



European Research Institute on Cooperative and Social Enterprises

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**WORKING PAPER N. 035 | 12**

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A PORTRAIT USING DESCRIPTIVE AND PRINCIPAL  
COMPONENT ANALYSIS**

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JEL classification: C38, J21, L31, M41  
Fondazione Euricse, Italy

Please cite this paper as:  
Carini C., Costa E., Carpita M., Andreaus M., (2012), *The Italian Social Cooperatives in 2008:  
A Portrait Using Descriptive and Principal Component Analysis*  
Euricse Working Paper, N.035 | 12

## **THE ITALIAN SOCIAL COOPERATIVES IN 2008: A PORTRAIT USING DESCRIPTIVE AND PRINCIPAL COMPONENT ANALYSIS**

C. Carini<sup>1</sup>, E. Costa<sup>2</sup>, M. Carpita<sup>3</sup>, M. Andreaus<sup>4</sup>

### **Abstract**

This paper describes the role of social cooperatives in Italy as a type of economic, nonprofit organization that is assuming an increasingly central role in the country, by contributing to its economic and social growth.

In the last decade many agencies, institutions and research centres (Istat – Italian National Statistic Office, Ministry of Economic Development, Confcooperative Legacoop, Unioncamere) have provided studies on the evolution of the cooperative movement in the Third Sector, in order to monitor the development of these organizations over time and to evaluate their economic and employment impact over the country.

Following a similar path, this study analyzes the contribution of social cooperatives in Italy at a regional level, highlighting the differences related to their age and fields of activity. Moreover, the paper evaluates the efficiency and profitability of the social cooperative by conducting further analysis based on a number of economic and financial indexes.

### **Keywords**

Social cooperatives, Italy, Regional development, Employment, Economic and financial indexes, Principal component analysis

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## 1. Introduction

Since 1960, European countries have witnessed a growing body of private organizations that do not have profit maximization as their final objective (Barr, 1992). Experiences in Germany, Sweden and the United Kingdom have shown how the ratio between public expenses and GDP has constantly increased from 1960 to 1980 (Malinvaud, 1994). In this scenario, foundations, associations, mutual help societies and cooperatives sprang up in order to offer goods and services able to responding to the citizens' needs.

Economists have proposed several theories to explain the birth of these organizations (Borzaga and Santuari, 1999): for the most part, the answer was: i) market failures due to information asymmetries between producers and consumers (Hansmann, 1980); ii) unmet needs for public services from the Welfare State (Weisbrod, 1975); iii) the actions of individuals or groups motivated by ideological, ethical or religious principles (Rose-Ackerman, 1987); iv) the willingness of consumers to maximize the output control (Ben-Ner and Van Hoomissen, 1991).

In Europe, the term used to refer to these organizations is "social enterprise" (Borzaga and Defourny, 2001), though they acquire different labels in different countries (Defourny and Nyssens, 2008). In short, "social enterprises" can be defined as private organizations whose mission is to produce goods and services in the pursuit of objectives that are in the general interest, referring to local communities, persons or social groups (sometimes in situations of fragility).

In Italy, the Law 118/2005 and the Legislative Decree Dlgs.n. 155/2006 establish the status of the social enterprise "for those private organizations whose main economic activity is organized in order to produce or exchange goods or services of social utility, designed to achieve objectives of general interest" (comma 1).

This paper focuses on the main type of social enterprise: social cooperatives (Thomas, 2004).

Social cooperatives are small or medium sized enterprises. They interact with local authorities and with the communities they are located in, supplying crucial services, including social, educational and work integration (for a recent sample survey, see Carpita, 2009).

In general, cooperatives are not a dominant form of enterprise (Bontemps and Fulton, 2009), however in Italy they play a relevant role in the broader economic tissue (Istat, 2008; Borzaga, 2009). In recent years, a number of research studies have examined social cooperatives (Mancino and Thomas, 2005; Borzaga and Tortia, 2006; Carpita, 2009). Moreover, many institutions, research centres and agencies (Istat, Ministry of Economic Development, Confcooperative Legacoop, Unioncamere, Gino Mattarelli Consortium) have conducted specific studies of the evolution of the whole cooperative movement within the Third Sector. These studies aim at providing an idea of the size and features of this phenomenon and to monitor the development of these organizations over time.

Nevertheless, reliable data on the number of social cooperatives operating in Italy are not available because every national association (such as Legacoop or

Confcooperative) provide their own data without integrating them with other institutions. As a result, the data are often missing or incomplete, nor has there been, to this point, a tool that integrates information from different sources.

Following these premises, the aim of this paper is to provide an exploratory analysis of the Italian social cooperatives in 2008, by considering their features in terms of size and performance. The article does not seek to confirm any specific theoretical hypothesis; the statistical analysis is intended to offer an accurate overall view of the social cooperatives phenomenon, whose impact had previously only been estimated (Istat, 2005).

Specifically, this paper aims to contribute to the existing literature by supplying: i) a descriptive analysis of the characteristics of Italian social cooperatives active in 2008 (their number, regional distribution, age, sector of activity); ii) a portrait of the context in which they operate; iii) an analysis of the economic and financial indicators able to measure the “efficiency” and the “capitalization ratio” of social cooperatives; iv) by processing the relevant data using the Principal Component Analysis (PCA).

The findings give insight as to the role of social cooperatives in the Italian economic fabric, and support previous studies (Andreaus, 2002; Carpita, 2009; Costa, 2003, Gino Mattarelli Consortium, 1997 and 2002) in which it emerges that social cooperatives are private, mutual organizations with characteristics that differ from the North to the South of Italy, from young to old organizations and according to the different fields of operation.

This analysis is part of a broader research project carried out by Euricse through the development of a statistical observatory on cooperation, and aims to analyze the role of social cooperation in Italy from a descriptive point of view, rather than from an economic and financial one.

The following section presents succinctly the organizational and legislative features of social cooperatives, by introducing them within their actual normative context.

Section three stems from the Observatory on Cooperatives and Social Enterprises in Italy, a project launched at the end of 2009 by Euricse. The main goal of this Project was to create a Data Warehouse containing periodically updated information on all of the registration data, sector of activity, economic situation and occupational information for each active Italian cooperative. Our analysis provides insights and background as to the methodological approach adopted to populate the Data Warehouse.

Section four introduces the “numbers” of Italian social cooperatives in 2008 by linking them with the regional welfare policy.

Section five describes their economic and financial performance by focusing on the analysis of revenues, costs and equity.

Finally, section six presents the Principal Component Analysis (PCA) of the data.

## **2. The Italian social cooperatives and the recent law 118/2005**

Italian social cooperatives were established with law 381/1991. As analyzed by Kerlin (2006), Italy was the first country in Europe to introduce such legislation, and was instrumental in increasing the number of organizations of this type over the years (Costa, 2003).

Social cooperatives acquired a relevant role after the introduction of Law 381/1991 by addressing the citizens' claims and needs previously unsatisfied by the deficiencies of the Welfare State (Pasquinelli, 1993). According to this law, social cooperatives can either be "caring activities" and/or "training" ones (Thomas, 2004). Caring activities – so-called type A – refer to social-health care and educational services, cultural services, nurseries, initiatives aimed at environmental protection; while training activities – so-called type B – introduce disadvantaged people to business activities and employment opportunities.

These organizations are privately owned, specifically member-owned, and operate in order to create social value for their community.

According to Istat (2008) social cooperatives increased from 650 in 1985 to 7,400 in 2005 (estimation) being mainly located in Northern Italy (46.8%). Social cooperatives had more than 262,000 members, 244,223 paid workers and 34,626 volunteers. The development of social cooperatives has been primarily supported by the substantial growth in demand of welfare services by the community and secondly by the personal ambitions of the founders in order to satisfy their moral beliefs (Thomas, 2004).

