Households' changing structure and consumption: the effect of the economic crisis during the period 2008-2013

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Abstract

Between 2007 and 2013, the structure of Italian households was changing, particularly in the central and southern areas of the country. Focussing on this observation, we are interested in studying whether the variations in consumptions expenditures during the 2008-2013 recession related not only to variations in households' propensity to spend but also to changes in households' composition. For this purpose, we refer to average per capita expenditures of different types of households, each weighted by its frequency. We gathered data on expenditures by two categories of consumption goods, namely "Food and Beverages" and "Non-food"; in addition, we used data on the relevance of the household type of the Household Budget Survey carried out by Istat. Our results confirm the difference between the southern areas of the country compared to the others, as well as the relevance of changes in the households' structure consequent to the crisis, particularly in the south of Italy.

Keywords: Household Budget Survey (HBS), per-capita expenditure, economic crisis, households' structure.

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The views and opinions expressed are those of the authors and do not necessarily reflect the official policy or position of the Italian National Institute of Statistics – Istat.

1. Introduction[3]

Changes in consumers' behaviours can reflect changes in available resources as well as socio-demographic and cultural developments influencing the structure and the role of households, and consequently of their networks, in society. In this work we focus on the relation between households' structure and private consumptions and on its evolution during the financial and economic crisis started in 2007-2008 that undermined the fundamental role of the households as a social safety net.

Typically, attention is focussed more on the economic disparities across Italian geographical areas, and less on the differences in their socio-demographic indicators and in particular on their households' characteristics. Indeed, the households' dimension shows geographical patterns opposed to those characterising income and GDP, with southern and northwestern areas historically characterised by the highest and the lowest average number of households' members respectively. In the years of the economic crisis, the size of households tended to decrease and converge in all the Italian regions. In addition, the structural characteristics of the households changed. Our goal in this work is to relate the variation in consumption expenses to the variation in the structure of Italian households, emphasising the differences in their temporal patterns in different geographical areas.

For this purpose, we use data arising from the monthly Household Budget Survey (HBS) on current consumption expenditures run by the Italian National Institute of Statistics - Istat between 2007 – the year preceding the economic crisis – and 2013. We consider average monthly households' expenditures, both at the national level and broken down by geographical area. More specifically, we focus on the evolution of per capita average expenditures, calculated accounting for the different types of households – in terms of size and composition – and for their weight (over all households). Indeed, the households' structure and their geographical location – typically reflecting different attitudes and preferences – are both factors possibly influencing consumption behaviours.

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The number and the role of household's members is particularly relevant because the expenditures' size and composition depend both on the household's budget and on its characteristics. For example, expenditures on education typically depend on the number of children per household. In addition, household size influences both the expenditures amount and the budget allocation: the average level of expenditures will indeed increase less than proportionally because of economies of scale.

The analysis of consumptions broken down by geographical area allows accounting for cultural differences that are still present despite globalisation and, even more importantly, for the well-known economic differences across Italian regions and areas.

In our analysis, we distinguish between two categories of consumption goods, namely "Food and Beverages" and "Non-food". On the one hand, the considered consumption categories are those more influenced by the households' characteristics. On the other hand, the disaggregation by households' structure and geographic dispersion might lead to less reliable estimates when further detailing the "Non-food" category, because of lower sample sizes and consequent higher standard errors.

Our goal is to study the evolution of per capita average monthly expenditures. To do so, we refer to the weighted average of expenditures by household type (possibly broken down by geographical area and consumption category). This indicator is particularly convenient because it allows decomposing the temporal variations into two main components, one related to changes in household types, one related to changes in the levels and/or in the propensity to consume. A third component, related to the interaction between the two variations is far less relevant compared to the others.

Our approach allows highlighting whether and to what extent changes in the structure of Italian households contributed to the evolution of consumptions across the considered years.

The specific contents of the present paper are organised as follows.

In Section 2 we describe the data. In Section 3 we discuss about the evolution of households' types over time. Section 4 introduces our indicator and its properties. In Section 5 we discuss some insights about consumptions expenditures based on our indicator. In Section 6 we illustrate the effects

of changes of the households' structure on consumption expenditures, and their differences across Italian geographical areas. Section 7 summarises and concludes.

2. Data on households and consumptions between 2007 and 2013

The Household Budget Survey (HBS) carried out by Istat since 1968 aims at providing information on the expenditures incurred by resident households to purchase goods and services exclusively devoted to household and consumption. The survey is based on the classification developed by the United Nations Statistics Division (U.N. 2008) to classify individual consumption expenditures according to their purpose (Classification of Individual COnsumption by Purpose – COICOP). Since 2014, the HBS has been has been deeply redesigned and replaced by a new version. Among the several radical changes it underwent (Freguja and Romano, 2015; Istat, 2015), it is worth mentioning the different definition of the survey units (households) and the change of the data collection technique from the traditional Paper-and-Pencil Interviewing (PAPI) to the Computer-Assisted Personal Interviewing (CAPI). Furthermore, the classification of consumption expenditures changed from COICOP 2009 to the more detailed COICOP 2013 (Eurostat, 2013); in addition also information about places and times of expenses started to be tracked.

To harmonise data before and after the substantial changes that have been introduced in every stage of the survey production process since 2014, Istat has proceeded to reconstruct the time series of the main expenditure aggregates since 1997. However, aggregates broken down by geographical area are not available. As discussed in the introductory Section, this does not allow accounting for the well-known territorial differences characterising Italy. For this reason, we decided to limit our analysis to data arising from surveys carried out before 2014. Being interested in the evolution of consumptions in the years subsequent to the economic crisis of 2008, we analysed the years from 2007 – preceding the crisis – to 2013, this latter year coinciding with the end of the most critical phase of the crisis.

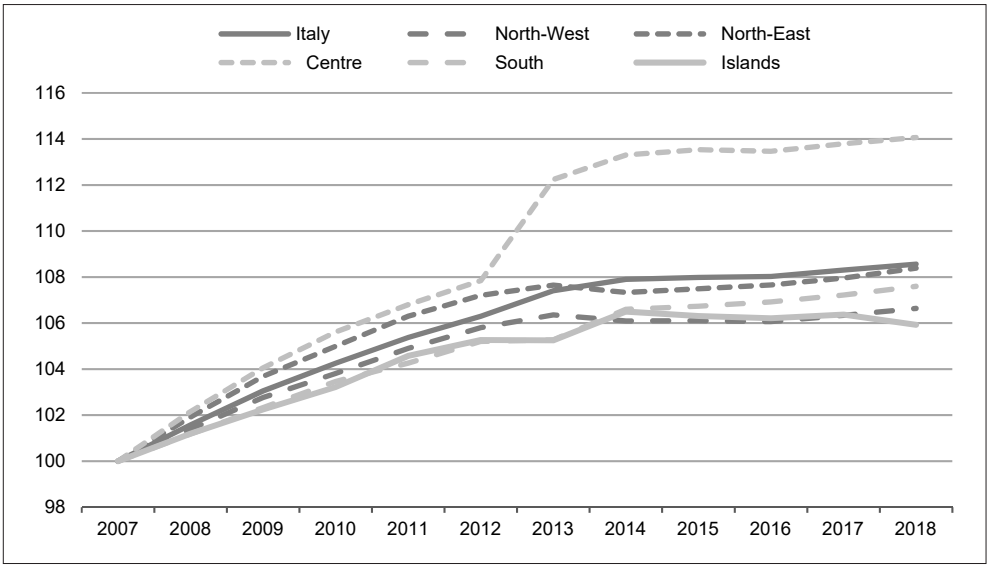
3. Households by structure and their evolution over time

The number (in thousands) of Italian households between 2007 and 2013 increased by 7.4%, moving from 23,881 to 25,650. The growth rate slowed down in the following years, and the number (in thousands) of households in 2018 was 25,926, thus increasing only by 8.6% from 2007 (see Figure 3.1). In the same years, the average household size decreased from 2.46 in 2007 to 2.35 in 2013, and remained almost stable afterwards (2.32 in 2018).

Notably, there are some relevant differences across geographical areas. As shown in Figure 3.1, the temporal patterns of the number of households and of their average size in the five Italian areas are similar until 2012. However, for the Centre these figures show a very distinctive behaviour between 2012 and 2014: a substantive increase in the number of households corresponding to a decrease in their average size. More precisely, the percentage increase of the number of households in the Centre from 2007 to 2013 was about 12.2%, much larger than the increase registered in the North-East (7.4%, aligned with the increase registered at the national level), in the North-West (6.4%) and – even more – in the South and in Islands (about 5.3%). Correspondingly, the decrease in the average household size was higher and faster in the Centre (–6.4%) compared to the other areas. A lower decrease was observed in the South and Islands (−4.5%), characterised nonetheless by higher averages in 2007. As a matter of fact, the decrease was much lower in the North-West and in the North-East (about −2.5%), characterised by the lowest average sizes in 2007.

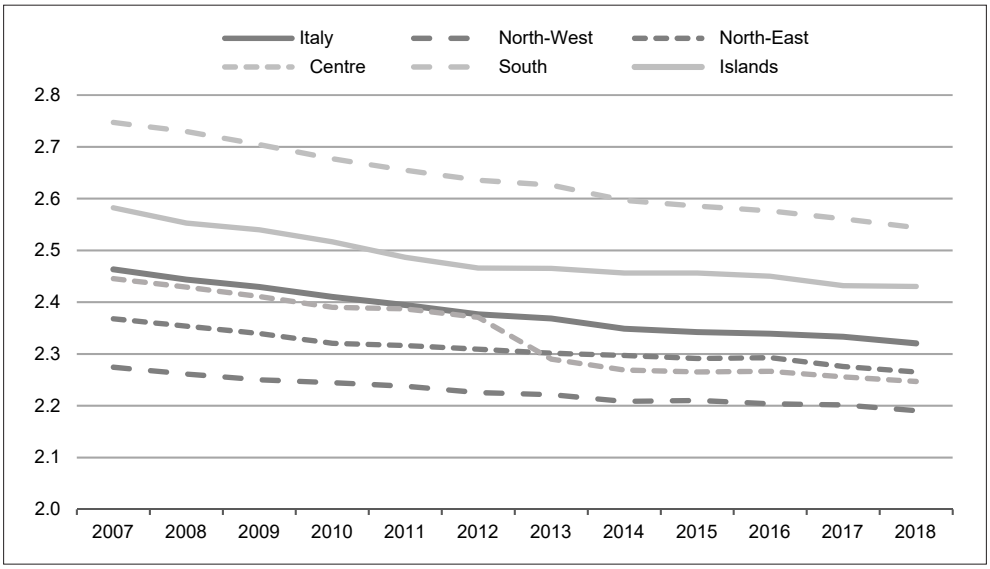
The difference between the Centre and the other areas might be attributed to adjustments and revisions due to the comparisons between the results of the Italian General Population and Housing Census and the Population Registers, used to review the Population Registers within each Municipality. Indeed, after 2014 the temporal evolution of the considered indicators in the different areas is rather homogeneous.

Figure 3.1.A - Number of households (Index number, base: 2007=100)



Source: Authors' calculation on HBS data

Figure 3.1.B - Average household size between 2007 and 2018



Source: Authors' calculation on HBS data

A number of demographic and socio-economic factors underlying the changes in the structure of Italian households were identified (see, among others, Malagoli Togliatti and Lubrano Lavadera, 2002; Zanatta, 2008; Ghigi and Impicciatore, 2015). One of the most important is surely the overall decrease in the fertility rate that, together with the increase in the average age at childbirth, led to a decrease of the number of households with children. In addition, more recently, there has been an increase in the levels of inward and outward mobility, possibly triggered by the crisis (Pace and Mignolli, 2016).

This implied, particularly in the southern areas (*Mezzogiorno*), a further decrease of the number of youths in the country, with a consequent decrease of the average household size, despite the Italian youngsters' relevant delay in home leaving. The population ageing (De Rose and Strozza, 2015) has resulted in a substantial increase in the relative size of the elderly population – with a high percentage of women because of the gender differential in mortality – often living alone, also because of widowhood (Maccheroni, 2014). In such context, the increasing marital instability (Vignoli *et al.*, 2011) led to an increase both in the number of one-person households, and in the number of other types of households, with a consequent increase of the number of households and of their variety.

