

# **Integrating Survey and Administrative Data on Local Social Protection**

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Welfare systems can be observed according to two different perspectives. The first deals with the supply of social protection, i.e. with the funding and provision of social benefits and the production of social services and goods. The second focuses on the demand of social protection and particularly on the characteristics of people benefiting from social protection or requesting for it.

Typically, data on the supply of social benefits have an administrative nature (registers and budgets data) whereas data on beneficiaries derive from sample surveys. In theory, administrative data, being census data, can be detailed by territory. On the contrary, sample surveys are usually planned to provide accurate estimates at the national level or for large sub-national areas. This chapter provides an example on the use of different data sets for Old age and Family/children functions at the province level (LAU 1 in the EU nomenclature). Data on the supply of benefits derive from the SISSIM (Istat Survey on Interventions and Social Services of Individual and associated Municipalities) and from municipal budgets. Data on the demand of social protection come from EU-SILC (European Union - Statistics on Income and Living Conditions), a survey that is annually conducted by Istat in a comparable European framework. Earned benefits are estimated applying small area estimation methods, given that the sample size of the EU-SILC survey at the province level is small, so the traditional design-based estimators usually are unreliable.

Results are analysed to understand whether administrative and sample survey data can be used to compose a coherent picture of social protection delivered at the provincial level.

## 1 Introduction

Monitoring the evolution of local welfare systems implies considering several aspects of social protection. The literature on the identification and clustering of welfare regimes has suggested a number of features to focus on (Titmuss, 1974; Esping-Andersen, 1990; Ferrera et al., 2012), such as the kind of risks and needs covered, or the way to access benefits. For the sake of simplicity, it may be useful to consider separately the characteristics of the system relating to the supply of social services and those concerning the demand of social protection coming from the population. The first category essentially focuses on the financing and delivery of social protection services, thus taking into account the amount of resources devoted to social protection and its distribution among the risks and needs covered, the kind of producers involved (public, private or non-profit) or the type of economic transactions involved (monetary transfer, direct provision of goods and services or tax breaks). On the demand side, the focus is on the quota and kind of population covered (met demand), and also on the population not covered by social protection even if eligible (un-met demand). Data on the characteristics of the beneficiaries (individuals and households thereof) are essential to understand which groups of population mostly benefit from social protection and which, conversely, are excluded.

Official statistics on the supply of social benefits have essentially an administrative nature (registers and budgets data) whereas data on beneficiaries mainly derive from sample surveys. The use of these pieces of information would represent an essential instrument to address local government policies.

This Chapter tries to integrate information from administrative data sources and sample surveys at the local level for two functions, namely Family/children and Old-age.

This Chapter is structured in different sections. Section 2 focuses on the Family/children and Old-age functions with the aim of clarifying the kinds of social protection actually covered by the two categories and shows data availability for Italy at the local level. Section 3 uses statistics from different data sources to depict the distribution of Family/children allowances and Old-age benefits from the perspective of offer and demand at the province level in Italy. Section 4 contains some final remarks.

## **2 Social protection data for old-age and family/children, at the province level: data availability for Italy**

Family/children and Old age represent two of the eight risks/needs covered by social protection, according to the European System of Integrated Social Protection Statistics (ESSPROS) (Eurostat, 2011).

The Family/children function supports the costs of pregnancy, child-birth and adoption, child rising and caring for other family members. Benefits can be in cash or in kind. Among the former, we find birth grants, income maintenance benefits in the event of childbirth or adoption, benefits paid to either mother or father in case of work interruption or working time reduction, periodical payments to a household member to help with the costs for child rising (family or child allowance) and other benefits paid to help households meet specific costs, such as those arising from the specific needs of lone parent families or of families with disabled children. The latter includes room and board provided to pre-school children during the day or part of the day, room and board provided to children and families on a permanent basis like in foster families, goods and services provided at home to children and/or to those who care for them, and other goods and services provided to families, young people or children, including reductions in prices, tariffs and fares.