In terms of their distinctive features, social cooperatives have so far represented the most important type of social enterprise in Italy (Defourny and Nyssens, 2008; Mancino and Thomas, 2005). However, other forms of social entrepreneurship have also developed over the years.

In light of the broader conceptualization of social enterprises (Borzaga and Defourny, 2001), recently a law on social enterprise was introduced in Italy (118/2005), which undoubtedly represents a milestone of the regulation of social entrepreneurship activities across Europe.

The law narrows the boundaries between "legal social enterprise" and "organizational social enterprise", because it enables "various types of organizations (not only cooperatives and traditional nonprofit organizations, but also investor-owned organization, for instance) to obtain the "legal brand" of social enterprise, provided that they comply with the non-distribution constraint and organize the representation of certain categories of stakeholders, including workers and beneficiaries" (Defourny and Nyssens, 2008, p. 26).

Four years after the promulgation of the law, the Iris Network Report (Borzaga and Zandonai, 2009) estimated that in Italy 14,700 possible "legal social enterprises" exist – i.e. private organizations that comply with the distinctive features required by the law – but only 623 institutions have obtained their "legal brand" by registering into the provided register.

Many academics have investigated the reasons for the "partial failure" of the law. Specifically, the scarce response of third-sector organizations to the law on social enterprise has been analyzed from several points of view. During recent years,

lawyers (Fici and Galletti, 2007; Iamiceli, 2009), economists (Ecchia and Viviani, 2006; Sacconi, 2006) and accountants (Andreaus, 2007, Marano, 2006; Rusconi and Signori, 2007; Travaglini, 2006, 2007) have given their contribution to the debate on social enterprise by analyzing the limits and potentials of the recent legislation.

Reflections on the motivations of this “partial failure” are not at the “core” of this paper: rather, the objective is to analyze the role of social cooperation as a form of social enterprise. These types of nonprofit organization are indeed considered a social enterprise even without the legal label. Indeed, according to the definition proposed by Borzaga and Defourny (2001), social enterprises are private and independent organizations, which continually pursue social value creation by offering goods or services and which assume a significant level of economic risk. As a consequence, social cooperatives are particular type of social enterprise.

### **3. Euricse Observatory on Cooperatives and Social Enterprises in Italy – methodological notes**

This analysis was developed within the framework of other activities carried out by the *Observatory on Cooperatives and Social Enterprises in Italy*, a project started at the end of 2009 by Euricse.

The main goal of this Project is to create a “data warehouse” of Italian cooperatives containing periodically updated information on all of the registration data, sector of activity, economic situation and occupational information of each active Italian cooperative.

The basis for the creation of the “warehouse” is the set of data taken from the AIDA-Bureau Van Dijk data bank on cooperatives, which is updated to 30<sup>th</sup> September 2010<sup>5</sup>.

In order to verify their accuracy, these data have been compared to those stored in other official banks, such as the Companies Register of Unioncamere, the Istat database of active companies (Archivio Statistico delle Imprese Attive - ASIA), the regional registers of social cooperatives<sup>6</sup> (created under the Italian law n. 381/91) and the archives of sector associations.

When any discrepancies have arisen within the economic data, as detected through specific IT routines, the verification process entailed looking at the balance sheet registered at the local Chamber of Commerce and available on the online data bank Telemaco of the Companies Register (the official record for all Italian businesses).

The total population of the cooperatives analyzed is made up of all of those that are officially registered as social cooperatives in the Companies Register and of all the cooperatives which, even if not specifically registered under the label “social cooperative”, are chartered on the regional roll of the cooperatives, or have the label “social cooperative” in their company name.

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5 Aida is a data bank created by Bureau Van Dijk (<http://www.bvdinfo.com>), which stores the registration, commercial and economic information about more than 950.000 Italian businesses.

6 Currently, Euricse has a complete register of cooperatives of the following regions: Abruzzo, Liguria, Lombardy, Marche, Trentino Alto-Adige (register of the provinces of Trento and Bolzano), Piedmont, Emilia-Romagna, Sardinia and Aosta Valley.

A cooperative is considered to be active if it is registered in the Companies Register, partakes in an economic activity<sup>7</sup> and is not under bankruptcy proceedings.

The cooperatives excluded from the analysis are those that have interrupted their activities and are no longer in the Companies Register and those that, though still in the Register, are not economically active. Additionally, the analysis excludes any *consortia* of cooperatives.

#### 4. Social cooperatives in Italy

As of the 31<sup>st</sup> of December 2008, there were 13,938 active social cooperatives. Table 1 shows their distribution by geographical area. The highest concentration is found in the northern regions (35.8%), while in the South it is 27.7%.

**Table 1 - Social cooperatives and their employees<sup>8</sup> by area – Year 2008**

Area	Social cooperatives		Employees of social cooperatives		
	N.	%	N.	%	average coop.
Northwest	3,092	22.2	107,402	33.8	35
Northeast	1,901	13.6	80,698	25.4	42
Centre	2,920	20.9	63,556	20.0	22
South	3,856	27.7	37,644	11.9	10
Islands	2,169	15.6	28,039	8.8	13
Italy	13,938	100.0	317,339	100.0	23

Source: Euricse, *Observatory on Cooperatives and Social Enterprises in Italy*

The most populated areas of Italy (Lombardy, Campania, Latium and Sicily – Figure 1) also have the highest number of active social cooperatives registered: the total for these four regions is 47.7% of all the cooperatives analyzed. Specifically, the highest concentration is in each region's capital city: Rome (1,117 social cooperatives), Milan (627), Naples (484) and Palermo (377).

Additionally, some provincial towns also have over 200 cooperatives registered: this is true especially in those metropolitan areas where during the past few years there has been an increasing demand for public health and educational services, and job assistance services aimed at disadvantaged people – among these, Turin and Brescia in the North; Frosinone and Latina in Central Italy; and Bari, Salerno, Catania and Cagliari in the southern and insular regions.

In total, social cooperatives employ 317,339 people, 59.2% of whom in Northern Italy, specifically (Figure 1) in Lombardy (18.6%), Emilia-Romagna (12.9%) and Piedmont (11.7%).

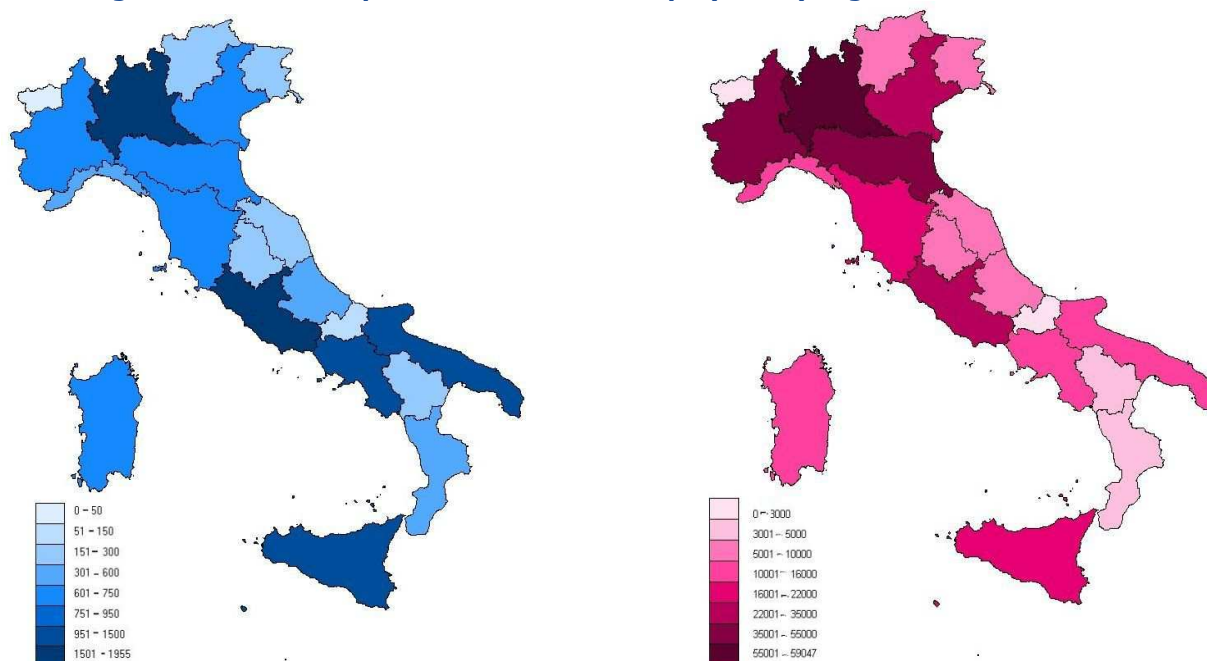
Looking at Table 1, it is evident that social cooperatives that are active in the northern and central regions have a greater number of employees than those in the South and the Islands.

