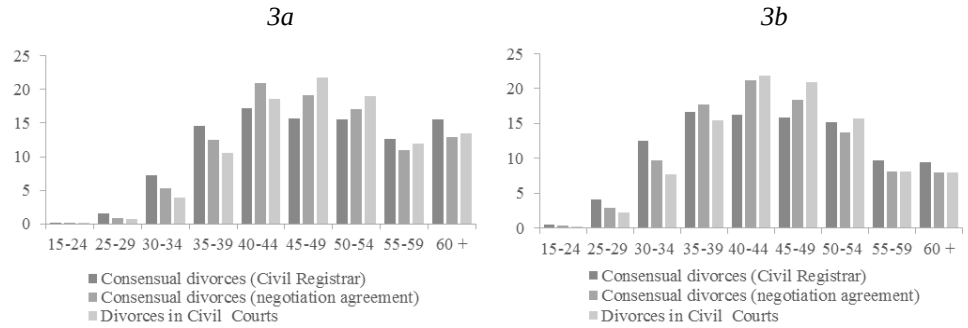
Figure 2 – *Separations (2a) and divorces (2b) by type of procedure (consensual or judicial) and type of extrajudicial agreement (ex-art. 6 or ex art. 12), Italy – Years 2010-2019 (abs. values in thousands)*



Source: Istat - Administrative data on legal separations and divorces

Considering only divorces in the "peak year" (2016), it is possible to observe how the age effect appears 'indirectly' related with the presence of children. As a matter of fact, Civil Registrar procedures' option is more common in the younger age groups, because it is assumed that there are no children yet, or in older age groups with the assumption that children are almost away from home (Figure 3).

Figure 3 – *Divorces by type of procedure, and age class of husbands (3a) and wives (3b), Italy. Year 2016*



Source: Istat - Administrative data on legal separations and divorces

3. Data and methods

3.1 Data

In this study, we use administrative data on Separations and Divorces collected by Istat; these data are exhaustive, consistent, and highly reliable, and allow both to monitor trends over time and space and to analyze the main socio demographic characteristics of husbands and wives who decide to end their marriage.

Separations and Divorces' data collection is multisource and reckon on different data acquisition flows (through Civil Courts and Civil Registrar Offices). Extrajudicial data comes from Civil Registrar Offices and are gathered at municipal level (NUTS-4), whereas judicial data comes from the 140 Civil Courts. The judicial geography is different from the administrative one. Insofar as our interest is focused on the spread of innovative behavior being equal the propensity to separate and divorce, we need to consider both the data of the Courts and those of the Civil Registrar Offices. It follows that the minimum territorial detail of the analysis is NUTS-3 level because it is possible to bring back the judicial geography to these administrative units. Finally, analyses are performed using 2018 data (most recent data at subnational level).

As main indicator, we consider the ratio between the total number of extrajudicial separations and divorces by Civil Registrar Office (ex art.12) and the total separations and divorces, both observed at the province level (NUTS-3). This allows for catching the effective incidence of this innovative procedure, because we consider the access to the Civil Registrar Office, instead of the support of a lawyer, as the newest behaviour. To avoid possible biases, ex. art 6 separations and divorces are excluded from the analyses because they are registered not in the municipality where the spouses reside but in the one where the couple got married.

3.2 Method

To deepen the relationship between the spread of ex. art 12 extrajudicial separation/divorce procedures and the province where they occur methods of spatial analysis are applied. These methods, as is well known, are based on the use of georeferenced statistical data for which the geographical variable not only plays an illustrative role but also becomes a useful element for understanding the phenomenon.

Spatial autocorrelation measures the correlation of a variable with itself across space. The underlying hypothesis – known as Tobler's First Law of Geography (Tobler, 1970) – is that "everything is related to everything else, but near things are

more related than distant things". Positive spatial autocorrelation occurs when populations at neighbouring areas tend to show similar values, while we have negative autocorrelation when we observe dissimilar values at neighbouring locations. If the data exhibits complete spatial randomness, this implies that there is not any underlying spatial structure in the data.

The existence of spatial autocorrelation can be tested by computing both global and local measures. There are several possible measures of spatial autocorrelation, but the most used global measure is Moran's I statistic:

$$I = \frac{n}{(\sum_{i=1}^{n}\sum_{j=1}^{n} w_{i,j})} * \frac{\sum_{i=1}^{n}\sum_{j=1}^{n} w_{ij}(x_i-\bar{x})(x_j-\bar{x})}{\sum_{i=1}^{n}(x_i-\bar{x})^2} \quad (1)$$

where x is the variable of interest, n is the number of spatial units and w_{ij} is the spatial weight of the link between the observation i and j. In our case of study x is the ratio between the total number of extrajudicial separations and divorces by Civil Registrar Office (ex art.12) and the total separations and divorces, both observed at the province level; n is the number of Italian provinces (107).

Spatial weights are organized in a square matrix (n x n) corresponding to the neighbour relationships. By construction, the diagonal elements (w_{ii}) are all equal to zero. I ranges approximately from -1 (perfect dispersion) to +1 (perfect correlation). A zero value indicates a random spatial pattern. The existence of spatial autocorrelation violets the traditional assumption that units of analysis are independent, with all that this entails.

Moran's I is a synthetic measure that summarize the overall clustering in the data and is calculated starting from the local relationships between the values observed in an area and its neighbours. To detect where clusters (observations with very similar neighbours) or hotspot (observations with very different neighbour) are located in our map it is necessary to compute local measures (Anselin, 1995). Local Indices for Spatial Analysis (LISA) are an extension of the global indices, and measure neighbourhood relations for each area we considered. As is the case with the global index, positive LISA values stand for positive autocorrelation (similar patterns), negative values stand for negative autocorrelation (opposite patterns).

In practical terms, the first step of our analysis is to define spatial neighbours' structure; the second is to assign weights to the identified neighbour links. Regarding the first point, several neighbour criteria can be used. Here we choose to use the queen contiguity criterion: areas (provinces) with at least a common border are considered as neighbours. In our data, we have 107 areas (NUTS-3 level). Two provinces are the least connected areas with one neighbour only, while the most connected province has nine links. The average number of links is 4.4. Once defined which province borders with which other, it is possible to build the matrix of

contiguity (to be normalized later) that will be used in the calculation of the Moran indices.

More in details, with respect to the second point, the weight structure we use reflects the spatial neighbours' contiguity defined: w_{ij} equals 1 if i and j are contiguous and 0 otherwise. Then, to avoid the indexes to be influenced by the different number of neighbours, the weights for each unit are standardised to sum to 1 (row standardization). Statistical analyses have been performed with R (see Bivard *et al.*, 2008).

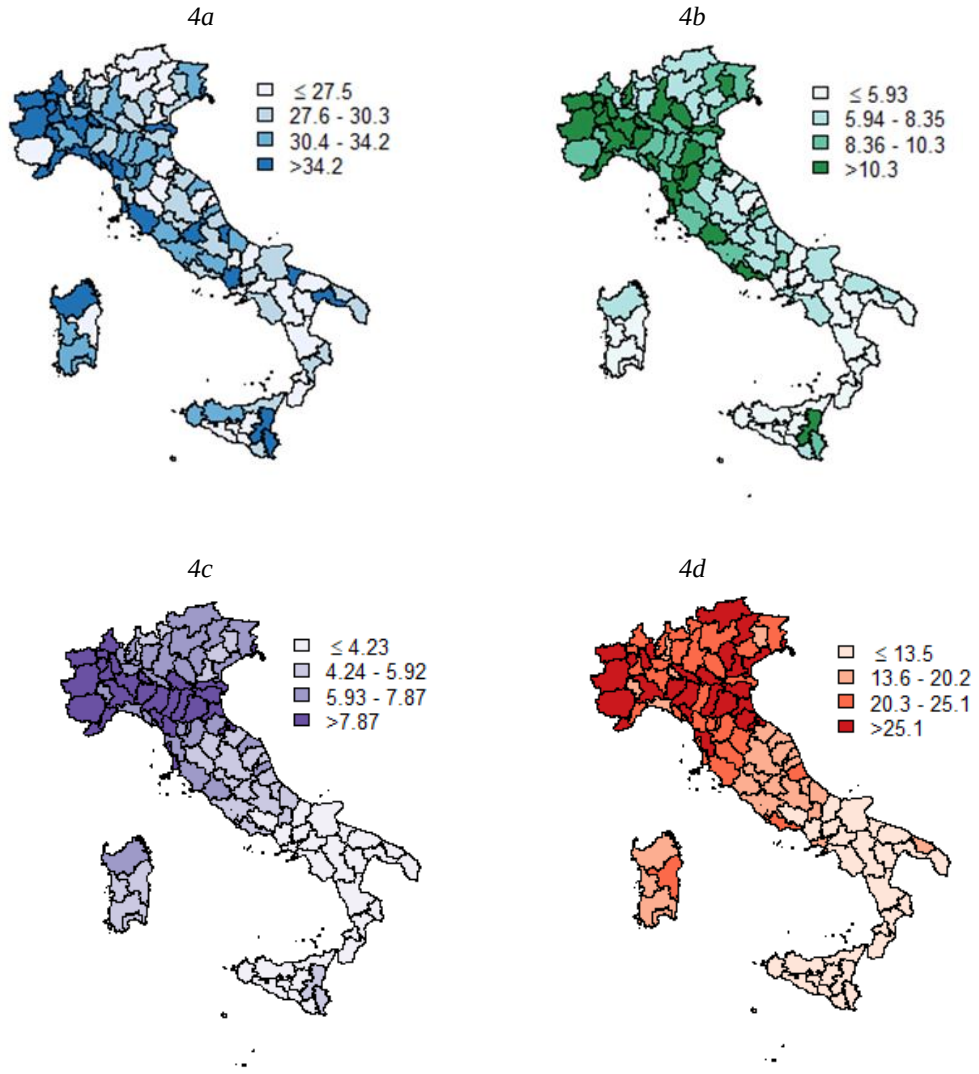
4. Results

Analyses on crude rates (per 10,000 inhabitants) of separation and divorces (*panel 4a*, Figure 4) and of extrajudicial separations and divorces (*panel 4b*, Figure 4) by Italian provinces show and confirm the already known presence of a north-south gradient (Rivellini *et al*, 2009). The incidence of marital disruptions – achieved both by traditional and innovative (extrajudicial) procedures – is higher in most of the provinces of North and the Centre of Italy, with some peaks in Piedmont, Liguria and Lombardy provinces. This territorial gradient is even more pronounced when observing the plotted crude rate of extrajudicial (ex art. 12) separations and divorces (*panel 4c*, Figure 4). In this case, Piedmont and Emilia Romagna provinces show the highest values. The North-South gradient is even clearer if we focus on the relative spread of most innovative marital disruption behaviours, represented in the *panel 4d* of Figure 4. The diffusion of these new procedures is then not homogeneous on the Italian territory: in the provinces of North and Centre of Italy the use of public services (Civil Registrar) related to the marital disruption seems more common than in provinces of the South of Italy.

This first result could be related both to the higher level of awareness about new procedures at disposal for citizens in these provinces, and to the higher incidence of married couples without minor children or adult children who are legally incompetent, severely disabled, or economically dependent (ex-art. 12).

To detect if populations who live in neighboring provinces tend to display similar levels of the main indicator (i.e., the ratio in *panel 4d*) we performed a global test of spatial autocorrelation. In our data, the presence of global spatial autocorrelation in the diffusion of extrajudicial forms of union disruption – already highlighted in the maps – is confirmed by the Moran's I statistic: in fact, we detect strong and significant (p-value<0.0001) spatial autocorrelation as the global Moran's Index equals to 0.73. The null hypothesis can be rejected: that means that who live in neighbouring provinces tend to display similar levels of the main indicator considered in the statistical analysis.

Figure 4 – *Separations and divorces per 10,000 inhabitants (4a), extrajudicial separations and divorces per 10,000 inhabitants (4b), extrajudicial art 12 separations and divorces per 10,000 inhabitants (4c), extrajudicial art.12 separations and divorces over total separations and divorces (4d). Year 2018. Italian NUTS-3.*



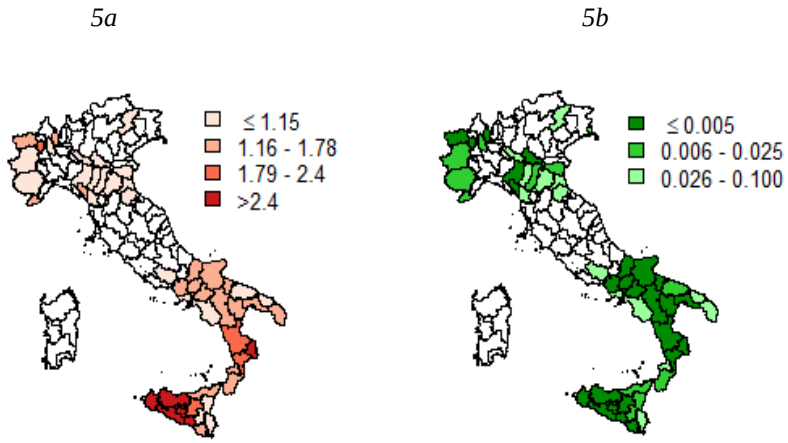
Source: Istat - Administrative data on legal separations and divorces

It is often useful to associate a local autocorrelation indicator with a global indicator of autocorrelation, able to measure the interdependence for each of the

provinces in question. LISA (Local Indicator Spatial Association) allows to understand which sets of contiguous provinces (clusters) show a significantly similar level of the phenomenon of interest.

Statistically significant local values of spatial autocorrelation are plotted in the *panel 5a* of Figure 5, while *panel 5b* shows the different significance levels considered. The statistically significant values are all positive - indicating that neighbouring provinces exhibit similar behaviour - and it is possible to identify several clusters both in the North and in the South of the Country.

Figure 5 – *Statistically significant Local Moran's I (5a) and Local Moran's I p-value (5b). Year 2018. Italian NUTS-3.*



Source: Istat - Administrative data on legal separations and divorces
Note: White areas are not statistically significant.

In the North of the Country, there are several provinces with significantly positive LISA values. Their similarity is due to high recourse to ex art. 12 (see *panel 4d* of Figure 4). These areas are mainly located in Piedmont, Lombardy, Emilia-Romagna plus Pordenone (Friuli-Venezia Giulia). It can be assumed that the citizens of these provinces are "linked" by this innovative behaviour, presumably driven both by a good promotion given to the procedure and by a good functioning of the public services. The South of the Country (except for Sardinia, plus the province of Frosinone) shows particularly high and significant values of LISA, but their "similarity" is on low values of the investigated phenomenon (see *panel 4d*, Figure 4). Positive spatial correlation is particularly high for most provinces of Calabria and Sicily. These areas show also a particularly poor adhesion to this type of procedure of marital breakdowns. Some contextual variables measured at the province level

could likely show their influence: the higher incidence of families with economically dependent co-resident children due to a more difficult labour market, a greater traditional recourse to the judicial resolution of disputes and a possible lower trust in the institutions.

5. Discussion and research perspective

The statistical analyses revealed a geographical pattern in the incidence of ex art.12 extrajudicial agreements for marital breakdowns over total separations and divorces: from one side a clear North-South gradient still emerges as for other modernized attitudes, previously studied; from another side the physical contiguity neighbouring creates a "word-of-mouth effect" in adopting innovative behaviors. High levels of positive spatial autocorrelation (statistically significant) are observed in two areas that are very different from economic, social, and demographic point of view. Nevertheless, the presence of local clusters identified by a statistical tool is not enough to catch the undergone social learning processes, through which individuals become aware of the existence and technical details of new phenomena through contact with other people living nearby. The develop of this part of analysis could lead advances in understanding the reasons of the clusters' occurrence, but there is an evident need for new research on the relation between micro (individual behaviours), macro (context of residence) and meso (social interaction) levels. In this perspective we could elaborate other concepts of "contiguity neighbouring", based on additional data, different from the geographic borders (e.g., air-line distances, road routes, journey times; economic and cultural distances; population density; degree of updating citizens on the latest regulatory changes; access to public services). The paper gives first insights on the territorial diffusion of innovative ways to interrupt a marital union, which – in our knowledge – is a topic not yet considered in national demographic literature. Otherwise, starting from some preliminary evidence (1 out of 3 municipalities did not even register an extrajudicial separation or divorce agreement while Rome, Milan, Turin, Naples and Palermo alone have recorded approximately 12% of the acts), we are aware that the role of metropolitan area should be taken into account. The conjectural effect of the "fast divorce law" is progressively fading. To confirm that, we need to monitor the phenomenon in the next years; at the same time, it would be crucial to describe future diffusion of new legal procedures considering the challenges and opportunities offered by the National Recovery and Resilience Plan (PNRR)2, which is opening a season of reforms. The topic considered in this paper is linked to at least two main cross-cutting

[2] The PNRR is part of the Next Generation EU program that the European Union negotiated in response to the pandemic crisis. The PNRR is available at https://www.governo.it/sites/governo.it/files/PNRR.pdf

reforms: the reform of public administration and reform of law system, which both push for digitalization; alternative dispute resolution and a general shortening of the time of judgment. The simplification of processes makes easier a restarting for citizens in Italy, but in this specific case restarting means also changes in customs and individual choices related to make a new family, remarrying, living alone apart together, etc.

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SUMMARY

Marital breakdowns in Italy: recent regulatory changes and territorial analysis

In the last years, two laws have deeply changed the regulation of marital breakdowns in Italy. Between these two, the law n. 162/2014 introduces the possibility of employing extrajudicial agreements for consensual separations and divorces and paves the way for more innovative behaviors, among couples without minor or economically dependent children. By the means of spatial statistical tools, the paper detects the geographical (at province/NUTS-3 level) pattern of the incidence of extrajudicial agreements for marital breakdowns over total number of separations and divorces. The spreading of these new procedures resulted as not homogeneous on the Italian territory as the individuals living in neighbouring provinces tend to display similar relative levels of extrajudicial agreements.

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GENDER EQUALITY ATTITUDES OF MUSLIM MIGRANTS IN ITALY[1]

Giuseppe Gabrielli, Germana Carobene

1. Introduction

The challenges of social integration and the question of diversity imply the need for a full understanding of the cultures that migratory phenomena are entering our tissues, which for a long period of time have been culturally homogeneous. It is particularly interesting in this sense to focus specific attention on the Islamic religion which, in an all-encompassing way, also generally involves the lifestyles of the faithful. In the approach to Islam it is therefore necessary to start from a fundamental methodological assumption: it cannot be reduced to the simple idea of religion, according to the classical approach, but one must contemplate both the religious and the political profile, since it is the rule of life, the law (El Ayoubi, 2000). Furthermore, it must be said that Islam as such does not exist, Islamic states may exist, but there is a different adhesion depending not only on the classic Sunni-Shiite bipartition (with a clear preponderance of the former) but on the legal schools of reference. As it is known, the first characteristic of Islam is that of the absorption of theology into law: the first juridical source is the Koran, which follows the Muhammadis imitation collected in the Sunna; we therefore have iğmā / consensus and qiyās / analogical reasoning. Sharia, the positive law, integrally regulates human activity and, in particular, contains the rules that regulate the life of Muslims, in their most personal sphere and regulate marriage, family, inheritance, etc. These rules apply to the umma / community of believers from birth and followed by the faithful, regardless of their residence.

Generally speaking, Islamic cultures show usually a strong gender inequality, legally structured, codified and defined at the social level. Women do not enjoy full citizenship but second class, their subordination is nothing more than the consequence of the application of Muslim family law, which derives from patriarchal and cultural norms. Among Muslims, the man-woman biological complementary has been embraced by traditional cultures (Mernissi, 2011) and has resulted in a legal

[1] This work is the result of a close collaboration between the authors. As for this version, sections 3 and 4 has been written by Gabrielli; sections 1 and 2 by Carobene; section 5 by Gabrielli and Carobene.

complementarity, inspired by the principle of equity / insāf (and not the principle of equality / musāwā): women they do not perceive themselves as heads of families; instead receive protection and in return must obey their husbands). This principle has remained unchanged over time, despite the processes of colonization and modernization, with evident repercussions on gender identity. Understanding these dynamics can therefore provide us with the terms and tools to provide the new challenges that are imposed on our legislator. It is also possible to note that in contemporary Islam, few issues are as highly controversial as gender inequalities (Masoumeh, 2016). The more traditional interpretation still supports the principle of gender complementarity / takāmul and conceives a clear division of social roles by gender that establish the division of employment and domestic work, responsibilities in the private environment and in family decisions and relationships in society (Salvini and Angeli, 2021). Obviously, it is not possible to establish an archetype of Muslim woman, since an important factor is the social and legal status which depends on the social and cultural policies of the contexts concerned.

However, the process of globalization, which has taken various forms in different parts of the Muslim world, has undermined traditional conceptions of appropriate gender roles. As a result of these factors, progressive Islamic discourses on gender equality and cultural dynamics are evident in the positive changes in the traditional expectations of Muslim families. The most recent movement of the so-called "Islamic feminism", which emerged in multiple Islamic states, as a cultural, political and social reflection (obviously with different outcomes depending on the context of reference) has promoted "equality and justice in the Muslim family" through a renewed reading of the founding texts of Islam through the use of critical reasoning / iğtihād (Lorber, 2010; Pepicelli, 2010; Vanzan, 2013; Assirelli *et al.*, 2014; Capretti, 2017). In more recent years, the struggle for the so-called gender / ğihād has continued, always in the wake of the Koranic law, provoking a heated debate in some Islamic states more sensitive to the processes of "modernization".

When considering immigration to Europe, Muslims represent the largest (non-indigenous) group perceived as a major challenge of the nature of ethnic, cultural and religious diversity (Triandafyllidou, 2011). Despite these multilevel contexts, the difference within the Muslim communities of Europe is often described in media discourse as a single typology that can be analyzed by the same kind of policies. In Southern European countries, Muslim immigrants have increased especially in the last two decades as these destination countries have become poles of attraction for economic migrants. In Italy, the majority of Muslim residents came from Morocco and Albania. However, Muslim migrants cannot in any way be considered a homogeneous group, as they come from different countries, speak different languages, adhere to different versions of Islam. Therefore, Muslim migrants do not

fit well into a monolithic conception of Islam that takes on different connotations in time and space.

In the empirical analyzes on migrants and gender roles, little space has so far been dedicated, also due to a lack of data, to the gender attitudes of Muslims in Italy (Di Brisco and Farina, 2018; Salvini and Angeli, 2021; Tognetti, 2012). According to the existing literature (Pessar and Mahler, 2003; van Klingeren and Spierings, 2020), we aim to describe the gender-specific attitudes of Muslim migrant men and women in Italy considering the heterogeneities existing between different groups. Our main assumption is that the Islamic community in Italy is significantly diversified and that gender attitudes are influenced by different contexts of origin. The empirical analysis will allow to draw a descriptive picture of the variegated Islamic universe existing in Italy contextualizing the analysis on the socio-normative schemes of the countries of origin.

2. Theoretical Background

In our analysis we must focus on two main considerations: the role of Islamic women and the legal diversity of the contexts of the countries of origin. The social position of women is traditionally organized within marriage and the family (Aluffi Beck Peccoz, 1997). Girls are used to housework and often have time to learn to read and write in school, which is more than enough for a woman. At social level they are framed so that the maximum realization is marriage. All the energies and dreams of these girls will be directed precisely on this and not, for example, on education and work, two options rarely considered. According to Islamic law, marriage (*nikâh*) is, in the first place, a legal institution aimed at regulating the social order. It has as its main objectives the care of legitimate offspring and the legalization of sexual relations. The marriage contract has different purposes for the two spouses. For the husband, it concerns the rights conferred on the person of the wife: sexual enjoyment and marital authority, with particular attention to the protection of the integrity of the nucleus. Let us not forget that the penal codes provide for absolution or reduction of the sentence for men who commit «crimes of honour». For women, however, the subject of the contract is the right to the obligatory nuptial gift and to the satisfaction of other material and emotional needs. Let us not forget that even in the case of inheritance rights, women are entitled to lower quotas than those reserved for male relatives. The violation of rights is also highlighted by depriving women of the opportunity to express their will, reducing marriage to an agreement between families rather than between individuals with equal rights and obligations.

Relationships between spouses within marriage are certainly marked by the supremacy of the husband over the wife. The roles of the spouses are also clearly

defined within the education of children. The mother is entitled to custody /*hadanâh*. She has the task of raising, caring for and supervising the child. Instead, the father has the power/*wilâyah*, that is the power to decide on the education of the son, on his education, the start of work, marriage, and the administration of his goods. Children acquire citizenship and religious status only through their fathers. Polygamy is an important institution of Islamic family law. Within the Qur'an there is a single verse that authorizes polygamy, very complex and difficult to interpret. Polygamy has long been the subject of profound criticism from the Muslim world. The juridical inequality between spouses within marriage is still manifested at dissolution event: Muslim law grants the husband the exclusive right to divorce, that is, the right to terminate the marriage by means of a simple verbal statement.

If this is, in general, the Koranic context of configuration of social relations it is however important to emphasize the plurality of Islam present in the different socio-political contexts, linked to cultural factors, adherence to certain legal schools but also to the historical evolution of many countries, to the phenomena of colonization, revolutions, economic backwardness etc.

The common colonial destiny of Morocco, Algeria and Tunisia with the submission to "western" laws, has favored the construction of a more modern Islam although, in the post-colonial period, Islam has acquired an important identity factor (Mcloughli, 2013). The comparison between the principle of equality and that of gender complementarity has encouraged a rewriting of the rules, especially in the areas of personal status and family law. On the other hand, the geopolitical situation of Egypt is different as, although geographically in Africa, it has always been Asian from a cultural standpoint. The Asian dimension has provided it with civilization - culture and religion. If the control by the State of the clergy is very strong in other North African countries, this has not yet happened in Egypt and this tends to leave room for the most conservative and traditionalist currents (Elsakaan, 2019).

In Western Africa, religious expansion has been linked not only to the activity of merchants, but also to that of the confraternities, which here have played a decisive role in the process of Islamization, mediating and seeking a dialogue between local pre-Islamic cultures, with ancient traditions, including the worship of ancestors and forces of nature, and helping to generate syncretic forms (Vercellin, 2000). This has also led to particularly violent forms of female submission (just think of female genital mutilation). The context of reference, especially on our example centered on Senegal and Burkina Faso, highlights a rural area, characterized by a low literacy rate that certainly does not favor the empowerment of women.

Completely different is, instead, the "European" Islam, that endogenous nature characteristic of areas of Eastern Europe that had to live with the decades of "severe" State atheism and communist repression, becoming a religion more open to secularity and Western values linked to gender equality. After the collapse of the

communist regime, religious sentiment flourished again, but this has never eradicated the much deeper sense of belonging to the nation. Religious belonging is now considered secondary to belonging to the nation.

Still different is Asian Islam where very different situations are highlighted. The Middle Eastern area is particularly heterogeneous within it and does not allow its reading as a single cultural block (Moghadam, 2004). Still different is the Islamic accession in the countries of the Persian Gulf area that have levels of female subordination difficult to explain (for us Westerners) with the high economic level reached. Strongly traditionalist is the area of Pakistan and Bangladesh that we can describe as deeply backward cultures also from the economic point of view, more linked to patriarchal codes. Unicum in the Asian landscape is the legal condition of Turkey, one of the few countries constitutionally secular, in which the construction of the State, at the beginning of the twentieth century was outlined as rejection of religious codes from public life (although Islam is currently forcefully reclaiming such spaces).

The contact with Western cultures, in migratory paths, therefore highlights a legal paradox in the dualism between equality, established at the constitutional level in the host country, and female subordination, that follows the subject as belonging to the Umma/Muslim community, regardless of its geographical location (Salih, 2008).

3. Data and methods

Data was taken from the "Social Condition and Integration of Foreign citizens survey" (SCIF), conducted by the Italian National Institute of Statistics (Istat) in 2011-2012. It is the only sample survey in the Italian system of multipurpose household surveys designed to collect data on families with at least one foreign citizen and to provide original information on foreign nationals living in Italy. The cross-sectional survey covers a random sample of about 9,500 households and provides information on the living conditions, behaviours, characteristics, attitudes and opinions of the foreign citizens in Italy including information on gender roles.

We considered the net sub-sample of men and women who arrived at adult ages in Italy (first generation migrants), who were aged 18-64 years old at interview, and who declared to be Muslim at interview. Among these, we selected 3,974 individuals coming from those countries of origin that had a sufficient sample size (more than 100 cases). The country of origin has been defined by the country of citizenship at birth. Table 1 shows the distribution of the final sample included in our analyses.

Table 1 – *Unweighted sample size by country/area of origin. First generation Muslim adult migrants in Italy. Absolute (abs. val.) and percentage (%) values.*

Country/area of citizenship at birth	abs.val.	%
Albania	885	22.3
Former Yugoslavia	336	8.5
Morocco	1,460	36.7
Tunisia and Algeria	544	13.7
Egypt	128	3.2
Senegal and Burkina Faso	266	6.7
Pakistan and Bangladesh	355	8.9
N	*3,974*	*100.0*

Source: our elaboration on SCIF data, 2011-2012.

The data include seven 5-point Likert scale items on the support for gender equality attitudes: “it must be the man who economically supports the family”; “it must be the man who makes the most important decisions regarding the family”; “the woman has to take care only of the house and the care of the family”; “the woman should ask her husband for advice on people to associate with”; “it is right for men to help women with housework”; “family life can work if the woman works outside the home as well as looking after the house and children”; “there is nothing wrong with a man and a woman living together without being married”.

A synthetic index of gender equality attitudes was adopted to measure the gender disparities in the attitudes that we described so far. According to the literature (Blangiardo, 2013), it assumes continuous scores that range from -1 (max gender disparity) to +1 (max gender equality) and total mean value equals to 0. These scores are determined starting from the frequency distributions of the seven items, appropriately ordering the categories from the worst to the best situation of gender equality.

The score, assigned to each category of each variable, is obtained through the difference between the sum of the relative frequencies that belong to the previous modalities minus the sum of the relative frequencies that belong to the following modalities. All scores (as well as their arithmetic mean) are assigned to respondents according to their given answers.

To avoid compositional effects, we used the index of gender equality attitudes as dependent variable of three nested linear regression models in order to consider those individual characteristics and behaviours associated to gender attitudes.

All the analyses used weighted data in order to provide results which are representative for the migrant population residing in Italy.

4. Results

Before turning to multivariate analysis, Table 2 presents some descriptive results on the characteristics and behaviours considered.

Table 2 – *Sample characteristics by country/area of origin and gender. First generation Muslim adult migrants in Italy. Percentage values (%).*

Variable	Category	%M	%W	%M+W
% of Women		-	-	39.7
Age at interview	*(mean value)*	37.7	34.9	36.6
Time since migration in Italy (yrs.)	*(mean value)*	12.8	8.9	11.3
Educational level	No Educ. or primary	22.5	24.6	23.3
	Lower secondary	37.0	38.0	37.4
	Upper secondary	34.3	30.4	32.7
	Tertiary	6.1	7.1	6.5
Municipality dimension	Town	30.1	37.3	32.9
in the country of origin	Middle or small city	42.6	36.1	40.1
	Village or countryside	27.3	26.6	27.0
% of having Italian citizenship		9.5	5.3	7.8
% of having a paid job		93.5	39.2	71.9
Marital status	Single	29.1	13.4	22.9
	Married	54.1	79.4	64.2
	Divorced or separated	16.4	5.1	11.9
	Widow	0.4	2.2	1.1
Number of children	None	38.2	19.4	30.8
	One child	14.9	19.8	16.9
	Two children	22.5	29.7	25.4
	Three children	14.9	19.0	16.6
	Four and more children	9.4	12.1	10.4
Importance of religion (1)	*(Mean value)*	8.1	8.4	8.2
% of individuals observing fasts		72.1	73.5	72.7
Religious attendance	At least once a week	34.5	27.9	31.9
	At least once in a month	13.8	9.9	12.2
	At least once in a year	16.1	16.3	16.2
	Never	35.6	46.0	39.7
N		*2,353*	*1,621*	*3,974*

Note: (1) Self-evaluation score of the importance of religion in a range from 0 to 10
Source: our elaboration on SCIF data, 2011-2012.

The 39.7% of interviewees is women (W) who on average are significantly younger (34.9 years old) and arrived in more recent years than the men (M) counterpart. All respondents have on average an heterogenous educational level and come from different places of origin according to the municipality dimension. Only

9.5% of men acquired the Italian citizenship; the same percentage reduces to 5.3% among women. Almost all men have paid work at interview (93.5%), while less than half of women have the same (39.2%). Only 13.4% of women is single at interview, while this percentage is more than double among men (29.1%). Interestingly, a quarter of the interviewees has three or more children (27.0%) and another quarter of them has two children (25.4%).

When considering individual religiosity, we analyse both the subjective religiosity and the religious communal integration (van Klingeren and Spierings, 2020). The former is measured through the self-evaluation score of the importance of religion (in a range from 0 to 10) and the habit of fasting, as individual religious act. On average, both men and women give significant importance to religion (8.1 and 8.4 respectively) and almost three quarters of them observe fasts (72.7%). The religious communal integration is measured by looking at religious attendance. Interestingly, in this case respondents are divided among those who attend a place of worship (e.g. mosque) frequently (at least once a week, 31.9%), those who sometimes do it (monthly or yearly, 28.4%), and those who never do it (39.7%). In the latter group the percentage of women is significantly higher (46.0%) than the one of men (35.6%).

Moving the attention on gender equality attitudes (Table 3), the estimated synthetic index show, as we can expect, that migrants coming from Albania and from former Yugoslavia have the highest values (i.e. the highest gender equality among Muslims, 0.216 and 0.045 respectively), while Morocco, Tunisia and Algeria occupy a somehow middle ground position (-0.027 and -0.036 respectively), and Egypt, Pakistan and Bangladesh have the lowest values (i.e. the highest gender disparity, -0.105 and -0.137 respectively). Interestingly, Senegal and Burkina Faso assume a value (-0.049) closer to the ones observed for Northern African countries than to the ones observed for the two South-Asian countries.

Table 3 – *Index of gender equality attitudes by country/area of origin. First generation Muslim adult migrants in Italy. Mean values and standard errors (std. er.).*

Country/area of citizenship at birth	Mean	Std.er.
Albania	0.216	0.315
Former Yugoslavia	0.045	0.326
Morocco	-0.027	0.341
Tunisia and Algeria	-0.036	0.329
Egypt	-0.105	0.256
Senegal and Burkina Faso	-0.049	0.307
Pakistan and Bangladesh	-0.137	0.284
Total	0.000	0.343

Source: our elaboration on SCIF data, 2011-2012.