The Old age function covers the social protection provision against the risks linked to old age such as loss of income, lack of independence in carrying out daily tasks, reduced participation in social life, and so on. Medical care for the elderly is not taken into account, as all health care expenditure is reported under the Sickness/health care function. Cash benefits include old age pensions and care allowances, i.e. benefits paid to elderly people who need frequent or constant assistance. Benefits in kind consist mainly of lodging provisions and sometimes board for retired people either in specialised institutions (homes for the aged) or in families. Furthermore, they include practical help provided to the elderly to assist them with daily tasks. Home help is included in this category, as well as the payment of an allowance to the person who looks after an elderly person.

Benefits may be provided by institutions which operate at the national (such as the central government or social security funds) or at the local level (such as the local governments). Thus, disparities among territories can be due both to local and national welfare policies. For example, given that old age benefits mostly consist of pensions, their distribution across territories depends on national welfare policies more than on local welfare policies; other factors can help explain such territorial disparities as well,

as for the different economic development of geographical areas. The same applies to family allowances when dealing with the Family/children function.

### **2.1 Available statistics from administrative data sources and censuses**

In Italy, statistics from censuses and administrative registers provide useful information on the supply of social protection services (see Chapter 3). The ISTAT Industry and Services Census collects data on the number and kind of local productive units and the workers thereof (public, private and non-profit), for each Italian municipality (LAU 2, previous NUTS 5, (Eurostat, 2013b)).

We detect three categories connected to the Old-age function, according to the ATECO classification (Istat, 2009): categories 87.10.00 and 87.30.00 identify services supplied in nursing homes for the elderly and disabled persons, whereas category 88.10.00 covers social assistance provided outside nursing homes. For what concerns the Family/children function, we detect category 87.90.00, which identifies residential institutions providing assistance to minors and lone mothers with children and category 88.91.00 which includes nursery schools and daily care services institutions for disabled minors. Based on the census data, in theory it would be possible to highlight the different concentration of such activities in territories, also by spotlighting on the mix of public, private and non-profit production units. However, accessible data are not detailed enough to permit such kind of analyses. Furthermore, data are not timely and the latest refers to 2011.

The SISSM is a census survey based on municipal budgets (see chapter 3). The survey gives information on municipal expenditure aimed at supporting seven kinds of risks/needs: families and minors, disabled persons, people suffering from addiction, elderly, migrants and gypsies, poor and homeless people. In particular, SISSM allows to highlight the amount of expenditure per beneficiary, as well as the share of expenditure charging beneficiaries.

Furthermore, the SISSM collects very detailed data on nursery school activities, which have been recently made accessible to users. Indeed, for each municipality, it is possible to know the number of nursery schools and beneficiaries, the level of expenditure and the share paid by beneficiaries, separately depending on the kind of service delivered (traditional nursery schools or other kinds of pre-school services) and

on the kind of management (if managed by the municipality itself or entrusted to other subjects). The latest accessible statistics pertain to the year 2012.

Local government budgets represent another relevant data source on the funding of social protection at the local level. Until now, their use has been somewhat limited by the lack of harmonization among budget frameworks. However, as of 2015, local governments have been undergoing a harmonization process which will lead to the adoption of a common budget framework within 2017 (Law n. 196/2009). This framework requires the classification of budget items according to standardized classifications, so to permit sound comparisons within the Italian territory but also with respect to other countries. For example, expenditures are classified according to the COFOG classification (Eurostat, 2011b), a classification shared at the international level and used to analyse general government expenditures by purpose.

ISTAT also disseminates statistics on the territorial distribution (by provinces) of pensions (amount and kind) as well as of beneficiaries (Istat, 2016). Statistics derive from social security registers and cover a variety of pensions, not only retirement pensions. For example, this category also includes invalidity pensions, which are not part of the ESSPROS Old age function.

Finally, it is worth stressing the potentiality of the Equivalent Economic Situation Indicator (EESI) database for deriving indicators on individuals/families requesting social protection. EESI was introduced in Italy in 1998 to measure the family economic condition of citizens requesting mean-test welfare programmes. In fact, Italian citizens who want to access mean-tested welfare programmes are required to submit a formal declaration, containing all the data necessary to compute the indicator, namely, data on individually earned income and wealth. Such data are collected in a database known as the EESI database. With respect to tax register data, EESI data allow to measure both individual and household economic conditions. Moreover, they permit to focus on populations which are scarcely covered by sample surveys, like lone parents with children or families with more than two children. Finally, the EESI database can provide information at the finer geographical level.