<sup>7</sup> In order to establish the sector of activity we looked at the ATECO 2007 code concerning the main economic activity declared by the cooperative to the territorial Chamber of Commerce. For more information see: <http://www.istat.it/strumenti/definizioni/ateco/>.

<sup>8</sup> When the exact number of employees was not available (19.9% of cooperatives) we made an estimation following a statistic procedure created by Euricse that assigns a random value to a group of similar cooperatives in terms of cost of employers, geographic distribution and type of cooperative. The methodological illustration of the procedure is available on request.



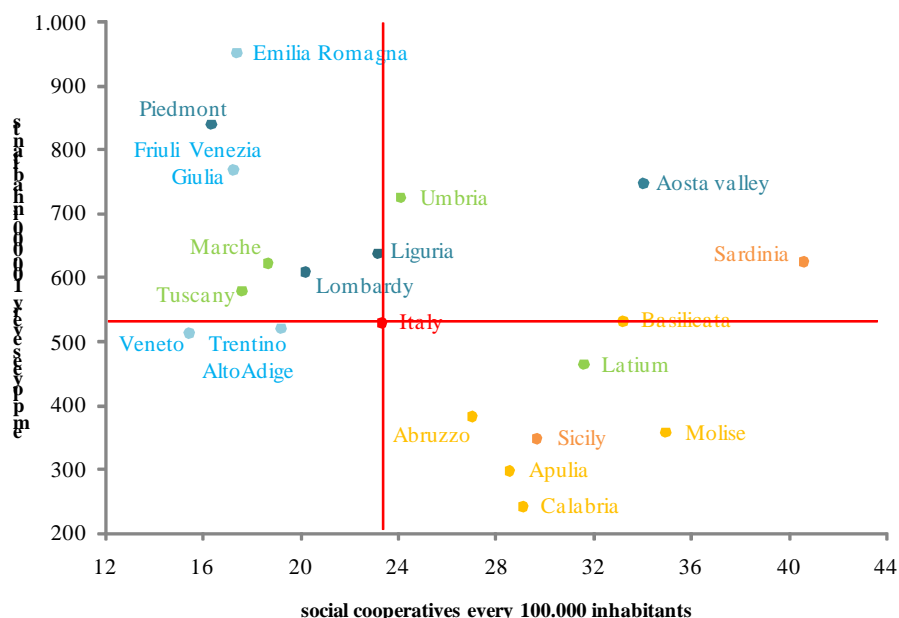
**Figure 1 - Social cooperatives and their employees by region – Year 2008**



Source: Euricse

Figure 2 clearly shows the greater average size of cooperatives in the North of Italy. Furthermore, the graph also highlights how the regions in the Northeast and Northwest have fewer cooperatives of greater size in terms of the number of employees (first square), while the regions in the South are in the third square (a lot of cooperatives of smaller dimensions, in terms of number of employees).

**Figure 2 - Regions per social cooperatives and employees every 100.000 inhabitants**



Source: Euricse

Table 2 shows that cooperatives in Italy are relatively young: 31.3% is not over 10 years old. Specifically, the increasing number of cooperatives in the southern area is a relatively recent phenomenon: one in two cooperatives is no older than 10 years, specifically, 28.9% is no older than five years.



**Table 2 - Social cooperatives by year of registration and type - Year 2008**

Year	Type A		Type B		Missing		Total	
	N	%	N	%	N	%	N	%
Up to 1992	1,743	23.0	991	19.2	17	1.4	2,751	19.7
1993 - 1997	1,063	14.0	745	14.4	35	2.9	1,843	13.2
1998 - 2002	1,854	24.5	1,234	23.9	185	15.5	3,273	23.5
2003 - 2007	2,442	32.2	1,874	36.3	689	57.6	5,005	35.9
2008	472	6.2	318	6.2	269	22.5	1,059	7.6
Missing	4	0.1	1	0.0	2	0.2	7	0.1
Total	7,578	100.0	5,163	100.0	1,197	100.0	13,938	100.0

Source: Euricse

As shown in the Table 3, approximately eight out of ten cooperatives operate in the service industry. In addition to health and social services (44.4%), they also provide services to businesses (11.8%) and educational services (5.9%). The remaining 10% is evenly distributed among industry (5.8%), agriculture (2.6%) and construction (3%) sectors.

**Table 3 - Social cooperatives by sector of activity and area – Year 2008**

Sector of activity (type of cooperative)	Italy		North		Centre		South and Islands	
	N	%	N	%	N	%	N	%
Services	11,141	79.9	4,217	84.5	2,360	80.8	4,564	75.8
Human health and Social work (A)	6,184	44.4	2,484	49.7	1,041	35.7	2,659	44.1
Education (A)	819	5.9	301	6.0	143	4.9	375	6.2
Arts, entertainment, recreation (A)	575	4.1	224	4.5	120	4.1	231	3.8
Support Service Activities (B)	1,651	11.8	554	11.1	470	16.1	627	10.4
Transportation and storage (B)	311	2.2	80	1.6	86	2.9	145	2.4
Lodging and food (B)	303	2.2	91	1.8	92	3.2	120	2.0
Prof, scientific, technical act. (B)	324	2.3	133	2.7	86	2.9	105	1.7
ICT (B)	250	1.8	83	1.7	81	2.8	86	1.4
Wholesale and retail trade (B)	300	2.2	130	2.6	87	3.0	83	1.4
Real estate activities (B)	34	0.2	25	0.5	7	0.2	2	0.0
Financial and insurance act. (B)	7	0.1	3	0.1	1	0.0	3	0.0
Other services (B)	383	2.7	109	2.2	146	5.0	128	2.1
Agriculture (B)	368	2.6	156	3.1	87	3.0	125	2.1
Industry excluding construction (B)	814	5.8	387	7.8	170	5.8	257	4.3
Construction (B)	418	3.0	105	2.1	129	4.4	184	3.1
Missing	1,197	8.6	128	2.6	174	6.0	895	14.9
Total	13,938	100.0	4,993	100.0	2,920	100.0	6,025	100.0

Source: Euricse

As per the regional distribution, data show that in the northern regions there are mainly type A cooperatives: in fact, 60.2% provide health, social and educational services. In the South there are nearly as many type A cooperatives as type B's, while in the central regions type B's are prevalent (60.3%).

Notwithstanding the absence of information concerning their types, it is still possible to differentiate between cooperatives that provide health, social or educational services (type A) from those that integrate disadvantaged people into the labor market (type B)<sup>9</sup> by looking at their main sector of activity. Of the organizations for which this is known, 54.5% can be classified as type A cooperatives.

<sup>9</sup> With just the code of cooperative's primary activity it is not possible to identify the social cooperatives that perform both activities of types A and B. However, through the analysis of regional registers of social cooperatives and historical data of the phenomenon (in 2005, mixed unions were only 4.3%) it is plausible to assume that the number of such cooperatives is still small.