In multivariate analyses, Table 4 presents how gender equality attitudes differ between the migrant groups according to their country/area of origin, controlling for the selected individual characteristics and behaviours. Model 1 (M1) mostly confrms what previously observed in the distribution reported in Table 3. In addition, Model 2 (M2) and Model 3 (M3) shows that the heterogeneity for country/area of origin of migrants somehow reduces their magnitude (lower coefficient) but persists in their statistical significance (p-value) after controlling for other factors.

Table 4 – *Determinants of index of gender equality attitudes. First generation Muslim adult migrants in Italy. Linear regression models. Coefficients and p-values.*

Varriable	Category	M1		M2		M3	
(referent category)		b	p-val.	b	p-val.	b	p-val.
Citisenship at birth	Albania	0.243	***	0.219	***	0.151	***
(ref. Morocco)	Former Yugoslavia	0.072	***	0.082	***	0.053	***
	Tunisia and Algeria	0.008		-0.009		-0.021	
	Egypt	-0.078	***	-0.103	***	-0.063	***
	Senegal and Burkina Faso	-0.022		0.021		0.038	*
	Pakistan and Bangladesh	-0.110	***	-0.106	***	-0.086	***
Gender *(ref. Men)*	Women			0.117	***	0.167	***
Age at inteview	*(continuos)*			-0.007	**	-0.008	**
Age-squared	*(continuos)*			0.001		0.000	
Time since migration in Ita.	*(continuos)*			0.018	***	0.016	***
Time since migr.-squared	*(continuos)*			-0.001	***	-0.001	***
Educational level	Lower secondary			0.070	***	0.057	***
(ref. Primary or less)	Upper secondary			0.149	***	0.116	***
	Tertiary			0.216	***	0.194	***
Municipality size in the	Middle or small city			-0.047	***	-0.043	***
origin country *(ref. Town)*	Village or countryside			-0.119	***	-0.108	***
Italian citizenship *(ref. No)*	Yes					0.078	***
Paid job *(ref. No)*	Yes					0.090	***
Marital status	Married					-0.021	*
(ref. Single)	Divorced or separated					-0.070	***
	Widow					-0.023	
Number of children	One child					-0.001	
(ref. no children)	Two children					-0.019	
	Three children					-0.050	**
	Four and more children					-0.082	***
Importance of religion[(1)]	*(continous)*					-0.010	***
Observing fasts *(ref. No)*	Yes					-0.012	
Religious attendance	At least once in a month					-0.002	
At least once a week (ref.)	At least once in a year					0.082	***
	Never					0.108	***
Constant term		*-0.027*	***	*-0.031*		*-0.042*	
Adj R-squared		*0.096*		*0.197*		*0.241*	

Note: (1) Self-evaluation score of the importance of religion in a range from 0 to 10
*Legend: * p<0.05; **p< 0.01; ***p<0.001*
Source: our elaboration on SCIF data, 2011-2012.

For the control variables, Model 2 includes in the analysis the individual characteristics. Women are more associated to gender equality attitudes (b=0.117) than men. The younger people are (b=-0.007) and the longer is the time since migration in Italy (b=0.018), the more attitudes are pro gender equality. Educated people, in upper secondary and tertiary level (b=0.149 and b=0.216 respectively), as well as those who come from town (the referent category) assume higher levels of gender equity than low educated people coming from small cities or villages (b=-0.047 and b=-0.119 respectively).

Model 3 considers socio-economic and demographic behaviours. Having Italian citizenship (b=0.078) and a paid job (b=0.090) are positively associated with pro gender equality attitudes. While being in (past or present) union (b=-0.021 and b=-0.070 respectively) or having a child of parity three (b=-0.050) and four (b=-0.082) are negatively associated to pro gender equality.

Last three variables consider the effects of individual religiosity and of religious communal on attitudes about gender equality. The direction of both effects indicates that more religious people are on average more opposed to gender equality. As expected, the coefficient of religious communal integration is substantially larger and more strongly significant than that of individual religiosity.

5. Synthesis and conclusion

In this article, we have described to what extent migration and secularization undermined the traditional views of Islamic complementary gender roles and determined various forms of gender-related attitudes among migrants coming in Italy from diverse parts of the Muslim world.

This issue supports the necessity to consider both religion and origin country in the analyses and not to assume that belonging to specific religion, such as Islam, is associated with unique behaviors or attitudes. As Read (2004) highlights, gender traditionalism is not synonymous with Muslim affiliation.

Even if relevant individual characteristics and behaviors are taken into account in the analyses, immigrants from a gender egalitarian country hold more egalitarian attitudes. In this origin country globalization and modernization have increased women's educational and social opportunities and eased their entry into paid employment, a role traditionally reserved for men.

Our findings also suggest that religious Muslims hold less gender egalitarian attitudes than more secular individuals. However, according to the literature, the factual explanatory power of migrants' religiosity lags far behind its prominence in public debates: religious commitment is just one among several factors and not even a particularly important one.

Younger, educated, employed migrants (more women than men) are challenging the patriarchal model of gender relations and assuming more gender equality attitudes. Muslims who live in large families tend to be more conservative attitudes than single ones, as well as Muslims who live since longer time in Italy or acquired Italian citizenship tend to assume more egalitarian attitudes than the others.

It has to be emphasized that our findings cannot be generalized to the whole Muslim population living in Italy. Since naturalized people, who are often less religious, and other less representative ethnic groups in Italy, who are often more religious, are not included in our analyses. Clearly, further research is needed to assess the relative impact of the Islamic culture and to disentangle it from other aspects of migrants' cultural background.

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SUMMARY

Gender Equality Attitudes of Muslim Migrants in Italy

In European public debates, Islam is often described as having a determinant role on gender inequality. However, Islamic community in Italy is significantly diversified and gender-related attitudes are affected by the different contexts of origin. By using multipurpose Istat data, we estimate a synthetic index of gender equality attitudes and conduct multivariate empirical analyses on migrant Muslim men and women. Results show that the heterogeneity among migrant groups persists after controlling for other factors. In addition, more religious Muslims are on average more opposed to gender equality. However, the role of religious communal integration is more important than that of individual religiosity.

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POPULATION AGEING AND RETIREMENT IN ITALY: AN ANALYSIS BY GENDER AND GEOGRAPHIC AREAS[1]

Cecilia Reynaud, Maria Herica La Valle

1. Introduction

The steady reduction in births and the decreasing mortality rate, above all for older ages, have led to a deep change in the population's age structure. In particular, due to the increase both in the absolute number of elderly people in respect to the total population and compared to other subgroups, e.g. younger, and working population, a significant demographic ageing has been taking place in our country.

As a result, the Italian population is one of the oldest in the world and, as such, has started to address the issues related to the fast and increasing demographic ageing earlier than other countries (Golini, 2000). On the 1st January 2020, in Italy, elderly people (aged 65 or over) number about 13.8 million and represent 23.2% of the total population, while youngsters (aged 0–14) and the working population number 7.7 million and 38.0 million, respectively. This means that there are 179 elderly persons for every 100 young persons, and 36 elderly persons for every 100 working-age persons. On the 1st January 1995, instead, elderly people numbered about 9.4 million and represented 16.5% of the total population; youngsters and working-age persons numbered 8.4 and 39.1 million, respectively, i.e. there were 112 elderly persons per 100 young people and 24 elderly per 100 active persons. Population ageing, both in absolute and in relative terms, has intensified, is intensifying and, above all, will continue to intensify fast. In particular, we can expect a vigorous increase in the proportion of e elderly people in respect to the total population in the future – at least in the next 25 years and excluding migration dynamics – since childbearing-age women of the future are the current female children, who number less than the women of the preceding generations.

Population ageing, which has been the focus of both scientific and political debate at the national (e.g. Tomassini and Lamura, 2009; Golini and Rosina, 2011; Castagnaro and Cagiano De Azevedo, 2013; Galasso and Profeta, 2014; Reynaud *et*

[1] The authors worked collectively. Cecilia Reynaud wrote the introduction (pf. 1) and the results of the model (pf. 3.2), Maria Herica La Valle wrote the data and methods (pf. 2) and descriptive results (pf. 3.1); the authors wrote together the discussion and conclusion (pf. 4).

al., 2018) and international level (e.g. Rowland, 2009; Schoeni and Ofstedal, 2010; Reher, 2015; Grundy and Murphy, 2017; Leeson, 2018), can be considered as the century's demographic, social and economic phenomenon as well as the major issue in the country (Golini *et al.*, 2003). Nowadays, and for several decades, population ageing is an unprecedented challenge for the whole of society of all advanced development countries.

Indeed, with ageing, several imbalances in the organization of society emerge. In economic terms, the weight of ageing depends on pensions, since 'the social security burden will tend to weigh increasingly on a gradually decreasing number of workers' (Garibaldi and Makovec, 2000). Welfare systems have been facing and, above all, will face a deep crisis due to the longer lifespan and the increase in the elderly population and this requires a re-examination of our society structure and organization (Reynaud and Miccoli, 2019). This suggests investigating the elderly population as well as social and generational dynamics related to ageing.

Italy has been experiencing a greater ageing process compared to other European countries; also, such process has been uneven over time and across regions. In particular, the analysis at the NUTS (Nomenclature of Units for Territorial Statistics) level 1 – North-west, North-east, Centre, South, and Islands – shows that demographic evolution has run alongside the economic development of the referred areas. Overall, in the northern regions, industrial development started earlier than in the other regions, thus leading to a higher economic expansion compared to the Centre and the South (which are still the most disadvantaged areas of the country). As a result, in the North, where survival levels increased over the 80s and fertility decreased over the 90s, population ageing occurred earlier than in the central and southern regions (Golini *et al.*, 2003). In particular, the South has experienced a delay in population ageing due to the demographic transition process, which concluded later compared to the North. Indeed, up to the end of the 90s, Italian manpower in particular came from the southern regions, and only in the last decade, thanks to a rapid decrease in fertility, has the ageing of the southern population reached the values that had been registered in the North earlier (Reynaud *et al.*, 2018).

In the light of these observations, the aim of our study is investigating the composition of the elderly population, i.e. evaluating the role of non-retired elderly people by calculating, as a first step, the ratio between elderly persons who are given a pension and the entire elderly population by age, gender and geographic area. By comparing data on the 1st January 1995 with those on the 1st January 2020, we intend to examine the evolution of the retired subgroup of elderly people by gender and region.

In particular, the study focuses on the portion of elderly persons who do not receive a retirement income or other types of economic revenue – such as those from

estates – thus representing a group of inactive persons needing financial support, i.e., a potential burden for the whole of society.

Our hypothesis is that the share of retired individuals has been increasing over the years although the impact of ageing on society has not been as strong as expected. Let us consider the financial burden of retired women on the whole of society. On the one hand, it can be seen as increasing given the higher participation of women in the labour market compared to past decades. On the other hand, the burden can be seen as decreasing since women receive survivors' pensions later in time than in the past, given the increase in individuals' lifespan.

This suggests that the type of pension people receive plays an important role in this context. Therefore, in our study, we split people who are given a pension into two groups: those who exited the labour market and are given a work pension (because they have met the State pension age or because they have accumulated the required working years) and those who are in receipt of other types of pensions – such as the survivor's pension or Social Allowance – in order to examine the evolution of work pensions over time by gender and geographic area. In the following, the two groups are called 'Work Pensioners' and 'Other Pensioners', respectively.

2. Data and methods

We use the INPS (National Social Security Institute) database, which allows identifying not only persons who receive a pension but also their province of residence, their individual characteristics, and retirement features. As a first step, we group Italian provinces and regions in broad geographic areas according to the NUTS-1 standard, i.e., North-west, North-east, Centre, South, and Islands. However, for the south and islands we consider one category only, which is indicated as 'South', so that the analysis focuses on four broad zones. Also, we use ISTAT (Institute for National Statistics) data on resident persons on the 1st January 1995 and on the 1st January 2020, by age, gender, and geographic area. We consider the years 1995 and 2020 and, in order to calculate the number of retired individuals by age (we focus on people aged 65+) on the 1st January 1995 and on the 1st January 2020, we select those receiving a pension by year of birth, sex, and geographic area in 1995 and in 2020, and exclude those dying over the same years.

Therefore, to identify individuals who do not receive a pension requires considering the corresponding resident population by age, gender and geographic area net of those who are given a pension. The ratio between retired people and total population shows the burden of retired on the elderly as a whole, or on subgroups of

old people, such as those aged 70+ (or 75+). This allows conducting a descriptive analysis by gender and geographic area over the observation years.

We employ a multiple linear regression model to investigate the evolution of the rate retired/elderly by demographic characteristics and by distinguishing between work pensions and other types of pension.

The dependent variable is the log transformation of the proportion retired/elderly, while explanatory variables are age, gender, type of pension, and geographic area. To be clear, in Italy, work pensions can be split into two categories, i.e., 'Seniority Pension', that is due to people who have the required working years, and 'Old Age Pension', which is paid to those who have met the required State pension age.

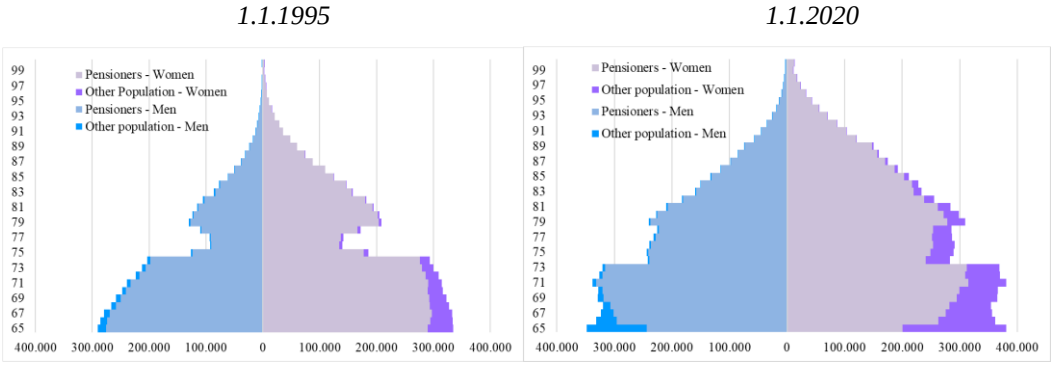
Also, the model controls for the observation year in order to show the changes that occurred over the considered time period (1995–2020). For the same reason, we calculate the interaction between the observation year and the explanatory variables.

3. Results

3.1 Descriptive results

Population distribution by age and retirement condition has been changing strongly, as shown by the age pyramids of the years 1995 and 2020 concerning the elderly persons only, i.e., those aged 65 and over (Fig. 1).

Figure 1 – *Elderly population by age, gender, and pension type.*



Source: our elaboration on ISTAT and INPS data.

The elderly population has dramatically increased and the proportion of people who do not receive a pension has risen as well, above all in the youngest age classes of the elderly persons group. This primarily depends on the changes that have

occurred in the pension system rules, directed to reduce the national pension expenditure. In particular, the minimum age that is required to receive Social Allowance – which is given to people who do not receive any income and to those whose income is lower than a certain threshold – was 66.7 in 2018 and 67 in 2019. This may partly explain the increase in the proportion of men and women aged 65 who are not given a pension.

Moreover, the increasing number of women who are not given any pension may be related to the higher male lifespan, which leads wives to receive the survivor's pension later than they did in the past decades.

In Italy, several current elderly women did not participate in the labour market during their life, or they were employed for very short time periods so that, at present, they do not meet the required conditions to receive a work pension. This suggests that often, women become 'retired' only thanks to the survivor's pensions that are given when their husbands die. Indeed, data show that in 2019, life expectancy in Italy was 81.0 for men and 85.4 for women (in 1995, instead, it was 74.8 and 81.1 respectively).

Looking at the total elderly population (people aged 65 and over), we can see that between 1995 and 2020, the share of retired individuals diminished for both men – from 97.1% to 96.0% – and women – from 94.1% to 86.1%. Instead, data on the portion of elderly population aged 70+ (or 75+), show that, over the observation period, the percentage of retired persons increased for men and decreased for women (primarily due to the higher male life expectancy compared to the past) (Table 1).

Table 1 – *Elderly population in receipt of a pension (%) by gender and age class.*

Age Class	**1.1.1995**		**1.1.2020**	
	Men	Women	Men	Women
65 +	97.1	94.1	96.0	86.1
70 +	97.6	96.3	98.7	90.2
75 +	98.1	98.5	99.0	93.0

Source: our elaboration on ISTAT and INPS data.

The analysis by broad geographic area shows deep differences between the North and the South, with the Centre presenting some values close to the southern ones. Over the observation period, the retired population aged 65 and over remained higher in the North than in the rest of the country although it declined in all areas, especially for women (Table 2). Overall, observed differences between the northern and the southern regions are greater for women than for men, and the values in the Centre are closer to those registered in the South (Table 2).

Looking at the retired people aged 70+ or 75+, instead, differences by region increased between 1995 and 2020 (Table 2).

Table 2 – *Elderly population in receipt of a pension (%) by gender, age class and broad geographic area.*

1.1.1995								
Age class	Men				Women			
	North-west	North-east	Centre	South	North-west	North-east	Centre	South
65 +	98.0	98.3	96.9	95.9	94.9	94.8	92.9	93.6
70 +	98.3	98.4	97.5	96.8	96.9	96.5	95.3	96.0
75 +	98.4	98.4	97.9	97.8	98.7	98.3	97.9	98.7
1.1.2020								
Age class	Men				Women			
	North-west	North-east	Centre	South	North-west	North-east	Centre	South
65 +	96.7	96.6	95.6	95.3	88.2	87.5	85.5	85.6
70 +	99.0	98.5	98.6	98.6	91.7	90.8	89.6	88.9
75 +	99.2	98.7	99.0	98.8	93.7	92.8	92.4	92.9

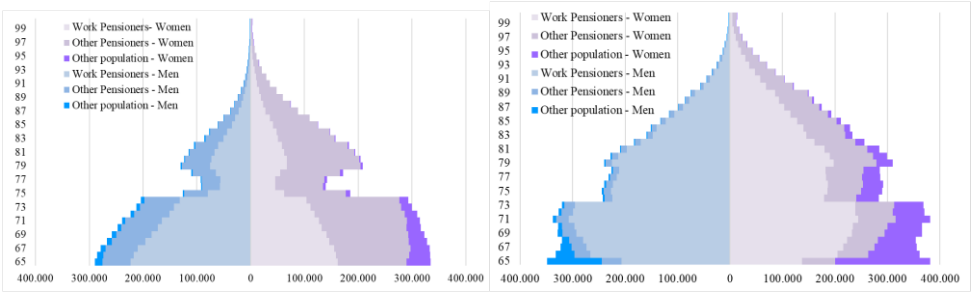
Source: our elaboration on ISTAT and INPS data.

The analysis of the evolution of the ratio between the elderly retired people and the total elderly population, requires the different existing pension types in Italy to be taken into account.

Data registered on the 1st January 1995 show deep gender differences: The proportion of women receiving a work pension is often lower than 50%, thus suggesting that most women are given another type of pension (Figure 2). In particular, for the oldest age classes, i.e., for women who were born in the early 1900s, such pensions may be represented by survivors' or Social Allowance. For men, instead, the share of those receiving a work pension was higher than the share of those who are given other types of pension. However, the percentage of individuals receiving other pension types was high and, in this case, the hypothesis is that a major role is played by Social Allowance.

In addition, for data registered on the 1st January 2020, differences by pension type emerge: Most of the men receive a work pension, and a reduction in the share of people in receipt of other pension types seems to take place over the observation period. For women, an increase in the group of those receiving a work pension took place between 1995 and 2020, although the share of those in receipt of other types of pensions continued to be high due to the limited female participation in the labour market – we are observing data on women who were born before 1955 – which is still characterized by significant gender imbalances.

Figure 2. *Elderly population by age, gender, and pension type.*



Source: our elaboration on ISTAT and INPS data.

3.2 Multiple regression model outcomes

In order to examine differences by gender, age, geographic area, and pension type, multiple regression techniques are applied. The model (Table 3) allows the detection of the association between each category of retired people and their burden on the elderly population as well as the interactions among variables. Almost all variables and their interaction are significant and the goodness of fit of the model is higher than 0.7.

Since we consider only two time points, the variable 'year' is a factor variable. In particular, the reference year is 1995, and results show that the variable 'year' is significant and positive, i.e., the proportion of retired people dramatically increased between 1995 and 2020, as already shown by the descriptive analysis.

As for gender, the coefficient is significant and negative, thus suggesting that the proportion of retired women is still lower than the percentage of retired men.

A positive association is observed for age: the higher the age the higher the proportion of retired persons in respect to the entire elderly population.

As for geographic area, results show that, despite the dissimilar economic structures of the north-western and the north-eastern regions, the labour market has not led to great differences in terms of share of people receiving a pension. The coefficient concerning the South, instead, is significant and negative: the percentage of retired people is still lower than in the North-west, while the coefficient of the Centre is negative and shows a lower significance level.

Table 3 – *Linear regression model coefficients.*

Variable	*Cat*	**Estimate**	**Standard error**	**Sig.**
Intercept		-2.060	-0.247	***
Year	*2020*	3.364	0.332	***
Sex	*Female*	-0.555	0.107	***
Age		0.022	0.003	***
Macro geographical area	*ref.: North-west*			
	Nord-east	-0.052	0.115	
	Centre	-0.202	0.115	.
	South	-0.322	0.115	**
Typology	*ref.: retired for employment*			
	Other retired	-2.546	0.122	***
	Other population	-3.213	0.122	***
Year*Women		0.231	0.081	**
Year*age		-0.037	0.003	***
Year* Typology				
	Other retired	-1.461	0.099	***
	Other population	-1.285	0.099	***
Sex * Macro geographical area				
	*Women *North-east*	0.024	0.115	
	*Women *Centre*	-0.118	0.115	
	*Women * South*	-0.290	0.115	*
Sex* Typology				
	*Women * Other retired*	1.581	0.099	***
	*Women * Other population*	1.629	0.099	***
Typology * Macro geographical area				
	*Other retired *North-east*	0.088	0.140	
	*Other retired *Centre*	0.740	0.140	***
	*Other retired * South*	1.278	0.140	***
	*Other population *North-east*	0.094	0.140	
	*Other population *Centre*	0.595	0.140	***
	*Other population * South*	1.013	0.140	***

R2 adjusted = 0.71
*Signif. Codes: 0'***'0.001'**'0.01'*'0.05'.'0.1''*
Source: our elaboration on ISTAT and INPS data.

Interaction between year and sex shows that the increase in the proportion of retired persons is higher for women than for men. The negative coefficient of the interaction between sex and South, however, shows that in this area of the country, the proportion of retired women is (still) low. Also, in the southern regions, the share of retired people who receive other types of pensions is larger than that of those receiving a work pension. This is found for the Centre as well, although results suggest the area is less disadvantaged compared with the South.

It is worth noting that the coefficients of the interaction between year and geographic area are not significant and have been excluded from the model. This may suggest that differences by area and age did not change over the observation

period. In our pension system, the proportion of the elderly population receiving a work pension – which depends on the number of people who have accrued the amount of work contributions that is required to receive a pension – has been increasing. However, differences by gender and geographic area still exist.

4. Discussion and conclusions

The study shows a significant change in the elderly population structure of our country. INPS data have allowed important information to be added to the study of ageing in Italy: The increase in the proportion of people retired from work shows there was a change both in the pension system and in our society's organization. This has led to a better sustainability of the high demographic ageing level: the elderly, who are given a work pension, by paying their work contributions, have partially contributed to the endurance of the pension system, while those receiving other types of pensions represent a burden for the system as a whole. Also, the work pension is usually higher than the other pension types, and this allows people exiting the labour market and receiving a pension to live autonomously.

However, the study shows important differences in population structure by gender and geographic area that need to be taken into account. In particular, differences by geographic area are not reducing, as our study shows. Women in the South are particularly disadvantaged in terms of pension receipt as well as in many life domains in our country. Although we will research this topic in more depth by identifying more pension types and by considering more than two time points, some observations can be formulated at this step of the research as well.

The proportion of retired people depends on labour market history, on new and old pension system rules, as well as on demographic dynamics – such as gender differences in life expectancy – and social behaviours – such as marriage intentions and decisions. The high ageing level of our country, which has led policy policymakers to try to cut pensions expenditures – has not reduced the proportion of retired people with respect of the entire old population for men. But this is not true for women.

Social and economic imbalances as well as demographic differences play a major role in this context. The reduction of geographic disparities – for instance, the economic development of the southern regions through the improvement of the labour market of this area – is needed.

Gender differences are expected to decrease due to the higher female participation in the labour market and their higher educational level compared with past generations. Also, the sustainability of the pension system requires an increase in the fertility levels of the country to avoid the number of people of new generations,

who will pay work contributions, being lower than the number of baby-boomers who will enter the pension system in the future.

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SUMMARY

Population ageing and retirement in Italy: an analysis by gender and geographic areas

Over the last decades, the increase in the share of the elderly people who exit the labour market thus receiving a work pension and the concurrent reduction in the workforce, has raised questions on the stability of the financial system of ageing countries.

Our study focuses on Italy and investigates the portion of elderly who are not in receipt of any retirement income or of other types of economic revenues, thus representing a potential burden for the whole society. We carry out an analysis by age, gender, and geographic area using INPS (National Social Security Institute) and ISTAT (Institute for National Statistics) data. The former allows the identification not only of persons who receive a pension but also their province of residence, their individual characteristics, and retirement features. The second provides information on the resident population by age, gender, and geographic area. We select people aged 65 and over and consider two time points, i.e., 1995 and 2020. A multiple regression model is employed to investigate the association between retired people by pension type and their burden on the elderly population. Results show that the old population structure significantly changed between 1995 and 2020 and confirm that demographic evolution has developed in relation to the economic development of the different Italian broad zones. Indeed, differences by gender and geographic area are detected: the share of men receiving a work pension is still higher than that of women, and this gap is more pronounced in the South compared with the North.

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IN.C.I.P.I.T. AND ELEUTHERIA: ANALYSIS OF TWO EMERSION, ASSISTANCE AND SOCIAL INCLUSION PROJECTS IN THE FIGHT AGAINST TRAFFICKING IN HUMAN BEINGS IN THE CALABRIA REGION

Pietro Iaquinta, Edith Macrì, Elita Anna Sabella

1. Introduction

Trafficking in human beings is a transnational crime. According to the 2020 Global Report on Trafficking in Human Beings prepared by the United Nations Office on Drugs and Crime, in 2018, worldwide, about 50,000 human trafficking victims were detected, and about 750 in Italy (United Nations Office on Drugs and Crime, 2020). However, given the hidden nature of this crime, the actual number of victims trafficked is underestimated. The prevention and repression of trafficking in human beings are a priority for the European Union in accordance with the protection of human rights, immigration policies, the safety of citizens and the enlargement of the Union. In this regard, between 2017 and 2018, more than 14,000 victims of trafficking were registered in the EU-27 Member States: over half of the registered victims were trafficked for sexual exploitation and 15% were trafficked for labour exploitation (European Commission, 2020a; 2020b; 2021). This crime carries with it enormous human, social and economic costs: in particular, in the EU-27, the cost of trafficking in human beings per victim is EUR 337,462 and a total of EUR 2.7 billion per year (European Commission, 2020c, p. 20). At national level, according to the official data given by the Department of Equal Opportunities at the Presidency of Ministers, in 2019, 2,033 victims were reported to the anti-trafficking system (Chamber of Deputies, 2020). The statistics relating to the cases of persons accused of / arrested throughout the Italian territory for crimes directly linked to the phenomenon of trafficking in human beings (Articles 600, 601, 602 of the Italian Criminal Code) reveal a prevalence of reports regarding the coercion to slavery or servitude and human trafficking, more numerous than those relating to the purchase and sale of slaves. On the other hand, there is a clear prevalence of people forced to slavery or servitude compared to those trafficked and purchased and sold as slaves. The most profitable markets where the victims of human trafficking are exploited are the sexual ones, begging and the labour market (mostly in the agricultural, construction, manufacturing and catering sectors) (Ministry of the Interior, 2021). Regarding the spread of the latter in the territories, Sicily, Calabria and Puglia, together with Veneto and Lombardy, are among the most affected regions of Italy (Santoro and Stoppioni, 2019). The phenomenon of human trafficking requires a

daily and constant commitment to the fight against it and support of the victims, whether regarding the labour exploitation, the most challenging aspects of "modern-day slavery" (Group of Experts on Action against Trafficking in Human Beings, 2020a; 2020b), or other forms of it (European Commission, 2021). In Italy, among the numerous actions regarding this issue: the Action Plan against human trafficking and serious exploitation 2016-2018, the PON Legality 2014/2020 FESR-FSE 2014/2020, the anti-trafficking toll-free phone number, as well as local initiatives, within individual territories, also in light of the remodeling of the modalities that the health emergency from Covid-19 has imposed to all (Save the children, 2020; Council of Europe, 2021; United Nations Office on Drugs and Crime, 2021).

2. Materials and methods

Through this article we aim to contribute to the reflection on the dramatic phenomenon of human trafficking from a different point of view. As this is, as already noted, a very complex phenomenon of a very big relevance, it seemed interesting to approach the analysis of it by studying the actions implemented in order to fight it. Specifically, the Calabria Region has been chosen as the area of observation, as in 31/12/2019 it has been ranked as the thirteenth city in Italy according to the number of foreign residents in it (Idos-Confronti, 2020) and also affected by the problem (Candia and Garreffa, 2011; Carchedi and Galati, 2019; Zambelli *et al.*, 2021). Within the territory, over the years, among others, two projects have been carried out to fight the trafficking in human beings in the Calabrian territory, which have been financed as part of the protection and social integration programs (Article 18 of Legislative Decree No 286/98) and first aid (Article 13 of the Law No 228/03): Eleutheria (2011-2016) and In.C.I.P.I.T. - Calabra Initiative for the Identification, Protection and Social Inclusion of Trafficking Victims (2016-2021). The projects, financed by the Department of Equal Opportunities, by the Presidency of the Council of Ministers and promoted by the Calabria Region in collaboration with the public sector or private social organizations, envisaged concrete measures in favor of the victims of severe exploitation, enslavement and human trafficking. In particular, the Eleutheria project aimed to achieve a series of objectives: identifying, reporting and putting under protection the victims of exploitation, through first contact activities, proactive actions for the emergence of potential victims of trafficking and/or exploitation and taking charge of the report; the identification, protection and first assistance, through prompt reception services, health assistance, legal advice, case assessment for the purpose of a preliminary identification of the assisted person as a victim of human trafficking and verification of the existence of the requirements necessary to get

social protection. The In.C.I.P.I.T. project, in addition to the aforementioned aims, moves towards the effective social inclusion of the victim of trafficking through integration policies, training courses or technical workshops. The logic underlying the activity starts from the awareness that the victim of trafficking must cease to be such in order to fit into the social context, achieving autonomy aimed at consolidating the processes of social and work inclusion and housing autonomy. It is therefore divided into phases: emergence, first assistance and second reception.

This work analyzes the project data, provided by the Immigration, New Marginality and Social Inclusion Sector – Anti-Discrimination Center and Civil Service of the Calabria Region, relating to the second initiative, In.C.I.P.I.T. Specifically, in the face of a multi-year project activity, the choice of the period to be taken into consideration was directed towards the last one for which the data are available, between 1 March 2019 and 31 May 2020. This is a time window deemed of interest also due to the pandemic in progress in the last quarter of observation, an event which, as already mentioned, has imposed a redefinition of times, places, and the ways in which project actions are implemented. The data that are being studied concern many aspects of the project action: to a preliminary description of some of the numerous activities implemented to ensure assistance and protection for people who have experienced trafficking, severe exploitation or who are in a risk situation, followed by the analysis of the users who benefited from it. In particular, in the context of activities aimed at the emergence of labour exploitation, the information assets are richer, to the point of allowing the description of the socio-demographic characteristics of the users (gender, origin) as well as the reflection on the working condition and possible existence of trafficking indicators.

3. In.C.I.P.I.T.: the project's data

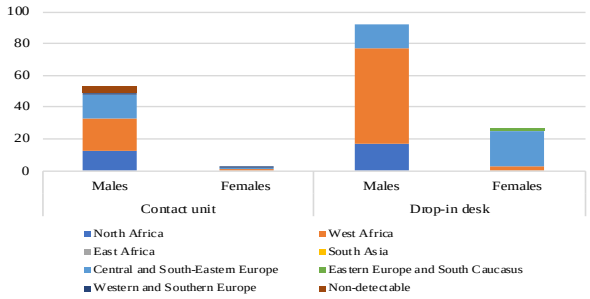
In.C.I.P.I.T. project, born in 2016 to offer an answer to the needs of prevention, emergence and contrast to the phenomenon of trafficking in human beings, concerning people of different nationalities exploited in different areas and often forced to live in conditions of subordination and slavery. The purpose of the In.C.I.P.I.T. is the fight against trafficking in human beings, the protection of victims involved both in phenomena of sexual exploitation and serious labour exploitation, begging and illegal economies and the subsequent social inclusion of the latter, through the construction of individualized paths of protection and socio-work reintegration.