## **2.2 Available statistics from sample surveys**

Nowadays, the EU-SILC is the major sampled-based source of information on income and living conditions for households living in the EU countries.

It allows to compare many monetary and non-monetary poverty indicators, as well as other living condition indicators in a spatial and also longitudinal framework. Due to the dimension of the sample size, the most detailed geographical level at which the EU-SILC allows the computation of reliable indicators in Italy (i.e. indicators with an acceptable variability) is the NUTS 2 level. In Italy this level corresponds to regions. If one is interested in computing indicators at a more detailed geographical level (or for other unplanned subdomains for the EU-SILC sample), then a possible solution is to resort to Small Area Estimation (SAE) techniques. Chapter 4 of this book presents an application where SAE methods are used to compute monetary poverty indicators at the provincial level in Italy.

The primary target variable coming from the EU-SILC that can be used to estimate monetary poverty indicators is the household equivalised income. This variable is computed by adding up all the individual sources of income for the members of the same households; other sources of income available at the household level are also taken into account. Moreover, social benefits are also included in the computation of income variables. It is important to underscore that the social benefits included in EU-SILC, with the exception of housing benefits, are restricted to cash benefits (Eurostat, 2013c). Thus, although in a partial way, the EU-SILC represents a source of information on the demand of social protection from households.

In the EU-SILC, social benefits are defined as current transfers received during the income reference period by households and are meant to relieve them from the financial burden of a number of risk or needs. These transfers are carried out through collectively organised schemes, or outside such schemes, by government units and NPISHs (Non-Profit Institutions Serving Households). The value of any social contribution and income tax payable on benefits by the beneficiary to social insurance schemes or to tax authorities is also included. According to the ESSPROS classification, in order to be included as a social benefit, a transfer must meet one of two criteria (Eurostat, 2013c): coverage is compulsory for the group in question (under law, regulation or a collective bargaining agreement); it is based on the principle of social solidarity (i.e. if it is an insurance-based pension, the premium and entitlements are not proportional to the individual risk exposure of the people protected). Although the EU-SILC survey uses the ESSPROS classification of social benefits, there are some differences. For example, the EU-SILC definition of social benefits also includes the education function, which is not included in the ESSPROS. The ESSPROS definition covers both current and capital

transfers (whereas the EU-SILC definition covers current transfers only), and it also covers certain reductions on taxes (where they meet the general criteria for social protection schemes and certain other criteria). Finally, as already underlined, the EU-SILC definition only covers cash benefits (with the exceptions of housing).

In more detail, the social benefits collected at the household level in the EU-SILC are Family/children related allowances, Housing allowances and Social exclusion not elsewhere classified. The Family/children allowances include allowances which aim at providing financial support to households for bringing up children and providing financial assistance to people who support relatives other than children. These allowances include: income maintenance benefits in the event of childbirth; birth grants; parental leave benefits; family or child allowances (i.e. periodical payments to a member of a household with dependent children to help with the costs of raising children); alimonies or supports paid by the government (central or local) in the event that the spouse does not pay alimony/child support; other cash benefits paid independently from family allowances to support households and help them meet specific costs (e.g. costs arising from the specific needs of lone parent families or families with handicapped children). Additional payments made by employers to an employee to supplement maternity leave or in lieu of wages and salaries are not included in the computation of Family/children allowances.

The social benefits collected at the individual level in the EU-SILC are: unemployment benefits, old-age benefits, survivor benefits, sickness benefits, disability benefits, education related allowances. As concerns the Old-age benefits, they refer to the provision of social protection against the risk linked to old age (e.g. loss of income, inadequate income, lack of independence in carrying out daily tasks, reduced participation in social life). These benefits include old age pensions, anticipated old age pensions, partial retirement pensions, care allowances (paid to elderly people who need frequent or constant assistance), disability cash benefits paid after the standard retirement age, lump-sum payments at the normal retirement date and other cash benefits paid upon retirement or on account of old age (e.g. capital sums paid to people who do not fully meet the requirements for a periodic retirement pension).