**Table 4 - Employees of social cooperatives per sector of activity and area – Year 2008**

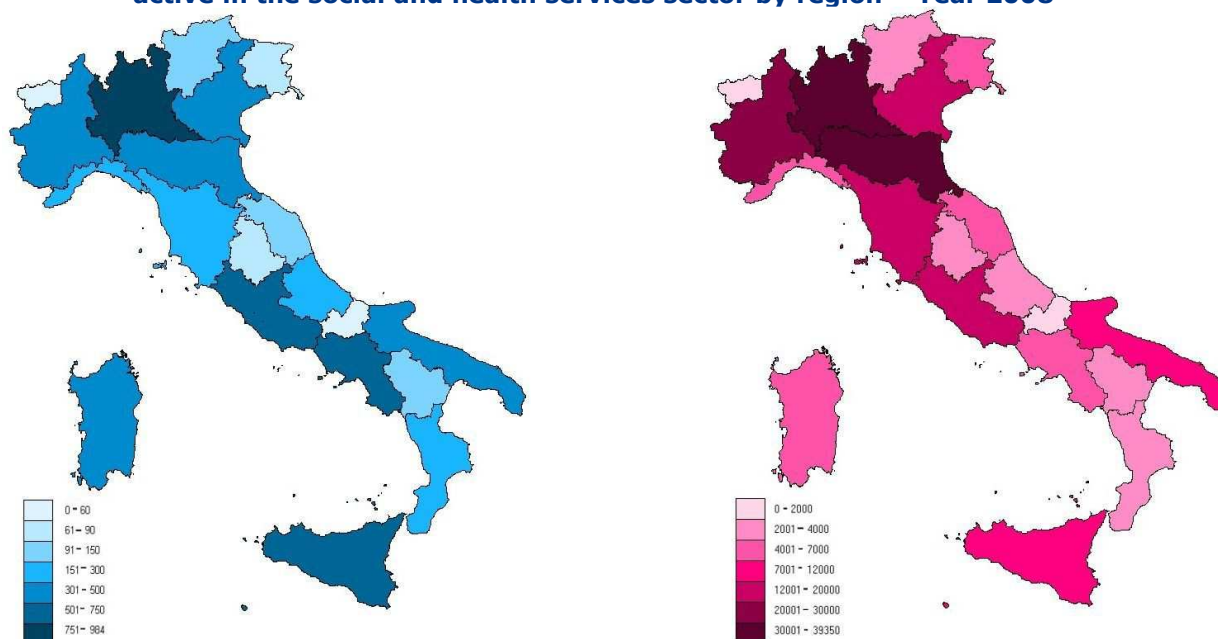
Sector of activity (type of cooperative)	Italy		North		Centre		South and Islands	
	N	%	N	%	N	%	N	%
Services	290,846	91.6	174,051	92.5	58,811	92.5	57,984	88.3
Human health and Social work (A)	210,373	66.3	130,347	69.3	39,526	62.2	40,500	61.7
Education (A)	11,580	3.6	5,330	2.8	2,871	4.5	3,379	5.1
Arts, entertainment, recreation	7,679	2.4	4,834	2.6	1,349	2.1	1,496	2.3
Support Service Activities (B)	37,254	11.7	21,783	11.6	8,832	13.9	6,639	10.1
Transportation and storage (B)	6,018	1.9	2,389	1.3	1,622	2.6	2,007	3.1
Lodging and food (B)	4,233	1.3	1,871	1.0	793	1.2	1,569	2.4
Prof., scientific, technical act. (B)	3,359	1.1	1,710	0.9	1,035	1.6	614	0.9
ICT (B)	2,809	0.9	1,654	0.9	742	1.2	413	0.6
Wholesale and retail trade (B)	2,240	0.7	1,191	0.6	642	1.0	407	0.6
Real estate activities (B)	185	0.1	161	0.1	21	0.0	3	0.0
Financial and insurance act. (B)	40	0.0	9	0.0	1	0.0	30	0.0
Other services (B)	5,076	1.6	2,772	1.5	1,377	2.2	927	1.4
Agriculture (B)	4,123	1.3	2,466	1.3	847	1.3	810	1.2
Industry excluding construction (B)	13,020	4.1	8,736	4.6	1,797	2.8	2,487	3.8
Construction (B)	4,051	1.3	1,680	0.9	1,309	2.1	1,062	1.6
Missing	5,299	1.7	1,167	0.6	792	1.2	3,340	5.1
<b>Total</b>	<b>317,339</b>	<b>100.0</b>	<b>188,100</b>	<b>100.0</b>	<b>63,556</b>	<b>100.0</b>	<b>65,683</b>	<b>100.0</b>

Source: Euricse

The majority of employees (91.6%) work in the service industry (see Table 4).

Type A cooperatives employ 229,632 people (72.4%) among whom 210,373 operate in the social and health services.

Among the 6,184 cooperatives that in 2008 were active in the health and social services, 76.1% (that is 4,704 organizations and 165,103 paid employees) provided social work services, while 8.4% also provided residential care (963 cooperatives and 30,471 employees). Only 8.4% operate in the health services sector.

**Figure 3 - Social cooperatives and their employees, active in the social and health services sector by region – Year 2008**

Source: Euricse

Figure 3 shows the regional distribution of social cooperatives, and their employees, providing health and social services in 2008. It is evident that they are nearly equally distributed on the Italian territory, with a greater concentration in the most populous regions; this is consistent with the data relative to the entire population of cooperatives. It also shows that the larger concentration of employees is in the northern regions.

## **5. Measuring the performance of social cooperatives**

Social cooperatives, much like cooperatives in general, are member-owned organizations that abide by principles of democracy and solidarity. Specifically, the objectives of social cooperatives cannot be reduced simply to profit maximization or economic and financial wealth, but are rather the creation of social value to the benefit of their community (Mancino and Thomas, 2005; Thomas, 2004; Andreaus, 1996).

Therefore, the study of the economic and financial performance of social cooperatives cannot be limited to a simple analysis of measures that are based on traditional economic ratios (Lerman and Parliament, 1991), because institutional specificity cannot be taken out of the analysis. Moreover, any analysis has to take into account that there are many difficulties in interpreting the economic results of this type of organization, because of the policy of compensation to its members that this kind of organization adopts. Indeed, profit often results as a "net zero surplus" (Guzman and Arcas, 2008) because the gross income is distributed to members via prices (Kyriakopoulos *et al.*, 2004).

In this context, two main misunderstandings occur (Travaglini, 1997): i) on the one hand, some authors suggest using the same profitability indicators both for nonprofit and for for-profit organizations, ii) on the other hand, other scholars focus on the measurement of the social value created by leaving out economic and financial criteria (like the Social Return on Investment – SROI, Nicholls *et al.*, 2009).

In our view, both strategies are fallacious because they do not reinterpret the traditional profitability indicators through the lens of nonprofit organizations and at the same time do not offer tools that are able to meet the particular features of these organizations. Nevertheless, it has to be kept in mind that nonprofit organizations also have to guarantee long-term sustainability in order to persist over time and their economic behavior needs to be measured.

Generally speaking, evaluating the profitability of social cooperatives is an extremely complex task, since the attainment of their social objectives cannot be measured by economic and financial indicators alone. Nevertheless, "it is not acceptable that the sustainable performance of social cooperatives is continuously sacrificed in the name of the pursuit of 'higher social reasons', by risking to lose the necessary conditions to work in the long time" (Alberani *et al.*, 2002, p. 21).

In social cooperatives, profitability is a necessary means to achieve their social purposes, and "it is necessary to reach the 'economic survival line': once achieved, the purpose of the organization is to satisfy the needs of the community and society at large" (Andreaus, 1996, p. 78).