All the mentioned changes reflect a cultural process resulting in convergence trends of the socio-demographic behaviour. This is evident in the narrowing range of the average household sizes in the Italian areas (between 2.2 in North-West and 2.6 in the South in 2013) despite the long lasting socio-economic differences.

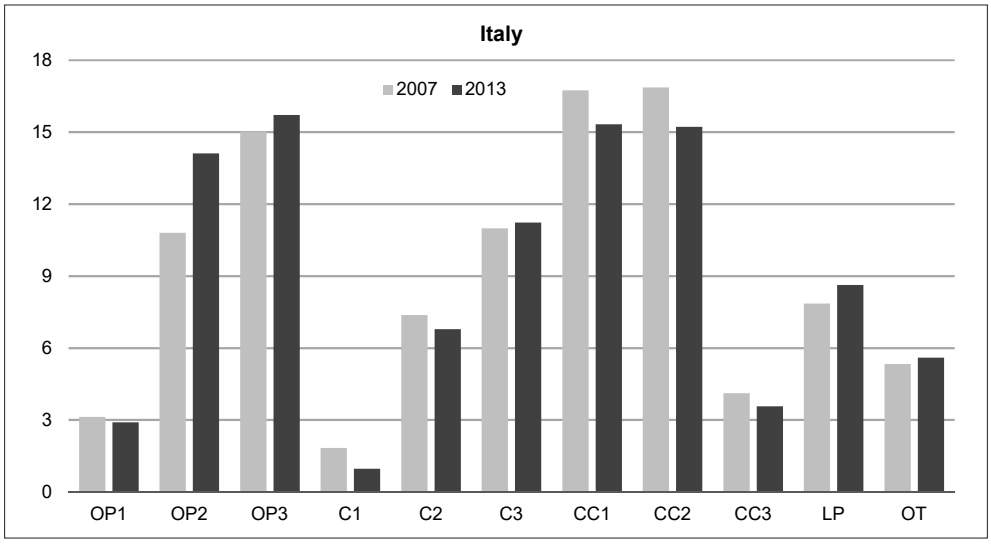
Figure 3.2 compares the distribution of the types of households in 2007 and 2013. In particular, we rely on the following categorisation (Budano and Demofonti, 2010):

- Single-person households with household reference person (HRP) aged less than 35 (OP1);
- Single-person households with HRP aged 35-64 (OP2);
- Single-person households with HRP aged 65 or more (OP3);
- Couple without children, with HRP aged less than 35 (C1);

- Couple without children, with HRP aged 35-64 (C2);
- Couple without children, with HRP aged 65 or more (C3);
- Couple with 1 child (CC1);
- Couple with 2 children (CC2);
- Couple with 3 children or more (CC3);
- Single-parent households (LP);
- Other types of households (OT) (including households whose members are not related by marriage, union, birth, or adoption, extended families, and households with more than one family nucleus).

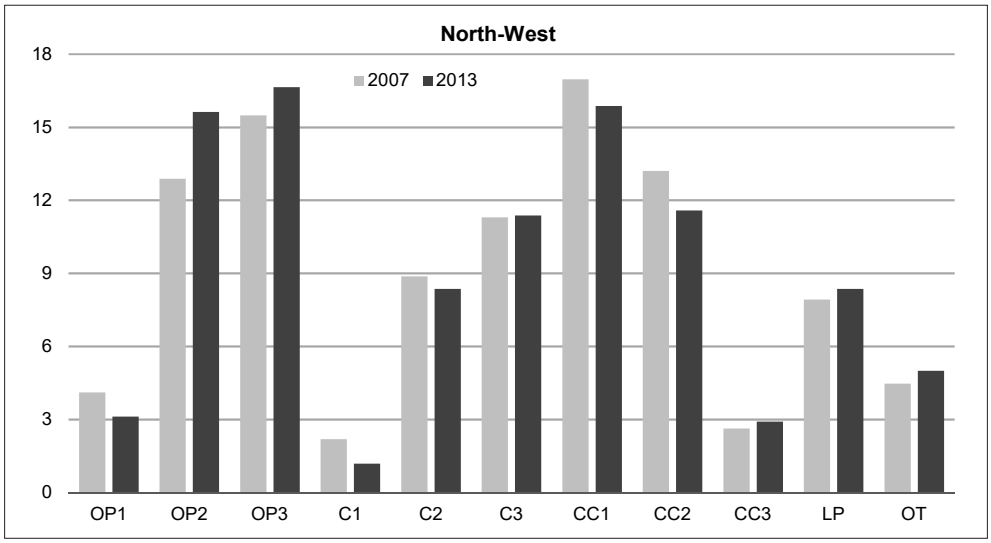
The considered characterisation combines the household's structure with the age of the reference person, thus allowing a transversal overview (Rosina and De Rose, 2017) of the stages of the family life cycle. As mentioned before, the different types of households taken into account are expectably characterised by different consumption habits, volumes and expenditures.

Figure 3.2 - Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. Italy



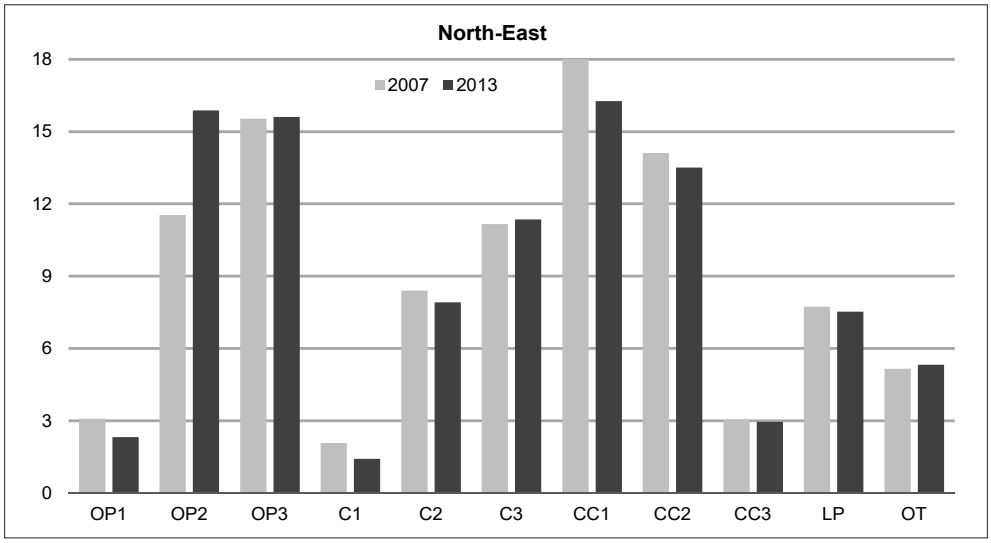
Source: Authors' calculation on HBS data

Figure 3.2 continued **- Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. North-West**



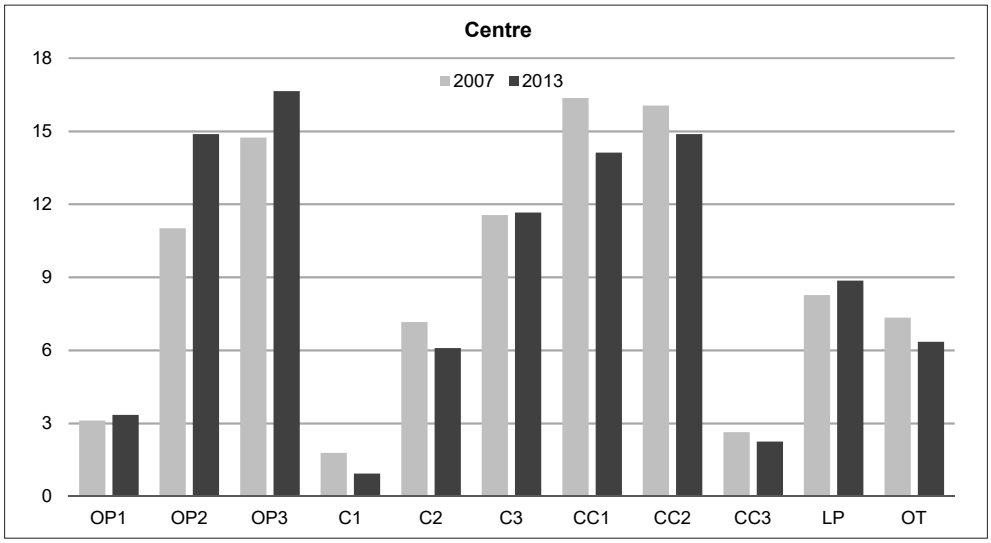
Source: Authors' calculation on HBS data

Figure 3.2 continued **- Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. North-East**



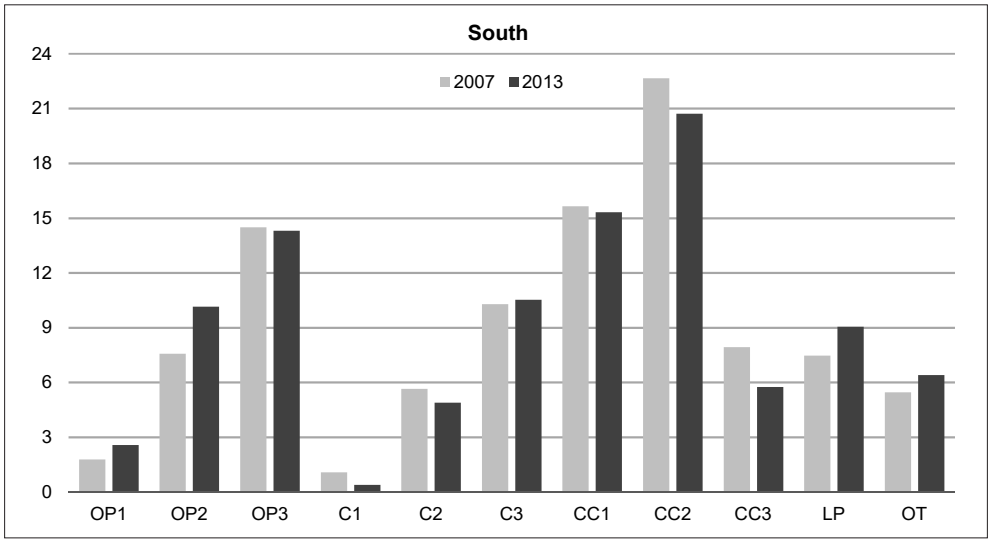
Source: Authors' calculation on HBS data

Figure 3.2 continued **- Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. Centre**



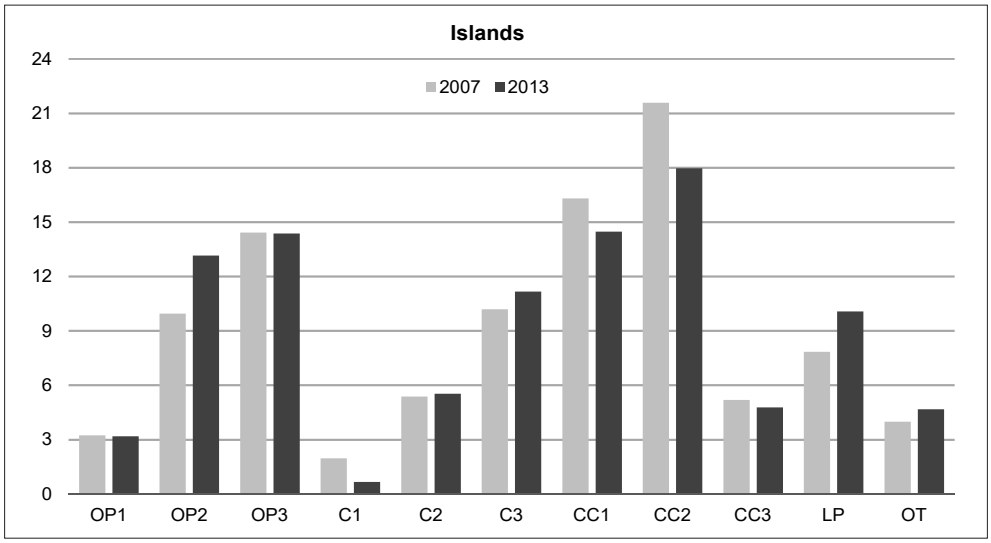
Source: Authors' calculation on HBS data

Figure 3.2 continued **- Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. South**



Source: Authors' calculation on HBS data

Figure 3.2 continued **- Distribution of households' types in 2007 and in 2013, at the national level and by geographical areas. Islands**



Source: Authors' calculation on HBS data

Between 2007 and 2018 there were five types of households prevailing in each geographical area, accounting together for nearly 70% of all households. More precisely, their relevance slightly increased between 2007 and 2013 to settle at the initial levels in 2018.