Using the EU-SILC, we can estimate the proportion of individuals or households receiving each kind of allowances.

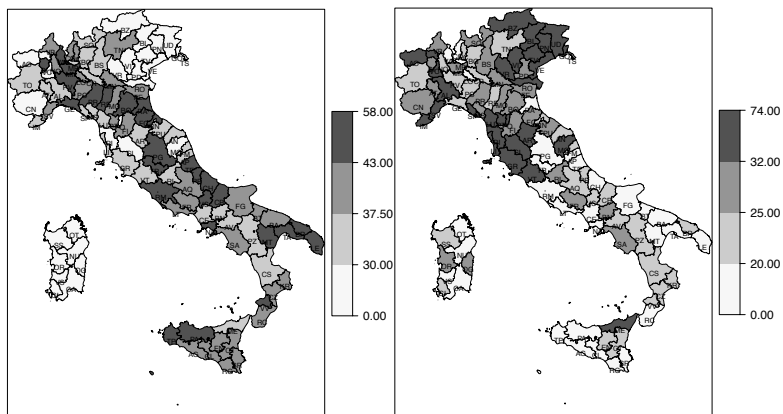


Figure 1: Shares of municipal expenditure for Family/children (left) and for the elderly (right)- year 2012.

### 3 Integrating administrative and surveys data on social protection at the province level

This section presents some empirical analyses based on the data sources described in the previous section. In particular, we use data from different data sources to analyse the territorial distribution of Family/children and Old-age benefits.

#### 3.1 Statistics from administrative data sources

Administrative data sources supply information on both national and local services. In this section we analyse the territorial disparities of local services, using data from the SISSM and from municipal budget data aggregated at the province level (section 2.1). Figure 1 shows the percentages of municipal expenditure devoted to Family/children (left) and Old-age (right) functions respectively, as they result from the SISSM. Municipalities of most provinces of Emilia Romagna, Umbria, Abruzzo and Puglia devote a large share (from 43% to 58%) of social protection expenditure to the Family/children function, whereas municipalities of Tuscany and Veneto seem to favour politics for the elderly.

Using municipal budgets data, the analysis can be extended by computing the share of social expenditure in favour of kindergartens, childhood



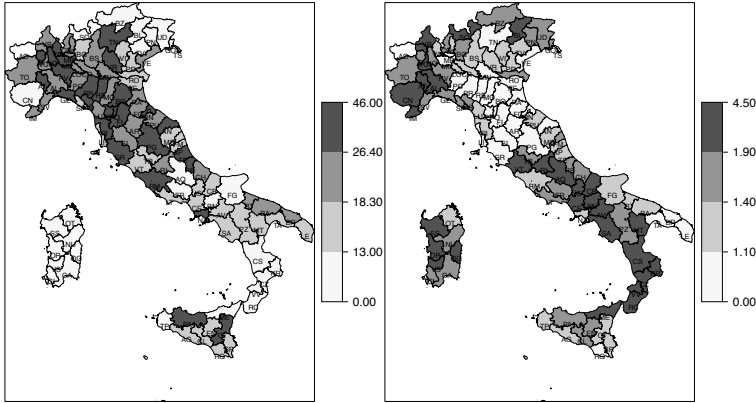


Figure 2: Shares of municipal expenditure for kindergartens, childhood and minors: percentage values (left), coefficient of variation (right) - year 2013 - Data of Val D'Aosta are not available.

and minors, which represent a part of the larger Family/children category. In the northern and central parts of Italy, provinces present the highest values (Figure 2, left panel) with relative low levels of heterogeneity among municipalities. Conversely, heterogeneity is higher for provinces characterized by lower shares of expenditure (Figure 2, right panel).

Municipal budget data also allow us to compute the share of social expenditure finalized to support nursing homes for the elderly. Figure 3 shows percentage values (left panel), highlighting the variability of shares among the municipalities of a same province (right panel).

## 3.2 Statistics from the EU-SILC

In this section, we comment the estimates obtained from the EU-SILC concerning allowances given to the Old-age and Family/children functions. To obtain estimates at the province level we used the methods discussed in Chapter 4. In what follows we describe the model used to obtain the estimates and we discuss the main results.