3.1 Emergence

In.C.I.P.I.T. envisaged a series of interventions aimed at the emergence of forms of exploitation using a series of channels for the emergence of victims or potential victims: contact units and low-threshold services – drop-in desks –, the Territorial Commissions, the Court, the Extraordinary Reception Centers, SIPROIMI, the Trade Unions, etc. The emergence activities of the In.C.I.P.I.T. are structured by type of exploitation: sexual exploitation, labour exploitation and begging. Within the framework of actions aimed at victims or potential victims of sexual exploitation, the contact units operating in the areas affected by the phenomenon of sexual exploitation on the street have conducted territorial monitoring and promoted forms of emergence, using gradual contact techniques, and offering approaches to "liberation". The activities were carried out both in inner-city contexts (historic centres and peripheral areas) and in suburban areas (long-distance roads outside inhabited centres). In particular, a team consisting of intercultural mediators, psychologists, social workers, educators, and support workers handled the delivery of comfort and harm reduction materials. The contribution of interviews with victims is fundamental, where possible, in order to understand their needs to provide advice, support or accompaniment to services (among others, the private social drop-in services enabling legal information in a broad sense). However, the health emergency that affected part of the project period resulted in an almost total absence of victims on the street, thus making the implementation of outdoor actions more difficult: hence, the use of telephone monitoring became an option. Even though this approach formula failed to reach all the people assisted on the street, it proved to be a valid contribution: 96 registered contacts were followed by direct interventions to meet the prevailing needs (purchase of foodstuffs, hygienic and sanitary materials, etc.). Moving on to the second form of exploitation, namely, the working one, the actions aimed at the emergence of the aforementioned were carried out in the plains of Sibari, Lamezia Terme and Gioia Tauro, three territories characterized by the presence of multiple types of crops and, therefore, by different ways through which trafficking, or labour exploitation is carried out. Specifically, through the outputs of the contact units, the work of the drop-in desks or the activities carried out in collaboration with the trade unions, it was possible to reach victims or potential victims of trafficking and / or labour exploitation. The Plain of Sibari is characterized by a large production of citrus fruits, rice, and oil in autumn and winter and from mid-May to the end of August for the production of peaches, apricots, plums. In these territories, the mobile and fixed contact units, namely the drop-in desks, operated. The mobile contact units have dealt with the monitoring of the phenomenon in the territory proceeding to approach the workers in the meeting places, providing telephone cards to contact in case of legal, health or work

problems. Further actions carried out: the supply of reflective harnesses in order to safeguard the safety of those who moved in the dark hours aboard bicycles; the supply of basic necessities and service orientation; the supply of masks and disinfectant gel due to the concomitant health emergency for Covid-19 in progress. The drop-in counter activities provided for the reception of workers by an operator for the construction of an individual project in order to provide social, legal and health support and orientation to local services. In order to underline the capillarity and importance of the service offered, it should be noted that most of the users of the counter went there independently or through word of mouth between acquaintances or compatriots. The description of the interventions implemented in the Plain of Sibari is accompanied, as a further cognitive element, by the quantification and reconstruction of user profiles (Figure 1). The mobile contact unit intercepted a total of 56 people (survey period 27.09.2019-31.05.2020): almost all men of working age, mostly from West Africa and Central and South-Eastern Europe (in particular from Romania). The female component is instead more represented among the contacts registered at the drop-in desk (survey period 18.09.2019-31.05.2020): 27 women, mostly from Central and South-Eastern Europe (especially from Romania), compared to 92 men coming mainly from West Africa (in particular from Nigeria and The Gambia).

Figure 1 – *Forced labour in the Plain of Sibari: people reached by contact unit and by drop-in desk, by sex and Region (absolute values).*

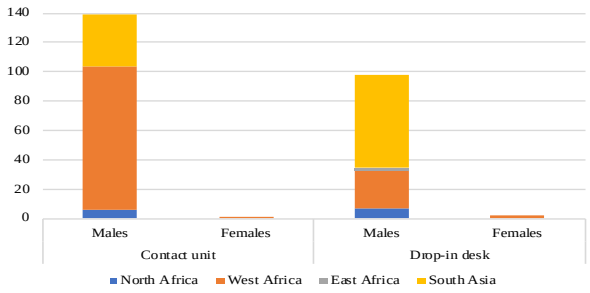


Source: own elaborations on In.C.I.P.I.T. project data.

The Plain of Lamezia Terme, characterized by an economy hinged on the agricultural and agro-food sector, constitutes an area of significant mobility in and out of workers. Within the territory, the contact unit carried out monitoring exits of labour exploitation, reaching the typical places of recruitment of the labour force or moving in the afternoon hours when workers stop working in the fields or warehouses. Similarly, to what was found for the Plain of Sibari, the unit carried out social, health and legal support actions also in order to create an essential trust relationship with the worker for the emergence of the phenomenon. Specifically,

among the activities carried out: the distribution of telephone cards as a contact and solicitation tool to report any legal, health or workplace problems; orientation towards drop-in desks; the supply of harnesses and reflective lights, work gloves, gels and masks; the offer of basic necessities or the reporting of services in charge of distributing them. Three branches were also actively involved in which the cognitive and orientation-information interviews took place, first in presence, then, following the closure in March, electronically. Among the activities, a peculiarity of a branch: the activation of an Italian language literacy course aimed at Bengalis was organized precisely in order to respond to a need expressed by some workers encountered. Regarding the type of user (survey period 01.03.2019-31.05.2020), the contact unit met a total of 140 people, including one woman, and at the desks 100 people were welcomed, 98 of whom were men (Figure 2). In line with the findings in the other territory, these are adults. However, by analysing the origin, new migratory paths of the subjects that started in the Indian sub-continent are outlined. Specifically, among the users of the contact unit, there are almost a hundred subjects from West Africa (The Gambia and Nigeria are the most represented countries of origin) and another significant share is made up of people from South Asia (Bangladesh and India). This new element is confirmed among users of drop-in desks: three out of five come from Bangladesh. The absence, among the contacts, of subjects from Eastern Europe and the small number of subjects from North Africa is not an indicator of their absence but rather derives from the difficulty in approaching the workers of those nationalities both because of the complex system of accompaniment in the workplace, and because of the absence of specific cultural mediators to cover these origins.

Figure 2 – *Forced labour in the Plain of Lamezia Terme: people reached by contact unit and by drop-in desk, by sex and Region (absolute values).*

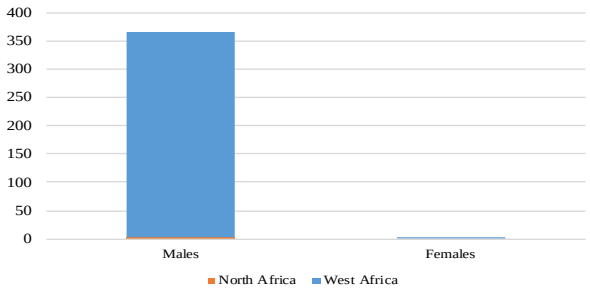


Source: own elaborations on In.C.I.P.I.T. project data.

The Plain of Gioia Tauro is the third area of action identified by the In.C.I.P.I.T. project for the emergence of labour exploitation. It is an area with an agricultural vocation that attracts thousands of workers, mostly seasonal, mainly employed in the

harvesting and processing of citrus fruits, olives and kiwis. The actions carried out by the contact unit – through the exits and the socio-legal assistance desk activities – included interviews to provide guidance information on the exploitation and opportunities offered by the project, as well as responses to the immediate needs expressed, with a view to establish a relationship of trust; personalized interviews to bring out needs and any indicators of exploitation; consultancy and administrative / legal support; accompaniment / access to the union for orientation, information and union services; accompaniment / access to public administrations, INPS, public health facilities, assistance bodies; distribution of personal protective equipment for work activities. The pandemic then entailed the launch of information activities, carried out by telephone, on the subject of: pandemic and anti-contagion measures to be taken; administrative and judicial procedures open and suspended due to the lockdown; assistance services and supply of basic necessities; income support tools made available by the government and local authorities. As part of the project aimed at the emergence of labour exploitation, through contact unit and desk, in the Plain of Gioia Tauro (survey period 01-03.2019-31.05.2020) 367 subjects were contacted most of whom were young people between 20 and 35 years old: 365 men coming mainly from sub-Saharan African countries, in particular from Mali, Senegal and Gambia and two women of Nigerian origin (Figure 3).

Figure 3 – *Forced labour in the Plain of Gioia Tauro: people reached by contact unit and desk, by sex and Region (absolute values).*



Source: own elaborations on In.C.I.P.I.T. project data.

Furthermore, as shown in Table 1 relating to trafficking and exploitation indicators, no trafficking situations have been detected in the Plain of Sibari, but indicators of labour exploitation have emerged. The latter were also tracked down in Gioia Tauro along with a case of trafficking. The number of victims of trafficking is more consistent in the Plain of Lamezia Terme (having involved men from Bangladesh and women from Nigeria) compared to about half of those who were

victims of labour exploitation[1]. On the other hand, with regard to working conditions, in the Plain of Gioia Tauro the greater incidence, among contacts, of subjects without a work contract clearly emerges; the share of the latter, although lower, is by no means negligible in the other territories. It should also be noted that, among contract holders, it has not always been possible to investigate the actual regularity of the same with respect to labour and social security legislation.

Table 1 – *Contacts reached in the Plains of Sibari, Lamezia Terme and Gioia Tauro by trafficking and exploitation indicators and contractual working conditions (absolute values).*

	Sibari	Lamezia Terme	Gioia Tauro
Trafficking and exploitation indicators			
Potential victim of trafficking and/or labour exploitation	38	26	94
Victim of human trafficking	0	32	1
in Italy	*0*	*3*	*1*
in transit countries	*0*	*21*	*0*
both in Italy and in transit countries	*0*	*8*	*0*
Victim of labour exploitation	57	55	271
in Italy	*57*	*49*	*271*
in transit countries	*0*	*0*	*0*
both in Italy and in transit countries	*0*	*6*	*0*
Non-detectable	24	9	1
Contractual working conditions			
With work contract	45	42	104
Without work contract	50	29	224
Self-employment	0	2	0
Non-detectable	24	27	39

Source: In.C.I.P.I.T. project data.

Finally, the number of actions for the emergence of forms of exploitation is completed by the work of four contact units active on the Calabrian regional territory – Crotone, Reggio Calabria, Catanzaro, and Cosenza – against the phenomenon of begging. Specifically, both monitoring activities were carried out in order to understand the dynamics of the phenomenon, and direct contacts. In the latter case, the offer of comfort goods was an opportunity to approach the victim in order to establish a constructive and profitable dialogue for emergence. Also in this context, the restrictions linked to Covid-19 have imposed a reshaping of activities by resorting to telephone monitoring and the delivery of necessities. From the data

[1]The sum of the people reached in the Plain of Lamezia Terme with regard to trafficking and exploitation indicators is more than 100 units as for someone it emerged more than one indicator.

relating to the more than 400 contacts reached, it is clear that adults are predominantly involved together with a marked characterization in terms of origin of the alleged victims: they are largely originating from West Africa, especially Nigeria. Furthermore, although it affects men to a greater extent, this form of exploitation also involves women. A further useful project data for the purpose of examining the phenomenon is the classification of the interventions carried out by the contact units by type of begging: if for women it was exclusively classic begging (for example, asking for money in the street, on public transport, in supermarkets), men are also engaged in auxiliary begging activities (namely, the request for money is accompanied by the provision of a service or the sale of a good).

3.2 Reception: first assistance, second reception and territorial care

The In.C.I.P.I.T. project manages structures with different reception intensities to respond to the needs and requirements of the different types of victims. The project is able to welcome women and men victims of trafficking for the purpose of sexual and labour exploitation, pregnant women, mothers with children, unaccompanied foreign minors, women and men victims of labour exploitation, begging, exploitation in illegal economies, forced marriages, transsexuals. The programs aim to accompany the person in escaping from the condition of exploitation until his full inclusion in the socio-relational context of reference. The welcome provided by In.C.I.P.I.T. is differentiated on the following levels: prompt reception for immediate protection and help needs with the offer of places for the reception of women, including pregnant women and with minor children; first and second level residential reception for the initiation of first aid courses capable of allowing psycho-physical recovery and awareness of one's condition and adequately address the path of protection and social reintegration. In this context, participation in literacy, training and job start-up courses are guaranteed with the aim of achieving full economic and working autonomy. Furthermore, if the welcomed person requests it, repatriation to his country of origin is guaranteed. All the procedures necessary for regularization are activated and support is offered for the procedural process in the case of complaints against traffickers; residential accommodation in semi-autonomous apartments to support the achievement of social and work inclusion objectives and accompaniment when leaving protection projects; residential reception of unaccompanied foreign minors victims of trafficking, with the activation of the specific protection program aimed at them. The project data for the period in question show 59 people welcomed in residential mode, 25 males – mainly Bengali and Nigerians – and 34 females, almost all of Nigerian origin. In relation to age, there are 48 adults, 10 minors and 1 unaccompanied foreign minor.

4. Conclusions

The study conducted so far illustrates the tools through which the Calabria Region has achieved considerable results in terms of the emergence of the phenomenon of human trafficking and the forms of exploitation connected to it. In the context of a complex phenomenon to identify and equally difficult to quantify, the number of contacts reached constitutes a valuable contribution both in absolute and potential terms. In fact, the word-of-mouth about the success of one's experience and the benefit obtained through the sharing of one's needs and the formulation of requests for help are the start of a virtuous mechanism that could involve an increasing number of subjects. For example, the dissemination, among the workers contacted, of their rights as workers, both in terms of personal protection and in terms of working conditions, expresses the effectiveness of the project action and gives good hope regarding the opportunity that this awareness becomes customary. Moreover, the Calabria Region obtained the refinancing of the project from the Presidency of the Council of Ministers, thus being able to guarantee its continuity. In the light of what has previously been highlighted and for the future it would be important to reach an increasing number of contacts of different nationalities, for example through the greater involvement of specific intercultural mediators, thus ensuring the opportunity for increasingly widespread action. It would also be desirable to promote the awareness of the territory for a better integration of users in the social context. Long-term action and its monitoring through the analysis of project data, therefore, make it possible to examine the phenomenon and its transformations, to enhance good practices and to implement new contrast strategies that are able to take into account the changes imposed by the pandemic situation in the social context too, especially towards the most fragile subjects.

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SUMMARY

In.C.I.P.I.T. and Eleutheria: Analysis of Two Emersion, Assistance and Social Inclusion Projects in the Fight against Trafficking in Human Beings in the Calabria Region

Trafficking in human beings is a transnational crime. This article aims to contribute to the reflection on the dramatic phenomenon of human trafficking from a different point of view, by studying the actions implemented in order to fight it. Specifically, within the territory of the Calabria Region, two projects, among others, have been carried out to fight the trafficking in human beings, which have been financed as part of the protection and social integration programs and first aid: Eleutheria (2011-2016) and In.C.I.P.I.T. (2016-2021). This work analyzes the project data, provided by the Immigration, New Marginality and Social Inclusion Sector - Anti-Discrimination Center and Civil Service of the Calabria Region, relating to the second initiative, In.C.I.P.I.T. The period under consideration is between 1 March 2019 and 31 May 2020. This is a time window deemed of interest also due to the pandemic in progress in the last quarter of observation, an event which has imposed a redefinition of times, places, and the ways in which project actions are implemented. The data concern many aspects of the project action: a preliminary description of some of the activities implemented to ensure assistance and protection for people who have experienced trafficking, followed by the analysis of the users who benefited from it.

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THE CONTRIBUTION OF FOREIGN WORKERS ON PRODUCTIVITY AND WAGES: COMPANY LEVEL EVIDENCE FROM ITALY [1]

Oliviero Casacchia, Corrado Polli

1. Aims

The literature dealing with the effect of immigration on the labour market, productivity and the level of wages in the host country is very extensive. Thanks to the pioneering work of Borjas and Katz (2007) and Peri (2009) which centres above all on the Anglo-Saxon context and in particular on the United States, important conclusions supported by empirical research have been reached. Two of the most important research questions addressed are:

a) Does the entry of immigrant workers have a positive or negative effect on the productivity and wages of the domestic workers?

b) What are the gains and losses caused by immigration distributed among local inhabitants? Do the qualification levels of the latter influence the impact?

With reference to these two questions, the macro effects are considered negligible since in the long run the accumulation of capital results in restoring the capital/labour ratio of the pre-immigration period. The results obtained by studying the effect on the level of wages are more controversial: if on the one hand many studies have found minimal or insignificant effects of the involvement of immigrants in the labour market with regard to wages (Card, 1997), using an analysis of historical records at national level, some have estimated an important negative impact on the segment of unskilled domestic workers (and this is where the numerous contributions of Borjas and his school can be found).

In European countries, research has led to two major results. First, the labour market participation of immigrants was lower than that of domestic workers. The new inflows seem to have significant effects especially regarding labour market participation of immigrants who have already been present in the host country for some time. Furthermore, the presence of numerous barriers in the labour market that isolate immigrants to less skilled sectors cause a considerable over-skilled effect,

[1] The paper is the result of the common work of the authors: in particular Oliviero Casacchia has written sections 1,2 and 6, Corrado Polli has written sections 3,4 and 5.

where foreign workers, even highly educated ones, perform tasks comparable to those of less skilled domestic workers (Dustmann, Frattini, and Preston, 2013).

As for Italy, there is data that allows us to appreciate the direct contribution of immigrants on the country's economy. Currently, the 2.4 million foreign workers present in the country provide 9% of added value and pay approximately 7 billion in taxes and 11 billion in welfare contributions (Leone Moressa Foundation, 2018). Concerning the methodology used in the studies that have addressed the topic, in recent years there has been an important transition from research based on macro-data, often conducted at the local level, to studies based on micro-data which, when possible, permit a longitudinal perspective. However, there are still few studies that analyse the contribution of foreign workers on productivity and the effect on the overall level of wages using micro-data. In general, these studies exploit the data obtained by integrating archives relating both to companies and to workers, these archives are not often readily available.

2. Theoretical framework and empirical contributions on the effects of immigrant workforce recruitment on productivity and wages

Most of the studies examining the economic effects of immigration focus on the consequences - deriving from the entry into the labour market of foreigners - on employment levels, wages and hours worked in companies. At the same time, however, there is a further line of research that analyses the effects of immigrants on productivity, capital intensity and the totality of production factors. In this regard, it is worth recalling the important studies conducted by Peri (2009) on the US labour market, which concludes that the employment of foreign workers involves a more efficient allocation of the workforce through a redistribution of tasks among domestic workers with foreigners, effectively increasing overall productivity. In fact, according to Peri, the employment of foreign workers would push domestic workers to fill jobs that require greater communication skills, while foreigners would carry out jobs that require higher manual intensity. In a nutshell, immigrants in the United States would increase productive and economic capacity by stimulating investment and promoting work specialisation. There are further studies along the same lines (Ottaviano et al., 2012) conducted in the United Kingdom that analyse the impact of immigrants on imports, exports and productivity in the service sector. According to these studies, immigrants can reduce the tendency of companies to relocate through the reassignment of productive tasks to the foreign workforce and can have an impact on company productivity by reducing labour costs. Foreign workers would also increase exports, reducing the costs associated with communication to destination countries and thus favouring trade. Not all studies reveal positive aspects when they

jointly analyse productivity and immigration, especially when the Italian context is analysed (Ferri et al., 2019): these results would be largely influenced by the atavistic productive stagnation of the Italian economy and by the strong presence of foreign workers with low levels of qualification.

Concerning the relation between immigration and wage, Borjas (2014) argues that in sectors where there is no competition between immigrants and domestic workers, the salaries of the latter should be pushed upwards. Furthermore, some studies have shown that immigration reduces the real wages received by domestic workers with scarce human capital (Borjas and Katz, 2007,).

More recent results, often openly in contradiction with those obtained by Borjas and his school, have shown that the consideration of this further element of differentiation between domestic workers and immigrants, even with a similar level of training would lead to an imperfect substitutability in the market and, in essence, in terms of salary variations of domestic workers which - if negative - would be scarce or limited in the short term (Ottaviano and Peri, 2008; 2012). However, it should be emphasised that the empirical results in this regard are rather contradictory: in some studies, a clear negative effect emerges (for example, Borjas, 2003; 2014), in others there would not seem to be a link between immigration and wages, or there would even be a positive relationship.

Analysis methods and strategies are also evolving. In the initial phase most were territorial studies, based on comparisons carried out in the same period between different places, or on analysis of historical records conducted at national level. These were followed by studies that focus on the use of data at the micro level and which have produced, among other results, explicit estimates of the elasticity of substitution between immigrants and domestic workers (Ottaviano and Peri, 2008).

Three strategies have been identified: a) the models are stratified according to the level of qualification on the basis of an imperfect substitutability between skilled and unskilled workers (with constant elasticity). The first studies pointed to a dichotomy differentiating between a high and a low level of education, others introduce a 4-category classification: uneducated, low, medium and higher educational qualifications; b) youth and elderly are differentiated between; c) the role of capital is expressly considered, and generally fixed as a constant in the short term (Ottaviano and Peri, 2008).

The possible differences in the average earnings between Italians and foreigners constitutes a good starting point for more detailed analysis[1]. Estimates from micro data using INPS (social security) data and a survey of financial statements from the Bank of Italy are reported in the study by Brandolini, Cipollone and Rosolia (2005). The authors argue that, based on the first source, in the period 1986-1994 foreign-born workers employed in private companies, operating in the extra-agricultural sector earn on average 4% less than a worker born in Italy.

As for the effect of introducing foreign workers into the Italian labour market, the opinion of those who consider it a cause of increase - and not decrease, on the wages of domestic workers seems to prevail - also according to the results obtained by the Anglo-Saxon school (or also Germany). According to Gavosto, Venturini and Villosio (1999), immigration in Italy influences the salary of those born in Italy in a positive way. Moreover, the parameter that measures the effect is more important in small businesses, and among the blue-collar workers in regions of the North-east and are less relevant in other areas. Similar results were obtained in the study by Staffolani and Valentini (2010). In the Italian labour market, the salaries of the domestic workers would be pushed upwards by the presence of immigrants (and this push would be higher when the share of immigrants in the workforce is low); the latter would also remain encapsulated in unskilled jobs.

3. Data and methodology

To study the effect of foreign workers on the productivity and wage levels of the host country, it was decided to merge three important sources of information.

The first archive considered is the Statistical Register of Active Enterprises (ASIA-Enterprises); ASIA covers all enterprises carrying on economic activities in the field of industry, commerce and services to business and families in Italy. It includes both economic and demographic variables of the main business structure and was carried out through a process of collating various administrative sources, which were then suitably integrated and transformed into statistical archives. The second register examined is ASIA-Employment, which contains information on the employment structure of Italian companies. In order to analyze detailed information on both companies and workers, we have integrated ASIA-Enterprises and ASIA-Employment (Linked Employer Employees Data) using a common code by firm.

To complete the integrated record underlying this study, some budgetary information obtained from the AIDA database (primarily added value and wages) was included at company level. It provides detailed data on the financial statements of Italian joint-stock companies, which were also the result of economic evaluations and a comparative analysis of the financial statements presented by the companies.

The reference period of the proposed analyses is 2015 (the most recent version of the available data). Our analyses include only the companies present in ASIA-Enterprises with the legal form "Capital company" and "Cooperative company". and we take into account only the small and medium-sized enterprises because they have a more economic homogeneous behaviour. We have also excluded companies operating in the “financial and insurance activities” sector and in the “real estate activities” sector because they have few foreign workers. The companies present in

ASIA both in 2014 and in 2015 are considered (companies born in 2015 were excluded). Ultimately, the total number of selected companies was 104,080.

The archive thus constructed contains the following variables relating to the individual worker: gender, age, educational qualification, citizenship (Italian, EU, non-EU), type of employment contract (permanent/temporary), profession, type of working hours (time-full/part-time). As for the companies, the information available is the geographical area in which the company is based, the sector of economic activity, the size, the added value per employee and the gross salary per employee. To interpret the results the degree of competitiveness of the companies were considered, using the Eurostat classification, which reorders the economic sectors of the companies based on the level of technological intensity of the manufacturing companies and in relation to the knowledge content of the services.

Crepon's methodology (2002) was used to evaluate the effect of foreign labour on the productivity and wages of the host country. According to this approach, it is assumed that in each firm the total value of production (Q) is represented by a Cobb-Douglas function, where (A) indicates the technological level, (L) the labour factor and (K) the capital:

$$Q = AL^{\propto}K^{\beta} \tag{1}$$

with α, β representing the elasticity of production against labour and capital. Subsequently, after having assumed perfect substitutability between workers, the factor of labour is broken down into a weighted sum of k workers categories (including, for example, citizenship). After a few mathematical passages, we arrive at the following two formulas that analyse the effect of the foreign component on the productivity and wages of companies, reported here in simplified form:

$$ln(\Pi_i) = \alpha * foreign_i + \beta * ExtraEU_i * bc_i + \gamma * F_i + \delta * X_i + \varepsilon_i \tag{2}$$
$$ln(W_i) = \alpha * foreign_i + \beta * ExtraEU_i * bc_i + \gamma * F_i + \delta * X_i + \varepsilon_i \tag{3}$$

The two dependent variables represent, respectively, the logarithm of the value added per employee (Π_i) and gross wages per employee (W_i) for each company. The explanatory variable 'foreign'[2] expresses, in the form of a vector, the quota of workers distinguished by groups of citizenship (domestic workers , EU and non-EU foreigners); the non-EU variable * bc instead contains the interaction factor between the quota of non-EU workers and an indicator variable bc which is 1 if there is a high

2 As mentioned in the introduction, it cannot be excluded that the behaviour of companies led by a foreign citizen may present anomalous characteristics compared to companies run by "natives", both in terms of profitability and above all as regards the composition by citizenship of the workers recruited.

presence (higher than the median value) of blue-collar workers in company i. F and X are vectors containing, respectively, characteristics of companies and workers.

4. Productivity and wages in Italy: some characteristics

Some information on the weight of foreign work in Italy allows a more effective classification of the results obtained through our analysis. In 2015 (reference date of the integrated archive) according to the data of the Continuous Labour Force Survey (RCFL), just over 23 million employees, 2.4 million are workers with non-Italian citizenship. It is plausible to hypothesise a diverse performance in terms of productivity and wages of foreign labour depending on whether we refer to individuals from developed countries or not. The data available does not allow us to introduce such a distinction: however, in the archive, we can distinguish, as mentioned above, between employed persons not belonging to the European Union (corresponding to 2015, the year chosen for the integration of the various archives therefore comprising of 27 countries) and non-EU citizens.

The selection analysed in this study presents demographic characteristics not so distant from those of the total employed people in Italy. The weight of men, who make up two thirds of the total number of employees considered is significant, over 70% in the case of non-EU employees. The percentage of young people is low (individuals under the age of 30 are only 12.8% of the total, even less among Italians, 12.4%) mainly due to a significant number of employed people aged 50 and over (over 27%). The distribution by age is then different considering citizenship: the percentage of over 50s drops to 20.5 in the case of non-EU citizens, and as much as 17 in the case of EU citizens.

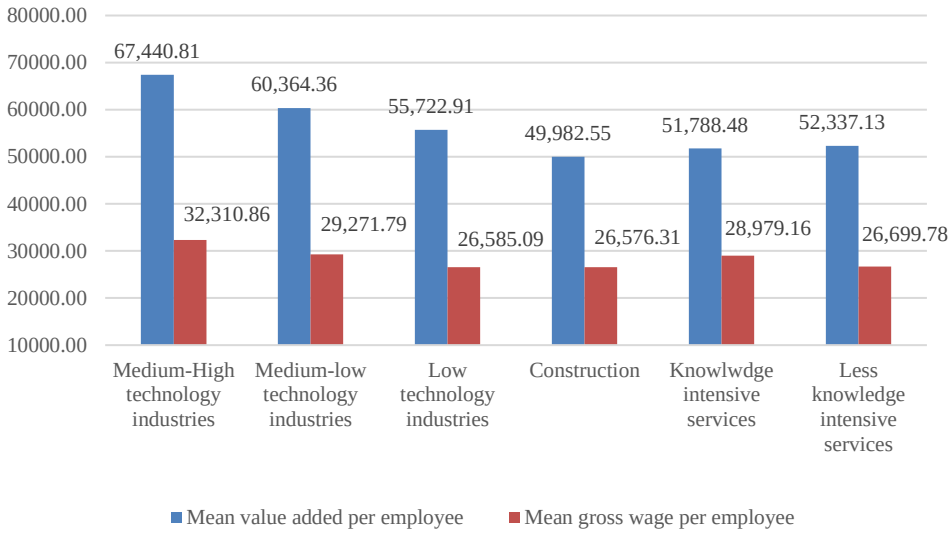
Observing distribution by qualification important indications emerge that will be considered in the study of productivity and wages later on. First, it should be noted that the failure to indicate qualifications, negligible in the case of Italians (1.4%), is instead relevant in the case of non-EU workers (16.6) and especially EU workers (21.3%). Taking into consideration the valid markers, important signs emerge confirming the current situation of human capital in the workforce in Italy. The percentage of workers with only primary school qualifications appears significant among non-EU citizens (about half), but also among Italians (almost 37%), and more moderate among EU workers (about 30%). The percentage holding a university education does not appear particularly different between the three groups: higher for Italians (15.6%) and EU citizens (14.9%), a little lower among non-EU citizens (12.6 %): see Figure 1.

Other important characteristics that may underlie different levels of productivity and wages is the type of economic sector in which the company operates. The

different sectors in which the companies in our archive are included guarantee very different levels of average value added per employee: from the construction sector, for which we are talking about an average value of less than 50 thousand euros per year, we move on to the medium high technology sector which guarantees the highest levels of average added value per employee (over 67 thousand euros per year) within the six categories considered. Some surprise is raised by the fact that there are no significant differences in the level of the variable considered by observing the high and low knowledge intensity service sector: in these cases, in fact, the added value, equal to about 52 thousand euros per year, is very similar. The differences in average gross wages per capita are, on the other hand, more contained.

Having mentioned the sectoral differences of the two variables under consideration (added value and remuneration), it is important to pay attention to the differences that occur in terms of the average size of the company and type of sector by distinguishing the citizenship of the worker (between the three groups already submitted).

Figure 1 - *Added value and gross remuneration by production sector. Average values per employee. Year 2015*



The average size of companies that recruit domestic workers is higher: 43.8% of locals work in companies that employ fewer than 50 employees, compared to a higher percentage (46.5%) for non-EU citizens and EU workers. Economic sectors characterised by medium or high know-how, such as those typical of medium-high technology manufacturing sectors or those that produce knowledge-intensive

services, are not surprisingly more widespread in companies that recruit domestic employees.

5. Productivity and wages: what are the differences?

As previously mentioned, the database available to us, made at company level, does not allow us to directly estimate the average levels of productivity and wages per worker (we need to insist on this point). To be able to obtain a result of this kind we would have needed information (which is not available) and which in at least in one case, is difficult to evaluate. In fact, the level of productivity of a company is usually assessed synthetically without being able to attribute it to specific employees. The level of average salaries could in theory be obtained, but only after a long process, together with additional databases such as the monthly communications managed by INPS which include the statements sent by employers to report the monthly wages paid to their employees – however, they are however difficult to access. At company level, however, it is possible to evaluate the effect of some aggregate information such as the weight of the quota of different workers in the three groups presented above. The percentage of employees are divided by sex, educational qualification, age, type of contract and so on with two target variables (added value and remuneration). Moreover, in our opinion this is a pioneering attempt never before done, at least in our country, from which valuable and concrete indications emerge about the association - albeit at a macro level (the effect of some variables treated as indicators) in a microenvironment (the analysis, as repeatedly stressed, takes place at the level of the company) - of the two target variables with some characteristics of the staff employed in a company. It should not be forgotten that this attempt follows the LEED approach.

The results obtained through the models described above are contained in Table 5.1. Columns 1 and 3 contain the coefficients deriving from the application of the model on the two dependent variables "average productivity" and "average wages" at company level without the value interaction. Columns 2 and 4 replicate the same models but taking interaction into account. The reading of the coefficients, which we recall are calculated considering all the companies and not a sample of them, would seem to associate a growing share of foreign workers with lower company productivity and wages for lower employees. This trend would seem to apply both to foreigners born in European Union countries and to non-EU citizens. The coefficients reported for educational qualification and professional qualification contain values that are economically predictable and confirm the correctness of the results as a whole. Analysing the results for the models including interaction between companies containing a high number of blue-collar workers and share of non-EU

workers, we note a statistically significant negative correlation between the increase in non-EU workers and wages per employee. The coefficients relating to productivity, on the other hand, are not statistically significant. In order to verify the robustness of the results just presented, the model was replicated on subgroups of companies, using the same specification. For this purpose, it was decided to use a classification proposed by OCDE which distinguishes manufacturing companies through a re-aggregation of the production sectors to which they belong, and which takes into account the investments in Research and Development supported by the companies. On the other hand, as regards the service sector, the companies in each sector are divided according to the percentage of graduates. When a certain threshold of university-trained employees is exceeded, companies belonging to a specific branch of services are defined as "high-knowledge content".

Table 1 – *OLS estimation results on productivity and wages. Italy, 2015*

	Productivity			Wages
	(1)	(2)	(3)	(4)
Share of domestic workers (ref.)	-	-	-	-
Share of EU workers	-0.0635***	-0.0639***	-0.052***	-0.05***
Share of non-EU workers	-0.147***	-0.124***	-0.115***	-0.09***
Interaction of presence of blue-collar workers * quota non-EU		-0.0299		-0.033**
Share of workers with primary education (ref.)	-	-	-	-
Share of workers with secondary education	0.174***	0.174***	0.136***	0.136***
Share of university-educated workers	0.318***	0.319***	0.220***	0.220***
Share of employees (ref.)	-	-	-	-
Share of blue-collar workers	-0.306***	-0.306***	-0.225***	-0.23***
Share of white-collar workers	0.898***	0.899***	0.857***	0.858***
Share of apprentices	-0.443***	-0.446***	-0.337***	-0.34***
Share of managers	2.328***	2.330***	2.455***	2.457***
Share of other typologies	-0.184***	-0.183***	-0.0271	-0.0268
Constant	3.694***	3.693***	3.178***	3.177***
Observations	103357	103357	103357	103357
R-squared	0.393	0.393	0.503	0.503
Other controls[(a)]	Yes	Yes	Yes	Yes
* p<0.05, ** p<0.01, *** p<0.001				

(a) Other controls include sex, age group, school attainment, type of contract, ln(investments in fixed assets per employee), sector, company size, geographical area.

With regard to manufacturing industries, for each technological level used in production processes, a greater share of foreign workers is associated with a negative effect both on productivity and on the wages paid to employees, thus confirming the results obtained in the general model previously described.

Again, with reference to the manufacturing sectors, the interaction value does not seem to have an effect on the two dependent variables. It should be noted, however, that in services with a high content of knowledge, a growing share of workers born in EU countries is associated with a positive effect on the productivity and wages of companies. In these sectors, moreover, the value interaction indicates, in companies with a prevalent presence of blue-collar workers and a higher percentage of non-EU workers, greater productivity and higher wages. Finally, as regards low-knowledge services, the coefficients seem to confirm the negative effect of high percentages of non-EU workers on productivity and wages (Table 5.2). An interesting fact comes from looking at the value interaction: a higher share of non-EU workers would have a negative effect on wages, not on productivity.