The most relevant types were those with one single person aged 35-64 or 65 and more, prevailing respectively in metropolitan areas and in smaller municipalities. Indeed one-person households constituted at least 30% of the overall household types (Figure 3.2). The next most relevant types were couples (with HRP of any age) living with one or two children, even if their relevance steady declined over time, suggesting that in Italy households with children were becoming less and less dominant. The last most relevant type were households with couples with HRP aged 65 or more, living without children. Since 2014, this was the most frequent type of household in northern and central Italy, whereas in the South the modal type was the couple with two children. In this framework, it is also worth highlighting the relatively higher frequency of single-parent households in the South and Island.

Indeed, possibly because of the crisis, these areas showed a higher tendency of children to return home and live with their lone parent, with a consequent increase of this type of households. The crisis could also have been responsible of the slight increase of the relevance of other types of households over time (Figure 3.2).

The trends described above, notwithstanding their convergence, had different impacts in the different Italian areas, and implied different variations in the structure of their households (Figure 3.2). In the next sections, we will focus specifically on the different effects of such variations on the temporal evolution of per capita expenditures.

The Household Budget Survey (HBS) conducted by Istat provides information for the different types of households about their number and the total amount spent in each of the considered consumption categories. For those households types with a varying number of components (for example, couples with 3 or more children) the average number of components is available. Based on such information it is therefore possible to evaluate average per capita expenditures for each type of household, and as well as their weighted average.

4. Defining an indicator of per capita expenditures: our approach

The household's consumption expenditure reflects the related family care for its members. Under this perspective, the average per capita expenditures of household members is often employed as an indicator of absolute and relative poverty (see, among others, Carbonaro, 2002).

Per capita expenditures (*PE*) at time *t* are expressed by the ratio between households' total expenditures and the total number of individuals living in households. Such quantity can also be regarded as the average of per capita expenditures of each type of household, $a_i^{(t)}$, weighted by the proportion of individuals living in each type of household (among those living in households), $c_i^{(t)}$:

$$PE^{(t)} = \sum_{i=1}^{n} a_i^{(t)} c_i^{(t)} \qquad (4.1)$$

where n is the number of households types and $\sum_{i=1}^{n} c_i^{(t)} = 1$.

Nonetheless, our goal is to identify what are the consequences of the changes in households' structures on consumption expenditures. Actually, as discussed before, households' structure varied much more than the number of households' members. In summary, the number of households increased by 7.4% between 2007 and 2013, whereas the number of persons living in households increased by only 1.03%.

Based on these considerations, we introduce here a summary index, $\bar{E}_{PC,W}^{(t)}$ (weighted per capita average expenditure), based both on the socio-demographic characteristics of households and on their level of expenditures, $a_i^{(t)}$. More precisely, $\bar{E}_{PC,W}^{(t)}$ is the average of per capita expenditures of each type of household, $a_i^{(t)}$, weighted by the frequency of type of household, $f_i^{(t)}$ in a given area:

$$\bar{E}_{PC,W}^{(t)} = \sum_{i=1}^{n} a_i^{(t)} f_i^{(t)} \qquad (4.2)$$

where $\sum_{i=1}^{n} f_i^{(t)} = 1.$

As we will show in the following, the analysis of the temporal evolution of $\bar{E}_{PC,W}^{(t)}$ (with t = 2007, 2008, …, 2013) allows a deeper evaluation of the consumption dynamics compared to the properly said per capita expenditure, which corresponds to the expenditures of a generic household with an average number of members.

Turning again attention to equation (4.2), we highlight that $\bar{E}_{PC,W}^{(t)}$ can be regarded as a "crude rate" whose sequence of variations over time can be studied referring to an additive decomposition model. Such model emphasises the role played by the variations in the propensity to consume, by the variation in the households' structure and by the interaction of such variations (Oaxaca, 1973; Biewen, 2012; Maccheroni, 2018).

Specifically, it considers the values of the indicator at time 0 and at time k, $\bar{E}_{PC,W}^{(0)}$ and $\bar{E}_{PC,W}^{(k)}$ (where k is a positive integer), calculated for a certain population. The variation of the index between the two periods (in temporal sequence) can be expressed as:

$$\Delta\bar{E}_{PC,W}^{(k)} = \bar{E}_{PC,W}^{(k)} - \bar{E}_{PC,W}^{(0)} = \sum_{i=1}^{n} f_i^{(0)}[a_i^{(k)} - a_i^{(0)}] \quad (4.3)$$

$$= \sum_{i=1}^{n} a_i^{(0)}[f_i^{(k)} - f_i^{(0)}] \quad (4.4)$$

$$= \sum_{i=1}^{n} [f_i^{(k)} - f_i^{(0)}]\,[a_i^{(k)} - a_i^{(0)}] \quad (4.5)$$

The three terms above decompose the change in the indicator by identifying three sources of variation. The first term (4.3) summarises the impact of variations in the households' average per capita expenditures from 0 to *k*. Such difference reflects changes in consumption spending behaviour or in the propensity to spend for consumption that would be observed *if* the structure of the households remained unchanged from one period to another. In other terms, it is the difference between two "$\bar{E}_{PC,W}$ standardised rates", calculated using the same weighting system, and as such it is not affected by changes in the households' structures.

The second term (4.4) summarises the impact of changes occurred in the households' structure between the periods 0 to *k* in the case when average per capita expenditures remain constant and equal to the levels at time 0. It is again the difference between two "$\bar{E}_{PC,W}$ standardised rates" calculated in the two considered periods, assuming that average per capita expenditures remain unchanged over time.

The last term (4.5) accounts for the interaction between the variations in the relevance of households' types and in their propensity to consume.

To better appreciate the role of each element in the model, the variation $[\bar{E}_{PC,W}^{(k)} - \bar{E}_{PC,W}^{(0)}]$ as well as its three components (4.3), (4.4), and (4.5) can be evaluated both in absolute terms and relative to $\bar{E}_{PC,W}^{(0)}$.

It is worth underlining that there is a significant positive relation between the variation of average expenditures and the variation of our indicator. Thus, our indicator offers an interesting and more articulated perspective on the evolution of consumption expenditures without losing substantive information on the more traditional indicator of average monthly expenditure.

5. Some preliminary considerations on consumptions expenditures between 2007 and 2013

Istat regularly produces reports containing detailed analytic information on the temporal evolution of consumptions expenditures in Italy[4]. As an introduction to our analyses, we offer an overview of the results obtained both at the national level and by greographical area.

Table 5.1 - Average monthly consumption expenditures by geographical area between 2007-2013 (Index number, base: 2007=100)

	2007	2008	2009	2010	2011	2012	2013
				Total			
Italy	100.0	100.2	98.5	98.9	100.3	97.5	95.1
North-West	100.0	100.2	100.0	100.0	103.7	98.9	96.7
North-East	100.0	100.8	97.5	99.9	98.9	98.5	95.8
Centre	100.0	100.7	99.3	100.0	101.5	98.9	95.9
South	100.0	98.6	96.5	96.3	97.4	94.1	92.1
Islands	100.0	99.8	96.2	94.0	93.4	92.5	89.6
				Food and beverages			
Italy	100.0	101.9	98.9	100.1	102.3	100.4	98.8
North-West	100.0	103.7	101.9	102.0	105.0	102.0	101.4
North-East	100.0	102.5	100.5	103.9	105.7	104.7	102.7
Centre	100.0	101.4	97.3	97.3	97.7	99.8	98.4
South	100.0	99.9	97.0	98.6	100.4	96.1	93.9
Islands	100.0	101.3	95.0	96.8	102.3	99.5	96.2
				Non-food			
Italy	100.0	99.8	98.4	98.7	99.9	96.9	94.3
North-West	100.0	99.5	99.7	99.6	103.4	98.3	95.8
North-East	100.0	100.5	97.0	99.2	97.6	97.3	94.6
Centre	100.0	100.6	99.8	100.6	102.4	98.7	95.4
South	100.0	98.2	96.3	95.5	96.5	93.5	91.5
Islands	100.0	99.4	96.6	93.1	90.6	90.3	87.5

Source: Authors' calculation on HBS data

As mentioned before, our analysis starts in 2007, the year before the crisis, when a financial crisis started in the USA and subsequently spread towards Europe and became an economic and budgetary crisis.

4 Please refer to www.istat.it for details. Information on consumptions can also be gathered from the survey on Household Income and Wealth carried out by Bank of Italy (https://www.bancaditalia.it/pubblicazioni/indagine-famiglie/index.html). Nonetheless, results from this survey are more aggregated compared to those made available by Istat.

A number of countries, among which Italy, with a less economically sound basis and with a high level of public debt, were hardly affected by the crisis (Brandolini, 2014).

At the national level, the crisis had a relevant impact on consumptions, particularly between the end of 2008 and the beginning of 2009, because of the fall in the purchasing power and due to the loss of income first and later, between 2011 and 2013, because of inflation. *Confcommercio* (the Italian General Confederation of Enterprises, Professions and Self-Employment) declared that 2012 was in fact the darkest year for consumptions[5], and Istat (2014) registered a further increase of absolute poverty compared to 2011, a year already characterised by a significant deterioration of the economic situation.

Eventually, 2013 recorded the minimum average monthly expenses, with an increasing decline moving from the North-West to the Islands (Table 5.1).

Within this context, the crisis affected the expenses in food and beverages to a lesser extent, because goods for primary needs are typically difficult to reduce. Indeed, in some geographical areas, such as the Islands and the North-East, the share of expenses for this category of products slightly increased compared to other areas. During the considered period, the percentage of expenses in food and beverages ranged between 16% and 19% in nothern and central Italy, and peaked to 25% in the South and to 27% in the Islands.

Since the variation of the share of expenses in food and beverages is inversely proportional to the income level, geographical areas with different (average) income levels - notably northern-central versus southern areas – were characterised by different levels and composition of consumption expenses and, therefore, of material living conditions (Table 5.1).

The highest share of household consumption expenditures is usually spent in non-food goods, whose level of consumption varies more along the life course.

Since this kind of goods is also more affected by the economic cycle compared to the other type, non-food products turned out to be the category most affected by the crisis, particularly in the South and in the Islands (Table 5.1).

5 See https://www.confcommercio.it/-/2012-l-annus-horribilis-dei-consumi, and the results of the survey carried out by Censis (2012).

Table 5.1 highlights the geographical differences in the expenses in food and non-food products, with a particularly high decrease over time registered in the southern regions. Even so, some common traits in the expenses by type of household are worth being pointed out (see Table 5.2).

As already mentioned in Section 3, the first eight household types -from OP1 to CC3 - have a specific number of members, whereas for the other three types (namely couples with 3 or more children, single-parent and other types of household) the number of members is registered. Based on information about the average size of such types of households, it is therefore possible to determine per capita average expenses of all types of households. To evaluate the variation in the level of expenses from one year to another, we refer to an average annual rate of variation (for years between 2007 and 2013), namely the geometric mean (see Table 5.2).

Such rate coincides with the rate of variation of per capita expenses for household types from OP1 to CC2.