Our target variables are the Old-age and the Family/children allowance proportions, described in section 2.2. Direct estimates from the EU-SILC survey of these variables prove unreliable estimates given that the sample size is very small. By means of auxiliary variables we can obtain

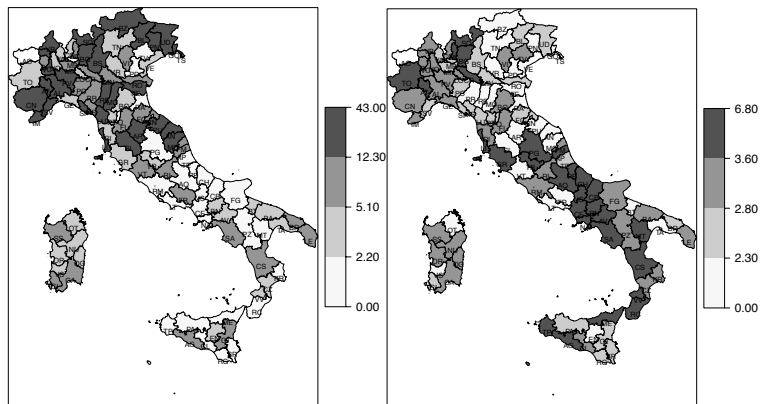


Figure 3: Shares of municipal expenditure for nursing homes: percentage values (left), coefficient of variation (right) - year 2013 - Data of Val D'Aosta are not available.

more reliable estimates for these variables (details in Chapter 4). In this application, the auxiliary variables are selected in the same way and from the same sources as in Chapter 4.

We first focus on the small area model for Old-age benefits proportions. In this model, the response variable values are provided by Old-age benefits direct estimates (proportion of people which received a money transfer for the elderly), while the selected auxiliary variables are the average household size (Hh. size), the proportion of households which own their house (House own.) and the current expenditure to support poverty (Pov. Exp.), at the province level. In Table 1, the regression coefficients of the model and their significance are reported. The sign and magnitude of the coefficients seems reasonable, with positive feedback on the model we used. The analysis of random area effects (not reported here) indicates that the model assumptions seem reasonable.

The spatial distribution of Old-age benefits small area estimates at the province level (Figure 4, left) shows the highest proportions in most of the provinces in the North-West, in some provinces of the North-East and in central Italy. The spatial distribution of the incidence of aged people (65 years old or more) is reported in Figure 4. As expected, the distributions of Old-age benefits and incidence of aged people are very similar. However, there are some differences. Firstly, the incidence of people who received

Table 1: Regression parameters estimates for the Old-age benefits proportions small area model.

	$\hat{\beta}$	<i>p</i> -value
Intercept	0.661	0.000
Hh. size	-0.203	0.000
House own.	0.002	0.107
Pov. Exp.	-0.001	0.019
$\hat{\sigma}_u = 0.026$		

transfers for the elderly is higher than that of aged people. Secondly, there are provinces with the highest level of Old-age benefit incidence (between 31% and 36%) and not a corresponding same level of incidence of aged people, particularly in the North. In the South of Italy the aged people incidence is very low; therefore, we observed estimated low level estimates concerning benefits for Old-age.

The proportion of households which received Family/children related allowances is estimated by using the direct estimates of Family/children allowances proportions as a response variable and the average household size (Hh. size), the current expenditure to support families (Fam. Exp.) and the current total expenditure dedicated to social protection (Tot. Exp.) as auxiliary variables, at the province level. In Table 2, the regression coefficients of the model and their significance are reported. The sign and magnitude of the coefficients seem reasonable, giving us positive feedback on the model we used. The total current expenditure for social protection is not significantly different from 0. However, we decided to include it in the final model. The analysis of random area effects (not reported here) indicates that some of the model assumptions are reasonable.

Table 2: Regression parameters estimates for the Family/children allowances small area model.