Table 2 – *Some robustness tests by knowledge level. Italy, 2015*

High intensity of knowledge				
	Productivity			Wages
	(1)	(2)	(3)	(4)
Share of EU workers	0.175**	0.182**	0.127***	0.130***
Share of non-EU workers	-0.0715	-0.289***	-0.0725**	-0.187***
Share of non-EU workers * blue-collar (dummy)		0.330***		0.173***
Low intensity of knowledge				
	Productivity	Wages		
	(1)	(2)	(3)	(4)
			-	-
Share of EU workers	-0.0388	-0.0400	0.0467***	0.0485***
Share of non-EU workers	-0.192***	-0.149***	-0.158***	-0.098***
Share of non-EU workers * blue-collar (dummy)		-0.0535		-0.075***
Other controls:	yes	yes	yes	yes

6. Conclusions and further developments

The analyses conducted in the present study lead primarily to three results. First, a growing share of foreign workers has a negative impact on productivity and wages. Secondly, the interaction between non-EU workers and the high presence of blue-collar workers significantly reduces wages; this effect is not confirmed on company productivity. Finally, knowledge-intensive service companies that employ a larger percentage of foreign workers have a higher level of both wages and productivity. On the other hand, in low-knowledge service companies, a higher share of foreign workers is associated with lower levels of wages. The present study was primarily for exploratory purposes. To refine the analyses, it would be appropriate to consider the different professions carried out by the workers and, above all, it would be

interesting to study them from the point of view of the communication and manual skills necessary to carry them out. In this regard, an in-depth study is envisaged starting from the extensive documentation made available by the INAPP survey on professions. Furthermore, as already mentioned above, the information on salary at an individual level could be considered from administrative sources to improve the analysis carried out at the company level. Finally, to evaluate the behaviour of companies on the labour market with regard to the recruitment of non-domestic labour, new hires and employment terminations could be examined in terms of skills and competences as well.

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SUMMARY

The contribution of foreign workers on productivity and wages: company level evidence from Italy

The aim of this paper is to describe the main features of firms for socio-characteristics of employees and to investigate the effects of share of foreign workers on firm productivity and wages. The analysis takes focuses on the medium and big size firms and on manufactured and not agricultural sectors. For the study, we combined data from different data sources (ASIA enterprises, ASIA employees and AIDA – Bureau Van Dijk). We found three main results in this paper: primary, higher share of foreign workers has a negative impact on productivity and wages of Italian firms, Secondary, the interaction between Extra-UE born workers and blue collars (do not) reduce significatively (labour productivity) wages. Finally, larger share of foreign-born employees that work in knowledge sector increases labour productivity and wages.

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INTERNAL MIGRATIONS IN ITALY IN THE 1920s REVISITING THE SOURCES

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1. Introduction

The history of internal migrations in Italy has been addressed by various scholars. These contributions, taken together, offer a fairly precise picture of the migratory movements that have affected the country, including in the fascist period. Among the most important is a work by Anna Treves (1976), which indicated pre-war migratory flows and how these grew into the flows that characterized the country during the post-war economic boom. Although not specifically dedicated to the fascist period, a volume by Stefano Gallo (2012) also deserves to be mentioned. Gallo showed the importance of temporary migration in the fascist years. There are many other contributions, often with reference to specific territories. These works usually focus either only on outgoing migratory flows or only on incoming flows. Ercole Sori studied migration within and outside the country using statistical sources showing the migrations from the Italian countryside to urban-industrial areas, the importance of wage differentials, and the relationship between migration and economic development (Sori, 1975). During the 1980s historians focused on the experiences of the internal migrations organized by the fascist regime (Gaspari, 1985; Franzina and Parisella, 1986; Protasi, 2016); internal colonizations were subsequently considered in the framework of fascist demographic policies (Ipsen, 1997; Protasi and Sonnino, 2003). The movements from high-mobility regions as Veneto and Friuli have been studied through fascist resources and municipal immigration records (Scarzanella, 1977; Ermacora, 2012); these research works based on local records show the relevance of spontaneous movements and the need to find alternative paths to emigration abroad during the interwar period. Municipal records, letters, diaries, and oral testimonies reveal mobility patterns and seasonal rural migrations that often are not detected in official records. Recently studies have stressed the importance of the fascist institutions devoted to migration during the 1920s (Gallo, 2015a; Gallo, 2015b), the negative impact of fascist policies, and the international labour market on Italian emigration in the interwar period. Fascist policies – the so-called "Battle for Grain" (1925), currency revaluation ("Quota 90" lira-pound, 1926) and the expatriation restrictions to promote internal colonization

(1927) – led to an economic slowdown and a rise in unemployment both in rural and in urban areas. In particular, Southern Italy was badly hit both by the Quota Act (1921; 1924), which significantly reduced immigration towards the United States (1920: 349.042; 1921-1929: 36.000 average per year) and by policies which favoured rural internal immigration from Northern regions to Agro Romano and Pontino (Lazio Region). Unable to expatriate, southern people ceased to be as mobile as they had been (Gallo, 2018; D'Amico and Patti, 2018). The 1929 world economic crisis also played out in Italy: according to official records, from 1930 to 1933 unemployment rose from 0.5 to 1.2 million, meanwhile Italian emigration dropped from 259,876 to 60,736 (Alberti 2015). Italian emigrants repatriated from the United States and emigration was reduced to a minimum. In order to mitigate unemployment, the fascist authorities promoted large-scale public works, re-opened borders for a short time, invaded Ethiopia (1936) and organized migration towards the Third Reich and Libya (1938-1939) (Mantelli 1993; Bermani 1998; Fincardi 2002). Meantime, internal migrations spread. In many of these works there are also attempts to quantify the phenomenon: the numbers and the demographic characteristics of internal migrants. However, each of them essentially uses a single source and often only partially uses the information contained therein. In this article, we propose a different approach, one in which all the information relating to the main stock and flow sources published by the Italian National Statistical Institute (ISTAT) is systematically exploited. In the article we offer an overview of internal migrations in Italy with reference to the 1920s. The aim, one already addressed extensively in the literature, is to gauge migration between different regions of the country.

2. Internal migrations in fascist Italy: Some quantitative evidence

With migration, perhaps more than with other forms of demographic behavior, a comparison between the absolute numbers of the flows, with rates, may prove useful. In migration studies there has been more work on the absolute numbers of migrants or of acts of migrations. However, it is also important, especially from a comparative point of view, to see the impact of these flows on the population.

Number of migrations and migration rates are summarized in Figure 1, where they are represented from 1911 to 1981. This is done to evaluate the characteristics of internal migration in the period considered in this article, compared to other time periods. The accuracy of the data is undermined by the problem of non-cancellation in the population registers by municipal employees; this involves the lack of agreement between the number of immigrants and emigrants. In order to overcome this problem, we take registrations as a point of reference; though they can, at least

partially, overestimate the phenomenon. With the same data we then calculated the migration rate. Figure 1 highlights the interval from 1921 to 1931.

The two series are very similar. The differences, however, allow us to stress three aspects: 1) considered in absolute terms, the graph gives the maximum of internal migrants in Italy in the early 1960s; 2) migration during the fascist period and, in particular, from the mid-1920s onwards, reached very high levels, comparable or even higher than those recorded in the economic boom; and 3) the first half of the 1920s was the period of fastest growth in internal migration. Therefore, the 1920s represent a highly dynamic phase for internal migration.

Figure 1 – *Internal migration and migration rates. Italy 1911-1981.*

Sources: registrations and numerator of the migration rate in Sviluppo della popolazione, 1965. Denominator of the migration rate Human Mortality Database. University of California, Berkeley (USA), and Max Planck Institute for Demographic Research (Germany). Available at www.mortality.org or www.humanmortality.de (data downloaded on 14/6/2021)

3. The sources: data and problems

In this article we use both stock sources, namely the population censuses of 1921 and 1931 (ISTAT, 1925-1928; ISTAT, 1933-1936), and flow sources, Population Registry Office data. As regards the two censuses, information is available on the present population with region of birth[1]. Populations are divided by gender and into large age groups. This information was also collected in other censuses before and after these, but not in that of 1936. As regards Italy between the wars, the two surveys span this period convincingly. A further reason why, at the moment, we have limited the analysis to this period is due to the fact that the data, at least at the national level, are perfectly comparable. Borders do not change between the two surveys, while the same cannot be said of the other censuses. The use of censuses for internal migration estimates leads to distortions, as: 1) they report only a summary of migration flows fixed at a given moment of time; and 2) they do not consider the influence of mortality. The analysis, therefore, focuses on migrants and not on migration. The differences are greater the greater the time distance between the two surveys. This depends on "both the number and the moves of migrants who died in the interim are likely to be excluded" (United Nations, 1970, p. 2). In the case of the resident population: "this number is, however, a gross understatement of both the amount of migration that has occurred during the lifetime of the living population and of the number of persons who have migrated" (United Nations, 1970, p. 2).

To these general limits we must add those that depend on the specific sources used here (Corsini, 1967). Probably the most serious is that the measurements refer to the present population. In fact, in comparisons between censuses carried out on the resident population, it is possible to speak of permanent migrants. But this is not the case if the reference population is the present one. In particular, in our case, there are conscripts and their uneven distribution across Italian territory. The Italian Army was mainly based out of the north and, in particular, in those areas annexed after the World War I. These were certainly border areas and needed military units. But there were other considerations. Soldiers were particularly numerous in the provinces of Bolzano and in those of Venezia Giulia, where there were very large groups of German, Slovenian and Croatian speakers. Numerous soldiers from other provinces represented part of the Italianization of these territories (Pupo, 2014). A second problem, connected to the survey of the present population and not to the resident one, is that the two censuses were conducted on different dates: on 1 December of 1921; and on 21 April of 1931. Thirdly, in the ten years between the two surveys there were some changes in the administrative boundaries of the regions. The most

[1] Obviously, the censuses also report the resident population, but in this case the region of birth is not specified.

important relate to the municipalities of the current province of Rieti, established in 1927. These were detached from Umbria and joined to Lazio in 1923. In 1927 some municipalities in the province of Caserta (Campania) were also added to Lazio. These changes were, however, modest. They only marginally affect our calculations.

Unlike stock data, with which we study migrants, flow data allows us to study migration. The data used here come from two different sources, both of which refer to changes in residence. The first are the files of the Movimento della Popolazione (1925-1932), the second is a collection published in the journal *Annali di statistica* (Sviluppo della popolazione, 1965)[2]. For both, the total number of registrations and cancellations is reported at the regional level, but without any indication of origin or destination. Although the basic data are the same, the two sources have very different types of information. In the first, which stops in 1928, yearly registrations and cancellations coincide perfectly. Therefore, the balance at national level is always equal to zero. This is evidently the result of data processing. In the second source, the series covers the entire time frame considered, though the data of Venezia Tridentina and Venezia Giulia annexed to the Kingdom after World War I are missing for some years. In this source, registrations and cancellations do not coincide. Therefore, they seem to reproduce the data of municipal origin as they were collected by the statistical institute: there was no processing. The precise data of the first source seem, at first glance, more attractive. But those of the second are more consistent with what we know about the Population Registry sources and their problems.

For the study of migration and, in particular, for the study of internal migration, we can make the two different types of sources act simultaneously in order to exploit the strengths and to limit the weaknesses of each. In particular, as regards the census data, we evaluate the direction of flows and their distance. As regards the flow data, we evaluate their consistency. The use of sources that report information that should be, at least in principle, consistent with each other, allows for some further reflections.

4. Methods and consistency checks

In terms of the sources, no particular explanations are necessary for the flow data: the information there, with all the limits previously noted, gives us the absolute extent of migration on an annual basis. As for the stock sources, however, matters are more complex. The method we use to estimate migrant numbers is discussed in

[2] These data are also published on the ISTAT website in the section *Serie storiche*: http://seriestoriche.istat.it/. Last access 14/12/2020.

the United Nations *Manual VI* (1970)[3]. In particular we use the more simplified version of the method illustrated in that book, that is the one that does not take into account mortality between the two surveys[4].

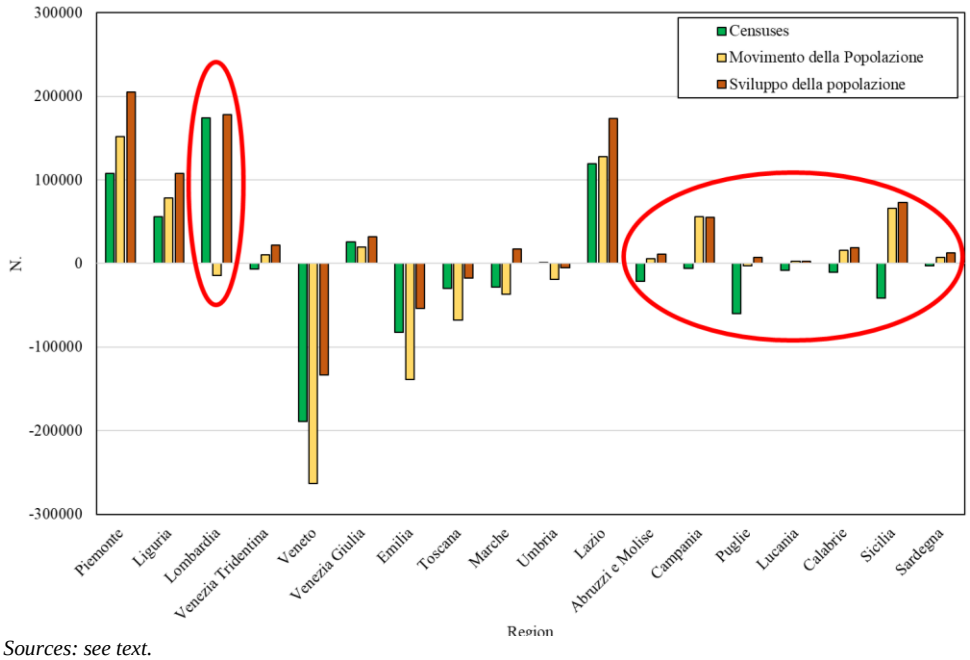
To highlight how census information was exploited, we divide the estimation procedures into three stages. Each of these gives us a supplement of information compared to an analysis of the data referring to a single region. In the first we consider the complete matrix of the present population in the different regions both 1921 and 1931, on the basis of the region of birth. This allows us to establish, referring to the census date, not only where the people who lived in a single region came from, but also where the people who left it went. In the second we compare the data of the different regions and thus propose the matrix of migratory exchanges between these territories. In this way we can see, for the two dates, the outcome of the transfers to and from all Italian regions. In the third we build the matrix of the differences between the two matrices obtained in the second phase and thus propose any migratory exchanges between all regions in the interval between the two censuses. The results of this last phase can be compared with the migration balances calculated from the flow sources[5]. The results of these comparisons are summarized in Figure 2. Before moving on to comment on the graph, it is necessary to point out that the outcomes at the national level of the migration balance are equal to zero for the censuses and the data of "Movimento della popolazione". For those taken from the "Annali", meanwhile, there is a deficit of cancellations of over 700,000 units.

[3] We, therefore, follow the same arguments advanced by Anna Treves. But we develop them in a systematic way.

[4] With the available data relating to the resident population, estimating the probability of survival is very complex. This is due to the fact that during the period the country's migratory balance was still strongly negative. There is also the issue that for the 1921 census the figure for some regions was strongly overestimated. On the estimation methods, please refer to Manual VI.

[5] Missing data in the flow sources were integrated with some estimates.

Figure 2 – *Internal migration balance in different sources. Italy 1921-31.*



Sources: see text.

The figure highlights coherence and inconsistency issues between the sources. As to coherence, the most important point derives from having a magnitude not too dissimilar to most of the balances. The most notable dissimilarities, on the other hand, are given by: 1) a very marked difference in the balance concerning Lombardy where the situation recorded in the series of the "Movimento" is very different from the other two sources; and 2) the differences of sign between the census and sources of flow in the southern regions, according to which, in the first the balance is negative, while in the second it is positive. These results, at least on the basis of what is universally supported in the literature, seem to give greater reliability to the stock data rather than to the flow data. However, we believe that these discrepancies need to be examined more carefully, because these come very close to the problem we want to explore. In particular, as regards the flow data, the results taken from the "Annali di statistica", which as we have seen do not lead to a national balance equal to zero, should be corrected by increasing the number of cancellations and, therefore, by reducing the regional balances. The problem of the data on the migratory balance (i.e. those with national balance equal to zero) is precisely this. Trying to reproduce

the calculation methods that led to a migration balance equal to zero, we have obtained results that almost perfectly overlap those observed in the figure[6].

The problem, therefore, is to find a more correct criterion for aligning the results of the flow sources with those of the stock sources. On a provisional basis, we can assume that the data on cancellations in the southern regions are much worse than in the northern regions, and that the revision of the data should go in this direction: this is unless, of course, we decide that the south attracted emigrants from central and northern Italy.

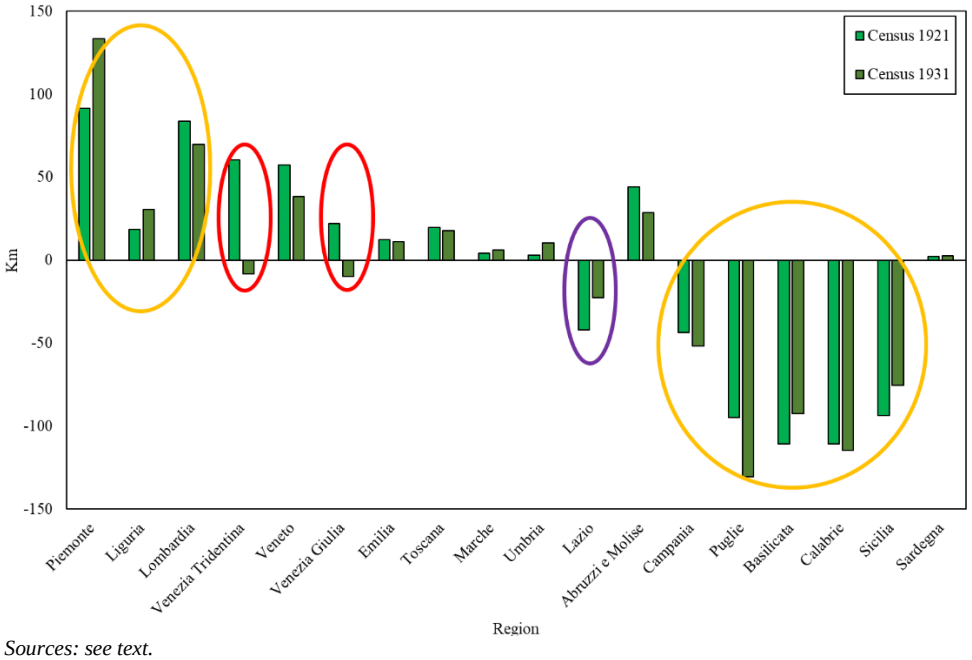
5. Migrants and the range of migration

An alternative way to follow the evolution of internal migratory flows is that of calculating migratory distances. In this regard, we have built a matrix of the distances between the different regions by measuring from regional capital to regional capital. For each individual present in a region we multiplied the distance from the capital of the region of birth and that of the region of arrival and then divided the result by the total number of migrants. We made the calculations both at the national level and at the regional level distinguishing outgoing and incoming distances. At the national level, of course, they coincide and are equal to 293 km for 1921 and 303 km for 1931. In the decade, therefore, the average distance covered by migrants has grown by about ten km. An increase of this magnitude may seem small, but, in the relevant ten years, growth was much greater, because in the figure of 1931 numerous acts of migration prior to 1921, and therefore already present in the previous census, are incorporated. The national figure is already significant in and of itself, because, in this case, migratory distance can be an indicator of deeper changes. In fact, it marks the fall off of movements between neighbouring regions and the increase of migration to more distant regions.

The regional detail shows values that are also very different from the national average. Figure 3 shows the migration balances in terms of distance for all regions. They are calculated by subtracting the average distance covered by emigrants from the average distance traveled by all immigrants. The results, therefore, do not depend on the number of people who move. Rather they reflect structural emigration trends.

[6] We have assumed that the number of cancellations must correspond to the number of registrations by re-proportioning the missing cancellations to the number of registrations for each region.

Figure 3 – *Migration balances in terms of distance.*



Sources: see text.

Before commenting on the graph, we want to note that, in a system of displacements defined by geographical borders, the migratory distance depends on the geographical location of individual territories too. If the direction and distance covered by the flows were random, the distances relative to the peripheral regions would be on average greater than those of the central regions. In this case, however, the difference between the average distance of entrances and that of exits would be zero. The outcomes described in the figure are very different. Peripheral regions, such as Sardinia, have a balance value lower than that of central regions such as Lazio and Abruzzi and Molise. Apart from this, however, what is most important here are the signs of the flows and their evolution over time. With regard to the first aspect, there is the almost specular patterning between the North-West and the South. In the regions of the industrial triangle, immigrants come from greater distances than those covered by emigrants from the triangle. The opposite is true for the southern regions. The central regions, on the other hand, have something closer to a balance. In other words, the regions that have a strongly positive migratory balance, or those that attract emigrants, exercise this action over a wider range than other regions. An exception is Lazio, the only one among the regions with a strongly positive balance to release its emigrants at a greater distance: the demographic growth of the region

and, in particular, of Rome was due to immigrants who came from neighbouring regions.

With regard to the historical evolution of flows, we focus here on the particular cases of Venezia Tridentina and Venezia Giulia. Both territories had been annexed to the Kingdom of Italy after World War I. In both cases we pass from a relatively large positive balance to a negative one. Before 1921 the inflows of Italian citizens settled in the recently annexed territories had been intense, particularly among those employed by the public administration. These flows were not balanced out by flows of an equal distance to the Italian regions. In the 1931 census, however, the arrangement of these flows and the intensification of relations between these territories and the rest of the Kingdom become clear.

6. Conclusions

The use of stock data and flow data allows us to investigate some aspects of internal migration in Italy in the 1920s. Not all the elements that can be drawn from the sources have been developed here. In particular, we have made a very limited use of census data, which are those that give us the greatest amount of information. Furthermore, these data are consistent with what we already know of the history of internal migrations in Italy. The flow data, on the other hand, seems less consistent with what we know for two reasons: the first is the effect of estimation techniques; and the second of a migratory balance that does not equalize as it should.

Another aspect that previous studies have not directly addressed is the extent of the underestimation of migrants in the census. From this point of view, the divergence between the two sources is striking. According to the calculations on the census data, immigrants and emigrants number fewer than 1.2 million, while in the flow data there are almost eight and a half million acts of migration recorded. ‘Migration’ is different from ‘migrant’: we do not know how many migrants there were. Certainly, fewer than 8.5 million, but equally certainly much more numerous than the estimates based on comparing the censuses. However, if the Population Registry Office data are by far the most reliable for defining the extent of flows, this is not necessarily true for direction. It is our belief that only an analysis that integrates the different pieces of information from the two source types can give a proper sense of internal migration in Italy.

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SUMMARY

Internal migrations in Italy in the 1920s: revisiting the sources

The history of internal migration in Italy has been addressed by various scholars, whose contributions offer a fairly precise picture of the migratory movements that affected the country, the Fascist period included. In many of these works there are also attempts to quantify the phenomenon: the numbers and the demographic characteristics of internal migrants. However, each of them essentially uses a single source or only partially uses the information contained therein. In this article, we propose a different approach, one in which all the information relating to the main stock and flow sources published by the National Statistical Institute is systematically exploited. In the article we offer an overview of internal migrations in Italy with reference to the 1920s.

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MEDITERRANEAN BASIN: A MELTING POT OF POPULATIONS IN FRONT OF ENVIRONMENTAL PROBLEMS

Silvana Salvini

1. Introduction

The countries bordering the Mediterranean have in common a millennia-old history, characterized by economic and continuous cultural exchanges. Despite this, during the most recent decades, those of the post-colonial era, the elements of differentiation have surpassed those of commonality. The need for work for the post-war reconstruction of Europe and the poverty of the countries of the South-East shore represented the factors of the social and economic imbalance that pushed it a large part of the population of South-East Mediterranean shores to move towards the richer Europe. Even if the flows of migrants have so far remained within limited numbers, nature of the different labour markets in industrialized countries (a lot segmented) and internal unemployment in the South-East shore countries have raised the concerns of European countries in the towards immigration, in particular from the Maghreb, from Egypt and from Turkey. Some politicians and a part of public opinion demonstrate the fear that economic and demographic imbalances (the large population growth rate and consequently the massive size of the younger generations in the South-East shore and the marked aging in the North shore due to low fertility), can cause unmanageable flows of South-North migrants.

Another critical point of demographic growth, still relatively large in North Africa and Western Asia, is represented by environmental problems. In 1989, Plan Bleu published a pioneering report on "Futures for the Mediterranean Basin" which recommended a design for the Mediterranean Strategy for Sustainable Development (MSSD). With the issuance of an update in 2005, entitled "A sustainable future for the Mediterranean: The Blue Plan's environment and development outlook" (Benoit and Cometau, 2005), the report's recommendations were adopted by the Barcelona Convention Contracting Parties at their 14th conference in Portoroz, Slovenia, 8-11 November 2005. Plan Bleu's key function as the "Mediterranean Environment and Development Observatory" (MEDO), draws heavily upon its expertise in sustainable development indicators.

Within MEDO, 134 initial indicators were selected and adapted to the follow-up of the implementation of Agenda 21 in the Mediterranean. Of these, 34 priority indicators were subsequently chosen to monitor the progress made by the Mediterranean countries focusing upon the objectives defined for 9 MSSD priority issues including: Improving integrated water resource and water demand management; Ensuring sustainable management of energy; Mitigating and adapting to the effects of climate change. In addition, some composite indicators such as the Human Development Index (HDI), Ecological Footprint (EF) and Environment Performance Index (EPI) were considered to monitor overall progress in terms of sustainable development. The MSSD priority indicators are unable to fully describe the complexity and diversity of sustainable development issues in the Mediterranean regions. Some additional indicators were thus selected and defined in order to tackle priority issues such as: water, energy, tourism, the conservation of rural and coastal areas. These analyses, widely disseminated in Plan Bleu publications (Plan Bleu, 2020) and continuously updated, are nicely complemented by the analysis of EF and bio-capacity trends in the Mediterranean region that is included in this report (Global Footprint Network, 2021a; Global Footprint Network, 2021b). We intend to analyse the association between demographic trend and environmental growth by a gender perspective, focussing on fertility tendency and EF in the Mediterranean countries, comparing Southern and Northern shores.

2. Ecological footprint

The calculation of the ecological footprint is quite complex, as it takes into account several factors: land for energy (forested land necessary to absorb carbon dioxide); farmland; pastures; forests (area devoted to timber production); built-up area (residential settlements, industrial plants, service areas, roads); sea. The different contributions are introduced in a spreadsheet or in specific formulas that reduce the surfaces in common measures, giving them a proportional weight. In this way the "equivalent area" necessary to produce the quantity of biomass exploited by an individual or a group is identified, measured in "global hectares" (gha)[1], starting from the local reality to arrive at the world situation, passing through regions and nations.

The formula used officially indicates the sum of all consumption (E_i is the ecological footprint deriving from the consumption C_i of the $i-$th product and q_i, expressed in hectares / kilogram, is the reciprocal of the average productivity for

[1] One hectare equals 2.47 acres.

the i −th product). To obtain the per capita ecological footprint, the value of EF is divided by the resident population in the area under consideration.

$$F = \sum_{i=1}^{n} E_i = \sum_{i=1}^{n} C_i q_i , \quad i = 1, \dots, n \tag{1}$$

The EF estimates the biologically productive land and sea area needed to provide the renewable resources that a population consumes and to absorb the wastes it generates -using prevailing technology and resource-management practices- rather than trying to determine how many people a given land area or the entire planet can support. It measures the requirements for productive areas (croplands, grazing lands for animal products, forested areas to produce wood products, marine areas for fisheries, built-up land for housing and infrastructure, and forested land needed to absorb carbon dioxide emissions from energy consumption). One can estimate the EF, at various scales—for individuals, regions, countries, and humanity as a whole. The resulting figures can also be compared with how much productive area -or bio-capacity- is available (Hayden 2019).

Simply stated, the Mediterranean region is running a severe ecological deficit, a situation that will only worsen unless effective resource management becomes central to policy-making. The average EF per capita for the Mediterranean Region increased 37%, from 2.4 gha in 1961 to 3.3 gha in 2007. Population has doubled over the considered period and the overall regional EF has increased 2.6 times. During the same period the bio-capacity available in the Mediterranean Region decreased (-38%) from 2.1 to 1.3 gha per capita.

We see that many of the actions taken by Greece, Italy and other Mediterranean countries to improve the performance of their economies are undermining the health of their ecological assets and mortgaging their long-term security. Never has the situation been so critical: The Mediterranean's accessibility to essential life-supporting ecological resources and services is strongly increasingly. At a time when the world is going further into ecological overshoot, failure to take action is becoming a fundamental threat.

We examine the nature of and trends in the demand that residents in the Mediterranean region are placing on the earth's ecological assets. The focus on Greece, Italy, Portugal and Spain offers a particular example of the interplay between ecological constraints and economic performance. Using the EF and bio-capacity measures, we investigate the main drivers of increased human pressure in the region and explore the likely implications of growing ecological deficits for the Mediterranean region's ecosystems and economies. In 1961, only six countries in the Mediterranean region had more ecological assets available to produce the resources and services, on aggregate, than their residents consumed. All other countries consumed significantly more than their domestic ecosystems produced.

By 2008, the deficit situation had spread to every Mediterranean country apart the possible exception of Montenegro (data set for this country is not sufficiently reliable). The larger the value of EF, the larger the value of consumption of individuals on a certain territory.

If we look at the Italian situation, we see that Italy, for its part, is responsible for a good portion of consumption, so much so that it has a per capita EF of 4.2 gha, a rather large number if we consider that the world one is 2.8 gha, but both are values in continuous growth.

Table 1 – *Ecological footprint in the Mediterranean Basin.*

Country	(A)	(B)	(C)	(D)	(E)	(F)
Albania	1.05	1	0.14	1.91	0.87	-0.86
Algeria	1.18	0.71	0.3	1.59	0.59	-0.41
Arabia	4.39	2.15	1.41	5.13	0.84	-0.74
Croatia	3.21	2.19	1.66	3.75	2.5	-0.53
Egypt	1.29	0.47	0.09	1.66	0.62	-0.37
France	4.27	3.23	2.49	5.01	3	-0.74
Greece	3.94	3.01	1.56	5.39	1.62	-1.45
Jordan	1.18	1.6	0.73	2.05	0.24	-0.87
Iran	2.56	0.29	0.16	2.68	0.81	-0.12
Iraq	1.12	0.44	0.21	1.35	0.3	-0.23
Israel	3.07	2.6	0.85	4.82	0.32	-1.74
Italy	3.08	3.5	1.59	4.99	1.14	-1.91
Lebanon	1.18	2.09	0.37	2.9	0.4	-1.72
Libya	2.4	1.54	0.89	3.05	0.44	-0.65
Morocco	0.93	0.67	0.38	1.22	0.61	-0.29
Mauritania	2.64	0.64	0.67	2.61	5.5	0.03
North Macedonia	2.12	4.29	0.76	5.66	1.43	-3.54
Portugal	2.99	4.08	2.6	4.47	1.25	-1.48
Syria	1.40	0.55	0.42	1.52	0.7	-0.13
Slovenia	3.88	6.95	5.53	5.3	2.61	-1.42
Spain	4.13	3.64	2.35	5.42	1.61	-1.29
OPT	0.4	0.38	0.04	0.74	0.16	-0.34
Tunisia	1.42	1.23	0.75	1.9	0.98	-0.47
Turkey	2.13	1.13	0.56	2.7	1.32	-0.57
UAE	6.22	6.34	1.89	10.7	0.85	-4.45

The table shows, for different countries of the world, the data (expressed in hectares per person) relating to different types of ecological footprint: (A) Ecological footprint of production: produced directly in the territory; (B) Ecological footprint of imports: deriving from activities and products imported into the territory;(C) Ecological footprint of exports: deriving from activities and products exported to other territories; (D) Ecological footprint of consumption: equal to the sum of the ecological footprint of production and imports, reduced by the share attributed to the ecological footprint of exports (A + B - C). The table, also expressed in hectares, also shows the biocapacity (E) and net export of ecological footprint (F = C - B).
Data source: Ecological Footprint Atlas 2010.

From the Northern shore to the Southern one: we focus on Algeria, that experienced the largest change in per capita ecological deficit, moving from a reserve of +0.7 gha per person in 1961 to an ecological deficit of -1.1 gha per person in 2008. This was due to both consumption increases (causing the total EF to grow) and population growth (which decreased the per capita biocapacity budget). Only Algeria's oil revenues allowed it to maintain its ecological deficit for the first few decades after independence. But by the late 1980s, declining oil prices took a toll on Algeria's petroleum-based economy, diminishing its capacity to pay for importing external ecological resources and services. As revenues and imports declined, Algeria's EF stabilized limiting residents' access to ecological resources and services. Morocco, Libya, Syria, Tunisia and Turkey also shifted from ecological creditor to debtor status during this period, while the other Mediterranean countries saw a worsening of their ecological deficits. Cyprus' ecological deficit grew by 3.1 gha per capita, the largest deficit increase in the region. Jordan reported the smallest deficit increase, at + 0.3 gha per capita.

In table 1 we have reported EF for the Mediterranean countries to compare the two shores of the sea. In the first column of the table, we can outline the difference among different countries. The oil-producer countries have a larger value of the footprint, such as the more developed countries (Italy, Spain, France, Greece), while the less developed countries in the region define a lower consumption of world goods (see for example Morocco and Tunisia).

3. Demographic and gender characteristics

Following data of World Population Prospects, we report in table 2 some demographic parameters: fertility (TFR, Total Fertility Rate), life expectancy (e_0 for males and females), adolescent fertility (F_{15-19}), contraceptive prevalence (Contr. women 15-49) and Gender Global Gap (GGG) to synthetize women's status in order to connect demographic and environmental conditions.