This does not hold perfectly for the last three types of households, even if the rates and the slopes of the linear trend have the same sign. Indeed, between 2007 and 2013 the average monthly expenses showed a decreasing linear pattern – particularly in the South and in the Islands (Table 5.1).

Nonetheless, even if 2013 registered the minimum level of average expenses in all the geographical areas, some household types, namely OP3 and C3, experienced instead an increase in the expenditures, whereas others, specifically OP1, showed a very unstable trend (Table 5.2)[6].

Combining the results in Table 5.1 with those in Table 5.2, it is possible to conclude that the most penalised households were those with the youngest reference persons (C1) living in the South and in the Islands, where the expenditures in "non-food" products decreased at an annual rate of 6.48% and 4.61% respectively.

Similar considerations hold for larger households (CC3) and for the other types of households (OT), particularly in the Islands (with an annual rate of decrease equal to 5.46%).

6 In this case, the average rate is close to zero (Table 5.2).

Table 5.2 - Average annual rate (%) of variation (*) in the average monthly expenditures between 2007 and 2013 by type of household and by $\bar{E}_{PC,W}$ for all the types

TYPE OF HOUSEHOLD	Italy		North-West	North-East	Centre	South
			Total			
OP1	-0.80	-0.15	-0.88	-0.10	-2.39	0.21
OP2	0.43	1.24	0.80	0.70	-1.71	-2.09
OP3	2.64	2.61	2.60	2.60	2.19	2.18
C1	-0.34	0.72	-3.16	0.56	-5.49	-3.96
C2	-1.41	-1.38	-0.17	-2.56	-2.76	-1.24
C3	1.18	1.93	1.62	0.22	0.30	1.28
CC1	-0.91	-0.51	-1.36	-1.11	-0.52	-1.42
CC2	-1.62	-1.86	-2.22	-0.45	-1.75	-2.78
CC3	-1.76	-2.86	-3.47	-1.02	-0.88	-4.15
LP	-1.32	-2.13	-0.48	0.48	-1.89	-1.11
OT	-1.64	-0.69	-1.19	-1.66	-1.52	-4.82
All types	-0.83	-0.55	-0.71	-0.69	-1.37	-1.81
$\bar{E}_{PC,W}$	*0.56*	*0.61*	*0.75*	*1.06*	*-0.14*	*-0.32*
			Food and beverages			
OP1	0.50	0.93	-1.07	0.76	-0.19	-0.69
OP2	0.70	0.90	1.57	1.09	-0.41	-0.64
OP3	2.39	2.54	3.15	2.54	1.65	0.89
C1	0.73	1.37	1.59	-0.89	-2.13	0.56
C2	-0.26	0.54	-0.38	-1.06	-1.67	1.70
C3	0.82	1.15	1.50	0.79	-0.64	1.38
CC1	-0.26	-0.39	0.22	0.04	-1.09	0.20
CC2	-0.64	0.07	-0.25	-0.63	-0.93	-1.94
CC3	-1.09	-2.37	-1.79	0.44	-0.74	-0.72
LP	-0.34	-0.47	0.71	-0.48	-1.45	0.79
OT	-0.33	0.57	0.98	-0.71	-0.52	-2.97
All types	-0.20	0.24	0.44	-0.28	-1.05	-0.64
$\bar{E}_{PC,W}$	*1.01*	*1.16*	*1.58*	*1.40*	*0.14*	*0.49*
			Non-food			
OP1	-1.05	-0.34	-0.85	-0.27	-2.93	0.46
OP2	0.38	1.30	0.68	0.62	-2.07	-2.49
OP3	2.71	2.62	2.48	2.61	2.39	2.65
C1	-0.52	0.63	-3.87	0.79	-6.48	-4.61
C2	-1.65	-1.73	-0.13	-2.90	-3.10	-2.11
C3	1.28	2.12	1.65	0.06	0.65	1.25
CC1	-1.05	-0.53	-1.64	-1.38	-0.34	-1.96
CC2	-1.85	-2.25	-2.57	-0.41	-2.01	-3.06
CC3	-1.94	-2.96	-3.80	-1.39	-0.93	-5.46
LP	-1.56	-2.49	-0.69	0.72	-2.04	-1.75
OT	-1.99	-0.98	-1.63	-1.92	-1.89	-5.46
All types	-0.98	-0.72	-0.92	-0.79	-1.47	-2.20
$\bar{E}_{PC,W}$	*0.46*	*0.50*	*0.60*	*0.98*	*-0.23*	*-0.58*

Source: Authors' calculation on HBS data
(*) Geometric mean.

It is nonetheless important to note that in the South and in the Islands the relative frequency of youngest couples without children (C1) is very low and decreased over time. This makes the estimates based on the survey less reliable.

Conversely, as noted before, there are some homogeneous behaviours across the geographical areas: the average annual variation of expenditures in non-food products by single-person households with older reference persons (OP3) is quite aligned for the different areas.

In addition, for this type of households, as well as for older couples without children, (C3) an increase in the level of expenditures can be noted. These results indicate that in Italy households with older members are protected more than those with younger ones are. Indeed, as underlined by Istat (2014), between 2007 and 2012 only the households with pensioners were able to maintain their level of monthly consumption, thanks to the financial security granted by the retirement income.

Thus, pension incomes contribute more than in the past to determine also the economic conditions of the other household members, impairing social mobility.

Finally, from results in Table 5.2 it can be noted that relevant differences exist between average expenses (All types), and per capita weighted average expenses $\bar{E}_{PC,W}$. Expenditures in food and beverages recorded an increasing pattern only in nothern Italy when considering (All types), whereas $\bar{E}_{PC,W}$ turned out to be increasing in the whole country. As for the other categories of goods (namely non-food and total), average espenditures decreased across all the geographical areas, whereas per-capita weighted average expenditures were decreasing only in the South and in the Islands.

6. The evolution of per capita average expenses and of its component between 2007 and 2013

As already remarked, in 2013 the current average expenses of Italian households was not back to the levels registered in 2007, despite the increasing patterns observed in some years, particularly in the North-West.

As previously anticipated, when attention is focussed on per capita average expenses, we find a better situation for the Centre-North area instead (Table 5.2). Under this perspective, the decomposition in Section 4 offers a detailed inspection and analysis of the temporal evolution of the expenses and of its three sources of variation (equations 4.3-4.5).

Focussing on per capita expenses is convenient because it highlights the peculiar situation of the expenses in food and beverages for the northeastern households.

In fact, as illustrated in Table 6.1, in this area the level of expenses is lower and for some types of households it is even lower than in the rest of Italy, Islands excluded. Conversely, the level of the expenditures in non-food goods is generally higher, particularly when compared with southern areas that show the lowest levels over the entire period of observation (and across all types of households).

Table 6.1 also emphasises relevant differences in the levels of per capita expenditures for different types of households, notably one-person households in the South, which are indeed at higher risk of poverty (Istat, 2014). To better assess and analyse such differences, in Table 6.2 we report the coefficients of variation, summarising the dispersion of per capita expenditures across the considered years and in the different areas[7].

7 Please note that we use the coefficient of variation rather than the well-known standard deviation, because the latter has a unit of measurement and a value possibly depending on the average of the phenomenon of interest. This would impair the comparison of the levels of dispersion, because the levels of expenditures change consistently across types of household and geograppphical areas.

Table 6.1 - Annual average (from 2007 to 2013) of per capita expenditures by type of household and geographical areas (index number, base: Italy=100)

	OP1	OP2	OP3	C1	C2	C3	CC1	CC2	CC3	LP	OT
						Total					
Italy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North-West	112.6	109.4	113.7	111.6	110.6	115.8	115.6	120.7	128.9	119.3	119.2
North-East	112.4	114.7	113.4	109.4	112.2	114.5	115.0	120.0	123.6	117.8	117.4
Centre	98.6	101.1	107.2	98.5	101.6	101.7	101.9	105.6	110.7	105.2	105.0
South	83.6	76.8	74.8	72.6	74.1	73.5	77.5	80.3	82.9	75.0	74.8
Islands	72.7	69.7	69.8	63.9	69.3	71.0	69.1	71.3	69.9	69.9	70.7
						Food and beverages					
Italy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North-West	107.0	102.2	105.1	101.1	101.6	105.9	104.0	103.9	103.9	108.3	107.5
North-East	90.0	94.7	99.0	90.0	95.2	100.1	95.0	95.5	94.6	95.2	96.3
Centre	99.6	104.0	103.7	100.0	103.1	102.3	101.7	102.7	104.1	103.9	102.9
South	102.7	101.9	95.7	112.7	103.2	94.4	101.1	100.6	102.5	97.2	97.1
Islands	95.2	92.9	88.2	103.4	95.1	88.3	93.4	93.3	91.6	90.1	89.4
						Non-food					
Italy	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
North-West	113.8	110.8	116.0	113.3	112.5	118.5	118.3	124.7	135.6	121.9	122.4
North-East	116.8	118.6	117.3	112.7	115.8	118.5	119.5	125.8	131.4	123.3	123.0
Centre	98.5	100.5	108.1	98.3	101.3	101.6	101.9	106.3	112.5	105.5	105.6
South	79.9	71.9	69.1	65.9	68.1	67.8	72.1	75.5	77.6	69.7	68.8
Islands	68.3	65.1	64.8	57.2	63.9	66.3	63.6	66.1	64.0	64.9	65.7

Source: Authors' calculation on HBS data

Table 6.2 - Coefficients of variation (%) of per capita expenditures in the households' types (*) by geografical areas. Years 2007-2013

	2007	2008	2009	2010	2011	2012	2013
			Total				
Italy	32.92	33.72	34.23	34.58	35.00	35.53	37.62
North-West	26.84	29.46	30.62	30.99	32.11	31.50	32.78
North-East	30.42	30.96	32.52	33.10	32.12	32.61	37.22
Centre	32.14	32.77	32.20	33.11	33.79	36.24	36.02
South	35.51	34.25	32.75	35.84	34.43	37.78	36.43
Islands	37.41	35.86	35.31	32.86	32.34	35.48	40.20
			Food and beverages				
Italy	27.86	28.32	28.31	30.45	29.82	32.11	32.65
North-West	25.97	27.27	26.50	29.87	29.55	29.24	30.71
North-East	27.12	27.98	27.58	31.43	30.38	30.50	33.09
Centre	27.34	28.77	28.69	29.99	30.12	34.28	31.72
South	30.27	29.82	28.82	30.42	29.72	34.54	34.12
Islands	31.57	26.07	30.65	29.47	27.22	34.97	33.26
			Non-food				
Italy	34.68	35.65	36.15	36.08	36.72	36.69	39.22
North-West	27.67	30.77	32.03	31.88	33.25	32.30	33.63
North-East	31.99	32.11	34.04	34.14	33.18	33.48	38.89
Centre	33.66	34.24	33.57	34.17	34.92	37.02	37.40
South	37.94	36.49	34.81	38.25	36.56	39.15	37.54
Islands	39.78	39.77	37.21	34.34	34.57	35.89	42.73

Source: Authors' calculation on HBS data
(*) See Table 6.1.

During the considered years, the recession and the economic crisis were accompanied by an increase in disparities in the income distribution (Istat 2013a, Ceccarelli et al, 2008) in every geographical area, with a consequent negative impact on consumption expenditures. This led to increasing differences in the socio-economic conditions across different types of households, particularly severe in the most disadvantaged areas and specifically in southern Italy. Indeed, the values of the coefficients of variation suggest that the differences observed in the levels of the indicator $\bar{E}_{PC,W}$, which reflect the different levels of disposable income, increased over time everywhere but particularly in the Islands (Table 6.2).

This is evident especially with respect to the expenditures in "non-food" goods, which are more influenced by the economic cycle. Notably, the maximum coefficient of variation is observed in this category of expenses, in the Islands in 2013 (Table 6.2).

Further interesting considerations arise from the analysis of the annual variation of the indicator $\bar{E}_{PC,W}$ broken down by its components – reported in Figures 6.1.A, 6.1.B and 6.1.C at an aggregate level and by good category.