Starting from these premises, this paper attempts to go beyond the limitations inherent in the use of the traditional economic ratios (such as ROE – Return on Equity and ROI – Return on Investment) and to analyze the overall performance of social cooperatives in Italy by utilizing four indexes: 1. profit (or loss)/turnover; 2. turnover/total operating expenses; 3. equity/total assets; 4. fix assets/total assets.

## 6. Turnover and total assets

The overall turnover that was produced by social cooperatives in the year 2008 amounted to 8.97 billion Euros, whereas the turnover of the entire cooperative sector was 97.57 billion Euros, 65% of which was invested in the North (27% in the northeastern regions, and 38% in the Northwest), and overwhelmingly in the services sector (88%). Table 5 highlights how almost 60% of social cooperatives achieve a turnover of less than 250,000 Euros, and that only 15% reach 1 million.

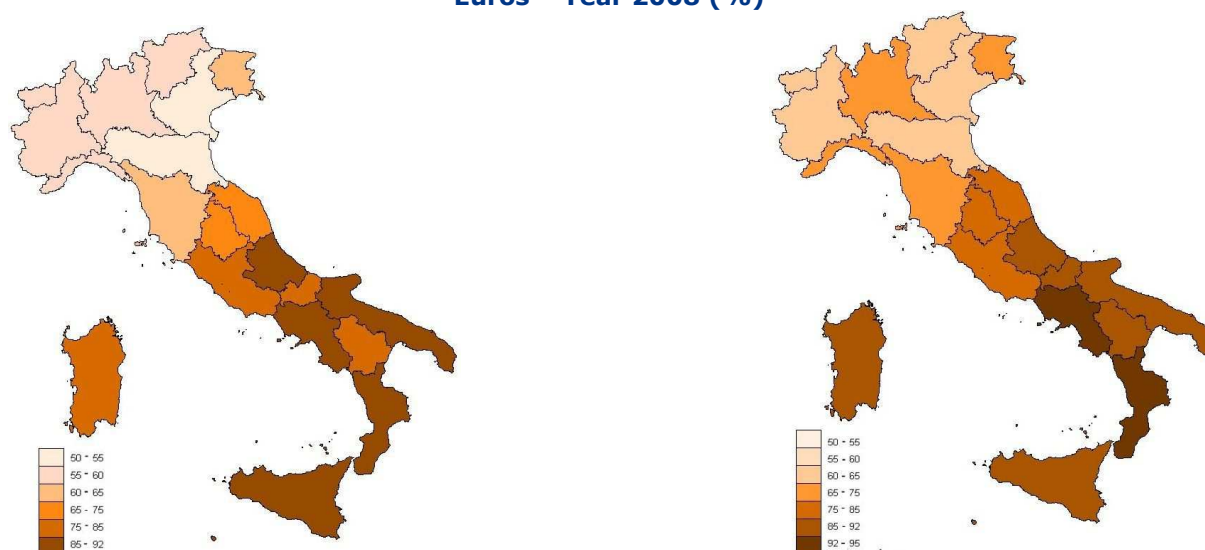
**Table 5 - Social cooperatives by turnover and total assets**

€, Thousands	Production value		Invested capital	
	N	%	N	%
To 50	3,690	26.5	4,223	30.3
From 50 to 250	3,570	25.6	3,919	28.1
From 250 to 500	1,824	13.1	1,613	11.6
From 500 to 1.000	1,435	10.3	1,203	8.6
From 1.000 to 2.500	1,244	8.9	951	6.8
From 2.500 to 5.000	398	2.9	322	2.3
Over 5.000	273	2.0	203	1.5
Missing data	1,504	10.8	1,504	10.8
<i>Total</i>	<i>13,938</i>	<i>100.0</i>	<i>13,938</i>	<i>100.0</i>

Source: Euricse

The social cooperatives' total assets, defined as the overall net amount that a business invests, was 7.2 billion Euros in 2008, 64% of which was invested in Northern Italy, overwhelmingly in the service industry (84%). Over 65% of the social cooperatives invested less than 250,000 Euros: this is a further confirmation as to their small size.

**Figure 4 - Social cooperatives by turnover (left) and total assets (right) of less than 500,000 Euros –Year 2008 (%)**



Source: Euricse

Figure 4 shows that coops that are smaller both in terms of turnover and total assets, are generally located in the centre and the southern regions of Italy, and in the Islands, particularly Campania, Lazio, Puglia and Sicily.

## 7. Financial and economic indexes

### 7.1. Index 1: profit (or loss)/turnover

This index reflects the amount of self-financing conducted, and highlights the part of a business's production value that remains, after accounting for production costs and the members' and partners' remuneration. The index can therefore have positive or negative values, depending the business's net operating profit or loss.

The index should be interpreted within the context of social cooperatives' institutional mission: if over the years a company shows a net operating profit, paired with a growing invested capital, it would stand to reason that it was able to finance the cooperative's growth purely or mostly through its operations. If, instead, the net operating profits are not utilized to pursue growth or investment objectives, such a conduct should cast doubts on a business's ability to be an effective and positive influence on its community.

**Table 6 - Social cooperatives by impact of profit on turnover – Year 2008**

<b>Profit (or loss) over turnover</b>	<b>N</b>	<b>%</b>
Up to -0,06	2,816	20.2
From -0,06 to 0	2,359	16.9
From 0 to 0,06	4,262	30.6
More than 0,06	1,840	13.2
Missing data	2,661	19.1
<i>Total</i>	<i>13,938</i>	<i>100.0</i>

Source: Euricse

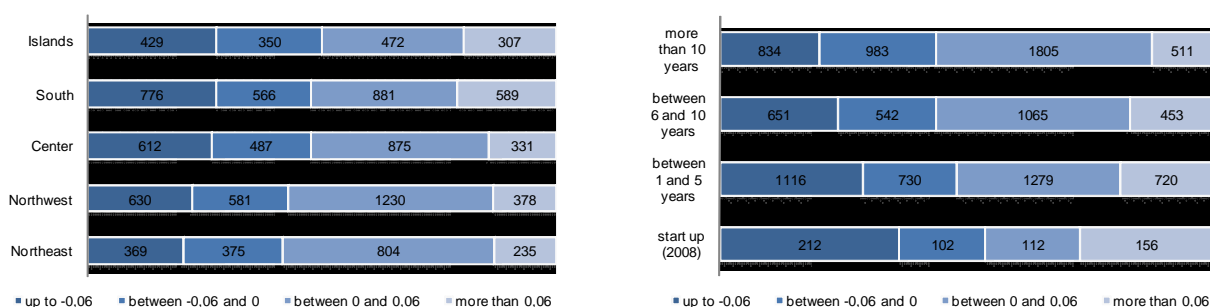
A review of the data reveals that social cooperatives have a certain degree of difficulty in covering their operating costs, which inevitably impacts their ability to achieve long-term economic success, and therefore their very survival without having to rely on contributions and outside funding.

For every 100 Euros of turnover, 45.9% of social cooperatives actually incur in an operating loss that in 25% of cases can be as much as 6 Euros. However, there is a significant number of coops that are actually able to show a positive margin: specifically, 37.8% show operating profits of up to 6%, while 16.3% achieve even better results.

An analysis of the weaker cooperatives – those with a higher recurrence of profit losses – shows that often they are newly constituted, therefore still in a start-up phase. Specifically, Figure 9 shows that 57% of these start-ups show a loss, although it must be noted that 156 of them (or 30% of the total) show an actual profit as early as their first year.

From a geographical point of view, cooperatives in Central and Southern Italy, as well as in the islands are the ones showing greater difficulties, although even in these regions there are several examples of businesses that are able to achieve positive results (margins better than 6%).

**Figure 5 - Impact of profit(loss) on turnover, by region and longevity—Year 2008**



Source: Euricse

## 7.2. Index 2: turnover/total operating expenses

This index aims at understanding the relation between operating expenses and turnover from the business activity.