We can look at the ranking of countries according to the different parameters, to see if there is some similarity among different rankings. The values of the parameters in the ranking generally tend to bring together the European countries on the one hand and the countries of the southern and eastern shores on the other. The TFR is lower than 2 for countries on the north shore (excluding Turkey with 1.99) and higher in the Asian and African shores. The situation for adolescent fertility and the GGG is almost identical, with only Israel close to Europe, while the rankings of contraception and those of male and female life expectancy are a little more heterogeneous, although the lowest values are found in the countries of the South and East Shores. Let us try to relate these measures with the

environment, also adding the density variable that expresses the overcrowding of a region or state. The concentration of population in coastal zones is the heaviest in western Mediterranean, the western shore of the Adriatic Sea, the eastern shore of the Aegean Levantine region, and the Nile Delta. Overall, the population density in the coastal zone is larger in the southern Mediterranean countries. This is also where the variability of the population density in the coastal zone is maximum, ranging from more than 1000 people/km2 in the Nile Delta to fewer than 20 people/km2 along parts of coastal Libya (UNEP/MAP, 2012).

Table 2 – *Demographic characteristics for the Mediterranean Basin, firstly east-southern shores and then northern shores, recent years.*

Country	TFR	e_0^F	e_0^M	F_{15-19}	Contr.	GGG
Algeria	2.79	78.76	76.3	37.7	57.1	0.634
Egypt	3.13	74.95	70.23	50.2	58.5	0.629
Libya	2.11	76.46	70.61	5.5	27.7	n.a.
Morocco	2.3	78.66	76.17	29.3	70.8	0.605
Tunisia	2.1	79.34	75.37	7.9	62.5	0.644
Cyprus	1.3	83.45	79.55	4.4	n.a.	0.692
Israel	2.93	84.9	81.99	7.5	68	0.718
Jordan	2.58	76.82	73.28	25.7	51.8	0.623
OPT	3.36	76.38	72.92	48.4	57.2	n.a.
Syria	2.64	79.1	73.13	25.4	53.9	0.567
Turkey	1.99	81.21	75.57	21.5	73.4	0.635
Albania	1.54	80.48	77.48	19.3	79.7	0.769
Bosnia	1.22	80.32	75.48	7.2	n.a.	n.a.
Croatia	1.41	82.02	75.95	6.6	69	0.72
France	1.85	85.82	80.32	4.7	92	0.784
Greece	1.26	85.07	80.51	5.8	76.2	0.701
Italy	1.3	85.97	81.91	4.6	65.1	0.707
Malta	1.51	84.68	81.37	11	85.8	0.693
Montenegro	1.74	79.77	74.99	6.7	39.4	0.71
N. Macedonia	1.46	78.32	74.26	12.9	40.2	0.711
Portugal	1.35	85.28	79.8	6.5	73.9	0.744
Serbia	1.42	79.05	73.89	11.9	58.4	0.736
Slovenia	1.64	84.44	79.25	3.2	78.9	0.743
Spain	1.39	86.68	81.26	6.6	70.9	0.795

Source: United Nations, 2019; World economic forum, 2021; United Nations, Department of Economic and Social Affairs, Population Division (2019). Contraceptive Use by Method 2019: Data Booklet (ST/ESA/SER.A/435).

Density is shown in Figure 1; European countries are much more “crowded” with respect to Asian and African regions. Overall, more than half the population lives in countries of the southern shores of the Mediterranean, and this proportion is expected to grow to three quarters by 2025 (UNEP/MAP/MED POL 2005). The Mediterranean region’s population is concentrated near the coasts. More than a

third live in coastal administrative entities totalling less than 12% of the surface area of the Mediterranean countries. The population of the coastal regions grew from 95 million in 1979 to 143 million in 2000. It could reach 174 million by 2025. (United Nations, 2019a).

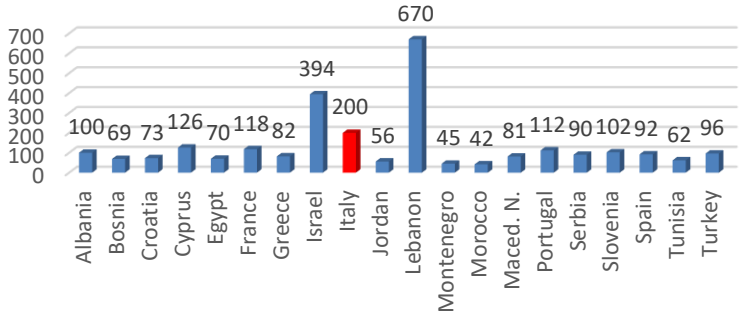
The concentration of population in coastal zones is heaviest in the western Mediterranean, the western shore of the Adriatic Sea, the eastern shore of the Aegean-Levantine region, and the Nile Delta. Overall, the concentration of population in the coastal zone is higher in the southern Mediterranean countries. This is also where the variability of the population density in the coastal zone is highest, ranging from more than 1000 people/km2 in the Nile Delta to fewer than 20 people/km2 along parts of coastal Libya and obviously in the deserted areas. Today, the average density of the Mediterranean countries exceeds 100 inhabitants/km². The 70% of these countries have a density between 60 and 130 inhabitants/km². Only Libya (3.6 inhabitants/km²), Algeria (15.3 inhabitants/km²) and Montenegro (45 inhabitants/km²) fall below this range.

Looking at the state of the Mediterranean Marine and Coastal Environment, we observe that the Mediterranean Action Plan (MAP) was established in 1975 as a coherent legal and institutional framework for cooperation through which all Mediterranean countries decided to jointly address common challenges of environmental degradation while linking sustainable resource management with development. It was soon followed by the Barcelona Convention and seven Protocols addressing issues relevant to the conservation and sustainable use of marine and coastal resources as well as to many policies and measures aiming to improve its management.

The 2020 Environmental Performance Index (EPI) provides a data-driven summary of the state of sustainability around the world. Using 32 performance indicators across 11 issue categories, the EPI ranks 180 countries on environmental health and ecosystem vitality. These indicators provide a gauge at a national scale of how close countries are to established environmental policy targets. The EPI offers a scorecard that highlights leaders and laggards in environmental performance and provides practical guidance for countries that aspire to move toward a sustainable future (Wendling *et al*., 2020; Hsu *et al*., 2013). A relationship between countries' EPI performance and economic development emerges. For instance, countries located in Europe tend to have higher EPI scores in relation to their Gross Domestic Product (GDP) per capita compared to other regions, in particular sub-Saharan Africa, which tends to have the poorest results, including Somalia. This tendency implies that countries with more financial resources can better implement policies to protect human health and the environment. However, this is not always the case. China and India, for instance, both have high GDP per PPP but receive low scores on the overall EPI. This result suggests the role of

something other than economic development alone (e.g., governance or political investments) that may also be critical in achieving environmental results. For example, Armenia has relatively low economic development ($3,716 USD) and a relatively high EPI score (81.5), compared to other countries with similar GDP per capita (Yale University, World Economic Forum and CIESIN 2016).

Figure 1 – *Density of population in Mediterranean countries per km^2.*



Source: Wikipedia, 2021; Statista, 2019.

Table 3 – *Environmental Performance Index in the Mediterranean Basin, 2020.*

Country	Rank	EPI Score	Decennial % variation
Albania	62	49	10.2
Algeria	84	44.8	0.5
Bosnia	78	45.4	10.9
Croatia	34	63.1	13.4
Cyprus	31	64.8	6.3
Egypt	94	43.3	7.7
France	5	80	5.8
Greece	25	69.1	3.4
Israel	29	65.8	5.2
Italy	20	71	1.1
Jordan	48	53.4	11.2
Lebanon	78	45.4	1.1
Malta	23	70.7	11.6
Montenegro	74	46.3	7.3
Morocco	100	42.3	13.3
N. Macedonia	43	55.4	2.2
Portugal	27	67	4
Serbia	45	55.2	7
Slovenia	18	72	4.6
Spain	14	74.3	8.6
Tunisia	71	46.7	6.4
Turkey	99	42.6	2.1

Source: EPI, 2020, in https://epi.yale.edu/epi-results/2020/component/epi.

Density and Environmental Indexes (that are multidimensional indexes and consequently take into account many variables measuring environment) describe the countries we focus on. Nevertheless, density for southern and eastern shores are influenced by deserted zones. For example, the low values of density relative to Egypt, Morocco and Tunisia imply large, deserted zones in the Sahel region and relative to Asiatic Desert, such as Wadi Rum in Jordan. Low values of density are characteristics also for the states of ex-Jugoslavia (Serbia, Croatia, Montenegro) while Italy, France and Portugal have larger density. Consequently, density is not a good parameter for deserted countries, that present high density only on coastal and urban zones.

Environmental index instead tells us the grade of pollution in a multidimensional way. In the following analysis we use the EPI score and EF to understand firstly the correlation between demographic and environmental variables and then to synthesize through factorial analysis the variables looking for the factor that explain the variability of the variables (Table 3).

4. Results of models

The correlation between fertility and GGG (gender parity index) is large: the link is negative and significant, while are positive those with life expectancy, showing that the greater the development in survival, the larger women's status.

Table 4 – *Pearson correlations among variables used in the analysis.*

	TFR	e_0^F	e_0^M	F_{15-19}	Contr.	GGG	EPI Sc.	EF
TFR	1							
e_0^F	-0.51*	1						
e_0^M	-0.382	0.948§	1					
F_{15-19}	0.739§	-0.736§	-0.638§	1				
Contr.	-0.234	0.642§	0.626§	-0.263	1			
GGG	-0.603§	0.658§	0.54*	-0.664§	0.358	1		
EPI Score	-0.428	0.86§	0.791§	-0.65§	0.543*	0.705§	1	
EF	-0.59	0.788§	0.64§	-0.73§	0.382	0.627§	0.804§	1

Note: the indicators represent the mean value of the following variables: Total Fertility Rate, Life expectation for females and males, Rate of adolescent fertility, Contraception Prevalence, Gender Parity Index, Environmental index and Ecological Footprint. * Correlation significant at level 0.05 (two tails). § Correlation significant at level 0.01 (two tails). Our elaborations on data cited in source of tables 2 and 3. The correlation is calculated on valid cases, excluding missing values.

The other strong significant negative relationships are between adolescent fertility and life expectancy (clearly an indirect relationship), such as those between contraception and life expectancy. Indirect relationships mean that both the

variables are influenced by other factors, such as modernization and female empowerment (Bongaarts, 1978; Easterlin and Crimmins, 1985).

Table 5 – *Mean values of the variables used in the analysis.*

	TFR	e_0^F	e_0^M	F_{15-19}	Contr.	GGG	EPI Sc.	EF
Mean value	1.82	81.714	77.377	13.867	66.296	0.7	58.2	2.729
# obs.	21	21	21	21	19	20	21	22
St. Dev.	0.596	3.41	3.29	12.525	13.881	0.056	12.302	1.166

Note: the indicators are as in Table 4. Source: Our elaborations on data cited in source of tables 2 and 3.

Table 6 – *Factor analysis: explained variance.*

	Initial Eigenvalues			Extraction sum of squared loadings			Rotation sum of squared loadings		
Comp.	Total	% var.	% cum.	Total	% var.	% cum.	Total	% var.	% cum.
1	5.48	68.46	68.46	5.48	68.46	68.46	3.5	43.7	43.7
2	1.06	13.2	81.66	1.06	13.2	81.66	3.04	37.96	81.66
3	0.5	6.2	87.86						
4	0.4	4.93	92.8						
5	0.28	3.51	96.31						
6	0.16	1.99	98.3						
7	0.11	1.42	99.72						
8	0.02	0.28	100						

Source: Our elaborations on data cited in source of tables 2 and 3.

In Tables 6 and 7 we report the results of factor analysis. The factors may be interpreted looking at the correlation with the original variables. Factor 1 may be interpreted as "modernization" and "sensitivity to the environment": the values of coefficient are very high and negative with TFR and adolescent fertility, positive with life expectancy and contraception, such as GGG, environmental performance index and ecological footprint. Factor 2, that explains a much lower level of variance, shows a negative value of correlation with GGG and a positive value with TFR, and this may be explained with "delay of modernization and empowerment of women", that is a characteristic of poor countries.

Table 7 – *Factor analysis results: component Matrix.*

Variables	1	2	Variables	1	2
TFR	-0.689	0.53	Contraceptive prevalence	0.603	0.646
e_0^F	0.954	0.196	GGG	0.8	-0.267
e_0^M	0.868	0.322	EF	0.885	-0.068
F_{15-19}	-0.845	0.362	EPI	0.916	0.097

Source: Our elaborations on data cited in source of tables 2 and 3.

In conclusion, we may synthesize that the first factor refers to European countries while the second to Eastern-Southern ones. The key stone of our analysis is represented by GGG, meaning female empowerment, and EPI score and EF, measures of environment, that present large correlations with the first factor.

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SUMMARY

Mediterranean basin: a melting pot of populations in front of environmental problems

Environmental problems are becoming increasingly important around the world and the Mediterranean basin is no exception. In this contribution we focus our attention on some environmental aspects such as the ecological footprint. We intend to analyse the association between demographic trend and environmental growth by a gender perspective, focussing on fertility tendency and EF in the Mediterranean countries, comparing Southern and Northern shores.

Correlation between demographic and ecological variables is analysed through factor analysis. The factors may be interpreted looking at the correlation with the original variables. Factor 1 may be interpreted as "modernization" and "sensitivity to the environment": Factor 2, that explains a much lower level of variance, shows a negative value of correlation with Gender Global Gab and a positive value with TFR, and this may be explained with "delay of modernization and empowerment of women", that is a characteristic of poor countries.

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YOUNG ITALIANS' SEXUAL DEBUT: THE ROLE OF FAMILY

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1. Introduction

In most developed countries, last decades have seen the postponement of the events marking the transition to adulthood, such as the end of the education, leaving the parental home, union formation, and entry into parenthood (Fussell and Furstenberg, 2005; Twenge and Park, 2017). The age at sexual debut has been characterized, instead, by an opposite process, lowering considerably. At the same time, the entry into adult sexuality has progressively acquired autonomy in the sequence of events that characterize the life of an individual, not only with regard to marriage, but also from a stable romantic relationship, becoming an independent step (Ongaro, 2004). In addition, the age at and the contexts of sexual initiation have changed much, with young men's and women's behaviours becoming more "gender-equal" (Bozon and Kontula, 2014; WHO, 2016). In Italy, this process started with the cohorts born in the second half of the XX century (Caltabiano *et al.*, 2006).

Whereas the transition to adulthood has been largely studied (for Italy, see, for example, Mazzuco *et al.*, 2006; Sironi *et al.*, 2015), rather less attention has been paid to the study of sexual debut. This is, at least partly, due to a relatively scarce availability of nationwide large samples. However, thanks to the data from the SELFY (Sexual and Emotional LiFe of Youth) survey conducted in 2017, recent and rich information on the beginning of affective and sexual life of undergraduate students at public Italian universities are available, accompanied by a large set of information on individual, social, and family characteristics. Moreover, the survey is an exact replication of a similar investigation run in 2000-2001 (ISS – Italian Students Sexuality) and this permits meaningful comparisons across time of young Italians' sexual behaviours and their determinants.

Our aim is to verify whether the relationship between the family context and the sexual debut has converged in the last decades between young Italian men and women.

2. Family background and young people's sexual debut

The general framework in which the student experiences his/her adolescence, and in particular the family of origin of the student, has been found to influence sexual initiation of children (Longmore *et al.*, 2001; van de Bongardt *et al.*, 2014).

More specifically, the literature suggests that more educated parents support and promote their children's investments in education and future occupation. These investments might be hampered by an early sexual debut and, thus, children of more educated parents are more likely to experience later sexual debut (Manlove *et al.*, 2012). Nevertheless, highly educated people, which are usually more open-minded toward sexuality compared to their lower educated counterparts (Treas, 2002), might act in the opposite direction, anticipating their children's sexual debut. Also the occupational status of mothers during early adolescence could have a role: having an employed mother could cause a greater freedom, whereas not employed mothers are more likely to be more traditional and might control to a wider extent their children, who, thus, could experience sexual initiation later (Hogan *et al.*, 2000).

As regards the relationship with parents, previous literature suggests that a good relationship with parents contributes to the construction of a mature identity and could help avoiding early entry into sexuality (Longmore *et al.*, 2009; de Graaf *et al.*, 2011, 2012); in addition, a good parent-child relation could delay sexual debut also because adolescents who are close to their parents may be more inclined to live up to their parents' wishes (de Graaf *et al.*, 2011). At the opposite, frayed relations accelerate sexual initiation: adolescents with negative relationships with parents may look for support and closeness in relationships outside the family, which clearly provide the opportunity for sexual debut (Davila *et al.*, 2009; de Graaf *et al.*, 2012). Nevertheless, reverse causation could occur, and parent-child relation could deteriorate as a result of children's sexual initiation since parents (not necessarily consciously) blame their children for not following their expectations, or as a simple reaction to a sign that their children are approaching adulthood (Ream, 2006). It is also possible that there is no causal relation and both sexual initiation and a distant relation with parents are both aspects of the same developmental process of growing up (Ream and Savin-Williams, 2005). In fact, some studies have found no relationship between parental closeness and timing of adolescent sexual debut (Longmore *et al.*, 2001), whereas others show that the relation depend on the gender of the adolescent, with stronger parental influence for young women than for men (Markham *et al.*, 2010; de Graaf *et al.*, 2011, 2012).

Regarding parent-child communication about sexuality, the direction of the association with sexual initiation is not very straightforward (Longmore *et al.*, 2009, Markham *et al.*, 2010). We may suppose that students who talk about sexuality with their parents anticipate their first sexual intercourse, due both to the fact they are

informed about the topic, and the fact that parents who talk about sexuality are more likely to be more open (van de Bongardt *et al.*, 2014). Nevertheless, some results from previous studies report a positive association between sexual communication and delay of sexual debut, due to a more prudent behaviour of students for fear of undesired consequences (Markham *et al.*, 2010). Again, all these explanations are 'unilateral', but the opposite direction of the connection between communication and sexual debut might work, too (de Graaf *et al.*, 2011).

Finally, another aspect of family context that could influence adolescents' sexual debut is the freedom of behaviour granted to children by parents. Literature on this topic is not so rich. No relation has been found between sexual debut and this dimension of parenting, but this is probably due to the fact that it is not the control in itself that matters, but the way in which the control is exercised (Longmore *et al.*, 2009). However, parents who give their children freedom in many behaviours tend to encourage someway an early entry into sexual activity (Caltabiano, 2007).

3. The Italian context

Italian cohorts born in the first half of the XX century experienced their sexual debut in the so-called 'double-standard system', which is opposed to sexual 'egalitarian models' characterizing western and northern European countries (Bozon and Kontula, 2014). Usually, for Italian men the first sexual intercourse was a rite of passage from adolescence to adulthood, often experienced outside a couple relationship. For women, instead, a couple relationship usually preceded intercourse, that was experienced at marriage or with their husband-to-be just before marriage, and was thus closely connected to family formation.

Starting from cohorts born in the 1960s, a convergence in the age at first sexual intercourse of men and women has begun (Caltabiano *et al.*, 2006), with women lowering their age at sexual debut. The same cohorts were characterized also by a convergence in the context of the sexual debut, with men experiencing more often their first sexual intercourse within a steady couple relationship and women pretty before marriage (Caltabiano, 2013).

Finally, most recent research shows a partial convergence toward the 'egalitarian regime', with sexual life that frequently anticipates the first romantic relationship also for young women (WHO, 2016; Dalla-Zuanna *et al.*, 2019). Despite all these changes, Italy remains a country with strong family ties, a greater attachment to Catholic values and a slow transition to adulthood (Ongaro, 2001), all factors that tend to slow down the sexual initiation of young Italians.

In the light of the above review, in this paper we intend to verify whether the role of family in sexual initiation of Italian men and women has changed across the last

seventeen years. In particular, we investigate whether the genders differences in the association between family background and sexual debut are decreasing across time. To test our hypothesis, we estimated event history models for the transition to a first sexual intercourse, separately for young men and women as well as for the years of the two surveys (2000-2001 and 2017), and included a large set of family contextual characteristics. We also added several control variables related to individual characteristics and factors associated to life experiences.

4. Data and methods

4.1. SELFY and ISS surveys

Data come from the SELFY survey (Dalla-Zuanna *et al.*, 2019), conducted in 2017, and the ISS survey (Dalla-Zuanna and Crisafulli, 2004) conducted in late 2000 – early 2001. The samples consist of students attending undergraduate courses in Economics and Statistics in Italian public universities, 4,998 students in 2000-2001 (from now on 2000 survey) and 8,094 in 2017.

In our analyses we kept 4,605 students interviewed in 2000 (41.4% men) and 7,479 (52.6% men) in 2017, excluding those students who did not answer questions on the first sexual intercourse and those who stated that they did not live in Italy at the time of the interview or during secondary school[1].

4.2. Multivariate analyses: the transition to first sexual intercourse

To study the association of family contextual characteristics with sexual debut, we used piecewise-constant exponential models for the transition to a first sexual intercourse, separately by gender and survey year (e.g., Blossfeld and Rohwer. 2002). The baseline hazard was time elapsed from age 10 (divided into four time periods: 10-13 years; 14-15; 16-17; 18 and more) to the occurrence of the first sexual intercourse or the interview date, whichever occurred first.

Given the relevance of family characteristics in influencing sexual debut, as seen in § 2, we considered several covariates in this respect. Specifically, besides parents' religiosity during respondents' early adolescence and parents' marital status, we included, from one hand, variables on social origin, such as parents' educational

[1] Literature suggests that migratory background can be important for youth's sexual behaviours (Gabrielli *et al.*, 2020), and thus foreigners' sexual debut should require a separate investigation. However, this is beyond the scope of this paper, also due to the low number of foreign students in our sample.

level and mother's occupational status during students' early adolescence. On the other hand, we included variables defining the parenting style and family climate during students' adolescence, such as: the relation with mother and father; communication with parents about sexuality, and freedom of behaviour granted to children by parents[2] (we consider if parents allowed students four behaviours during (late) adolescence: coming home late for dinner without letting them know; coming home late on Saturday night; coming home late on other nights; spending moments of intimacy at home with boy/girlfriend).

The individual characteristics (besides age, which was the baseline hazard) included as time-constant control variables were the following: the area of residence at interview, the religiosity during early adolescence, the type of upper-secondary school attended, and the upper-secondary school final score, the satisfaction with physical appearance during middle adolescence, the reaction to school and parents' rules during adolescence.

Finally, we also added as controls a third group of covariates describing individual life experiences and lifestyle during middle adolescence. In particular, we included as dummy variables: if the student practiced sports often or very often; if s/he never went to discos; if s/he was a smoker; if s/he ever a) got drunk, or b) tried ecstasy, marijuana or other drugs before 16 years old. Lastly, we included two time-varying covariates signalling if a first non-complete sexual experience had happened and if a first couple relationship had been experienced. We are aware that these two variables are intervening variables and usually precede sexual intercourse. Nevertheless, the entry into adult sexuality is progressively becoming autonomous with respect to the formation of romantic relationship, or it may be fastened compared to the past, with a lower waiting time between first time to non-complete sexual experiences and first time to sexual intercourse. In this respect, excluding those covariates might lead to an overestimation of the effect of other individual and family covariates, especially for students who answered in 2000.

5. Results

Table 1 lists the parameter estimates of regression models, describing the risk of experiencing a first sexual intercourse for male and female students in 2000 (first

[2] In preliminary analyses, we considered also another covariate connected with family, namely the presence of older siblings. Literature shows it can influence sexual behaviours of youth, giving important information about the potential market of sexual partners, in terms of availability (see, for example, Carella *et al*., 2020). However, this covariate did not turn to be significant and thus it has not been included in the final models presented here.

and second columns) and in 2017 (last two columns). We focus on the results related to the role of family factors.

Family context has a crucial role for students' sexual initiation both for male and female students, but the multifaced aspects of family context matter differently for young men and women, and also across time. First of all, the role of parental education is quite gender-differentiated, even if things changed in more recent years. Young men with highly educated parents have a later age at first sexual intercourse both in 2000 and in 2017, confirming results by literature. Surprisingly, at the opposite, having low educated parents decreases women' risks of sexual initiation in 2000 (a result found also in some Italian previous studies, for example, Dalla-Zuanna and Mancin, 2004), whereas in 2017, the highest risk of a first sexual intercourse pertains to young women with middle educated parents. Male students whose mothers were employed have a higher risk of experiencing a first sexual intercourse both in 2000 and in 2017; for females, this holds only in 2000.

As regards the relationship with parents, results suggest a very complex picture and underlie the importance of considering parents' sex in the evaluation of the parent-child relationship. In 2000, a close relationship with the parent of the same sex anticipates sexual initiation and, at the opposite, a close relationship with the parent of the opposite sex delays sexual debut, for both young men and young women. In 2017, the role of the relationship with the father remains the same. Instead, a close relationship with the mother has no impact for men and decreases the risk of sexual initiation for women. Relating to the role of the communication with parents about sexuality, the presence of communication is associated with early ages at sexual debut for men, but this is significant only in 2000. For women, talking with parents about sexuality is negatively connected with sexual initiation in 2000, and the association becomes positive in 2017 (namely, it increases the risk). Thus, both for the relationship with parents and for the communication with parents about sexuality, in recent years the association of these aspects with sexual initiation is stronger for women than for men, confirming what found in some previous studies of a stronger susceptibility of women' sexuality than men' one to family influences.

Lastly, confirming what found in the literature, the more parents are indulgent and permissive with adolescents, the more the students anticipate sexual debut, and this is consistent for young men and women and across years. Thus, the age at first sexual intercourse is connected with whether or not parents do an active control and supervision on their children's behaviour.

As regards the control covariates, for many individual characteristics and most covariates describing social life and interactions, there are not many differences between men and women.

In sum, whereas many individual characteristics and life experiences already show a convergence between genders in their association with sexual debut, family

contextual characteristics are still quite far from reaching a convergence between genders about their influence on sexual debut.

Table 1 – *Piecewise-constant exponential models describing the risk of first sexual intercourse. β coefficients. Separate models by gender and year of interview.*

	2000		2017	
	Males	Females	Males	Females
INDIVIDUAL CHARACTERISTICS				
Age (ref: 18 and more)				
10-13	-2.98***	-2.66***	-2.94***	-2.92***
14-15	-1.23***	-0.64***	-1.14***	-0.74***
16-17	-0.36***	0.27***	-0.21****	-0.01
Geographical area of residence at interview (ref: North-West)				
North-East	0.26**	0.16*	-0.08	-0.11*
Centre	0.14	-0.09	-0.02	-0.12*
South	0.16*	-0.17**	0.16***	-0.08
Religiosity during early adolescence (ref: not religious)				
Irregular attendance to Sunday Mass	-0.05	-0.26***	-0.12***	-0.05
Regular attendance to Sunday Mass	-0.29***	-0.31***	-0.35***	-0.16***
Don't remember	-0.03	-0.47***	0.29*	0.05
Type of secondary school (ref: vocational school)				
High school	0.38	-0.18	-0.38***	-0.56***
Polytechnic	0.29	-0.17	-0.35***	-0.49***
Secondary school final score	-0.01***	-0.00	-0.01	-0.01
Reaction to secondary school rules during secondary school (ref: often complained, they were too strict)				
Usually accepted them	-0.48***	0.04	-0.18***	0.36***
Didn't usually complain, although they were too strict	-0.45***	0.03	-0.22***	0.31***
Reaction to parents' rules during adolescence (ref: did not understand them and often argued)				
Usually accepted them	-0.30***	-0.45***	-0.27***	-0.22***
Tried to have more freedom	-0.17**	-0.12*	-0.17***	0.07
Satisfaction with physical appearance during middle adolescence (ref: not satisfied or only fairly)				
Satisfied	0.03	0.21***	0.12**	0.01
FAMILY CHARACTERISTICS				
Highest parents' educational level (ref: high)				
Medium	0.14*	0.08	0.02	0.14***
Low	0.27***	-0.21**	0.11**	-0.02
Mother employed when the student was 11-13 (ref: yes)				
No	-0.15**	-0.23***	-0.22***	0.06
Don't remember	0.16	-0.74***	-0.05	0.08
Relationship with the father during adolescence (ref: distant)				
Close relationship	0.21***	-0.13***	0.12**	-0.17***
Relationship with the mother during adolescence (ref: distant)				
Close relationship	-0.36***	0.21***	-0.11	-0.24***
Communication with parents about sexuality (ref: in-depth)				
No communication	-0.41***	0.25***	-0.02	-0.31***
Only superficial	-0.21***	0.00	0.03	-0.18***
Freedom of behaviour granted to children (ref: very indulgent parents)				
No indulgent parents	-0.40***	-0.21***	-0.25***	-0.21***
Little indulgent parents	-0.17**	-0.14**	-0.07*	-0.14***

** significant at ten percent; ** significant at five percent; ***significant at one percent*

Table 1 – *continued.*

	2000		2017	
	Males	Females	Males	Females
LIFE EXPERIENCES				
Practicing sports during middle adolescence (ref: never or only sometimes)				
Often or very often	0.25***	0.13**	0.20***	0.11***
Going to discos during middle adolescence (ref: no)				
Yes	0.31***	0.15***	0.16***	0.11***
Smoked during middle adolescence (ref: no)				
Yes	0.23***	0.38***	0.47***	0.25***
Got drunk before 16 (ref: no)				
Yes	0.16**	0.11	0.01	0.10*
Have tried ecstasy, marijuana, or other drugs before 16 (ref: no)				
Yes	0.20**	0.40***	0.05	0.14*
Whether the student experienced the first couple relationship (TV) (ref: no)				
Yes	0.73***	1.14***	0.90***	1.19***
Did not answer**	0.89***	1.03***	0.85***	1.06***
Whether the student had the first sexual experiences (TV) (ref: no)				
Yes	2.38***	2.45***	2.21***	1.99***
Did not answer**	1.77**	2.05***	1.49***	1.19***
Intercept	-9.01***	-9.95***	-8.66***	-8.63***
N	1,838	2,645	3,750	3,423

** significant at ten percent; ** significant at five percent; ***significant at one percent*

6. Discussion and conclusion

Many developments have characterized sexual attitudes and behaviour of young Italians in the last two decades: age at first intercourse has lowered, homosexual relationships have become more accepted, the number of partners has increased. More generally, sexual behaviours and attitudes of young men and women appear to converge in several respects (contraception, casual sex, betrayal). In this paper, we specifically analysed the changes in the correlates of sexual debut among a large sample of university students, with the aim to verify if a convergence has been achieved. In particular, we tested whether in recent years there has been a convergence between genders in the relationship between family contextual characteristics and sexual initiation of young Italians over time.

However, contrary to what expected, we verified that there is only a partial convergence: indeed, there are still many differences between young men and women with respect to the role of family context characteristics. Among differences by gender which remain strong, social origin has a diverse impact on sexual debut of young men and women. Low parental education increases the risk of having a first sexual intercourse for young men as reported by the literature (e.g., Coppola, 2007), but not for women. At the same time, in line with what previously found (Hogan *et*

al., 2000), in 2000 having a not employed mother favours a higher age at first sexual intercourse for both genders, whereas in 2017 there has been a gender differentiation, with a lower risk for males only. Thus, a convergence in the impact of social origin does not seem to occur.

Moreover, we found no convergence in the effect of the relationship with father and mother on the risk of sexual debut, showing that strong ties with the father act in an opposite direction between young men and women both in 2000 and in 2017, a difference that persists in recent years. Instead, a close relationship with the mother has changed its impact on the risk of first sexual intercourse, and in 2017 the two effects are closer than in the past (a close relationship lowers the risk, but it is not significant for young men). In very recent years, too, the association of the relationship with parents and sexual initiation is stronger for women than for men, confirming what found in some previous studies of a stronger susceptibility of women' sexuality than men' one to family influences (Graaf *et al.*, 2011, 2012). Finally, also communicating with parents about sexuality has a gender differentiated impact, but it becomes attenuated in the last year: while in 2000 having no communication is associated with a lower risk for young men and a higher risk for young women, in 2017 both risks become lower - even if no longer significant for young men, supporting what found in other studies (Markham *et al.*, 2010).

Conversely, parenting style shows a similar association with sexual debut for young men and women, with students with more indulgent and permissive parents anticipating sexual debut (Ongaro, 2004; Caltabiano, 2007).

Generally speaking, family context still plays a different role in sexual debut of young men and women, suggesting that the gender convergence has not been reached. Moreover, some characteristics are related to earlier sexual intercourse for men but not for women: having a close relationship with father, belonging to a lower social stratum, they are all elements signalling that the traditional model of masculinity has not disappeared, especially in some contexts.

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SUMMARY

Young Italians' sexual debut: The role of family

In most developed countries, last decades have seen the postponement of the events marking the transition to adulthood, while the age at sexual debut has been progressively anticipated. At the same time, the entry into adult sexuality has gradually acquired autonomy in the sequence of events that characterize the life of an individual, and young men's and women's behaviours have become more similar. Our aim is to verify if the role of family contextual factors associated with sexual debut has changed across the XXI century, leading to a similarity in these relationships between young male and female students. Using data from the Italian Students Sexuality survey run in 2000-2001 and the Sexual and Emotional LiFe of Youth survey conducted in 2017, we applied event history models for the transition to first sexual intercourse. We find that there is only a partial convergence: family background, even when controlling for individual characteristics, still influences differently young men's and women's age at sexual debut.

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TERRITORY AND POPULATION: DEMOGRAPHIC TREND OF THE METROPOLITAN CITY OF ROME[1]

Sara Miccoli, Alessia Naccarato, Cecilia Reynaud

1. Introduction

Since the second half of the twentieth century, Italy has experienced profound changes in its demographic processes (Reynaud and Miccoli, 2021). Due to the continuous decline in births and the parallel decrease in mortality, the natural balance (the difference between births and deaths) has been negative since 1993. The population growth that has occurred since the mid-1990s is therefore attributable exclusively to the net migration (the difference between immigration and emigration). Without the contribution of immigration, the population in Italy would have started to experience a negative variation as early as the mid-1990s (Strozza, 2016).

At the sub-national level, demographic evolution in large cities has also been conditioned by internal migration and counteracted by evolution in the rural territories. Since the World War II, industrial development has reinforced the attractiveness of cities, which have been able to guarantee better opportunities. These sub-populations have grown rapidly, particularly in the North-Central Italy, to the disadvantage of the populations of the rural areas (Celant *et al.*, 1999). In the 1950s and 1960s, Italian cities had very high rates of urban growth (Salvati and Zambon, 2019).

In the 1970s and 1980s, alongside the rural areas, the large cities also began to experience a population decrease, in favour of the surrounding more external municipalities (Dematteis, 1997). In general, during this period, the large redistribution over the territory experienced a short phase of stagnation (Reynaud and Miccoli, 2018).