Focussing first on the geographical differences, they are mostly due to the first dramatic decrease of the expenditures in the northwestern area between 2011 and 2013, whereas in the previous years the other areas recorded the most pronounced drops, particularly the South and the Islands. Specifically, in the Islands the crisis was deeper and lasted longer compared to other areas, as one can appreciate from expenditures in "non-food" products (Figure 6.1.C).

Turning to the components of the variation of $\bar{E}_{PC,W}$ from one year to another (equations 4.3, 4.4, and 4.5), it is first interesting to observe the low and almost stable relevance (in %) of the interaction between the component related to the changes in the propensity to spend, that is connected to the changes in the households composition.

As for the expenditures in "food and beverages" (Figure 6.1.B), in the central area, the profile of the expenditures variations dramatically differs from that characterising northern and southern areas, which are more similar.

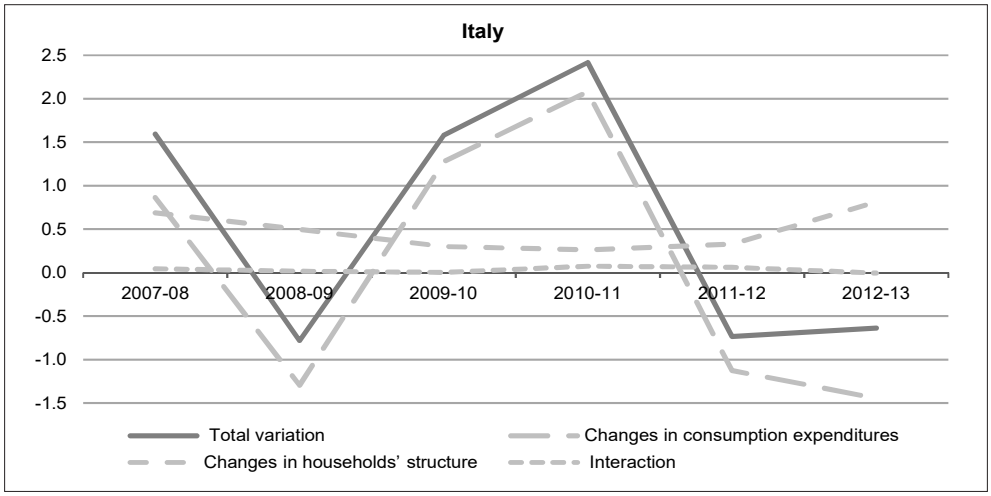
In general, the fluctuations between 2007 and 2013 relate only to the propensity to spend in northern Italy, and particularly in the North-West, with a distinctive decrease in these expenditures between 2008 and 2009. This is less evident in the rest of the country (Figure 6.1.B).

Different considerations hold for expenditures in "non-food" goods, which account for a relevant proportion of total expenditures (Figure 6.1.C). Again, notable differences can be appreciated at the geographical level.

Higher income areas with slight changes in the composition of households – such as the North-West – show variations highly determined by the changes in the propensity to spend, which follows the cyclical trend. On the contrary, the almost negligible role played by the variations in the households' structure in this area acted as a brake to expenditures more than in other areas. Instead, moving from the North-East to the South and Islands, we find again that changes in the households' structural characteristics increasingly contributed to mitigate the expenditures decrease during the crisis and to increase their level afterwards.

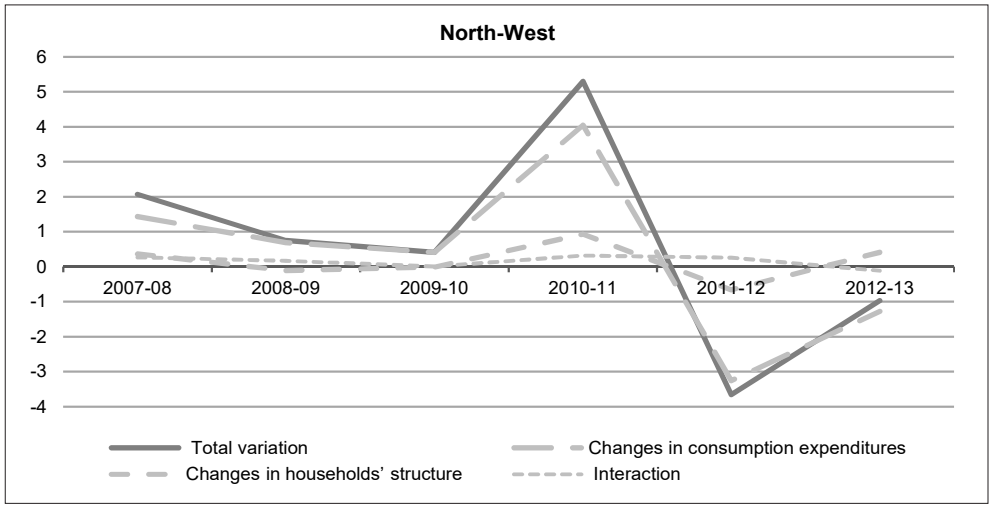
Actually, the most dramatic changes in the households' structure occurred in the central and in the southern areas. The rapid increase of the number of households with an older reference person – where the retirement income granted financial security and offered protection from the impact of the crisis (Istat, 2014) – was accompained by a decrease in the number of households with two or more children, who instead sharply reduced their expenditures.

Figure 6.1.A - Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. Italy



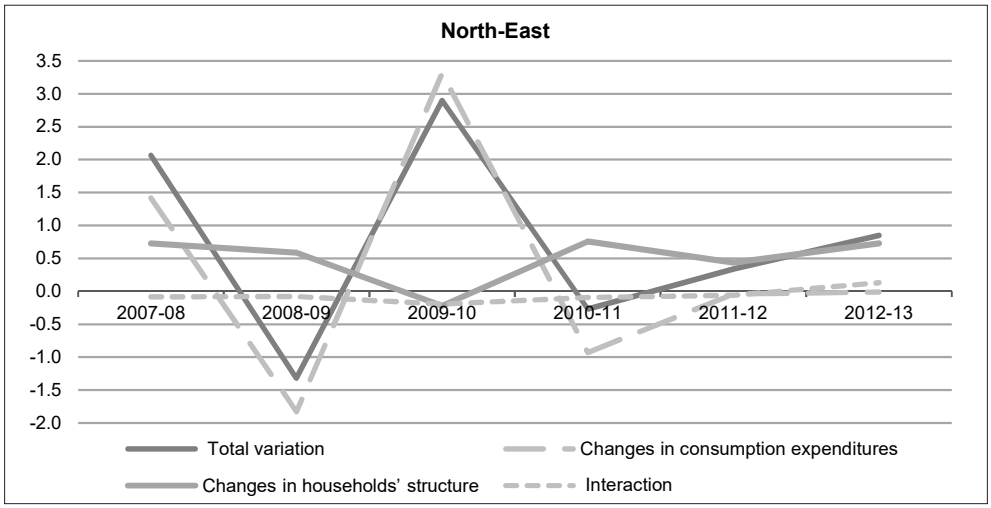
Source: Authors' calculation on HBS data

Figure 6.1.A continued **- Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. North-West**



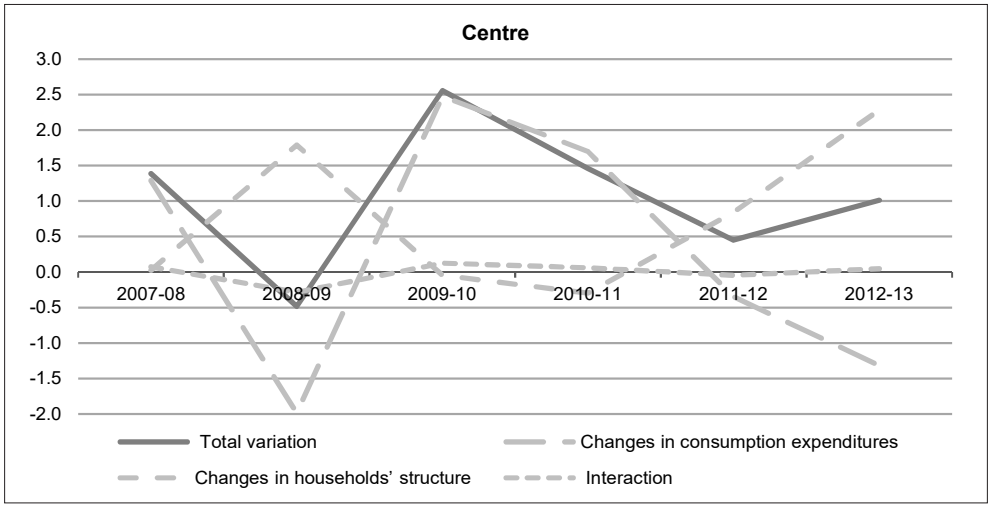
Source: Authors' calculation on HBS data

Figure 6.1.A continued **- Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. North-East**



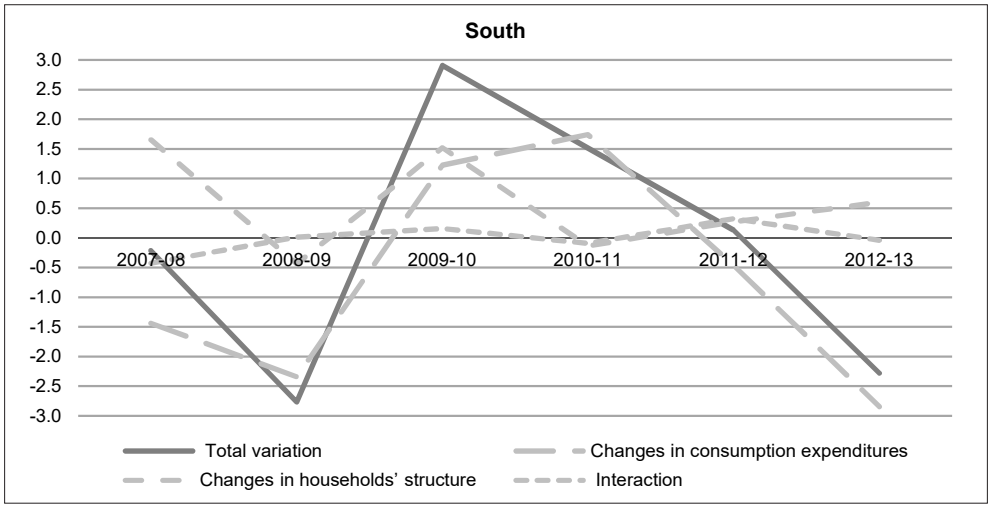
Source: Authors' calculation on HBS data

Figure 6.1.A continued **- Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. Centre**



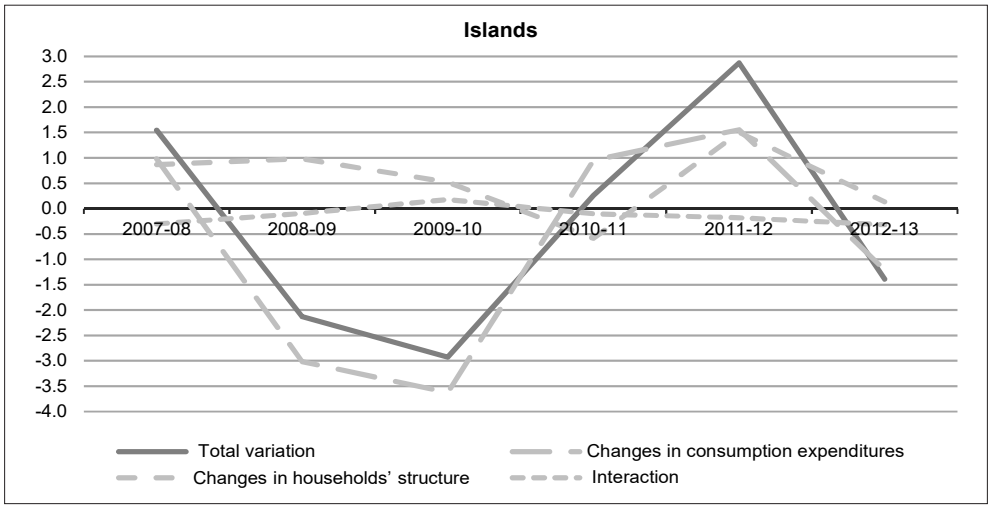
Source: Authors' calculation on HBS data