When the index value is less than 1, the business model is simply not viable in the long run, since the activity is not producing any added value. An index that is close to 1 essentially describes a situation where the cooperative is struggling, and would not be able to cover unforeseen expenses, be they operational or financial in nature; furthermore, it is strategically stumped, since the surplus lack means that it cannot reinvest systematically in its activity and future growth.

**Table 7 - Social cooperatives by ratio of turnover over operating expense—Year 2008**

Turnover/operating costs	N	%
Up to 1	6,000	43.0
From 1 To 1,2	5,336	38.3
From 1,2 To 1,4	484	3.5
Over 1,4	411	2.9
Missing data	1,707	12.2
<b>Total</b>	<b>13,938</b>	<b>100.0</b>

Source: Euricse

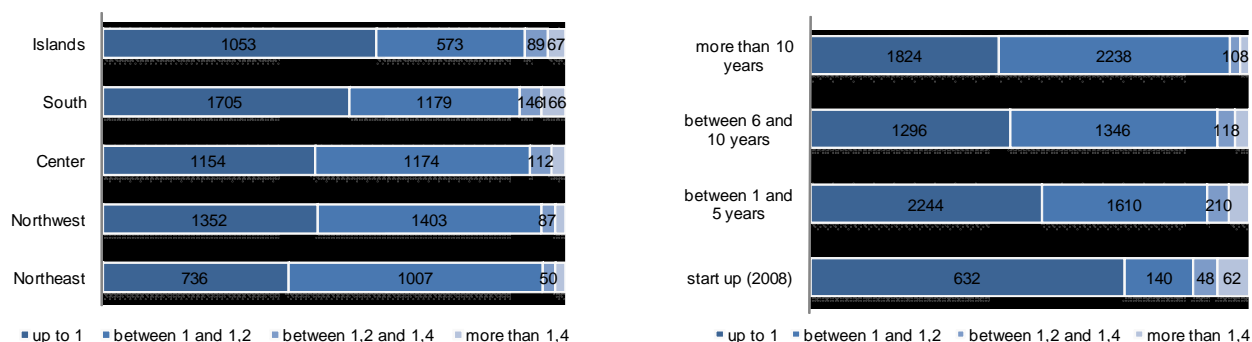
Table 7 shows how almost 50% of social cooperatives attest themselves within an index value of 1 or less. This result is even more significant when analyzed in conjunction with the results displayed by index 1: cooperatives display an at least partial difficulty in covering their operational costs solely by means of their turnover. This has an obvious impact on the overall management and remuneration strategies employed by the organizations.

Nevertheless, there is also a large population (43.6%) of businesses that shows index values of up to 1.2.

Figure 6 organizes the data by geographical areas and by longevity, and suggests that for the most part, those cooperatives in financial dire straits tend to cluster in Southern and insular Italy.



**Figure 6 - Impact of turnover on operating expenses by area and longevity –Year 2008**



Source: Euricse

### 7.3. Index 3: equity/total assets

The scope of this index is to reflect on the cooperatives' degree of capitalization, and to represent indirectly a business's debt ratio. This indicator describes a balance (or lack thereof) between cooperative's own financial resources and its debts, as it funds its activity.

**Table 8 - Social cooperatives by ratio of equity to total assets—Year 2008**

Equity/total assets	N	%
Up to 0	2,152	15.4
From 0 to 0,15	3,641	26.1
From 0,15 to 0,35	2,642	19
More than 0,35	3,566	25.6
Missing data	1,937	13.9
<b>Total</b>	<b>13,938</b>	<b>100.0</b>

Source: Euricse

17.9% of social cooperatives have a negative equity. This situation happens primarily where recurring net operating losses consume the capital originally allocated by its members.

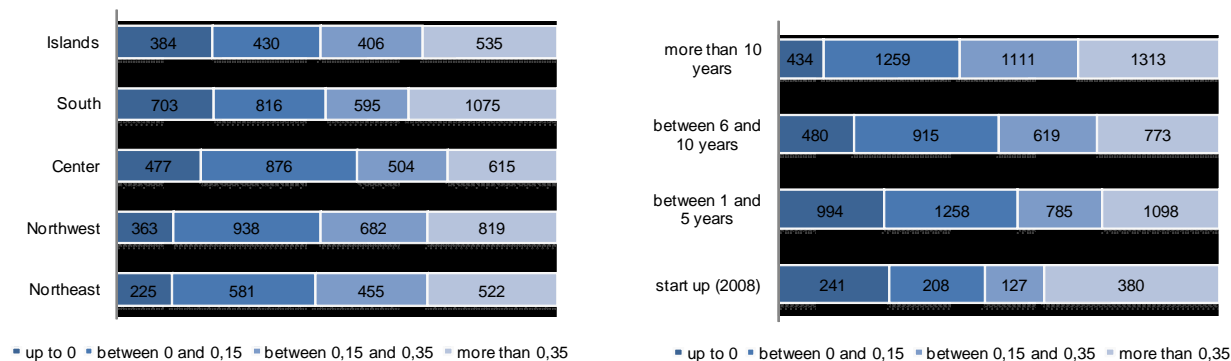
On the other hand, though, 29.7% of cooperatives are able to finance their investments with over 35% of own equity. Regardless, it is important also to consider the data in conjunction with an index that measures the flexibility of use, meaning the impact of fixed assets on total assets (Table 9). A correct management of the total assets need to match the timelines of assets and activities, therefore a thorough analysis must look beyond the ration of equity to total assets, to consider a company's fix assets to total assets as well.

A geographical analysis seems to split the country into two realities: in Northern Italy (East and West) the index of capitalization records higher values (between 20% and 25% in the businesses analyzed here), whereas in the rest of the country there is a higher incidence of cooperatives with fewer assets to invest (in Southern Italy, almost 25% of the cooperatives show an index with values of less than 0).

This index also offers interesting insights when analyzed in conjunction with cooperatives' geographical areas and age.



**Figure 7 - Impact of equity on total assets, by area and longevity –Year 2008**



Source: Euricse

#### 7.4. Index 4: fixed assets to total assets

This ratio measures the rigidity of assets by showing how much of it will return to liquidity in the long term (after more than 12 months). Assets flexibility is also a function of the specific type of activity that a business operates in, and this must be taken into account whilst analyzing the index's results. Typically, labor intensive activities, such as those in the service industry, require little in terms of hard assets but high levels of staffing, whereas capital intensive businesses are the ones that require machinery and infrastructure, which have a dampening effect on total assets (Andreus and Costa, 2009).

**Table 9 - Social cooperatives sorted by Index 4 – Year 2008**

<b>Fixed assets to total assets</b>	<b>N</b>	<b>%</b>
Up to 0.06	3,831	27.5
From 0.06 to 0.2	3,042	21.8
From 0.2 to 0.45	2,866	20.6
More than 0.45	2,672	19.2
Missing data	1,527	11.0
<b>Total</b>	<b>13,938</b>	<b>100.0</b>

Source: Euricse

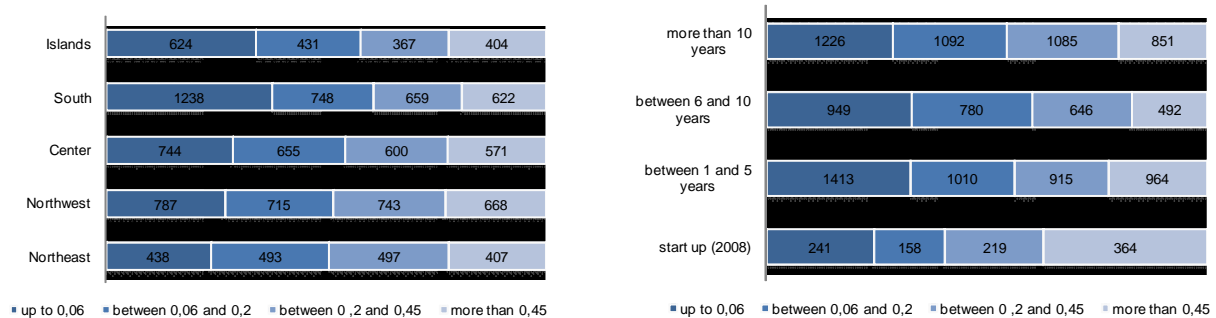
The index shows that 27.5% of social cooperatives are invested in long term assets, or other long term investments that, overall, make up 6% or less of the total assets. 55.4% of the social cooperatives show an index of asset rigidity of less than 20%. Given all the information above, the levels of capitalization shown in Table 8 can be considered sufficient for a balanced and competent administration of the companies' finances.