In the 1990s, cities with more than 100,000 inhabitants began to lose population: a negative natural balance was accompanied by the choices of individuals to move away from the big cities and live in smaller centres. This

[1] Sara Miccoli analysed the data and contributed to literature review, Alessia Naccarato suggested and described the model, Cecilia Reynaud conceptualized the paper. The authors worked collectively to analyse the result of the model. Cecilia Reynaud wrote the introduction and conclusion, Alessia Naccarato wrote data and method, and Sara Miccoli wrote the results.

process has continued during the 2000s. Indeed, all the main Italian metropolitan provinces experienced a population increase, thanks mainly to the growth of the hinterland municipalities (Casacchia and Crisci, 2013). The peri-urbanisation process has thus continued to erode the population of the central cities of urbanized area, intersecting with international migration flows.

The city of Rome and its province have experienced all these phases. Due to its administrative role as the capital of Italy, of the region and of the province, Rome's population has grown rapidly since World War II. The attractiveness of Rome gradually spread to the whole province, which in 2014 became the Metropolitan City of Rome. The population growth of the municipalities of the Metropolitan City of Rome depends substantially on their ability to attract internal and international migration flows, but these municipalities do not show a homogeneous demographic trend (Salvati *et al.*, 2016). Attractiveness tends to decrease in the municipalities located further away from the capital city (Casacchia and Crisci, 2013). Studies on the demographic evolution of the Metropolitan City of Rome have mainly focused on the core/hinterland dichotomy (Casacchia and Crisci 2006; Crisci, 2016). These studies have shown that in recent times the municipalities bordering Rome have become similar to the capital city, often slightly more dynamic. On the other hand, great diversity has emerged in the other municipalities: some continue to attract population and even show a population growth, others experience an important process of population decrease, also due to their characteristics, such as being mountainous municipalities (Reynaud *et al.*, 2020). Therefore, the distance from the capital city is also of great importance (Salvati *et al.*, 2016).

Rome and its neighbouring municipalities are strongly connected due to their geographical proximity and these municipalities tend to be influenced by the capital city from an economic, social and cultural point of view. Despite its large territorial size, Rome has often assimilated neighbouring municipalities. For this reason, municipalities bordering Rome could be considered together with the municipality of Rome as a single area (municipality of Rome and neighbouring municipalities, which we could consider as hinterland). Their demographic dynamics could be compared with municipalities bordering this central area and with municipalities even further away (but still belonging to the metropolitan city).

The aim of this paper is therefore to examine the evolution of the population in the municipalities of the Metropolitan City of Rome (former province of Rome), from 1971 to 2019, distinguishing the municipalities of the central area (capital city and neighbouring municipalities), the municipalities forming a ring around this area, and the other municipalities of the metropolitan city. A descriptive analysis of the intercensal growth rate of the municipalities of the Metropolitan City of Rome will then be carried out. In order to examine demographic evolution, unlike other

studies in the literature, our contribution wants to consider the time dependence structure that plays an important role in the population growth process. In fact, an exploratory analysis will be conducted to assess the effects on the evolution of the population of past demographic dynamics and some characteristics of the municipalities (demographic ones such as the percentage of older population and the incidence of foreigners, but also geomorphological ones, such as the type of municipality and the distance from Rome). The hypothesis is that the demographic trend of municipalities is influenced both by time-invariant geo-morphological characteristics of municipalities and by past population dynamics (Hp. 1). Since the dynamics of a population in a certain place also depend on what happens in the other areas simultaneously and asynchronously, the relationship between dependent and independent variables is estimated through a system of simultaneous equations. Municipalities, which are diverse in both demographic and territorial dimensions, represent the most detailed administrative units and, therefore, an analysis at municipal level makes a detailed comparison possible. All this allows to make explicit the inertia that is typical of demographic phenomena. An in-depth analysis of the demographic evolution of the Metropolitan City of Rome is of enormous interest in order to better understand the demographic changes taking place in and around large cities.

2. Data and method

The data used refers to 121 municipalities (LAUs)[2] in the Metropolitan City of Rome (NUTS 3). These data come from those provided by the Italian National Institute of Statistics (ISTAT) on municipalities population size in the censuses from 1971 to 2019. The 2019 data stem from the last census carried out by ISTAT in that year and conducted with a new strategy based on a sample survey. An effort was made to define a comparable territorial breakdown and the data refer to 2011 census boundaries. In particular, we used the total resident population data and calculated the intercensal population growth rate for the periods 1971-1981, 1981-1991, 1991-2001, 2001-2011, and 2011-2019, as follows:

$$\mathrm{r}_{i(t,t+n)} = \ln\left(\frac{P_i(t+n)}{P_i(t)}\right)/n \qquad (1)$$

[2] Italy is divided into 110 provinces (NUTS 3), in the 20 regions (NUTS 2). Each province has a capital city. Since 2014, the 14 largest and most urbanized provinces have been transformed into metropolitan cities. The metropolitan city includes the capital city and the municipalities (LAUs) that were already part of the province.

where i is the $i-$th municipality; t is the considered census data and $t+10$ is the subsequent census data; P is the total resident population. The growth rate is the endogenous variable in the estimated model.

With regard to demographic characteristics, we used as exogenous variable (that is, the indicator of the age structure) the ageing index at the beginning of the considered periods (AI_t). Since 1991 (the first year for which census data on the non-national resident population are available) we considered –as a second exogenous variable- the incidence of the non-national resident population at the beginning of the considered periods (NN_t). For the time-invariant geomorphological characteristics, the exogenous variables are: the altitude of the municipalities (alt) and whether or not they are coastal municipalities (coa). As previously mentioned, we divided municipalities according to the distance from the pole. In this way, we have three groups of municipalities: (1) capital city and neighbouring municipalities, which compose the centre; (2) municipalities surrounding the central area, which compose the first ring; (3) the other municipalities of the Metropolitan City, which compose the other area. Therefore, two dummy variables were created: "first ring" (I ring) and "other area", using the centre as term of comparison.

We applied a simultaneous equation model (SEM) where the endogenous variables are the intercensal growth rate of the municipal resident population in different decades. Within this context it is not possible to disregard the idea that the intercensal growth rate in a certain decade depends on that of the previous decade and has an effect on that of the following decade. The estimation of a SEM (Greene, 2003), in which the endogenous variable of an equation becomes an explanatory variable of the remaining equations, allows us to capture the effect of dependence over time of the intercensal population growth rate. This relationship justifies the choice of a system of simultaneous equations that takes into account the link between the different equations in the estimation procedure of the unknown parameters. Such parameters have been estimated with Three Stage Least Squares (3SLS) procedure (Zellner and Theil, 1962). The estimated model is:

$$r_{71\,81} = alt + I\,ring + other\,areas + AI_{71} + \varepsilon_{71\,81}$$

$$r_{81\,91} = alt + I\,ring + other\,areas + AI_{81} + r_{71\,81} + r_{71\,81} * I\,ring + r_{71\,81} * other\,area + \varepsilon_{81\,91}$$

$$r_{91\,81} = alt + I\,ring + other\,areas + AI_{91} + NN_{91} + r_{71\,81} + r_{71\,81} * I\,ring + r_{71\,81} * other\,areas + r_{81\,91} + r_{81\,91} * I\,ring + r_{81\,91} * other\,areas + \varepsilon_{81\,91}$$

$$r_{01\,11} = alt + I\ ring + other\ areas + AI_{01} + NN_{01} + r_{71\,81} + r_{71\,81} * I\ ring + r_{71\,81} * other\ areas + r_{81\,91} + r_{81\,91} * I\ ring + r_{81\,91} * other\ areas + r_{81\,91} + r_{91\,01} * I\ ring + r_{91\,01} * other\ areas + \varepsilon_{01\,11}$$

$$r_{11\,19} = alt + I\ ring + other\ areas + AI_{11} + NN_{11} + r_{71\,81} + r_{71\,81} * I\ ring + r_{71\,81} * other\ areas + r_{81\,91} + r_{81\,91} * I\ ring + r_{81\,91} * other\ areas + r_{81\,91} + r_{91\,01} * I\ ring + r_{91\,01} * other\ areas + r_{01\,11} + r_{01\,11} * I\ ring + r_{01\,11} * other\ areas + \varepsilon_{11\,20}$$

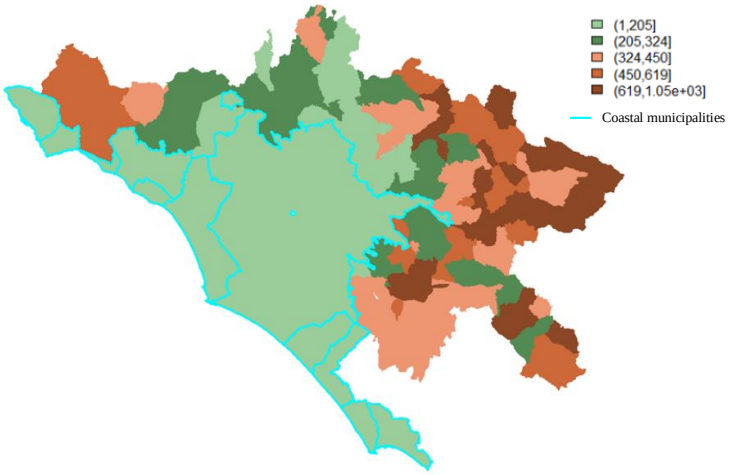
The already mentioned explanatory variables have been included following some assumptions. First of all, we have hypothesised that the most aged municipalities experience a further process of depopulation, and therefore a decrease in population, compared to the other municipalities (Hp. 2) (Reynaud and Miccoli, 2018). On the contrary, we hypothesized that municipalities that have attracted non-national resident population experience a greater dynamism, compared to the other municipalities (Hp. 3), both because of the pull effect of immigration itself (Casacchia *et al.*, 2019), and because of the higher fertility of foreigners (Mussino and Strozza, 2012). Secondly, since some studies have already shown that mountain municipalities are subject to a greater population decrease process while coastal municipalities are more dynamic, we assumed that these time-invariant geomorphological characteristics are relevant in explaining municipalities demographic evolution (Hp. 4), even more than the geographical position, expressed as the distance from the capital city. Finally, we hypothesized that the other explanatory variables can be affected according to the geographical position of the municipalities (Hp. 5). The two dummy variables (I ring and other area) allow the distinguishing of the effect of the explanatory variables in the five equations according to the geographical distribution of the municipalities. They have therefore been introduced into the system of equations, either individually to evaluate their effect on the model constant or multiplied by the exogenous variables to evaluate the different effect of these variables as the geographical position varies. In general, we have assumed that geo-morphological and demographic characteristics are decisive equal geographical location, but that the previous dynamic is the one that has the greatest association with population variation.

3. The Metropolitan City of Rome: characteristics

3.1 Descriptive analysis

The Metropolitan City of Rome consists of 121 municipalities which we have grouped into three categories. Thirty municipalities belong to the centre: these are Rome and the 29 neighbouring municipalities; 27 municipalities belong to the first ring: these are the municipalities bordering the municipalities of the centre; 64 municipalities belong to the other area. Of these 121 municipalities, 10 are coastal municipalities, 73 are hill municipalities (altitude between 200 and 600 metres), and 26 are mountain ones (altitude above 600 meters) (Figure 1).

Figure 1 – *Municipalities of the Metropolitan City of Rome, for altitude and coastline.*

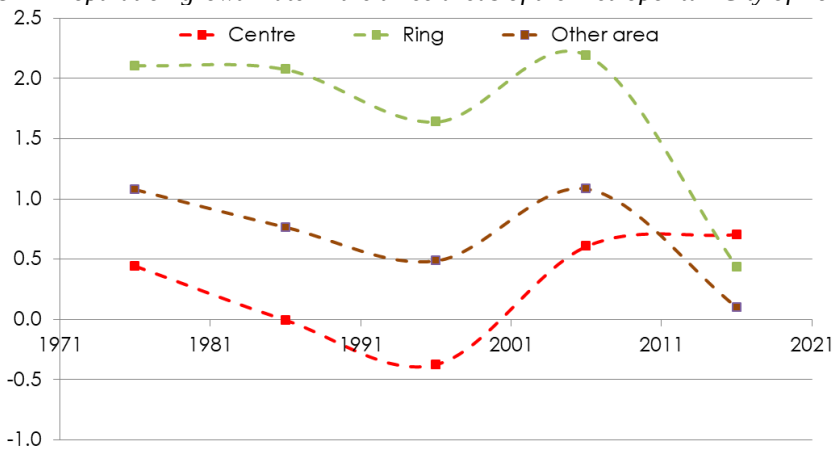


Source: our elaboration on ISTAT *data.*

The population of Rome Metropolitan City increased from 3.5 million in 1971 to 4.3 million in 2019. However, from 1971 to 2019, the population grew differently by intensity and trend within the metropolitan city. Although at different levels, in all periods considered the trend was similar for municipalities in the ring and the other area. Central municipalities, on the other hand, followed the same trend until 2008, when they experienced a recovery. The population living in the municipalities of the ring has always recorded the highest growth rate, except in the period 2011-2019 when the centre experienced the highest rates, following the recovery that began a few years earlier (Figure 2). In the last period, the natural balance of most of these central municipalities has continued to be negative and the

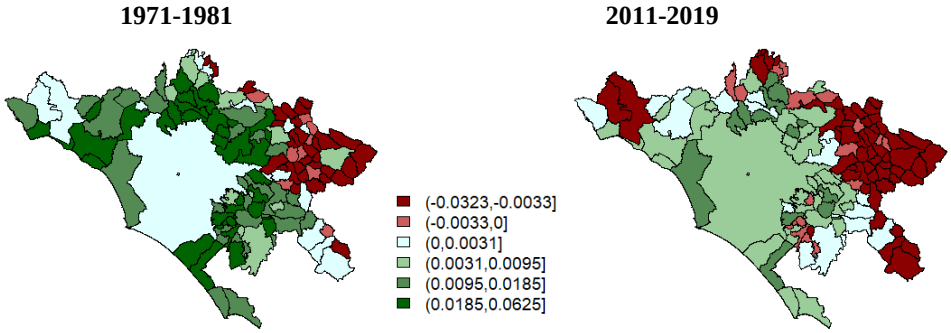
recovery was therefore mainly driven by the net migration and thus by a recovery in attractiveness compared to previous periods. In particular, the growth rate has been positive in the municipality of Rome and in a few other municipalities. However, in the previous decades, Rome's growth rate was equal to 0 and several municipalities of the Centre showed a positive growth rate (Figure 3).

Figure 2 – *Population growth rate in the three areas of the Metropolitan City of Rome.*



Source: our elaboration on Istat data.

Figure 3 – *Population growth rate for the Metropolitan City of Rome municipalities. Period 1971-1981, 2011-2019.*



Source: our elaboration on Istat data.

3.2 Results of the model

The model's goodness of fit was superior to 0.5 (R^2 adjusted = 0.59). This result therefore leads to the conclusion that to consider the effect of the demographic evolution of previous periods is right. The coefficients relating to the growth rates in previous periods are often statistically significant and positive. Therefore, the increase in population in one period leads to an increase in the next period. This is particularly true for the period 1991-2001 but not for the period 2001-2011, where the association with the growth rate of the previous period 1991-2001 is not statistically significant. As hypothesized (Hp. 1), it seems that there is a typical demographic inertia effect, despite it is not always the immediately preceding period that is most relevant. With regard to the characteristics of the municipalities, the variable concerning the coastline was not included in the final model because it was never statistically significant. Altitude, on the other hand, is significant in the first (-0.00002), second (-0.00001) and fourth (-0.00001) periods and, as assumed, always has a negative coefficient: the higher the altitude of the municipality, the less population growth occurs as we hypothesized (Hp. 4). Demographic characteristics at the beginning of the period are not statistically significant, contrary to our hypotheses (Hp. 2 and 3), with the exception of ageing on 1.1.1971 (-0.0029), which negatively affects growth in the period 1971-1981. In the other periods, for the Metropolitan City of Rome, the geographical position counts more than the population structure. Contrary to what has been assumed, the growth capacity of the municipalities (determined in these phases mainly by their ability to attract immigrants) seems to be determined more by their geographical position than by their characteristics (Hp. 5).

The municipalities in the ring experienced a more intense demographic growth than those in the centre only in the period 1991-2001 (0.00735), while in the last period the coefficient is negative (-0.00463), thus confirming what was observed in the descriptive analysis. As regards the municipalities in the remaining area, compared to the municipalities in the centre, growth is lower in both the first (-0.01084) and the last period (-0.00617), and higher in the period 1991-2001 (0.00572). These results allow us to state that especially in the period 1991-2001 the growth of the Metropolitan City of Rome no longer depends only on the centre but involves more the other area. Rome continues to attract population, but in this period, both because of the higher costs of the big city and because of better living conditions in the countryside areas, the gravity area of Rome has extended its boundaries involving municipalities even more distant than those of the centre.

The interaction between the growth in the previous periods and the geographical position do not show statistically significant differences: the coefficients of these interactions are often not significant. In 1991-2001, the only statistically significant

interaction is between the growth rate of the previous period and the rest of the area (-0.44092): here the effect of the demographic evolution of the previous periods was less strong than in the other two areas of the city. In 2001-2011, the link with the 1971-1981 growth rate is different from that of the centre: in the ring the effect is smaller (-0.37025), while in the others the effect is greater (0.26905). Finally, in 2011-2019, the 1991-2001 growth rate is more important for the rest of the area (0.37251).

Table 1 – *Results of the simultaneous equations system*

Variables	**1971-1981**	**1981-1991**	**1991-2001**	**2001-2011**	**2011-2019**
constant	0.03997***	0.01467***	-0.00265	0.01645***	0.00401
r(71-81)		0.34175***	0.07969	-0.12319	0.15882***
r(81-91)			0.77534***	0.53240**	-0.07804
r(91-01)				0.10627	-0.09447
r(01-11)					0.25215**
Altitude	-0.00002***	-0.00001*	-0.00001	-0.00001**	-0.000001
Ageing index	-0.00029***	-0.00003	0.000001	-0.00002	-0.00001
Foreign population (%)			0.00001	-0.00002	0.00002
Area of metropolitan city					
Ring	-0.00327	-0.00232	0.00735**	0.00315	-0.00463*
Other area	-0.01084***	-0.00153	0.00572**	-0.00197	-0.00617***
r(71-81) * Ring		0.17859	-0.19770	-0.37025*	-0.12297
r(71-81) * Other area		-0.04309	0.17914	0.26905*	0.02361
r(81-91) * Ring			-0.06545	0.04759	0.19549
r(81-91) * Other area			-0.44092***	-0.12619	0.15948
r(91-01) * Ring				0.28796	0.25017
r(91-01) * Other area				-0.08250	0.37251**
r(01-11) * Ring					-0.14752
r(01-11) * Other area					-0.20905
R^2 adjusted	0.59009	0.55104	0.65200	0.59760	0.69477

*Signif. Codes: 0'***'0.001'**'0.01'*'0.05'.'0.1' '*
Source: our elaboration on Istat data.

Although some of our hypotheses have therefore not been tested, the model confirm that population growth is often conditioned by territorial and demographic characteristics and, above all, by previous demographic dynamics (Hp. 1).

4. Conclusion and discussion

In the Metropolitan City of Rome, the demographic evolution of the municipalities is not at all homogeneous. The increase in population in the municipalities of the Metropolitan City has certainly been influenced by the distance from the capital city, which has had and still has a strong capacity to attract both immigration from other areas of the country and from abroad (Crisci and Santacroce, 2019). In recent times, the municipality of Rome attracts population and in the last period has experienced a population increase higher than that of the Italian population as a whole. Despite these developments, the huge surface area of the municipality of Rome -which is the largest municipality in Italy- has not been sufficient for population growth to be greater than that of other municipalities in the Metropolitan City. Neighbouring municipalities have developed an important attractiveness, which is certainly dependent on the importance of Rome. This phenomenon has recently extended to more distant municipalities, especially in 1991-2001, when the resident population in Italy seemed to be stagnating. In a complex model, in which both the past evolution of the population and the demographic and geomorphological characteristics are taken into account, the geographical position with respect to the capital was important in explaining the demographic dynamics of the various municipalities of the Metropolitan City. This result shows the peculiarity of this area and the importance of investigating the causes and effects of the demographic trend in such an important area for the country in general.

Although this study is preliminary and needs to be further investigated, the initial results constitute a starting point for further investigation, with the integration of additional social and economic components, into the evolution of the sub-populations inhabiting the territory of Rome and the surrounding areas. In-depth studies on the topic could constitute useful tools for administrations to elaborate and implement really effective housing or mobility policies.

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SUMMARY

Territory and population: demographic trend of the Metropolitan City of Rome

Since the 1970s, in Italy, there have been deep changes in demographic processes that have led to the Italian population has experienced firstly a slight growth, then a growth due only to immigration, and, in recent years, a demographic decline. The demographic trends of the large cities was different, also influenced by internal migration and opposed to the trends of the rural territories. In particular, Rome has grown rapidly and its attractiveness has spread to the entire province, which in 2014 became the Metropolitan City of Rome.

The aim of this paper is therefore to examine the evolution of the population in the municipalities of the Metropolitan City of Rome, from 1971 to 2019, distinguishing the municipalities of the central area, the municipalities forming a ring around this area, and the other municipalities of the Metropolitan City. A descriptive analysis of the inter-censual growth rate of the municipalities of the metropolitan city of Rome was then be carried out. Then, we applied a simultaneous equation model where the endogenous variable is the inter-censual growth rate of the municipal resident population. This allowed us to take into account that the population trend observed in each of the intercensal periods depends on the intensity and geographical distribution of the same phenomenon in the previous decade.

In the Metropolitan City of Rome, the demographic evolution of the municipalities is not at all homogeneous. The increase in population in the municipalities of the metropolitan city has certainly been influenced by the distance from the capital city. In our model, in which both the past evolution of the population and the demographic and geomorphological characteristics are taken into account, the geographical position with respect to the capital resulted in being important in explaining the demographic dynamics of the various municipalities of the metropolitan city. This result shows the peculiarity of this area.

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INTELLECTUAL PROPERTY RIGHTS PROTECTION AND HEALTH: THE CASE OF TUBERCULOSIS[1]

Silvia Balia, Sara Pau, Silvana Robone

1. Introduction

Tuberculosis (TB, hereafter) is a high-impact communicable disease. It is present in all countries and affects all age groups. Despite being curable and preventable, in 2019, TB generated globally 10 million infections and 1.4 million deaths, ranking among the top 10 causes of death in low-income countries (WHO, 2020). Reducing the burden of the TB epidemic is a health target of the United Nations Sustainable Development Goals (SDG).[2]

TB is caused by a bacterium (Mycobacterium tuberculosis) that spreads through the air from one sick person to another. Most often, it affects the lungs, but it can also affect other body parts. Approximately a quarter of the world's population has latent TB. Despite being infected, people with latent TB do not necessarily develop the disease and, because they do not suffer an active illness, they cannot transmit TB to others. A relatively small proportion (5-10%) of those with latent TB will eventually fall ill and require care. People with compromised immunity (e.g., HIV) or those suffering from undernutrition, poverty, smoking, and diabetes are at greater risk of both being infected and becoming ill (WHO, 2020). Most TB patients can be treated with a 6-month antimicrobial drugs regimen. However, the treatment can be longer (9-20 months) for patients who have developed a multidrug-resistance TB, which is a major concern at the country and global level. The success rate of the treatment varies by country and heavily depends on countries' capacity to early diagnose and detect drug resistance, propose shorter treatment regimens, and support patients to increase adherence.

The scientific debate has shed light on the need to increase the research and development effort on TB. Rapid tests for diagnosing the infection and the disease and detecting drug resistance, safer and more effective treatment strategies, and a vaccine, are necessary for a rapid decline in TB mortality and to end the TB epidemic

[1] The article is the result of the joint work of the three authors.

[2] Specifically, the SDG target 3.3 aims at ending the TB epidemic by 2030. The strategy implies reaching an 80% reduction in the TB incidence rate (new and relapse cases per 100 000 population per year) by 2030, and a 90% reduction in the annual number of TB deaths by 2030, compared with 2015.

(Reid *et al.*, 2019). Furthermore, recent data show that, despite the presence of new and safer drugs, many people still do not have access to them because of barriers resulting from patent-backed monopolies and high prices (Makoni, 2021).

Over the past 30 years, almost all national economies have adopted some level of intellectual property rights (IPR) protection. Becoming a member of the World Trade Organization (WTO), established to facilitate trade among countries, is conditional to signing the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS), which extends IPR protection to knowledge-intensive products, such as pharmaceuticals, computers, and telecommunication. When joining the WTO, developing and least-developed countries (LDCS) were obliged to strengthen their IPR legislation.

The discussion on IPR protection in the pharmaceutical industry, characterized by a complex system of regulations including patents, clinical testing, and market exclusivity, is particularly controversial (Boldrin and Levine, 2013). IPR protection can have both positive and negative effects on economic efficiency. On the one hand, obtaining monopoly power as a reward for innovation enhances the firms' incentive to innovate. On the other hand, research and development efforts might be refrained by the penalties and legal actions, such as those set by the TRIPS, that necessarily exist to deter patent infringement. IPR protection might also reduce domestic innovation in developing countries that typically innovate through imitation. Moreover, in the pharmaceutical sector, stricter protection legislation could threaten public health by making low-cost generic drugs less available to citizens.

Most of the economic literature has focused on the impact of IPR protection on innovation and economic outcomes. Many studies document that stricter IPR enforcement decreases domestic innovation in developing countries, while it can stimulate research and development in developed and richer countries (Kyle and McGahan, 2012; Delgado *et al.*, 2013; Gamba, 2017). Less is known, however, about the effects of stricter IPR on pharmaceuticals in the health domain.

In this work we try to fill this gap by studying the potential effect of implementing the TRIPS on the dynamics of the global burden of TB. Because TRIPS compliance is motivated by the commercial benefits of joining the WTO, the agreement's implementation can be used as a natural experiment to understand whether and to what extent IPR protection in the pharmaceutical sector influences health outcomes. For this reason, we exploit country variation in the time of compliance to estimate the impact of IPR on TB burden. We use data provided by the World Health Organization (WHO), the WTO, and the World Bank, for 184 countries in the years 1990-2017 in a Difference-in-Differences research design. We estimate a 2-way staggered Fixed-Effect (FE) regression model for TB mortality rate, controlling for socio-economic and health risk factors, and provide a full dynamic specification of the effect.

We find that TRIPS compliance has a negative effect on TB mortality rate in high-income countries, and a positive effect in low-income countries. While the effect is persistent in all countries, it starts in the year after the introduction of TRIPS in high-income countries and in the sixth year after treatment in the low-income ones. We find no significant effect in middle-income countries.

2. Data and summary statistics

Our analysis exploits data from different sources. The outcome variable is the TB death rate, provided by WHO. It measures the number of deaths over 100,000 people due to TB, excluding HIV, for the period 1990-2017 in 184 countries. We use an indicator for *education* (the mean years of schooling within a country) provided by the United Nations Development Program, and the *GDP per capita* provided by the World Bank (WB), as socio-economic controls.[3] We also use the indicator of life expectancy at birth provided by the United Nations Department of Economic and Social Affairs. It reflects the population general health status in each country by considering the mortality pattern that prevails across all age groups.

Moreover, to take into account country differences in the incidence of TB, we expand our dataset with two variables that should act as proxies of poor living conditions and living out of urban areas, which are important risk factors for TB (WHO, 2020). Specifically, we use *drinking water services*, which measures the percentage of population with access to an improved drinking water, and *sanitation*, which is calculated as the percentage of population using at least basic sanitation facilities (ventilated improved pit latrines, compositing toilets, or pit latrines with slabs). Poor sanitation also contributes to malnutrition, which is another important TB risk factor. These variables are provided by WHO and, contrary to more specific indicators of poverty and inadequate living, are available for all countries included in the analysis for almost all years.

Our policy indicator is the dummy variable TRIPS, that takes value 1 since the year of the agreement's adoption. To build this indicator, we use the information on TRIPS compliance by country provided in Kyle and McGahan (2012). We also use the WTO website to update information on the most recent adoptions by those least developed countries which have benefitted of extended transition periods to apply provisions of the TRIPS.

In Table 1 we present descriptive statistics for our unbalanced sample of countries. Drinking water services and sanitation conditions are not homogenous

[3] Mean years of schooling is defined by UNDP as the average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.

among countries, as shown by the between-country variation. However, for these variables, as well as for GDP and education, the within-country variation suggests low variability over time.

Table 1 – *Descriptive statistics.*

	Mean	*Std. Dev.*	*Min*	*Max*
TB death rate	19.21	30.03 (26.25; 13.91)	0	278
GDP per capita	12.12	17.52 (16.68; 3.10)	0.19	111.97
Mean years of schooling	7.45	3.19 (3.19; 0.92)	0.4	14.1
Life expectancy	68.51	9.66 (9.10; 2.95)	26.2	84.3
Drinking-water services	83.55	18.82 (18.43; 5.07)	19	100
Sanitation	69.77	31.00 (30.79; 6.13)	3.4	100

Notes. The sample size is 4,405. GDP per capita is constant in 2010 US$ and is expressed in thousands of dollars. Between and within Std. Dev. are reported in brackets.

Table 2 reports the descriptive statistics for unbalanced sub-samples of countries. Countries have been stratified in high-, middle-, and low-income economies (Kyle and McGahan, 2012). As expected, the TB death rate decreases with income level and low-income countries are those that suffer the most the burden of TB. Life expectancy at birth is particularly low, on average, in low-income countries, where living conditions, lifestyles, education levels, and access to healthcare are below the standards of wealthier nations, thus reflecting a lower general health status of the population.

Table 2 – *Descriptive statistics by income level.*

	High-income countries (N=1307)				Middle-income countries (N=2325)				Low-income countries (N=773)			
	Mean	*Std. Dev*	*Min*	*Max*	*Mean*	*Std. Dev*	*Min*	*Max*	*Mean*	*Std. Dev*	*Min*	*Max*
TB death rate	2.1	3.3	0	23.0	19.3	25.5	0	180.0	47.8	43.1	3.5	278.0
GDP per capita	33.0	19.8	5.3	111.9	4.2	2.9	0.4	15.9	0.6	0.3	0.2	1.5
Mean years of schooling	10.3	1.9	5.3	14.1	7.1	2.5	0.4	12.9	3.6	1.9	0.7	11.0
Life expectancy	77.0	4.4	53.3	84.3	68.0	7.2	42.5	79.9	55.6	7.4	26.2	72.1
Drinking-water	98.0	5.5	51.0	100	83.9	14.7	30.3	100	56.6	15.5	19.0	97.0
Sanitation	96.8	6.1	54.8	100	68.8	25.4	7.0	100	26.9	19.9	3.4	97.0

3. Empirical Strategy

The existing literature assumes the timing and strength of IPR protection to be exogenously determined (Branstetter *et al.*, 2006; Moser, 2005; Lerner, 2002). According to Kyle and Meghan (2012), in the case of the TRIPS implementation, developing and least developed countries were resistant to adopting or strengthening IPR protection, and did so mainly because they expected large benefits from WTO membership. For all these reasons, IPR reforms are often used as natural experiments to understand how IPR protection influences economic activities.

To assess the causal impact of TRIPS compliance on TB mortality, we set up a quasi-experimental research design and estimate a staggered 2-way FE (country and year) Difference-in-Differences model (DD henceforth), where we center the time of the policy switch to zero to have all the countries facing the same initial treatment time. We first estimate the following baseline 2-way fixed effect DD model:

$$y_{it} = \beta D_{it} + \theta X'_{it} + \alpha_i + \delta_t + \alpha_i \cdot t + \varepsilon_{it}$$

where y_{it} is the TB deaths rate in country *i* in year *t*, D_{it} is the absorbing treatment status (1 in any year after the reform for the treated country i, 0 otherwise), X'_{it} is the matrix of controls, α_i is the country fixed effects, δ_t the year fixed effects and $\alpha_i \cdot t$ is the country-specific linear trend.

We further extend the classical specification of the DD with a dynamic analysis that relies on "event study" estimates. More precisely, given the availability of data and the observed time windows around the staggered adoption of the policy (1990 – 2017), we standardized the time dimension as $m = 27$ periods before and n$= +24$ periods after the TRIPS adoption. We then have a certain time $(-27, \ldots, 0, \ldots, +24)$, where 0 is the year of policy switch, that allows us to capture either the immediate effect of the policy, and any additional effects that occur *n* periods after adoption. We combine the years in 5-years intervals (1-5, 6-10, etc.) instead of using a one-year increment, because we expect the policy to affect health gradually. We set the baseline period as one year before, as common in practice. The ending point is fixed at 21plus year, both in the before and after periods. We disentangle the full dynamic response of the TB mortality rate to the institutional change and estimate the following DD regression augmented with leads and lags:

$$y_{it} = \sum_{l \neq -1} \beta_l D_{it}^l + \theta X'_{it} + \alpha_i + \delta_t + \varepsilon_{it}$$

where, ceteris paribus, D_{it}^{l} are interactions of the binary indicator of treatment TRIPS, here D_{it} , (1 in any year after the reform for the treated country *i*, 0 otherwise) with group-year dummies *l* (observed time window: 27 years before Trips, 0, 24 years after TRIPS, grouped in 5-years intervals).

Table 3 - *Estimated impact of TRIPS compliance on TB mortality rates*

Deaths due to tuberculosis among HIV-negative people (per 100 000 population)	(1) All	(2) High-income countries	(3) Middle-income countries	(4) Low-income countries
Pre-TRIPS mean	27.95	3.81	22.38	49.35
TRIPS X POST	1.81**	-1.16***	-1.33	10.1***
	(0.844)	(0.12)	(0.83)	(3.70)
Controls				
GDP per capita (constant 2010 US$)	-0.02	-0.05***	-0.64*	-24.62***
	(0.04)	(0.01)	(0.35)	(8.98)
Mean years of schooling	-0.94***	-0.09*	-0.68	-12.63***
	(0.35)	(0.05)	(0.48)	(4.11)
Life expectancy	-0.09	-1.88***	-0.49	0.84**
	(0.22)	(0.16)	(0.32)	(0.36)
Drinking-water services	-0.02	0.04	0.37***	-0.51*
	(0.12)	(0.03)	(0.10)	(0.27)
Sanitation	0.28**	0.05	-0.12*	1.01***
	(0.12)	(0.05)	(0.07)	(0.38)
Constant	13.67	142.4***	38.42*	62.12*
	(17.72)	(13.29)	(22.62)	(34.64)
Country fixed-effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Country-specific linear trend	Yes	Yes	Yes	Yes
Observations	4,405	1,307	2,325	773
R-squared	0.93	0.97	0.94	0.89

Notes: All models include country, year fixed effects and a country-specific linear trend. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

4. Results

Table 3 presents the estimated impact of the TRIPS compliance on TB mortality rates, using the full sample and the samples stratified by income level. TRIPS compliance has a negative effect (an average of – 1.16 over 100,000 people in the whole post-treatment period) on TB mortality rate in high-income countries, and a positive effect (an average of about 10.1 over 100,000 people) in low-income countries.