Figure 6.1.A continued **- Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. South**



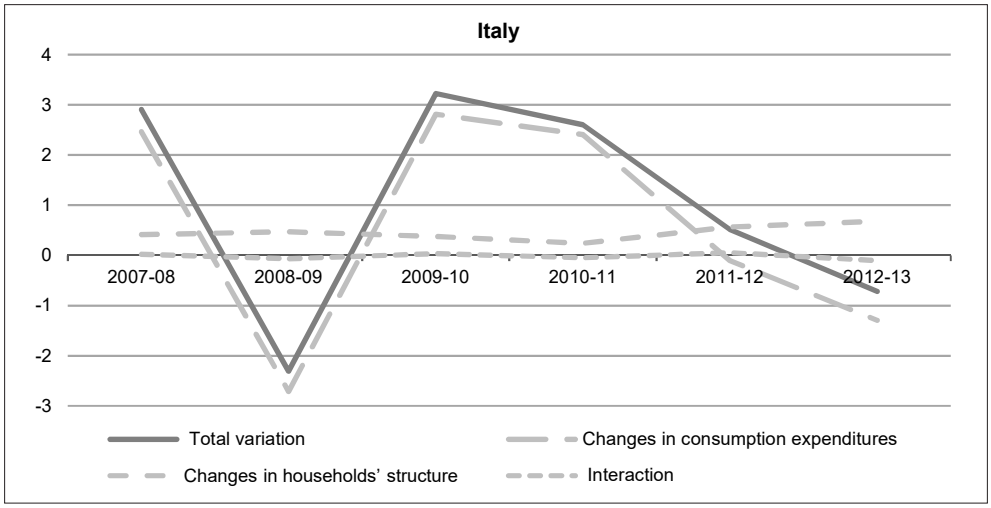
Source: Authors' calculation on HBS data

Figure 6.1.A continued **- Relevance (%) of the three components of the annual variation of per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Total expenditures. Islands**



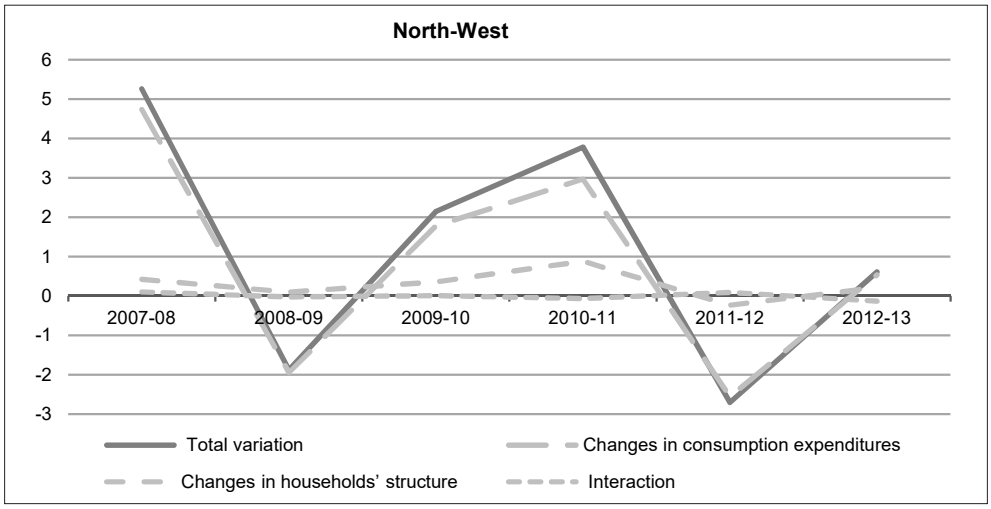
Source: Authors' calculation on HBS data

Figure 6.1.B - Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. Italy



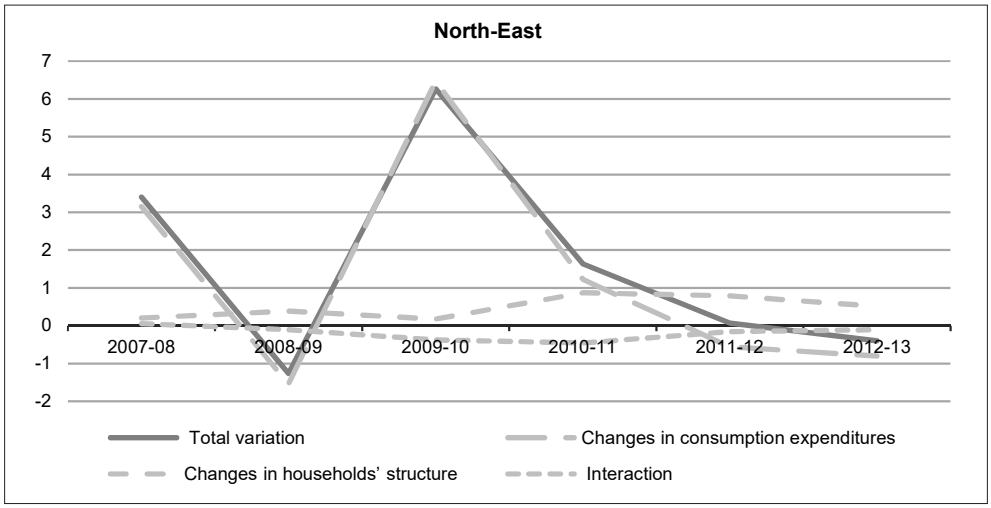
Source: Authors' calculation on HBS data

Figure 6.1.B continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. North-West**



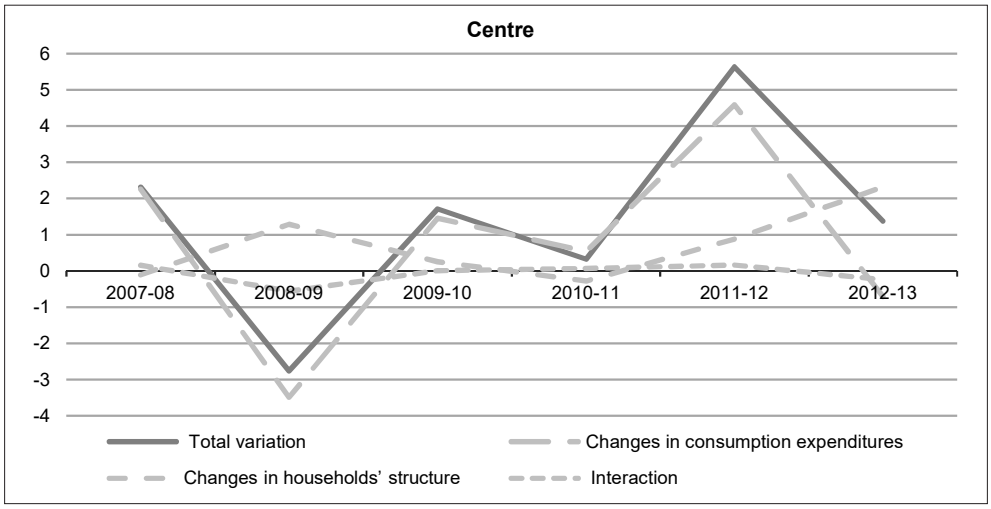
Source: Authors' calculation on HBS data

Figure 6.1.B continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. North-East**



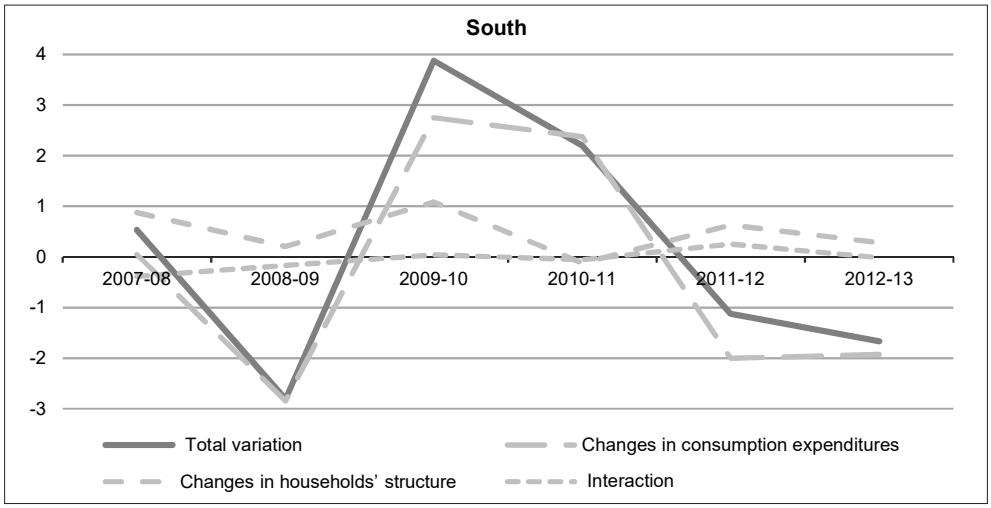
Source: Authors' calculation on HBS data

Figure 6.1.B continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. Centre**



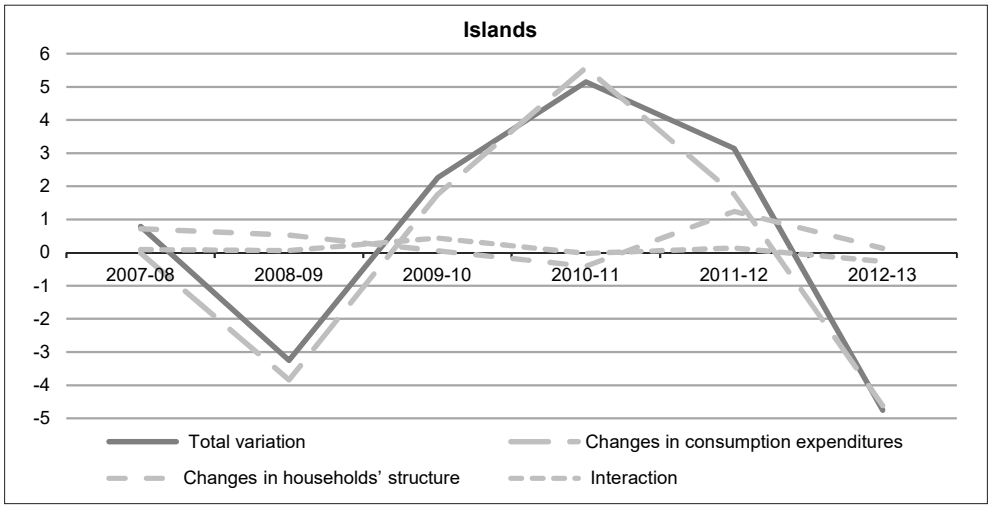
Source: Authors' calculation on HBS data

Figure 6.1.B continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. South**



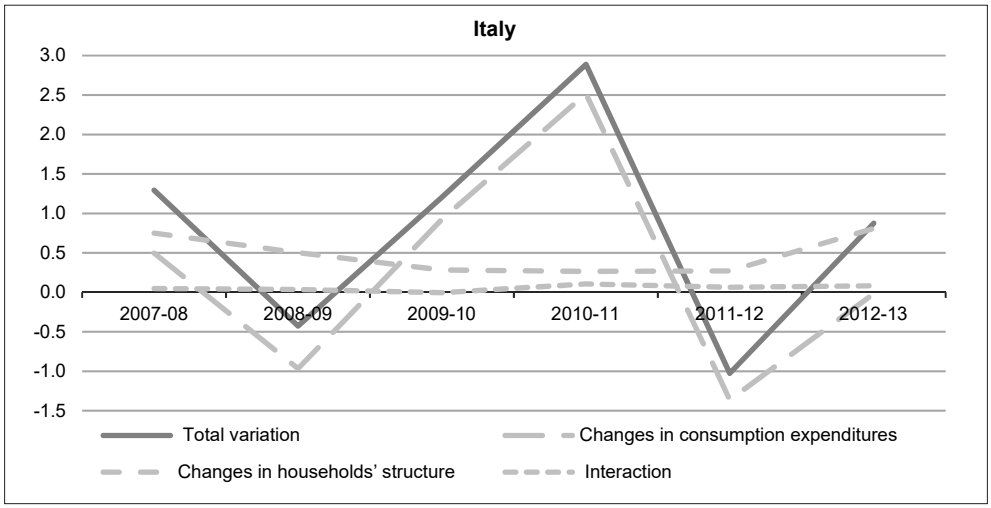
Source: Authors' calculation on HBS data