	$\hat{\beta}$	<i>p</i> -value
Intercept	0.402	0.000
Hh. size	0.275	0.000
Fam. Exp. (th.)	-0.365	0.086
Tot. Exp. (th.)	0.086	0.236
$\hat{\sigma}_u = 0.040$		

The highest Family/children allowance proportions are in the South of Italy, in the provinces of Macerata and Ascoli-Piceno in central Italy

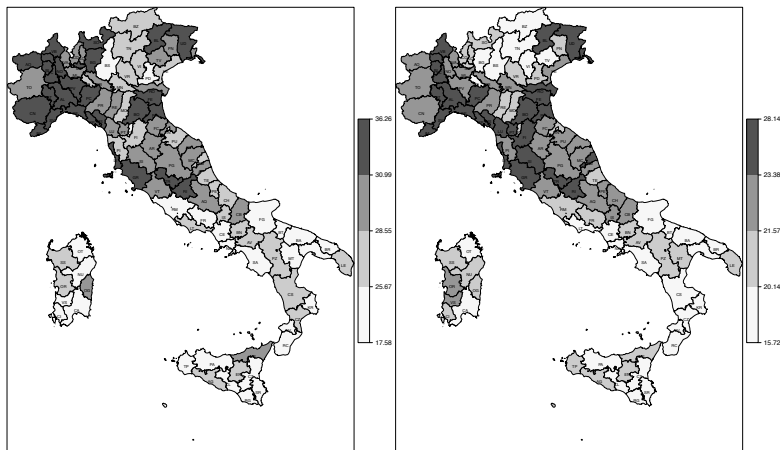


Figure 4: Small area Old-age estimates (proportion of people which received a money transfer for the elderly) (left), incidence of people aged 65 or more (right) – year 2012.

and Treviso and Vicenza in the North (Figure 5, left). Unfortunately, the average number of children per family at the province level is not available. We know the average household size at the province level, which has an interquartile range of 0.2, with the first quartile equal 2.3 and the third quartile to 2.5, and a range of 0.91. Therefore, the average household size is very similar throughout the majority of the provinces and only specific information of the average number of children per family could help us an in-dept analysis of money transfers for childhood at the province level. Furthermore, the incidence of young people on the population at the province level cannot help us in this analysis, given that in 90% of the provinces, this incidence is between 14.9% and 19.3%. However, we show the incidence of people aged 18 or less on the population in Figure 5 on the left and therefore we can make a comparison between Family/children allowances and the incidence of young people on the population. The two distributions at the province level are different. In the North-East, where the incidence of children is highest, the level of Family/children allowance is not matching. Nevertheless, this disparity can be observed in the rest of Italy as well. However, when comparing the two maps in Figure 5 it is necessary to bear in mind that the incidence of people aged 18 or less on the total population has a very low variability among

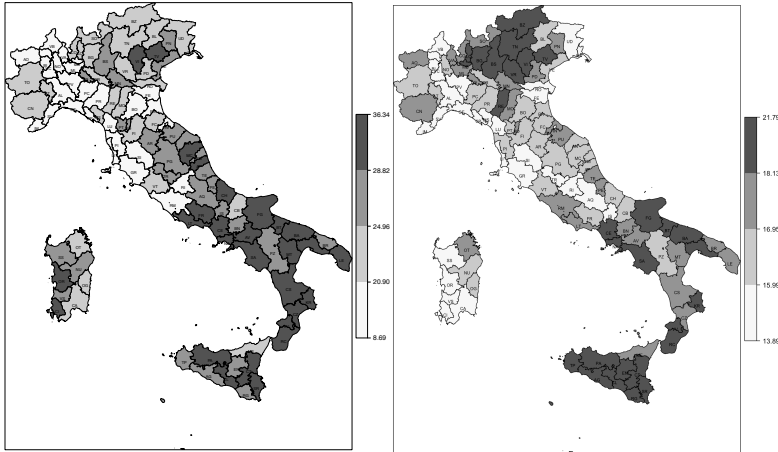


Figure 5: Small area Child allowance estimates (proportion of families which received money transfers for childhood) (left), incidence of people aged 18 or less (right) – year 2012.

provinces. On the contrary, the Family/children allowances show strong heterogeneity among the provinces, with values ranging from 8.7% to 36.3%. In our opinion, the higher levels of southern provinces may be due to the simultaneous presence of lower incomes and larger households, given that family/children related allowances are mostly made of family allowances, i.e. benefits included in the salary for child rising (Eurostat, 2011b). For what concerns the provinces of Vicenza and Treviso (which are known to have low poverty rate, see also Chapter 4) the Family/children allowances higher values are probably due to the presence of families with a greater average number of children.