Table 4 - *Event study*

Deaths due to tuberculosis among HIV-negative people (per 100 000 population)	(1) All	(2) High-income countries	(4) Middle-income countries	(3) Low-income countries
Mean mortality rate at $t = -1$	16.84	2.73	22.08	32.36
21-27 years before TRIPS	-1.57	-0.93	8.38	-19.33*
	(5.96)	(1.35)	(7.73)	(10.30)
15-20 years before TRIPS	7.31*	2.06	15.68***	0.83
	(4.21)	(1.38)	(3.84)	(8.58)
10-15 years before TRIPS	3.524	2.651***	5.163**	7.46
	(2.87)	(0.918)	(2.569)	(6.891)
5-10 years before TRIPS	-4.24**	1.94***	-0.11	-3.18
	(1.89)	(0.46)	(2.17)	(6.35)
2-5 years before TRIPS	-1.68	0.23	-0.38	-1.69
	(1.78)	(0.29)	(1.87)	(6.41)
1-5 years after TRIPS	3.88**	-2.08***	-0.57	9.83
	(1.73)	(0.43)	(1.85)	(6.72)
6-10 years after TRIPS	9.51***	-3.35***	0.37	32.52***
	(1.85)	(0.68)	(1.93)	(8.36)
11-15 years after TRIPS	12.90***	-3.92***	0.61	37.84***
	(2.00)	(0.95)	(2.09)	(10.32)
16-20 years after TRIPS	15.83***	-4.19***	-0.75	35.09***
	(2.22)	(1.24)	(2.29)	(10.64)
21-24 years after TRIPS	19.96***	-4.51***	-2.80	Not estimable
	(2.55)	(1.54)	(2.64)	
GDP per capita	0.25***	-0.01	1.08***	-28.93***
	(0.05)	(0.01)	(0.26)	(8.84)
Mean years of schooling	0.60*	-0.09	-0.31	-2.92
	(0.34)	(0.06)	(0.45)	(2.45)
Life expectancy	-0.15	-1.02***	-0.79***	1.56***
	(0.19)	(0.08)	(0.22)	(0.38)
Drinking-water services	-0.09	0.12***	0.18*	-0.15
	(0.11)	(0.03)	(0.01)	(0.21)
Sanitation	-0.19***	-0.04	-0.35***	0.14
	(0.06)	(0.04)	(0.06)	(0.25)
Constant	37.38**	76.30***	79.11***	-6.372
	(17.81)	(6.706)	(17.66)	(32.91)
Observations	4,405	1,307	2,325	773
R-squared	0.83	0.93	0.88	0.72

Notes. All models include country and year fixed effects. Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 4 shows the results of the "event study" as described in Section 3. The 5-10 and 10-15 years before TRIPS dummies are statistically significant for high-income countries, while for middle-income countries the statistically significant leads refer to 10-15 and 15-20 years before TRIPS, suggesting that the parallel trends assumption does not seem to hold. Therefore, we can provide a causal interpretation only to the results for low-income countries, while for high and middle-income countries we must be cautious and provide only a descriptive interpretation. In low-income countries the TRIPS compliance has a positive and statistically significant effects on mortality rates. However, such effects seem to occur only after 6 years from the introduction of the TRIPS, and to persist over time. The magnitude of such effect is not negligible, because 6 years after the TRIPS there seems to be an increase in mortality rates of about 32.5 over 100,000 individuals, and it becomes about 38 over 100,000 after 10 years. Considering that in low-income countries the mean mortality rate at $t = -1$ is about 32 deaths over 100,000 individuals, the increase in the mortality rate corresponds to about 100% after 6 years, and 117 % after 10 years.

As a robustness check, we have estimated an alternative specification that, instead of using GDP, education, and life expectancy at birth as separate indicators, includes a summary indicator directly. Specifically, we have used the Human Development Index (HDI), which assesses countries development achievements with respect to three fundamental dimensions (standard of living, education, and health). Overall, results are robust to the change in the specification.[4]

5. Conclusions

In our study we investigate the potential effect of implementing the TRIPS on the dynamics of the global burden of Tuberculosis. We use data for 184 countries in the years 1990-2017 and estimate the causal effect of the TRIPS on TB mortality rates using a Difference-in-Differences design in which the treatment occurs at different timing for different countries, using 2-way FE estimator. The TRIPS compliance appears to cause an increase in TB mortality rates in low-income countries, although such effect is not immediate but appears to take at least 6 years to occur.

Our study suffers from a few limitations. The specification of our regression model is very parsimonious. We face an issue of data availability, because we deal with a long panel (28 years) for a very large number of countries (184). Moreover, because TB incidence rates are made available by WHO only for a limited time span (2000-2019), which covers only a short pre-policy period, we preferred to focus on TB mortality rates which have a broader coverage.

[4] Tables of results are available on request.

Our DD analysis relies on the assumption that the treatment effect is homogeneous across countries and over time. However, a recent influential piece of the literature has questioned the use of the 2-way FE estimator because it might produce biased estimates of the dynamic of the treatment effect. In fact, when the treatment hits groups of units (cohorts) at different points in time, parallel trends are not sufficient for identification, and leads and lags indicators may be contaminated by cohort specific average treatment effects from other periods (see, e.g., Sun and Abraham, 2020; de Chaisemartin and d'Haultfoeuille, 2020; Callaway and Sant'Anna, 2021; Goodman-Bacon, 2021). Hence, potential pitfalls may arise that weaken the reliability of our dynamic estimates and leave room for the application of more recent and sophisticated methods robust to treatment effect heterogeneity in future research.

In our paper we have not investigated the "transmission mechanisms" linking the TRIPS Agreement to health outcomes. Previous literature has investigated the effects of IPR protection on R&D investment in pharmaceuticals, approximating the latter, as an example, by number of clinical trials (Kyle and McGahan 2012). Patent protection appears to be associated with greater R&D investment in diseases that affect high-income countries, and the treatments developed as a result may benefit people in poorer countries as well. Therefore, in the future we could test the hypothesis that "efforts in R&D" is the factor linking the TRIPS Agreement to health outcomes.

Our findings are relevant for policy makers that aim to overcome the trade-off between IPR protection and health, which is particularly relevant in low-income countries. Rapid and affordable access to essential drugs could be guaranteed by the use of "patent pools".[5] The latter aggregate patent rights of multiple patent holders and make pooled patents available to member and non-member licensees. Usually, the pool allocates a portion of the licensing fees it collects to each member in proportion to each patent's value (WIPO 2014). An example of an effective patent pool is the Medicines Patent Pool (MPP), established by *Unitaid* in 2010. MPP operates as a non-profit voluntary licensing mechanism through partnerships with originator pharmaceutical companies and generic manufacturers. MPP negotiates licences with patent holders and licenses those patents to multiple manufacturers, who develop the licensed medicine. It might also facilitate the development of new regimens by licensing drugs that are still under development.[6] The treatments are

[5] "Patent pools are voluntary arrangements where patentees authorize the pool to license specific patents, typically as a bundle, to third parties" (Galasso and Schankerman, 2021).

[6] With regard to TB "in early 2017, MPP signed its first agreement with the Johns Hopkins University. This agreement was to facilitate the clinical development of *sutezolid*, a promising investigational treatment for tuberculosis. It was followed by a second agreement with Pfizer in October 2019 to access

then made available in a given set of developing countries. Preliminary empirical evidence suggests that the MPP increases the likelihood of launch of essential drugs, their quantities sold and reduces their prices (Galasso and Schankerman, 2021).

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SUMMARY

Intellectual Property Rights Protection and Health: the Case of Tuberculosis

Tuberculosis (TB) is a high-impact communicable disease, spread globally, representing one of the top 10 causes of death in low-income countries. Since 1995, less developed and developing countries, where the burden of TB is very high, have been obliged to comply with the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) to become members of the WTO. The TRIPS extends the Intellectual Property Rights (IPR) protection to knowledge-intensive products, such as pharmaceuticals, with potential effects on drug innovation and public health. Empirical evidence on the latter effect is scarce. In this work, we exploit country differences in the timing of TRIPS compliance to study whether and to what extent IPR protection might affect health outcomes. We use thirty years of data on TB mortality rates, socio-economic and health risk factors for 184 countries to estimate a 2-way staggered FE regression model and provide a full dynamic specification of the effect of the policy. We find that the TRIPS led to higher mortality rates in low-income countries, while high-income countries had beneficial effects on reducing TB mortality.

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LA MOBILITÀ ELETTRICA TRASFORMA LAVORO E COMPETENZE. UN'ANALISI ATTRAVERSO L'ATLANTE LAVORO.[1]

Valentina Ferri, Giovanni Matranga, Rita Porcelli

1. Introduzione

La decarbonizzazione dei trasporti presenta un grande potenziale per lo sviluppo industriale e commerciale dell'Italia. Mentre la pandemia da Covid-19 ha inferto un duro colpo al comparto automotive causando flessioni nelle vendite 2020 di quasi il 30% rispetto ai livelli pre-covid[2], la crescita delle immatricolazioni delle auto elettriche è stata inarrestabile, arrivando a un +250% nello stesso periodo di tempo[3].

Il futuro vede ancora più protagonista e strutturale l'elettrificazione che al 2030, stando alle stime del Piano Nazione Integrato per l'Energia ed il Clima (PNIEC), potranno vedersi più di 6 milioni di veicoli elettrici circolare sulle nostre strade contro le attuali circa 2.000.000 di unità[4]. Con le giuste politiche abilitanti, l'Italia può trarre vantaggio da questa transizione, in termini non solo economici ma anche occupazionali, per via delle nuove competenze richieste dal settore. Secondo uno studio di *European Platform for Electromobility* di giugno 2020[5], la mobilità elettrica porterà in Europa oltre 1 milione di posti di lavoro entro il 2030. Naturalmente, la transizione non è senza sfide: alcuni settori come quello dei carburanti o delle parti meccaniche delle auto registreranno inevitabili perdite in termini di posti di lavoro. Per questo è essenziale accompagnare e gestire tale fase di cambiamento con interventi politici ben mirati e lungimiranti, al fine di creare

[1] Il lavoro si inserisce nell'ambito delle attività della Convenzione tra INAPP e MOTUS-E ed è frutto della stretta collaborazione tra gli autori. I paragrafi da attribuire a Valentina Ferri sono Letteratura e Risultati; il paragrafo da attribuire a Rita Porcelli sono la Metodologia e la Conclusioni; il paragrafo da attribuire a Giovanni Matranga è l'Introduzione. Le opinioni espresse in questo lavoro impegnano la responsabilità degli autori e non necessariamente riflettono la posizione dell'Ente di appartenenza.

[2]https://www.mit.gov.it/documentazione/immatricolazioni-119454-nuove-auto-nel-mese-di-dicembre-2020-1495

[3]Motus-E, Analisi di mercato dicembre 2020 (https://www.motus-e.org/analisi-di-mercato/dicembre-2020-la-rivoluzione-che-non-si-ferma)

[4]Motus-E, Analisi di mercato settembre 2021 (https://www.motus-e.org/analisi-di-mercato/settembre-2021-record-storico-di-vendita-di-auto-bev)

[5] European Platform for Electromobility - European Green Deal and Green Recovery: time to focus on Electromobility - June 2020.

occupazione di qualità, agevolare la formazione dei lavoratori e della classe dirigente che sappia gestire il cambiamento e garantire non solo la sostenibilità ambientale ed economica ma anche sociale. Sfruttando sempre di più lo sviluppo di capacità elettrica da fonti rinnovabili, tra cui l'eolico e il solare (+70 GW previsti al 2030 rispetto a dicembre 2019[6]), l'Italia ha quindi l'occasione unica per trasformare la debolezza della scarsità di risorse combustibili fossili in un punto di forza.

L'articolo si pone l'obiettivo di presentare il primo studio volto a ricostruire e descrivere, in termini di processi di lavoro e di professionalità coinvolte, la filiera produttiva che potrebbe essere investita dalla transizione verso la mobilità elettrica. A tal fine utilizzeremo il modello dell'Atlante lavoro per perimetrare la filiera e i dati della Rilevazione sulle Forze di Lavoro (RFL, ISTAT) per effettuare delle analisi relative agli occupati che potrebbero essere coinvolti in questo processo.

2. Letteratura

In letteratura si annoverano quattro principali approcci utilizzati per l'identificazione dei *green jobs*. Il primo considera come impiegato nei "lavori verdi" il lavoratore specializzato in attività per la protezione dell'ambiente (US Department of commerce, 2010). Uno degli svantaggi di questo approccio basato sui processi è che non può tenere conto delle attività legate alla riprogettazione dei prodotti svolta da fornitori specializzati di macchinari e soluzioni di ingegneria e architettura (Vona *et al.*, 2019). Si perde così dalle analisi una porzione di lavoratori che fanno parte degli occupati che potremmo definire *green*. Il secondo approccio, invece, identifica le industrie con un'ampia frazione di imprese che producono "beni verdi" (Peters *et al.*, 2010). Il lavoro viene definito *green* sulla base delle caratteristiche del settore. Attraverso tale sistema che si basa sugli schemi di classificazione industriale, tuttavia, non è possibile distinguere prodotti e servizi "verdi" da quelli simili "non verdi". Il terzo metodo rappresenta la combinazione dell'approccio basato sul processo e sul prodotto: utilizza i dati sull'occupazione delle attività relative a prodotti e servizi "verdi", ad esempio automobili ibride o elettriche (BLS, 2013; Deschenes, 2013). Con questo metodo, tuttavia, non si arriva all'identificazione del tempo speso dai lavoratori nello svolgimento di attività *green*. L'ultimo approccio si concentra sui compiti relativi alle attività *green* svolte dal lavoratore (Consoli *et al.*, 2016; Vona *et al.*, 2017; Bowen *et al.*, 2018).

Sfruttando il database O*Net contenente informazioni sulle competenze e sul contenuto dei compiti delle professioni, alcuni papers recenti indagano l'impatto dei *green jobs* sul mercato del lavoro statunitense seguendo un approccio basato sulle

[6] https://energiaclima2030.mise.gov.it/index.php/il-piano/obiettivi

competenze e sui compiti. Consoli *et al.* (2016), attraverso tale approccio, indagano sul contenuto di competenze dei "lavori verdi" nel mercato del lavoro statunitense.

Vona *et al.* (2017), piuttosto che utilizzare la variabile binaria su cui sono basate normalmente le classificazioni standard, determinano il grado di contenuto verde che caratterizza compiti specifici attraverso una variabile continua. Nello stesso studio vengono individuati due gruppi di competenze *green*: competenze ingegneristiche e competenze manageriali. Le competenze ingegneristiche sono coinvolte nella progettazione e produzione della tecnologia *green*. Le competenze manageriali riguardano le pratiche organizzative ambientali. Gli autori rilevano che l'intensità di attività routinarie e il livello di competenze delle professioni "verdi" sono più elevate rispetto a quelle relative alle professioni "non verdi".

Bowen *et al.* (2018) sfruttano il set di dati O*Net e analizzano la quota di posti di lavoro che trarrebbero vantaggio da una transizione dell'economia *green* negli Stati Uniti. Essi stimano l'impatto della transizione ecologica sulla composizione della forza lavoro statunitense e individuano diversi metodi per misurare la probabilità per i lavoratori di passare da lavori "non verdi" a lavori "verdi".

Vona *et al.* (2019), inoltre, attraverso un approccio basato sui *task*, hanno recentemente proposto un contributo empirico per stimare l'impatto dell'occupazione "verde" sui mercati del lavoro locali statunitensi sfruttando il database O*Net.

Il vantaggio di utilizzare metodi *task-based* per identificare i lavori "verdi" sui descrittori O*NET (Dierdorff *et al.*, 2009) consiste nella possibilità di individuare il grado di contenuto verde delle professioni definito come "la misura in cui le attività e le tecnologie dell'economia verde aumentano la domanda di occupazioni esistenti, danno forma al lavoro e ai requisiti dei lavoratori necessari per le prestazioni occupazionali o generano requisiti di lavoro e lavoratori"(Dierdorff *et al.*, 2009).

La nostra ricerca segue il metodo *task-based* al fine di indagare la transizione dei lavoratori verso la mobilità elettrica, analizzando così un sottogruppo dei lavori verdi. A questo scopo, tuttavia, proponiamo un'altra fonte di dati e descrittori del lavoro tratti dall'Atlante del lavoro (Mazzarella *et al.*, 2018) che ha alcuni elementi in comune con la classificazione O*NET ma anche molte differenze. La più importante è il metodo di costruzione dei descrittivi dell'Atlante lavoro che è stato sviluppato seguendo le logiche tipiche della divisione organizzata del lavoro e che è fondato sul modello della catena del valore. Tale modello è stato applicato in modo estensivo a tutti i settori economico professionali (SEP) individuati nell'ambito dell'Atlante, e in modo analitico per ciascuna area di attività (ADA). In ogni ADA sono stati identificati i generatori di valore descritti come il complesso risultato dell'interazione tra specifiche produttive dettate dalle attività da svolgere e le risorse del soggetto necessarie al presidio di tali attività. Questa sua caratteristica rende l'Atlante adatto ad azioni volte a costruire un sistema condiviso di elementi tecnici

intorno ai quali identificare la pertinenza delle richieste specifiche di mercati innovativi, come *e-mobility*, rispetto all'esistente.

3. Metodologia

Il lavoro di analisi ha permesso di individuare 95 ADA che potrebbero descrivere con un dettaglio minimo le attività lavorative incluse dal processo di trasformazione del mercato della mobilità. Attraverso tale percorso è stato possibile: identificare le professionalità potenzialmente investite dalle innovazioni introdotte nella filiera della mobilità elettrica; stimare quanti sono gli occupati afferenti a tale filiera e conoscere le caratteristiche di tali professionisti. Inoltre, abbiamo potuto costruire le premesse di metodo per l'identificazione degli elementi necessari per l'avvio dell'analisi dei fabbisogni professionali e dell'investimento in formazione delle aziende che operano nel settore della mobilità elettrica.

La mappa dei 24 Settori Economico Professionali (SEP) di cui si compone l'Atlante lavoro è stata generata dall'intersezione di due classificazioni ISTAT fra loro indipendenti, sia rispetto all'oggetto rappresentato, sia rispetto ai criteri costruttivi utilizzati: la classificazione delle attività economiche (ATECO 2007) e la classificazione delle professioni (CP 2011). Tutti i codici costituenti le classificazioni statistiche appena ricordate, alla loro massima estensione sono stati riaggregati nei SEP Atlante per rispondere ad un'esigenza empirica di individuare un "perimetro" dove poter collocare, ordinandone il campo informativo, insiemi di processi lavorativi e attività dotate di relativa omogeneità interna (intra-settoriale) e sufficiente distinzione esterna (intersettoriale) (Mazzarella *et al.*, 2018).

Grazie a questa struttura, nella prima fase della ricerca, si è effettuata un'analisi approfondita dei descrittivi del lavoro dell'Atlante andando a selezionare le ADA riferite ai codici ATECO delle aziende coinvolte nella filiera della mobilità elettrica italiana. Dopo la prima analisi sono stati rianalizzati i contenuti di Atlante andando ad osservare non solo le ADA richiamate dai codici ATECO selezionati a monte, ma approfondendo tutto il patrimonio dei descrittivi e ponendo una particolare attenzione ai risultati attesi[7]. La perimetrazione classificatoria dei 24 SEP di Atlante ha permesso, inoltre, l'associazione dei dati della rilevazione campionaria Forze di Lavoro Istat alle singole ADA. Nel presente studio sono state, nell'ambito delle singole ADA, estratte le coppie di codici CP-ATECO, secondo il gruppo di ricerca, maggiormente coinvolte nella filiera rendendo così possibile una prima stima del numero di occupati.

[7] I Risultati Attesi (RA) di Atlante illustrano, in sintesi, i prodotti e i servizi attesi in esito alla realizzazione delle attività descritte nell'ADA, e le performance richieste per lo svolgimento delle stesse.

La concatenazione dei codici CP delle professioni a 5 *digit*, con i codici ATECO dei settori a 4 *digit*, ci ha permesso di individuare delle combinazioni che possiamo definire facenti parte della filiera che potrebbe essere investita dalla transizione verso la mobilità elettrica. Allo scopo di inquadrare un perimetro di analisi della filiera della *E-Mobility* e la relativa tassonomia, abbiamo innanzitutto distinto le combinazioni tra quelle che, secondo noi, sono e saranno impattate dalla mobilità elettrica e quelle che non lo saranno. Quindi tra quelle del primo gruppo, abbiamo distinto tra combinazioni "*core*" cioè quelle più strettamente e direttamente impattate dalla transizione perché riguardano strettamente il prodotto (es. progettazione, costruzione e tutti i servizi necessari) quelle "*non-core*" impattate in modo indiretto, perché funzionali al prodotto o facenti parte dell'indotto (es. lavori civili per l'installazione delle colonnine di ricarica). All'interno del perimetro "*core*" abbiamo delineato una suddivisione/clusterizzazione interna, utilizzando come base di riferimento lo studio "*Electrify 2030*" di *The European House*-Ambrosetti, 2018[8].

Nello specifico, 189 combinazioni più fortemente caratterizzanti la mobilità hanno trovato corrispondenza nella Rilevazione Continua Forze di Lavoro insieme ad altre combinazioni che abbiamo identificato come "*non-core*". Tutte le 189 combinazioni che abbiamo rintracciato nei dati RFL sono diventate nella nostra metodologia una variabile dummy (0/1) denominata "Mobilità elettrica *core*". Inoltre si è realizzata un'altra variabile binaria che tiene conto del raggruppamento *Core* e *Non core* che per comodità chiameremo "Mobilità elettrica C*ore* e *Non core*". Circa gli aspetti relativi alla nomenclatura, rimandiamo al rapporto finale che illustra i risultati della Convenzione tra INAPP e *Motus-E*[9].

Le analisi sono state quindi sviluppate in modalità descrittiva per la prima fase al fine di individuare le principali caratteristiche della filiera. Si prosegue con un'analisi di regressione nella seconda fase, orientata alla stima delle determinanti della disoccupazione, osservando il comportamento della nostra variabile di interesse cioè la combinazione CP-ATECO. In particolare, verifichiamo se la combinazione CP-ATECO facente capo alla mobilità elettrica aumenti la probabilità di entrare a far parte della compagine dei disoccupati rispetto agli occupati.

Formalizziamo di seguito la stima, tenendo conto che ci rifacciamo all'anno 2019 e che, la perimetrazione di quello che individuiamo come mobilità elettrica "*core*" riguarda gli individui che potenzialmente potrebbero essere investiti, anche con diversi gradienti dalla transizione verso la mobilità elettrica. Il modello che utilizziamo è *probit*, commenteremo gli effetti medi marginali, con errori clusterizzati. La specificazione che utilizziamo è di seguito formalizzata:

[8] https://bit.ly/3dEyOmJ
[9] Il rapporto sarà a breve disponibile sul sito INAPP.

$$y = \beta_0 + \beta_1 D + \beta_2 A + \beta_3 C + \varepsilon$$

dove l'*outcome* (y) rappresenta la probabilità di essere disoccupato rispetto alla probabilità di essere occupato; (D) è combinazione CP-ATECO identificativa della mobilità elettrica *core* (0/1) oppure identificativa della mobilità elettrica *core* + *non core*; (A) le caratteristiche del lavoratore: genere, età, stato civile, cittadinanza; (C) titolo di studio e regione di residenza. Dalle analisi sono stati eliminati gli inattivi, gli individui in pensione, nonché coloro che sono al di sotto dell'età lavorativa.

4. Risultati

Le prime evidenze empiriche mostrano che gli occupati che potrebbero essere investiti dai cambiamenti dovuti alla mobilità elettrica sono il 4% del totale dei lavoratori italiani (Tabella 1). Questa percentuale è data dal 3% ca. per quello che abbiamo definito il raggruppamento "*core*" e, l'1% ca., da quello definito come "*non core*". In termini numerici, rifacendoci al 2019, si tratterebbe di 726.061 occupati. Dal 2011 al 2019, pur non variando l'incidenza percentuale degli occupati interessati dalla transizione, resta una variazione del numero degli occupati in quello che abbiamo definito il raggruppamento "*core*" della mobilità elettrica. Gli occupati passano da 692.563 a 726.061.

Tabella 1 – *Occupazione nella mobilità elettrica (ME).*

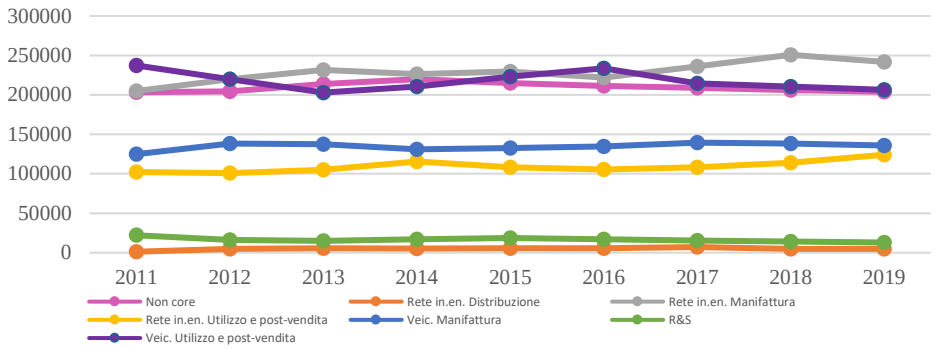
	Tot occupati (v.a.)	No ME (v.a.)	ME Non core (v.a.)	ME core (v.a.)	No ME	ME Non core	ME Core
2011	22.598.244	21.702.289	203.392	692.563	0,960	0,009	0,031
2012	22.565.971	21.666.131	204.452	695.388	0,960	0,009	0,031
2013	22.190.536	21.279.099	213.812	697.624	0,959	0,010	0,031
2014	22.278.917	21.353.349	219.847	705.720	0,958	0,010	0,032
2015	22.464.753	21.531.539	215.072	718.142	0,958	0,010	0,032
2016	22.757.838	21.828.450	211.159	718.228	0,959	0,009	0,032
2017	23.022.959	22.092.963	208.812	721.184	0,960	0,009	0,031
2018	23.214.948	22.276.121	205.865	732.962	0,960	0,009	0,032
2019	23.359.861	22.429.671	204.129	726.061	0,960	0,009	0,031

Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2019

Quando osserviamo il numero di occupati (Figura 1), per ogni *cluster* verifichiamo come, dal punto di vista complessivo, si evinca una rilevanza maggiore, in valore assoluto, del cluster relativo alla Rete infrastrutturale ed energetica, nonché dell'utilizzo e post-vendita del veicolo, oltre al raggruppamento "*non core*". La maggiore crescita di occupati si nota nella rete infrastrutturale ed energetica, intesa come utilizzo e post-vendita. Sempre nella rete infrastrutturale ed energetica

verifichiamo, nell'ambito della manifattura, un incremento che si ferma nell'ultimo anno considerato nelle analisi. Per quanto riguarda, invece, il veicolo, nell'ambito della manifattura osserviamo un'occupazione abbastanza stabile, eccetto una minima crescita nel 2018. Risulta molto evidente il numero inferiore di occupati nell'ambito dell'utilizzo e del post-vendita, questo dato coglie anche in parte la crisi dell'*automotive*. Sia nella Ricerca e sviluppo, sia nel settore del Veicolo, sia nella Rete infrastrutturale ed energetica, si osserva un numero inferiore di occupati in valore assoluto con poche variazioni nel lasso di tempo considerato.

Figura 1 – *Occupati per cluster anni 2011-2019.*



Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2019

Dalla Tabella 2 emerge che, in termini di qualità del lavoro, il tempo indeterminato, riguarda fondamentalmente i lavoratori nella distribuzione (rete infrastrutturale ed energetica).

Tabella 2 – *Analisi descrittive dei cluster.*

Cluster	Retribuzione mensile *(euro)*	Quota lavoratori tempo indeterminato	Ore lavorate (settimanali)	Età media per individuo
Rete in. en. Distribuzione	1648.011	0.93761	50.53977	40.81202
Rete in. en. Manifattura	1497.342	0.841693	44.06901	41.66606
Rete in. en. Utilizzo e post-vendita	1726.682	0.903372	40.95072	42.19791
Veic. Manifattura	1492.414	0.851562	39.09558	42.18044
Veic. Utilizzo e post-vendita	1267.79	0.844881	44.4553	43.93265
R&S	1781.079	0.955409	32.66004	45.00352

Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2019

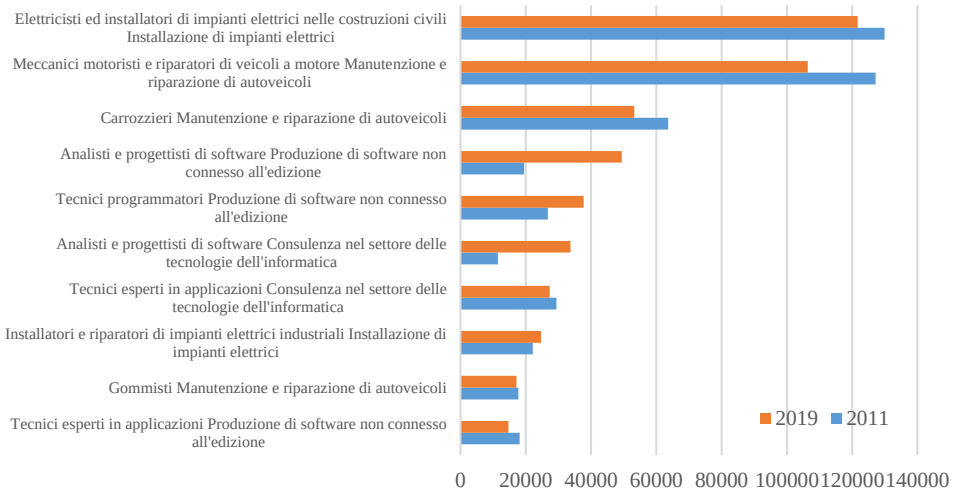
Continuando rispetto all'età, osserviamo sempre nello stesso settore l'età più elevata. Presumiamo quindi che questo attenga al settore pubblico e ai tempi indeterminati succitati. Le ore lavorate più alte riguardano la rete infrastrutturale ed

energetica come settore manifatturiero. Anche il veicolo inteso come utilizzo e post-vendita presenta una media di ore lavorate più elevata.

La Figura 2 rappresenta le prime 10 combinazioni CP-ATECO che nel 2019 risultano avere un maggior numero di occupati, rispetto a tutte quelle agganciate attraverso l'unione dei codici individuati nel dataset RFL. Nella Figura 2 osserviamo come le combinazioni CP-ATECO che richiamano maggiormente i settori core relativi al veicolo (meccanici, carrozzieri etc.) hanno subito una leggera diminuzione del numero di occupati. É bene evidenziare che non possiamo dedurre che il calo sia dovuto all'ascesa della mobilità elettrica.

D'altra parte, osserviamo come vi sia un vantaggio delle combinazioni CP-ATECO che secondo il nostro metodo riguardano in parte e riguarderanno la mobilità elettrica, relative al *software* e alla progettazione degli stessi. É legittimo ipotizzare che: una filiera costituita da professioni più tradizionali -le quali potrebbero subire dei contraccolpi dovuti all'ascesa di nuove tecnologie, nonché alla delocalizzazione- mescola professioni più nuove e in crescita.

Figura 2 – *Le 10 combinazioni CP-Ateco più significative in termini di occupazione (2011,2019).*

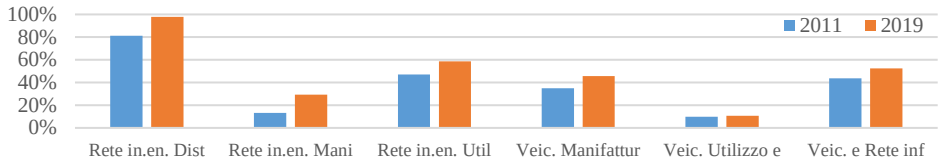


Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2011-2019

La Figura 3 rappresenta la percentuale di lavoratori in aziende che constano di un numero di sedi maggiore di uno. Come si può osservare, dal 2011 al 2019, la percentuale di individui che dichiara di lavorare in un'azienda costituita da un numero di sedi maggiore di uno, è aumentato. Potrebbe essere, quest'ultimo, un segnale dell'ampliamento del settore. In particolare, è un fenomeno che osserviamo in tutta la rete infrastrutturale ed energetica e, successivamente, nel *cluster*

manifatturiero del veicolo. Oltre che un ampliamento, si potrebbe supporre anche un legame con fenomeni di delocalizzazione.

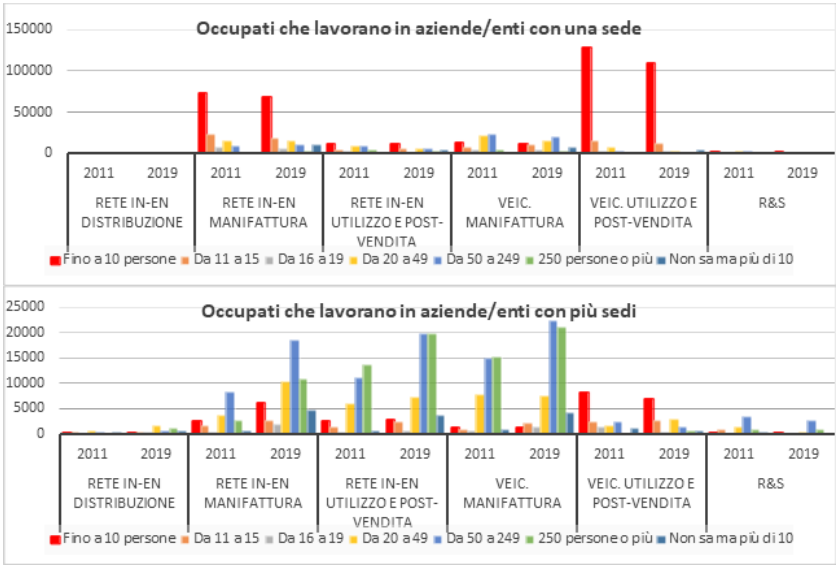
Figura 3 – *Aziende presso cui lavorano gli individui con più di una sede (%).*



Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2011-2019

Le Figure 4 e 5 mostrano come gli occupati che dichiarano di lavorare in un'azienda con una sola sede, diminuiscono tra il 2011 e il 2019, è evidente per esempio il calo nell'ambito del Veicolo inteso come Utilizzo e Post-vendita.