Figure 6.1.B continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area. Food and beverages. Islands**



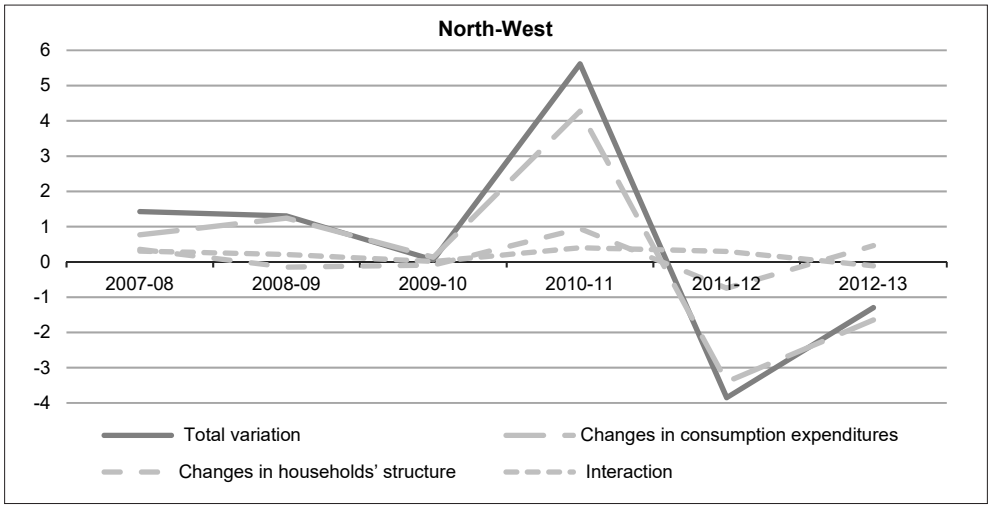
Source: Authors' calculation on HBS data

Figure 6.1.C - Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". Italy



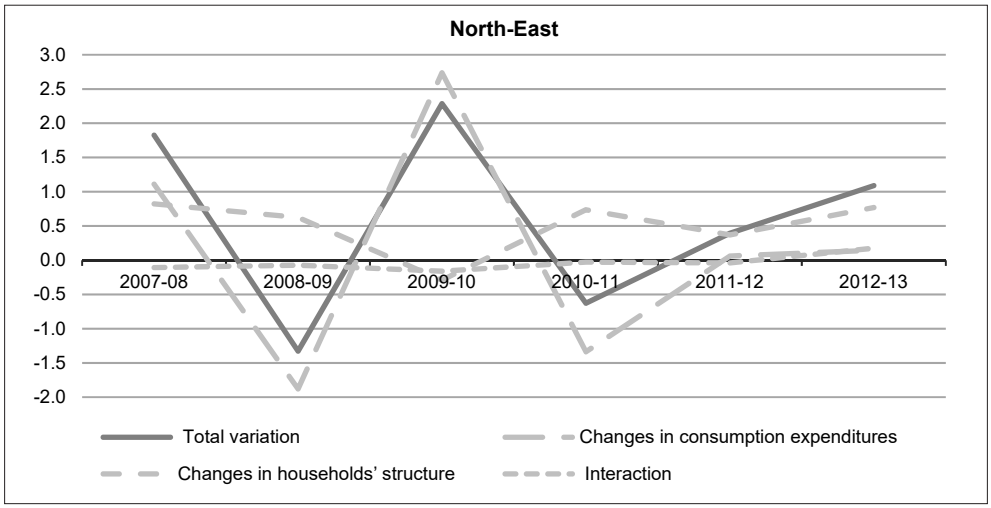
Source: Authors' calculation on HBS data

Figure 6.1.C continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". North-West**



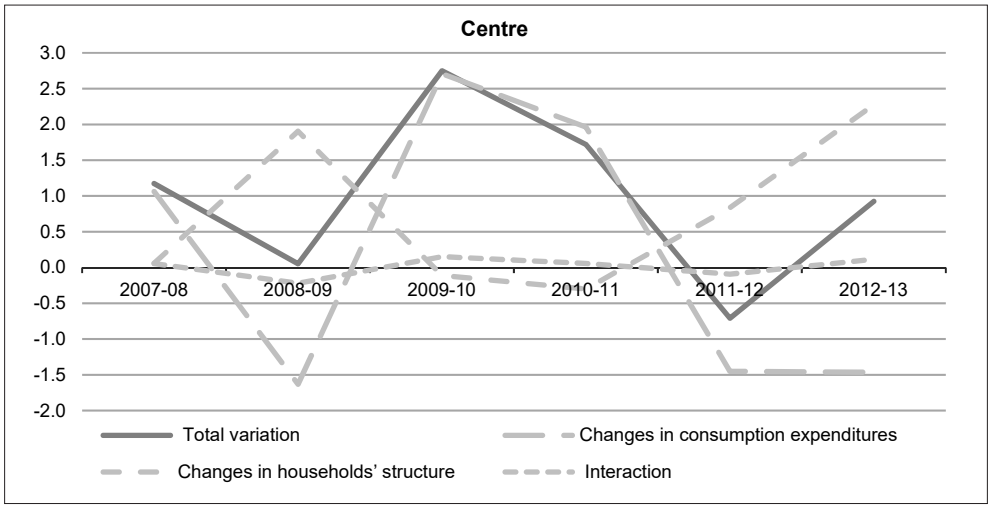
Source: Authors' calculation on HBS data

Figure 6.1.C continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". North-East**



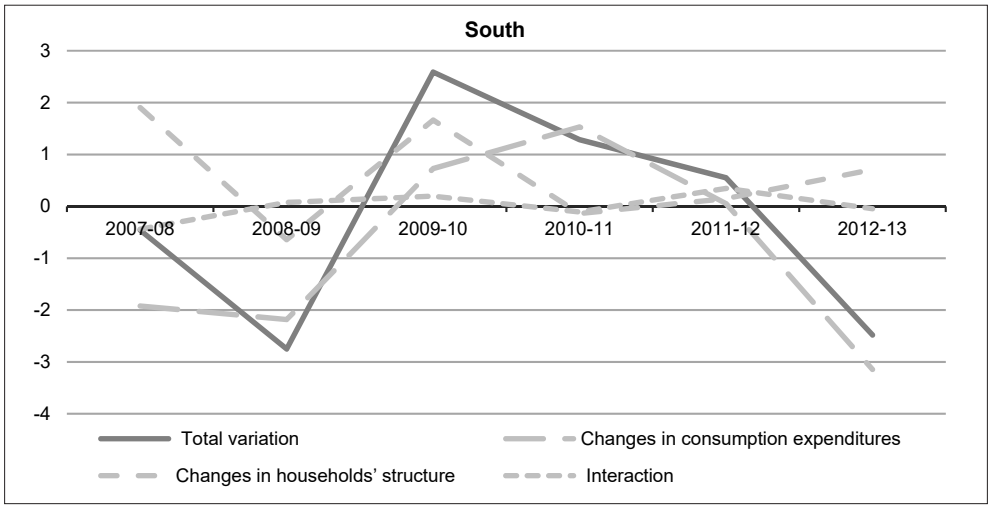
Source: Authors' calculation on HBS data

Figure 6.1.C continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". Centre**



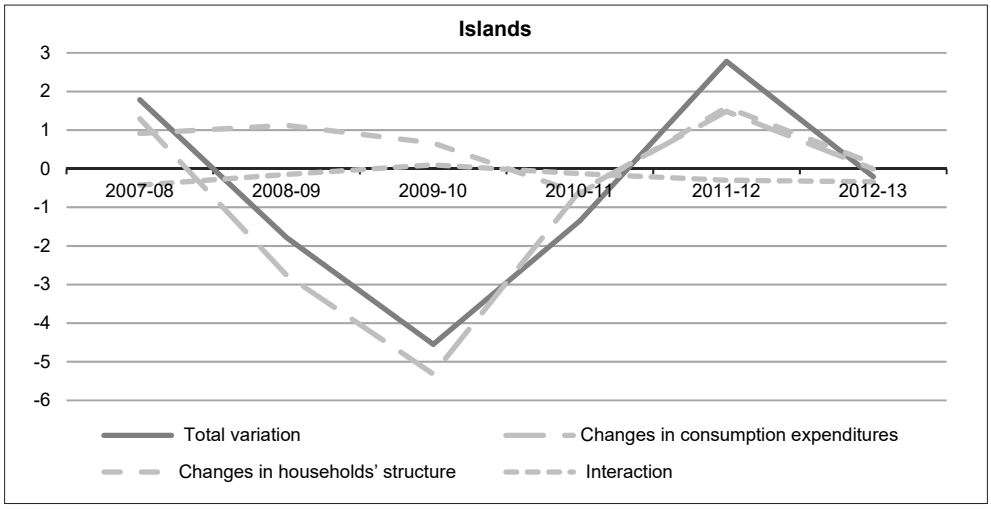
Source: Authors' calculation on HBS data

Figure 6.1.C continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". South**



Source: Authors' calculation on HBS data

Figure 6.1.C continued **- Relevance (%) of the three components of the annual variation of the per capita weighted average from 2008 to 2013: propensity to spend, household structure and their interaction by geographical area: "Non-food". Islands**



Source: Authors' calculation on HBS data

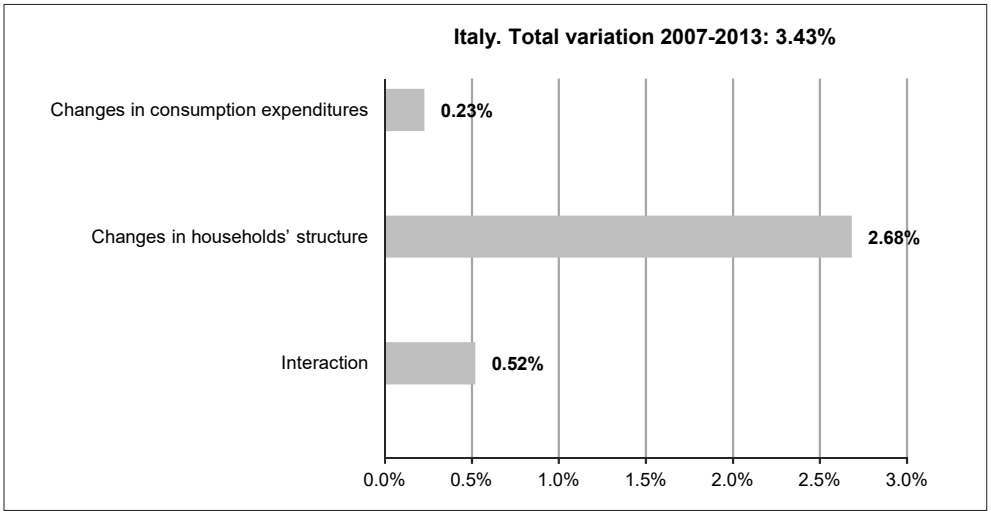
7. Conclusions

As discussed throughout the paper the socio-demographic factors responsible of the relevant changes in the universe of Italian households led to the increase of one-person households – also because of population ageing – and to the decrease of households' size.

Another aspect that surely deserves attention is the gradual integration of a multietnic component, due to immigration (Bruzzone, Maccheroni, and Mignolli, 2008). Unfortunately, we could not account for the consequent changes in the population of Italian households based on the available data.