## 4 Final remarks

Empirical analyses of previous sections allow us to use information coming from different data sources. Indeed, for each Italian province we computed municipal social expenditure finalized to cover family/children and old-age needs/risks. More specifically, we computed the share devoted to kindergartens, childhood and minors, as well as the share used to support nursing homes for the elderly. On the beneficiary side, we

estimated the proportion of people who received Old-age benefits and the proportion of families who received allowances related to Family/children.

We used three different data sources, namely, the SISSM, municipal budgets and the EU-SILC (see sections 2.1,2.2). Given the different nature and objective of each single data source, a harmonization process was required. As a first step, we tried to recover data relating approximately to the same period; actually, EU-SILC and SISSM statistics refer to the same year (2012), while municipal budget data refer to 2013. Secondly, we examined questionnaires and tried to select the variables best fitting the definitions of Family/children and Old-age functions given by ESSPROS. We found a good approximation for what concerns EU-SILC, though some differences are still present (see section 2.2). Conversely, the harmonization of administrative data sources and ESSPROS is more difficult, being that municipal welfare functions are considerably different from those given by ESSPROS. However, this problem will be solved soon, since before the end of 2017 Italian local governments will adopt a budget framework based on official statistics classifications (see section 2).

Empirical evidence shows a significant variability of Family/children and Old-age benefits among provinces, stemming from both administrative and EU-SILC data. Inequalities may pertain to the provinces of a same region and also the municipalities of a same province. This is particularly evident for the Family/children benefits, whose relevance changes considerably across provinces according to both administrative and EU-SILC data. The municipal share of social expenditure given to Family/children ranges from 7.5% (Belluno province) to 58% (Palermo province) without any particular geographical pattern for the highest intensities. However, we notice that the provinces of Piemonte, Veneto, Trentino Alto Adige, Friuli Venezia Giulia, Toscana and Sardegna record the lowest intensities. Looking more specifically at municipal expenditures for kindergartens, childhood and minors, we find higher intensities in the North-West and in central Italy but also the region of Sicilia. The proportion of families who received Family/children related benefits (small area estimates based on EU-SILC data) show the highest values in the South with the only exception of two provinces in the North-East, namely, Treviso and Vicenza. Actually, such benefits mainly consist of family allowances, thus their territorial distribution depends on national policies and on the economic development of the territories themselves. In Italy, only employees, temporary workers, pensioners, and persons receiving unemployment benefits are eligible for family allowances, while self-employed and unemployed people are excluded. Moreover, family

allowances are given only to families with very low income, or to large families.

The incidence of municipal expenditure for Old-age is highly variable among provinces, ranging from the 9.7% of Agrigento to the 73.1% of Aosta. However, we notice more homogeneity among geographical areas than that relating to family/children allowances. We find greater incidence in the provinces of northern and central Italy, particularly in the regions of Toscana and Veneto. The share of expenditure aimed at supporting nursing homes records higher values in the same geographical macro-area. Small area estimates of the proportions of people receiving old-age benefits confirm greater intensities in northern and central Italy. As highlighted in Section 2.2, Old-age benefits include pensions after retirement.

A comparison between the supply and demand of social protection at the local level is hardly problematic, given accessible data. The first point concerns the kind of social services analysed, whether national or local. National services implement central policies with the purpose of delivering uniform standards throughout the country. Conversely, local services implement local policies, which are planned and funded to respond to local specific needs and wishes. Unfortunately, it is not possible to estimate national and sub-national services separately at the province level. While section 3.1 shows territorial inequalities of local social services provided by municipalities, section 3.2 considers both local and national benefits received by people. Hence, comparing the local supply and demand of social protection using these data is not straightforward. Secondly, it is worth reminding that analyses stemming from administrative data cover both cash and in-kind benefits whereas EU-SILC based analyses consider only cash benefits.

Finally, a critical issue is the lack of harmonization between welfare functions in the different data-sources, which prevents the construction of a coherent integrated data set.

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