Figure 4 e 5 – *Occupati per classe dimensionale d'impresa, anni 2011-2019.*



Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2011-2019

Per concludere l'analisi, dal momento che la letteratura dibatte sulla questione dell'occupazione e su quanto la transizione verso la mobilità elettrica potrebbe comportare delle perdite di occupazione, ci siamo interrogati se, attraverso la prima perimetrazione della mobilità elettrica si potesse indagare sull'evoluzione della perdita del lavoro. Attraverso i dati del 2019 abbiamo pertanto stimato la probabilità che un individuo possa essere in uno stato di disoccupazione, in particolare se

l'individuo aveva o ha come ultimo lavoro una combinazione CP-ATECO afferente a quella che per noi è la filiera della mobilità elettrica. Le stime indicano che, tenendo conto dei controlli, un lavoratore che faceva o fa capo ad una professione CP combinata con un ATECO che secondo il metodo adottato fa parte della filiera mobilità elettrica Core, ha una probabilità di essere disoccupato inferiore a un individuo che ha una combinazione CP-ATECO diverso da quello della mobilità elettrica (Tabella 3).

Tabella 3 – *Probabilità di essere disoccupato (regressione probit, effetti medi marginali).*

	Disoccupato (0/1) b/se	**Disoccupato (0/1) b/se**
Mobilità elettrica Core	-0.019***	
	-0.004	
Mobilità elettrica Core + Non core		-0.018***
		-0.004
Fem	0.012***	0.012***
	-0.003	-0.003
Età	-0.001***	-0.001***
	0.00	0.00
Titolo di studio	sì	sì
Regione di residenza	sì	sì
Cittadinanza	sì	sì
Totale osservazioni	213711	213711

*Fonte: Elaborazioni degli autori su dati RFL ISTAT, 2019. Note: Le due regressioni hanno la stessa dipendente, tra le variabili esplicative è usata alternativamente la variabile relativa al raggruppamento "Mobilità elettrica Core" e "Mobilità elettrica Core + Non core". Gli asterischi indicano livelli di significatività: *** p<0.01, ** p<0.05, * p<0.1.*

In altri termini, far capo al raggruppamento "mobilità elettrica", comporterebbe un rischio inferiore di disoccupazione rispetto a tutte le altre filiere di 1.9 punti percentuali se consideriamo il raggruppamento "*core*" e di 1.8 punti percentuali se consideriamo il raggruppamento "*core + non core*" (Tabella 3).

Conclusioni

Il presente contributo è il primo studio volto a ricostruire e descrivere, in termini di processi di lavoro e di professionalità coinvolte, la filiera produttiva investita dalla transizione verso la mobilità elettrica in Italia. Attraverso questo paper stimiamo che i lavoratori potenzialmente coinvolti nella transizione verso la mobilità elettrica rappresentano il 3% degli occupati e, se si considera il raggruppamento più alto definito come Non core, si arriva al 4%.

L'osservazione dei lavoratori che potranno essere impattati maggiormente dalla transizione, ci porta a individuare come caratteristiche principali un alto livello di

tempi indeterminati in particolare nella rete infrastrutturale ed energetica. Ciò indica una qualità dell'occupazione alta che potrà garantire un percorso di transizione dei lavoratori più sicuro. Significativo è il dato che mostra come vi sia stata una importante diminuzione di occupati nelle combinazioni CP-Ateco che potremmo definire maggiormente tradizionali. L'esigenza che è scaturita da queste prime analisi è stata proprio quella di comprendere se la transizione potrà comportare una contrazione dell'occupazione, oppure si tratta di una contrazione in settori più tradizionali a vantaggio di quelli più innovativi.

Le prime stime hanno permesso di ottenere coefficienti significativi rispetto al fatto che gli individui che fanno parte della filiera della mobilità elettrica (come individuata dal gruppo di ricerca) hanno meno probabilità degli altri di trovarsi in uno stato di disoccupazione. Possiamo considerare questo articolo il primo *step* di un progetto di ricerca più ampio, il cui obiettivo finale sarà quello di individuare i diversi gradi di impatto sul sistema di ricostruzione delle competenze definite grazie alle combinazioni tra *task* e settori. L'impatto della mobilità elettrica potrà tradursi in un aumento della domanda di occupazione esistente in contesti lavorativi in cui le attività e le relative competenze resteranno invariate. In altri casi, invece, la transizione comporterà un cambiamento importante dei requisiti dei lavoratori in termini di contenuto delle attività e delle relative competenze richieste per lo svolgimento della propria mansione. Non si esclude che alcune figure professionali possano subire un impatto più forte e correre un maggior rischio in termini di occupazione qualora non vi fossero adeguate strategie di riqualificazione. D'altro canto, con la richiesta di competenze nuove ed emergenti, le attività e le tecnologie verdi potranno generare nuova occupazione.

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SUMMARY

Electric mobility: an empirical analysis through atlas of work

The paper aims to analyse the transition to electric mobility in terms of job tasks and occupation groups involved. The Atlas of work, the model that describes the occupation in terms of activities and products/services available in carrying out activities, allows to individuate the principal characteristics of this transition. The results suggest that the Italian employees who could be involved in this transition towards electric mobility represent 4% of the Italian employees.

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VALUTAZIONE DELLA *PERFORMANCE* NELLA PUBBLICA AMMINISTRAZIONE[1]

Giorgia Marini, Maira Mele

1. Introduzione

Valutare la *performance* della Pubblica Amministrazione (PA) significa valutare la capacità della PA di erogare servizi pubblici adeguati alle esigenze della collettività. In particolare, la valutazione della *performance* fa riferimento sia all'attività svolta dalla PA che ai risultati da essa conseguiti in termini di servizi offerti che alle modalità con cui tali servizi vengono offerti, attraverso l'analisi dell'attività di pianificazione e programmazione degli obiettivi strategici stabiliti dalla PA e l'utilizzo di indicatori per la misurazione della *performance* e il monitoraggio dell'attività svolta dalla PA.

Tale valutazione prevede pertanto l'analisi del contributo apportato da ciascuna unità coinvolta, individuo, gruppo o organizzazione nell'erogazione dei servizi previsti, rispetto a diversi livelli di analisi, profili organizzativi e prospettive. In particolare, il livello di analisi macro riguarda la *performance* delle PPAA operanti in uno specifico settore di policy; il livello di analisi medio riguarda la *performance* della singola PA; il livello di analisi micro riguarda la *performance* delle singole attività.

Con riferimento al profilo organizzativo, la valutazione della *performance* attiene al risultato conseguito dall'intera istituzione con le sue diverse articolazioni nel raggiungimento di obiettivi finalizzati alla soddisfazione di bisogni collettivi; con riferimento al profilo individuale, la valutazione della *performance* attiene al contributo di ciascun soggetto operativo coinvolto nel perseguimento dello stesso prodotto finale. Infine, una valutazione secondo una prospettiva interna prevede un'analisi della *performance* nella sua estensione orizzontale in termini di input, di processo, di output e di outcome; mentre una valutazione secondo una prospettiva esterna un'analisi della *performance* nella sua estensione verticale dal livello individuale, organizzativo, di programma, alla rendicontazione del relativo operato in termini di *accountability*, trasparenza e informazione.

Obiettivo del presente lavoro vuole essere quello di rivedere alcuni passi salienti del ciclo della *performance* nella PA, attraverso la descrizione degli enti e dei

[1] Giorgia Marini e Maira Mele hanno contribuito in uguale misura alla stesura del lavoro.

soggetti coinvolti nel processo e degli strumenti utilizzati nel processo di valutazione e misurazione della *performance*, evidenziando punti di forza e di debolezza del ciclo, al fine di offrire una valutazione critica delle procedure di valutazione della PA.

2. Il ciclo della *performance*

Il D. Lgs. 150/2009, modificato dal D. Lgs. 74/2017, ha formalizzato, da un punto di vista legislativo, la valutazione della *performance* della PA.

Tale decreto prevede l'adozione da parte della PA di strumenti di misurazione e valutazione della *performance* organizzativa ed individuale, aventi la finalità di garantire il raggiungimento di eccellenti *standard* qualitativi ed economici del servizio offerto.

I principi ispiratori della valutazione della *performance* sono contenuti nell'art. 3 del D. Lgs. 150/2009 e riguardano gli *stakeholder*, il merito e le pari opportunità.

I criteri di definizione dei metodi e degli strumenti volti alla misurazione, alla valutazione e alla premiazione della *performance* individuale ed organizzativa, devono tener conto dell'assolvimento degli interessi dei destinatari dei servizi, il cui giudizio rappresenta un idoneo punto di partenza per eventuali modifiche e nuove formulazioni delle scelte strategiche aziendali. La valorizzazione del merito individuale o complessivo rappresenta lo strumento attraverso il quale incentivare ciascun operatore a migliorare la qualità del contributo fornito alla realizzazione del prodotto finale. La garanzia delle pari opportunità di diritti e doveri della collettività evidenzia il senso di responsabilità che il dipendente ha nei confronti dei destinatari dei servizi e di cui potrà dare manifestazione attraverso la garanzia della massima trasparenza dei risultati conseguiti.

Le fasi caratterizzanti il ciclo di gestione della *performance* vengono delineate nell'art. 4 del D. Lgs. 150/2009, coerentemente ai contenuti e al ciclo della programmazione finanziaria e del bilancio: a) definizione e assegnazione degli obiettivi che si intendono raggiungere, dei valori attesi di risultato e dei rispettivi indicatori; b) collegamento tra gli obiettivi e l'allocazione delle risorse; c) monitoraggio in corso di esecuzione e attivazione di eventuali interventi correttivi; d) misurazione e valutazione della *performance*, organizzativa e individuale; e) utilizzo dei sistemi premianti attraverso i criteri di valorizzazione del merito; f) rendicontazione dei risultati agli organi di indirizzo politico-amministrativo, ai vertici delle amministrazioni nonché ai competenti organi esterni, ai cittadini, ai soggetti interessati, agli utenti e ai destinatari dei servizi.

Queste sei fasi possono essere raggruppate in tre macro-attività (D'Adamo et al., 2019): 1) programmazione, in cui si inserisce la definizione degli obiettivi e delle risorse; 2) misurazione, in cui si inserisce la valutazione dei risultati sulla base degli indicatori determinati; 3) *reporting* e valutazione, quale resoconto e interpretazione

degli scostamenti, base delle future azioni correttive per la definizione di ulteriori obiettivi e risorse da inserire nella stessa *performance* di riferimento oppure in una nuova *performance*, facendo procedere così da capo il ciclo.

2.1. La fase della programmazione

La fase della programmazione è la fase più delicata del ciclo di gestione della *performance*, in quanto risultato di un'analisi complessa, volta a definire obiettivi che siano, ai sensi dell'art. 5, comma 2, del D. Lgs. 150/2009, rilevanti e pertinenti rispetto ai bisogni collettivi; specifici e misurabili in termini concrete; tali da determinare un miglioramento della qualità dei servizi erogati.

Gli obiettivi vengono differenziati, ai sensi dell'art. 5, comma 1, del D. Lgs. 150/2009, in generali e specifici. I primi rappresentano le priorità strategiche nel periodo triennale di riferimento tenuto conto dell'ambito di operazione; i secondi invece vengono individuati nel Piano della *Performance*, coerentemente con gli obiettivi generali, prima dell'inizio dell'esercizio, dagli organi di indirizzo politico-amministrativo in relazione alla direttiva annuale del Ministro.

Gli obiettivi, in ambito amministrativo, si inseriscono in un processo di declinazione che prende il nome di "*cascading*" (o a cascata), sia in termini temporali (dagli obiettivi strategici di lungo periodo agli obiettivi operativi di breve periodo), sia in termini gerarchici (dai livelli organizzativi più alti alle singole unità operanti), garantendo così una relazione causale tra gli obiettivi stessi.

Generalmente vengono considerati nella loro relazione gerarchica: obiettivo strategico, obiettivo di programma o di progetto, obiettivo gestionale e obiettivo di dettaglio. Per ogni obiettivo strategico ci sarà un obiettivo di programma o di progetto; per ciascuno di questi ultimi, un obiettivo gestionale e infine per ciascuno di quest'ultimo, un obiettivo di dettaglio.

Nella fase della programmazione, è inoltre necessario calibrare attentamente le competenze dei singoli individui operanti rispetto agli obiettivi da perseguire, tenendo conto delle risorse assegnate ai livelli organizzativi, ai gruppi e ai singoli individui.

Nella fase della programmazione si procede infine all'elaborazione degli indicatori, utilizzati nella successiva fase di misurazione. Tali indicatori sono generalmente classificati in: indicatori preventivi, se definiti appunto in sede di programmazione della gestione dando espressione a quelli che sono gli obiettivi di traguardo; consuntivi, se elaborati in sede di controllo della gestione ad esprimere i risultati conseguiti. Da questi ultimi si distinguono gli indicatori di realizzazione, identificanti il grado di raggiungimento o mancato raggiungimento degli obiettivi traguardati. Possono inoltre essere qualificati in riferimento all'oggetto, ovvero in relazione ai singoli elementi costitutivi del ciclo della *performance*, oppure in relazione al grado di dettaglio delle informazioni contenute si distinguono in

indicatori analitici e sintetici; in riferimento alle grandezze considerate si distinguono in qualitativi, quantitativi, temporali.

Alla fase della programmazione seguono le fasi di misurazione e valutazione.

2.2. Il sistema di misurazione e valutazione della performance

Il sistema di misurazione e valutazione della *performance* consta di un insieme di tecniche, risorse e processi non è quello di dare vita ad un giudizio definitivo fine a sé stesso sull'operato della PA, ma è quello di trarre dati utili a delineare il grado di efficienza, efficacia e in generale il livello qualitativo della *performance* pubblica, affinché la stessa PA possa rendersi conto delle attività svolte e delle misure necessarie da adottare al fine di poter migliorare le proprie prestazioni (La Spina, 2020).

Ai sensi dell'art. 7 del D. Lgs. 150/2009, le PA valutano annualmente la *performance* tanto organizzativa che individuale adottando un proprio sistema di misurazione e valutazione. La funzione di misurazione e valutazione viene svolta dagli Organismi Indipendenti di Valutazione (OIV), cui compete la valutazione della *performance* organizzativa e la proposta di valutazione annuale dei dirigenti di vertice.

2.3. Misurazione e valutazione della performance organizzativa

Per *performance* organizzativa si intende la valutazione dei risultati attesi dalle attività dell'amministrazione, sia in termini di servizi gestiti direttamente dalle varie unità operative interne, che indirettamente tramite l'operato di altri organismi come gli istituti scolastici o gli istituti ospedalieri, sia in relazione alle funzioni di regolazione o di trasferimento di risorse a enti per il perseguimento di interessi pubblici (D'Adamo et al., 2019, capitolo 3, par. 3.4.1).

La valutazione della *performance* organizzativa permette di trasformare le priorità strategiche programmate in obiettivi generali e specifici, definiti nel Piano della *performance*, unitamente alle risorse e agli indicatori funzionali alla misurazione e valutazione della *performance* dell'amministrazione e del personale dirigenziale (Portale della Performance, 2022).

L'art. 8 del D. Lgs. 150 del 2009 definisce appositamente la struttura della *performance* organizzativa, ovvero gli ambiti in cui si deve orientare la valutazione, in una sorta di gerarchia: dal "fine ultimo" quale attuazione delle politiche e conseguimento degli obiettivi legati alle necessità collettive, a tutti i mezzi e tappe intermedie per il suo conseguimento, tra cui l'attuazione dei piani e dei programmi in cui si articola l'elaborazione della politica.

La misurazione e valutazione della *performance* organizzativa riguarda l'adozione di modelli multidimensionali di misurazione e di strumenti di rappresentazione (per esempio, le mappe strategiche) per la gestione dell'istituzione;

la definizione di indicatori per verificare il raggiungimento di obiettivi, per valutare gli *output* ottenuti in relazione agli *input* impiegati e per analizzare i risultati raggiunti in relazione ai *target* definiti; l'adozione di indicatori di misurazione dell'*outcome*; la misurazione della *customer satisfaction* delle attività e dei servizi rivolti tanto agli utenti singoli che collettivi (associazioni e imprese); l'adozione di sistemi informativi e supporti informatici; il monitoraggio delle fasi intermedie del ciclo, funzionale al sistema dei controlli interni; la rendicontazione interna (tra organi di indirizzo politico e dirigenti e tra questi ultimi e i singoli dipendenti) ed esterna (tra istituzione e *stakeholder*).

2.4. Misurazione e valutazione della performance individuale

La misurazione e la valutazione della *performance* individuale di dirigenti e personale responsabile di un'unità organizzativa è legata agli indicatori di *performance* dell'ambito organizzativo di diretta responsabilità. In particolare, i macro-fattori che concorrono alla misurazione della *performance* individuale sono riferiti ai risultati dell'ambito organizzativo/unità/settore di diretta responsabilità, ai risultati ottenuti rispetto a specifici obiettivi individuali assegnati preventivamente, alla qualità del contributo fornito alla *performance* organizzativa e alla capacità di valutazione dei propri collaboratori attraverso il canone della differenziazione dei giudizi (D'Adamo, 2019, capitolo 3, par.3.4.2).

La valutazione della *performance* individuale riguarda in particolare: l'assegnazione da parte del valutatore degli obiettivi, a tutto il personale, entro 30 giorni dall'approvazione del Piano della *performance*; il monitoraggio dell'attività del personale, attraverso un programma di interventi volti ad accompagnare il processo di controllo, tenendo conto della dimensione dell'ente, degli obiettivi assegnati e delle finalità dell'organizzazione, e attraverso una raccolta dati utili alla valutazione; l'analisi dei dati raccolti, attraverso l'assegnazione di punteggio e la valutazione in merito ai singoli obiettivi; la comunicazione dei risultati conseguiti relativi al punteggio assegnato attraverso colloqui individuali volti a chiarire la modalità con cui è stata svolta l'attività assegnata, ad individuare gli eventuali scostamenti e a programmare interventi per rendere più efficiente il servizio o la prestazione; la conciliazione, strumento di valutazione *ex post* cui il singolo operatore potrà ricorrere laddove non ritenga corretta la valutazione del proprio operato da parte del valutatore.

3. I protagonisti del processo di misurazione e valutazione della *performance*

Dall'analisi del D. Lgs. 150/2009 è possibile individuare una pluralità di organi e soggetti coinvolti nelle varie fasi del sistema di misurazione e valutazione della *performance*, con responsabilità e ruoli diversi (D'Adamo, 2019, capitolo 3, par.3.4.7).

Primo tra tutti l'Autorità Nazionale Anticorruzione (ANAC). L'ANAC, ex Commissione per la valutazione, la trasparenza e l'integrità delle amministrazioni pubbliche (CiVIT), istituita con Legge 114/2014, opera nella piena autonomia e indipendenza nel coordinare l'attività di trasparenza e di prevenzione della corruzione, con l'obiettivo di eliminare, o quantomeno ridurre, il verificarsi di condotte illecite.

Al fianco dell'ANAC, opera il Dipartimento della Funzione Pubblica (DFP), titolare della competenza dedicata alla promozione e al coordinamento delle attività di valutazione e misurazione della *performance* delle PPAA e all'indirizzo delle attività svolte dagli OIV. In origine, l'attività di verifica dell'andamento della *performance* rispetto agli obiettivi predeterminati era attribuita agli organi di indirizzo e dell'alta direzione, ma l'art. 6 del D. Lgs. 150/2009 ha devoluto tale competenza agli OIV in un'ottica di indipendenza del sistema di valutazione della *performance*. Gli OIV sono disciplinati dall'art.14 del D. Lgs. 150/2009.

L'OIV, nominato dal DFP per un periodo triennale tra gli iscritti all'elenco nazionale degli organismi indipendenti di valutazione, adempie le proprie funzioni elaborando una relazione annuale di valutazione conclusiva e formulando proposte e raccomandazioni ai vertici amministrativi. La relazione, in particolare, deve essere redatta entro il 30 aprile di ogni anno con riferimento al precedente esercizio e, oltre a dover essere trasmessa all'organo politico, deve anche essere pubblicata sul portale Amministrazione trasparente. Su tale portale viene pubblicata anche la Relazione sulla *performance*, quale momento finale del processo di misurazione e allo stesso tempo presupposto della valutazione in quanto contenente la descrizione del livello di conseguimento degli obiettivi raggiunti secondo gli indicatori individuati nella fase di programmazione, poi sottoposta a validazione, di competenza dello stesso OIV. All'OIV spetta inoltre la proposta della valutazione annuale della dirigenza, sostituendo i servizi di controllo interno denominati nuclei di valutazione (disciplinati nel D. Lgs. 286/1999), e la responsabilità sul controllo della corretta applicazione delle linee guida pubblicate dal DFP. L'OIV è coinvolto anche nella prevenzione della corruzione e nella trasparenza in coordinamento con l'ANAC e con il Responsabile della Prevenzione della Corruzione e della Trasparenza (RPCT), nel verificare l'ottemperanza agli obblighi di pubblicazione previsti nel D. Lgs. 33/2013. In tal senso, l'OIV esprime parere obbligatorio sul codice di comportamento che ogni amministrazione è chiamata a predisporre ed adottare ai sensi dell'art. 54 del D. Lgs. 165/2001.

Da supporto all'OIV, funge la Struttura Tecnica Permanente (STP), quale interfaccia tecnica, tra OIV e Dirigenza, nel sistema di misurazione e valutazione della *performance* e nell'interazione con le varie unità organizzative.

Infine, per quanto riguarda il tema della partecipazione, l'art. 19 bis del D. Lgs. 150/2009 richiama l'importanza della collaborazione attiva dei cittadini nel processo

di misurazione della *performance*, la quale può avvenire sia tramite comunicazioni dirette degli utenti esterni e interni agli OIV, sia tramite i sistemi di rilevazione del grado di soddisfazione che ogni amministrazione deve adottare nel voler garantire la massima trasparenza e coinvolgimento dei destinatari delle prestazioni fornite, secondo le modalità indicate dallo stesso OIV. Gli OIV qui rivestono un ruolo fondamentale: verificare l'effettivo rispetto del principio di partecipazione e della relativa attuazione, nonché valutare l'adeguatezza della relazione instaurata con l'esterno e la conseguente divulgazione dei dati. Lo scopo degli OIV è infatti quello di fornire aiuto e sostegno nel caso in cui l'attesa posta in capo all'utenza non venga concretamente realizzata, suggerendo le misure da adottare per sopperire a tale insoddisfazione. Ai fini di un'autentica partecipazione, gli OIV si occupano della definizione delle modalità attraverso le quali gli utenti esterni possono presentare le dovute segnalazioni. Preferibilmente trasmesse in via telematica, gli OIV dovranno individuare e pubblicare il nome e i contatti dell'ufficio competente a ricevere le segnalazioni, il relativo indirizzo di posta elettronica e provvedere all'elaborazione di un format di segnalazioni che ne identifichi la natura, l'oggetto, la struttura organizzativa interessata, la descrizione del singolo episodio e la relativa valutazione.

4. Gli strumenti del processo di misurazione e valutazione della *performance*

L'art. 10 del D. Lgs. 150/2009 identifica la necessità di disporre e di pubblicare sul sito istituzionale e sul Portale *Performance*, entro il 31 gennaio di ogni anno, il Piano della *Performance* e la Relazione sulla *Performance* (D'Adamo, 2019, approfondimento 9 e 12).

Il Piano, rappresentazione formale della fase di programmazione, è lo strumento che dà avvio al ciclo della *performance* in quanto identifica gli elementi fondamentali su cui si baserà il processo di misurazione, valutazione e rendicontazione della *performance*. Nello specifico, si tratta di un documento programmatico triennale che identifica gli obiettivi strategici ed operativi dell'amministrazione, gli indirizzi, le risorse finanziarie, strumentali e umane, gli indicatori e i target per la misurazione e la valutazione della *performance*, oltre che i singoli obiettivi assegnati al personale dirigenziale.

Funzionale alla redazione del Piano è il cosiddetto "albero della *performance*", uno strumento di comunicazione esterna che consente di mettere a sistema i due profili principali della *performance*, quello della *performance* organizzativa e quello della *performance* individuale, nell'elaborazione di una mappa logica che individua i legami tra mandato istituzionale, missione, aree strategiche, obiettivi strategici e piani d'azione, fornendo una rappresentazione integrata della *performance* amministrativa complessiva.

All'interno del Piano è possibile individuare, oltre alla sezione dedicata alla pianificazione triennale in cui si individuano gli obiettivi strategici che la PA intende perseguire, altre tre sezioni relative a: (I) presentazione dell'amministrazione, che descrive in maniera sintetica l'amministrazione, le funzioni svolge e le modalità operative; (II) risultati attesi e unità operative coinvolte; (III) programmazione annuale, che individua gli obiettivi operativi e i traguardi intermedi necessari a raggiungere quelli disposti sull'arco triennale; (IV) descrizione del legame tra *performance* organizzativa e individuale, in particolare, coerenza tra obiettivi individuali e programmazione annuale (Presidenza del Consiglio dei Ministri, 2017).

La redazione del Piano della *Performance* ha lo scopo di assicurare la qualità del sistema di definizione degli obiettivi e la comprensibilità e attendibilità della rappresentazione della *performance,* garantita solo se verificabile ex post la correttezza del processo di pianificazione di principi, fasi, tempi e soggetti, con i relativi risultati, obiettivi, indicatori e target (ANAC, Delibera n. 112/2010).

Oltre al Piano della *Performance*, l'art. 10 del D. Lgs. 150/2009, comma 1 prevede la redazione di una Relazione annuale sulla *Performance*, con l'obiettivo di indicare, a consuntivo, i risultati organizzativi e individuali raggiunti, rispetto a quelli programmati, e gli eventuali scostamenti, in riferimento all'anno precedente. Si tratta di un documento snello e chiaro in cui l'OIV esprime in modo sintetico evidenze e criticità in merito alla *performance* organizzativa e al processo di attuazione del ciclo della *performance* (ANAC, Delibera n. 23/2013).

Tale relazione viene approvata dall'organo di indirizzo politico-amministrativo e validata dall'OIV entro il 30 giugno di ogni anno.

Il Piano della *Performance* e la Relazione sulla *Performance* sono quindi i documenti formali di rappresentazione, a preventivo e consuntivo, del ciclo della gestione della *performance*.

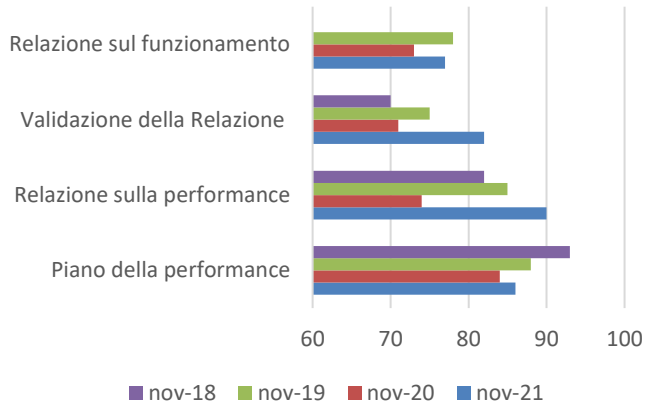
Senza la redazione di questi documenti di governo dell'amministrazione, non potranno essere erogati i trattamenti e le premialità previsti (incentivi economici e di carriera), ai fini della valorizzazione dei dipendenti che danno vita alle migliori *performance* tenuto conto dei risultati ottenuti dalla misurazione della *performance* organizzativa. A tal proposito, ai sensi dell'art. 20 del D. Lgs. 97/2016, correttivo della Legge 190/2012 e del D. Lgs. 33/2013, le PPAA sono chiamate a pubblicare nella sezione "*Performance*", sottosezione "Ammontare complessivo dei premi", tutti i dati riguardanti l'ammontare dei premi stanziati legati alla *performance* e quelli effettivamente distribuiti, al fine di dare seguito al processo di valutazione del personale e soprattutto di attuare il principio della diversificazione dei trattamenti previsto nel D. Lgs. 150/2009.

5. Considerazioni finali

In base agli ultimi dati pubblicati nel rapporto periodico di monitoraggio aggiornati a novembre 2021 (Portale della performance, 2022), l'85% delle PPAA che rientrano nel perimetro considerato dal Portale della Performance ha presentato il Piano della *performance*, il 75% la Relazione sulla *performance*, il 67% la Validazione della Relazione e il 70% la Relazione sul funzionamento. A fronte di queste percentuali piuttosto elevate, si registrano tuttavia ritardi nella pubblicazione dei suddetti documenti. Solo il 27% delle PPAA ha pubblicato il Piano della *performance* entro la scadenza, mentre si registrano ritardi più consistenti nella presentazione degli altri documenti: 51% delle PPAA hanno pubblicato in ritardo la Relazione sulla *performance*, il 60% la Validazione della Relazione e il 64% la Relazione sul funzionamento. Inoltre, sebbene in linea teorica la mancata adozione del Piano della performance da parte di un'amministrazione comporti la non erogazione delle prestazioni salariali di risultato ai dirigenti individuati come responsabili e sebbene l'amministrazione che non presenti il Piano non possa né procedere a nuove assunzioni né conferire incarichi di consulenza a qualunque titolo, ancora si registrano percentuali piuttosto importanti di amministrazioni che non pubblicano il Piano della *performance* (11%), la Relazione sulla *performance* (23%), la Validazione della Relazione (33%) e la Relazione sul funzionamento (29%).

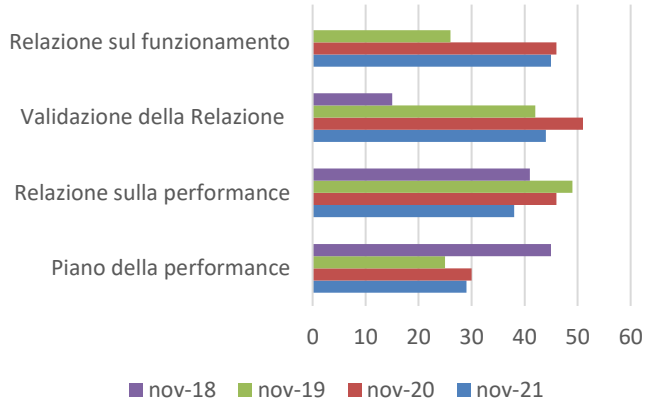
Le figure 1-3 mettono a confronto negli anni 2018-2021 le percentuali di documenti pubblicati, le percentuali di amministrazioni che hanno pubblicato entro la scadenza e quelle che non hanno pubblicato i suddetti documenti per tipologia di documento.

Figura 1 – *Percentuale di documenti pubblicati dalle PA. Anni 2018-2021.*



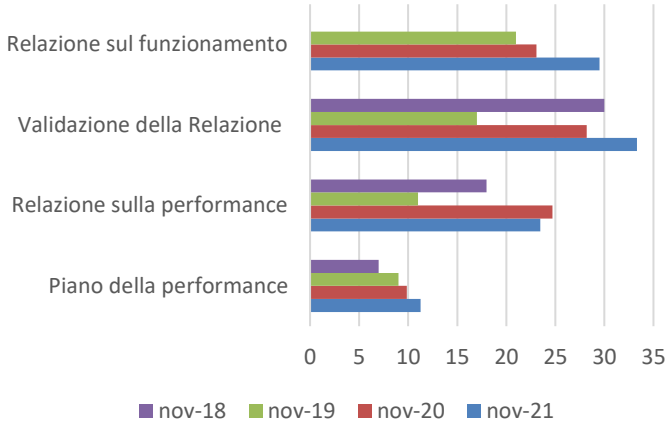
Nota: nostre elaborazioni su dati della PCM-DFP, Ufficio per la valutazione della performance.

Figura 2 – *Percentuale di PA che pubblicano entro la scadenza. Anni 2018*-2021.



Nota: nostre elaborazioni su dati della PCM-DFP, Ufficio per la valutazione della performance.

Figura 3 – *Percentuale di PA che non pubblicano entro la scadenza. Anni 2018-2021*.



Nota: nostre elaborazioni su dati della PCM-DFP, Ufficio per la valutazione della performance.

Tante e diverse possono essere le ragioni di questi ritardi. A nostro avviso, quelle più significative, rilevate con un lavoro sul campo realizzato da SDA Bocconi School of Management attraverso una serie di domande poste ai partecipanti (una cinquantina di *manager* pubblici) di alcune iniziative di formazione (Executive Master in Management delle Amministrazioni Pubbliche-EMMAP e corso di perfezionamento per i *manager* delle Aziende Casa-Casamanager), riguardano la convinzione che la misurazione della performance abbia un ruolo limitato

nell'informare il *management* per il 15% dei *manager* pubblici, così come la funzione di *accountability* esterna (6,4%) e quella di revisione delle politiche aziendali (2,1%) (Giacomelli et al., 2021). Finché la misurazione e valutazione della *performance* nel settore pubblico vengono percepite come strumenti per la determinazione della premialità (79%) e finché gli strumenti per la misurazione e valutazione della *performance* vengono descritti come formali e complicati, la misurazione e valutazione della *performance* vengono *de facto* svuotate del loro significato e della loro utilità e rimangono meri strumenti teorici fini a sé stessi. Una soluzione potrebbe essere tornare alla domanda originale che ha dato origine alla valutazione e misurazione della performance nella PA («perché» misurare la performance) e solo in un secondo momento concentrarsi su «che cosa» misurare e «come» farlo.

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SUMMARY

Performance evaluation in the Public Administration

The aim of the paper is to review some important steps of the performance cycle in the PA, through the description of the bodies and subjects involved in the process and the tools used in the performance evaluation and measurement process, highlighting strengths and weaknesses of the cycle, in order to offer a critical evaluation of the PA evaluation procedures.

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