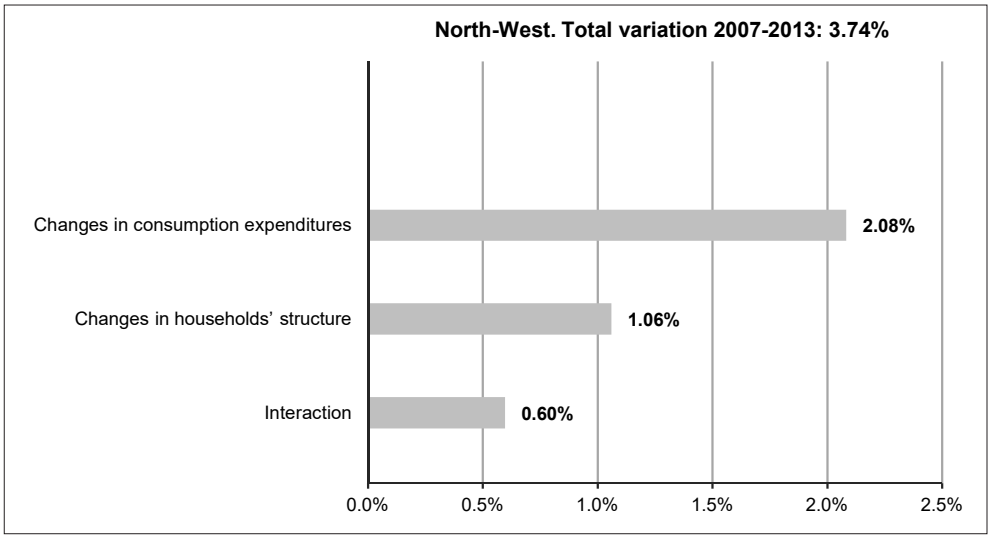
Our approach allowed exploring the impact of the socio-demographic dynamics on consumption expenditures. Such impact was clearly more relevant in those areas where social changes were more pronounced, namely the Centre, the South, and the Islands. This is evident in Figures 6.1.A, 6.1.B, and 6.1.C, as well as in Figure 7.1 that reports the relevance of the components responsible for the total variation registered for $\bar{E}_{PC,W}$ from 2007 to 2013.

Figure 7.1 - Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. Italy



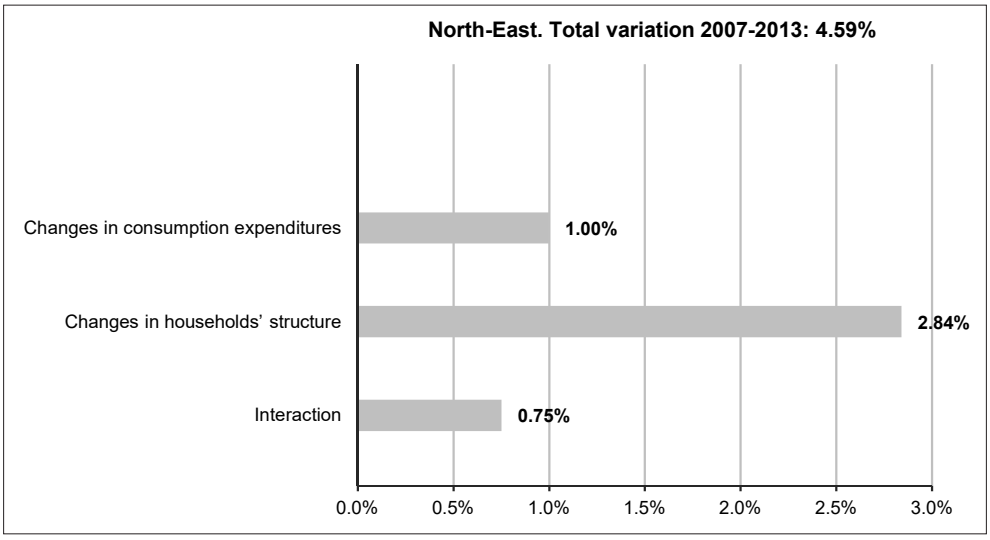
Source: Authors' calculation on HBS data

Figure 7.1 continued **- Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. North-West**



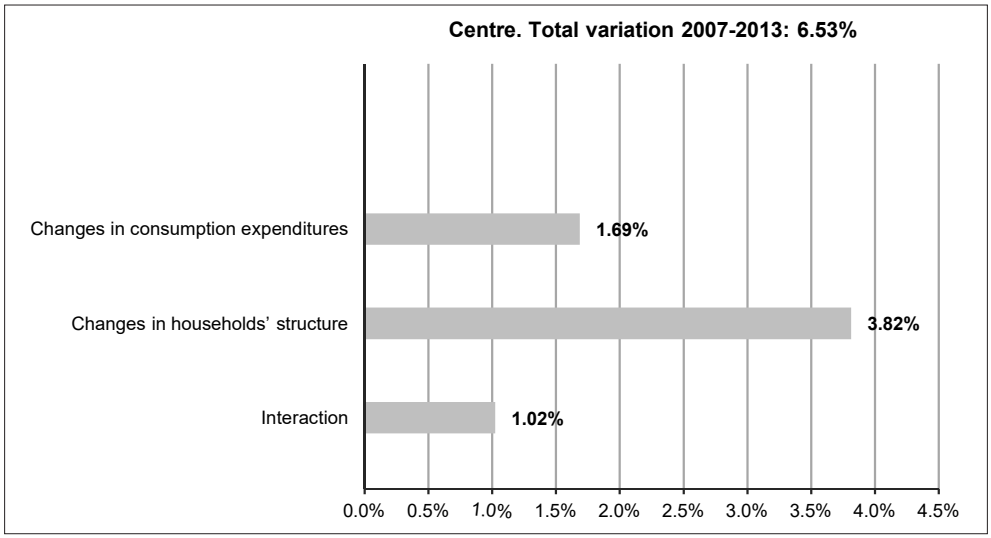
Source: Authors' calculation on HBS data

Figure 7.1 continued **- Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. North-East**



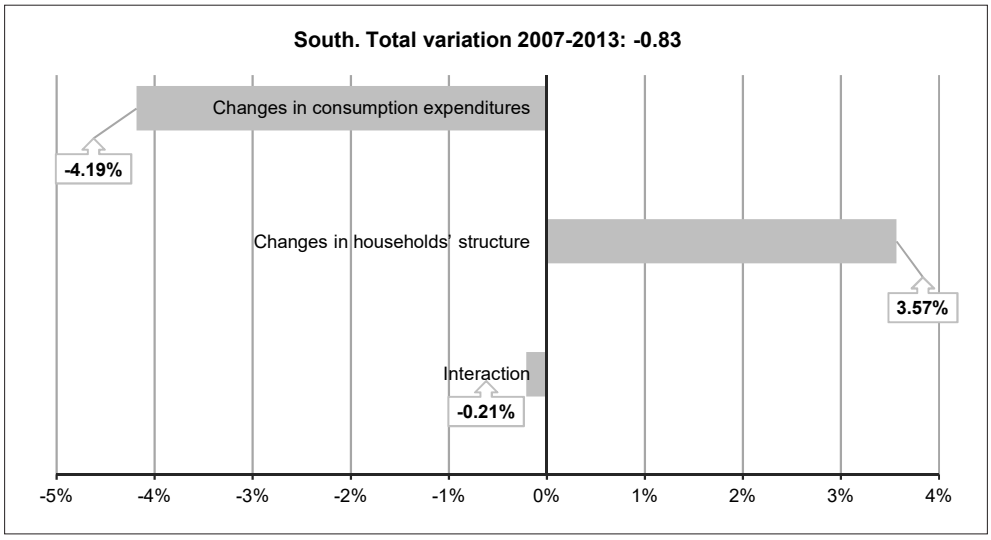
Source: Authors' calculation on HBS data

Figure 7.1 continued **- Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. Centre**



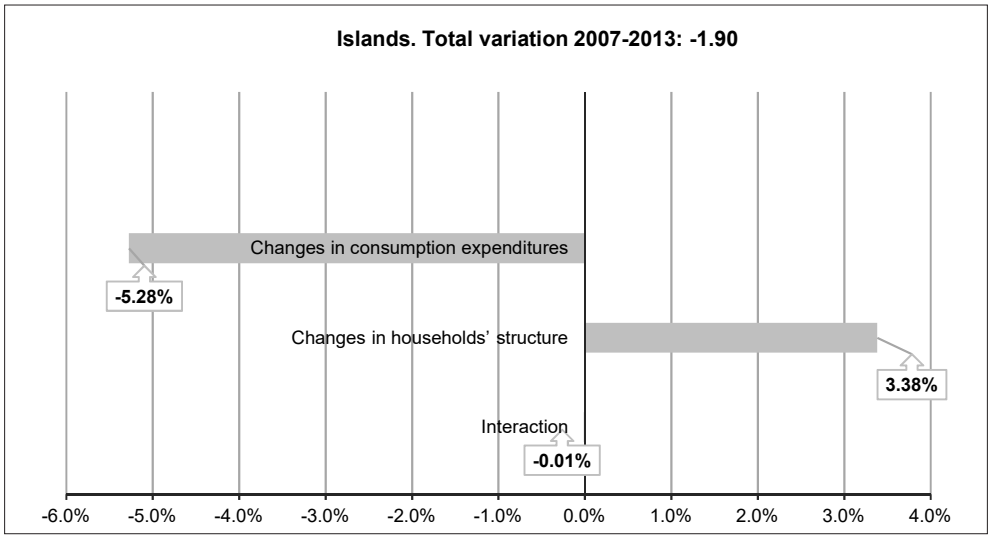
Source: Authors' calculation on HBS data

Figure 7.1 continued **- Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. South**



Source: Authors' calculation on HBS data

Figure 7.1 continued **- Components of the variation (%) of the the per capita weighted average, $\bar{E}_{PC,W}$ from 2007 to 2013, by geographical areas: total consumption expenditures. Islands**



Source: Authors' calculation on HBS data

The positive variation of the per capita weighted average registered in the North and in the Centre of Italy was triggered by the increase in the propensity to spend, which played a fundamental role in the North-West but was less relevant in the North-East and in the Centre. In particular, the contribution due to changes in the households' structure reaches its maximum in the Centre (Figure 7.1). This is coherent with the evidence on the evolution of the households as discussed in Section 3. In the latter areas indeed, where the variation of the expenditures was negative, the important relevance of the variation of households' structure can be noted: in the South and in the Islands the significant reduction in the propensity to spend was offset – at least partially – by changes in the households' characteristics (Figure 7.1).

Actually, it is important to consider that the ageing of population characterising Italy as a whole was nonetheless more pronounced in the southern areas during the considered period. The increase in the relevance of the older population had necessarily economic effects, reflected also in the variations in consumption expenditures. Indeed, between 2007 and 2013 average monthly expenditures increased for households with an older

reference person (specifically, OP3 and C3; see Table 5.2). By focussing on per capita weighted average expenditures, instead, we found that it increased only in southern Italy for such households.

Southern Italy is also the area where the risk of depopulation was more pronounced, because of levels of fertility lower than in the other areas, as well as of youth emigration and of the more pronounced effects of the crisis on the levels of occupation. Consequently, the economic situation of the households worsened, and only households with older reference persons were able to maintain their purchasing power (Table 5.2). Thus, our results suggest that the redistributive role of the retirement income prevented a general decrease in the consumption expenses.

Particularly in southern areas, but also across the entire nation, there is still uncertainty about the economic prospects. Moreover, the socio-economic transformations occurred over the years might weaken the traditional intergenerational solidarity within the family environment. In addition, the decrease in the number of households' members and/or their distance from home because of migration can undermine the fundamental role of the family as a social safety net.

In this framework, a relevant and crucial role might be played by informal networks, which are larger than the parental ones and which can "integrate" the possibly weakened family solidarity. Nonetheless, such informal networks are lacking, particularly in southern Italy. This further aggravates the condition of this area, already disadvantaged because of the pronounced differences in the Italian welfare system (Istat, 2014) which penalise the southern regions with respect to the resources available for services and social assistance.

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