Figure 8 shows how cooperatives in the northeastern regions have a higher degree of asset rigidity: a little less than 30% of them have long-term investments constituting 6% or less of total invested capital.

In businesses that are still in their start-up phase, there tends to be a more rigid structure of total assets, since initial investments tend to be more long-term oriented. Furthermore, it is interesting to measure the impact that the type of activity has on the financial structures herein described. As should be expected, the service industry presents greater assets flexibility: 58% of the social cooperatives that operate in this sector show a fixed asset to invested capital ratio of less than 20%; of these, 33% have a ratio of less than 6%. The agricultural and industrial sectors, instead, are less

flexible: the ratio is 20% or more for 64% and 53% of the cooperatives operating in them, respectively.

**Figure 8 - Fixed assets to total assets ratio by area – Year 2008**



Source: Euricse

## 8. Principal Components Analysis (PCA)

This section focuses on the results gleaned by the technical application of Principal Component Analysis (PCA) which has been built up by using the variables analyzed in the previous paragraphs.

The technique, outlined by Pearson (1901) and further defined by Hotelling (1933) is an explorative method within multivariate statistics. Its main objective is the reduction of a large number of variables into a smaller number of latent variables, called “components”, so as to impact the size of the original matrix, and locate a set of synthetic dimensions that will make it easier to interpret what is being observed.

The process involves representing the units under analysis graphically as points, and then measuring the distance between them. Thereafter, this distance is projected onto a graph by using the notion of the cluster’s inertia relative to its centre of gravity (Bolasco, 1999). These projections are therefore an approximation of the existing relations among the original data.

The PCA’s objective is to determine the optimum axis (the principal components) that best describes the space where the cluster is to be drawn, thereby minimizing the loss of information. The principal components are linear combinations of the original variables, correlated and sorted so that the first component will describe the largest possible part of the system’s total variability.

In this case, the choice was made to proceed by including within the analysis, the following variables: turnover, total assets, employees and indexes (1-3).

The PCA was conducted on 9,288 social cooperatives for which: a) there was a complete dataset available for all of the variables listed above; b) the four indexes had values between the fifth and the ninety-fifth percentile of their distribution. This decision was made in order to ensure that the analysis would not return anomalous values due to data incorrectly input in the AIDA database.

The results of the PCA are presented in table 10: the six starting variables were reduced into two principal components, which, overall, account for 79.3% of the entire system variance. The first component is the most significant, since it alone accounts for roughly 50% of the total variance. It has a strong correlation with output value,

invested capital, and number of employees. Since it seems to summarize qualities that are related to the social cooperatives' dimensions, it was decided to call it "size".

The second component is instead correlated to indicators that measure turnover to operating expenses ratios, profit (loss) to turnover ratios, and to a slightly lesser degree, equity to total assets ratios. This component is a linear combination of the three indexes that evaluate a business's performance in terms of efficiency. Therefore, it will be referred to as "efficiency/profitability".

**Table 10 - Variables and principal components extracted through the PCA**

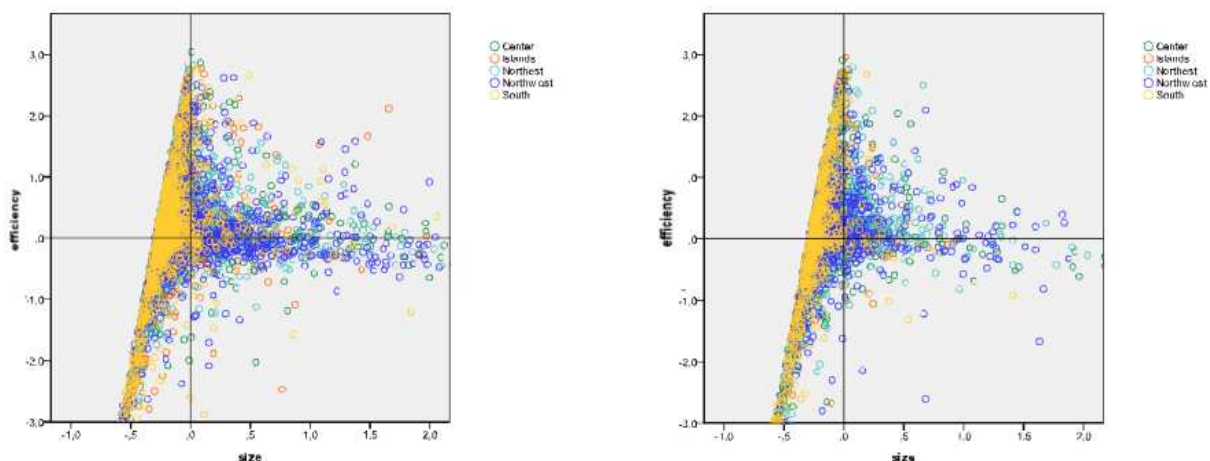
Variables	Components	
	1	2
Total Assets	0.956	-0.082
Turnover	0.983	-0.095
Number of Employees	0.949	-0.099
Index 1	0.130	0.912
Index 2	0.128	0.893
Index 3	0.062	0.534

Source: Euricse

The scatter plot graphs in Figure 9 represent the distribution of A and B type cooperatives along the two principal components "size" (on the x axis) and "efficiency/profitability" (on the y axis).

The figures clearly show how, regardless of their type, cooperatives in the southern regions tend to concentrate in the second and third quadrants (where "size" is less than 0), thereby confirming what has already been described in the paragraphs above: cooperatives in these regions are overall smaller in size when compared to those in the rest of the country. This difference is even more apparent in the scatter plot depicting type B cooperatives, most of which, with rare exceptions, almost never show a value greater than 0 in the "size" variable.

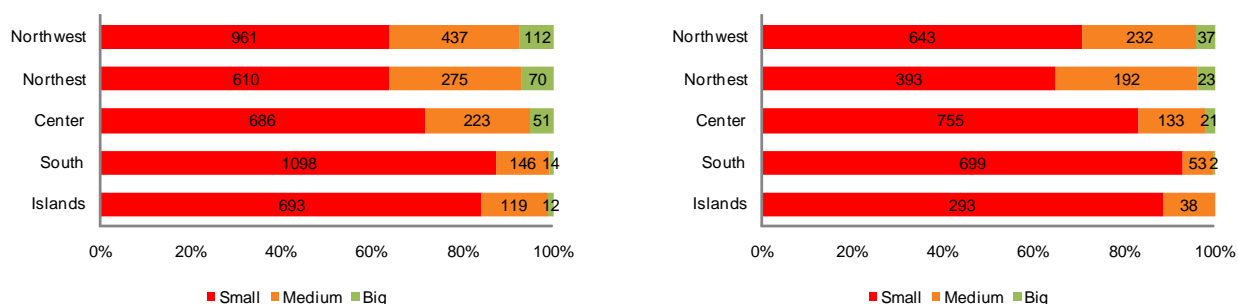
**Figure 9 - Type A (left) and type B (right) social cooperatives by size, efficiency/profitability and area distribution – Year 2008**



Source: Euricse

Grouping the values of size into three classes we have small cooperatives (with size less than 0), medium (size between 0 and 1) and big cooperatives (size more than 1). Looking at the data (Figure 10) it is evident that social cooperatives are mostly small especially in the southern regions and Islands.

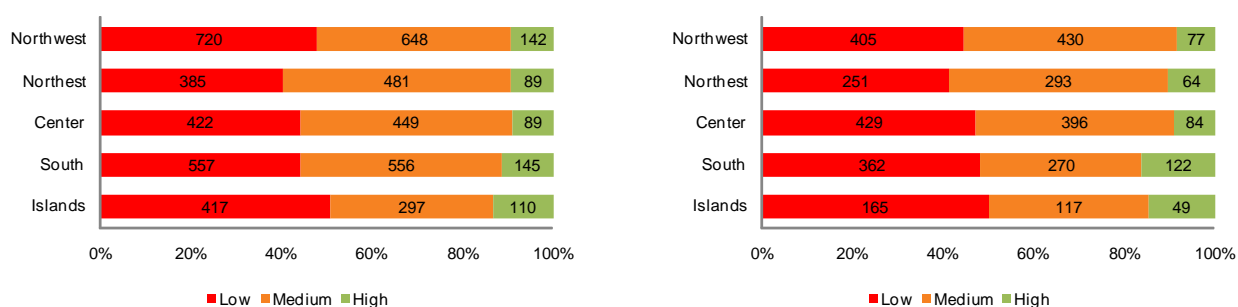
**Figure 10 - Type A (left) and type B (right) social cooperatives by size and area— Year 2008**



Source: Euricse

Looking at the scatter plot in Figure 9 it is also evident that, despite their small size, some cooperatives both in northern and southern regions are able to reach respectable levels of efficiency in economic management and financial performance. Furthermore, the values can be grouped into three classes of efficiency: low (less than 0), medium (between 0 and 1) and high (more than 1). Cooperatives in the Southern regions and in the islands, particularly those of type B, tend to concentrate mainly in low and high classes (Figure 11).

**Figure 11 - Type A (left) and type B (right) social cooperatives by efficiency and area Year 2008**



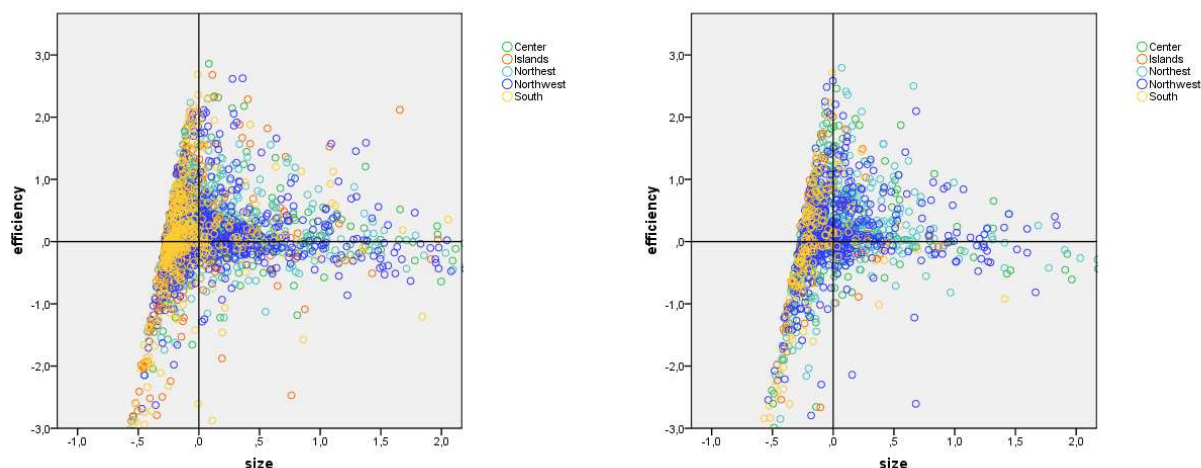
Source: Euricse

A comparison between the data shown in Figure 12 and those depicted in Figure 9 shows the importance that experience has in reaching important goals, both in terms of size and also in efficiency and economic stability. However, it is also apparent that in Southern Italy, regardless of their "seniority", cooperatives (especially those operating in the field of employment) aren't able to reach size and the same economic successes comparable to their counterparts in the North.

Efficiency analysis shows that, despite the accumulated experience, few cooperatives (about 10%) reach high levels of economic and financial efficiency. Significant differences are not observed between northern and southern regions in the percentage of cooperatives with a high efficiency/profitability.

Instead, the differences stand out if we consider only the cooperatives with at most five years of age (Figure 13).

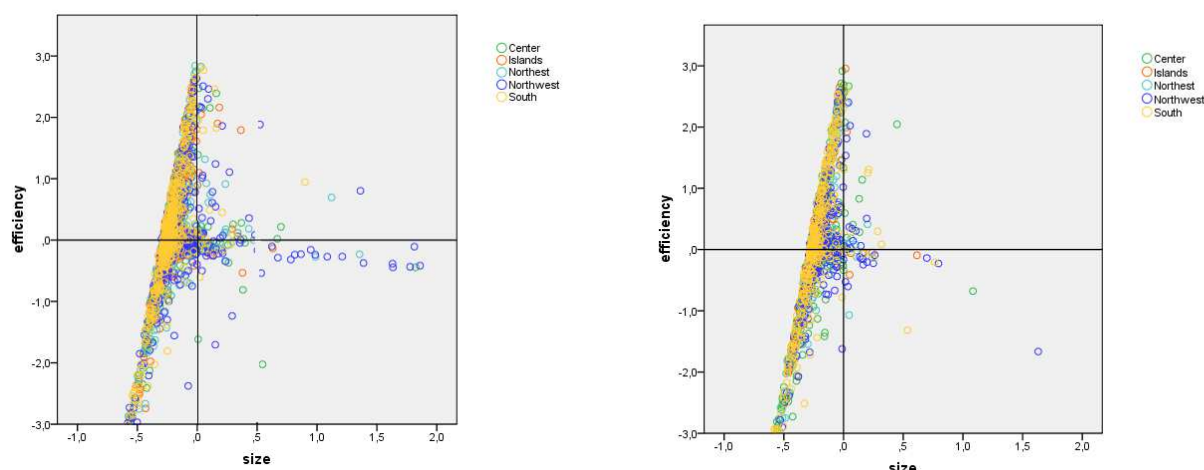
**Figure 12 - Type A (left) and B (right) social cooperatives with more than 10 years of service by size, efficiency and area – Year 2008**



Source: Euricse

As for cooperatives formed from 2003 onwards, the small size of type B cooperatives in central and southern regions and those of type A in the southern regions and Islands should be considered noteworthy.

**Figure 13 - Type A (left) and B (right) social cooperatives with at most 5 years of service by size, efficiency and area – Year 2008**



Source: Euricse

## 9. Conclusions

This analysis is part of the research conducted within the Euricse *Observatory on Cooperatives and Social Enterprises in Italy*, and is an example of the great potential of the *data warehouse*, created by Euricse last year; it is also a possible starting point for next analyses of Italian social cooperatives and cooperation in general.

The findings of this research project offer a clear portrait of social cooperation in Italy in terms of their financial life and their impact on employment.

Firstly, the data show an increase in the number of cooperatives compared to 2005: this is the result of not only an increased demand for social and healthcare assistance,

and for the re-integration of the unemployed into the workforce, but also of a greater involvement on behalf of nonprofit organizations in providing these services.

The cooperatives that are noteworthy, in terms of economic activity and employment, are those of type A. This is true for the entire Italian territory, but especially in the Northern regions: they are in fact home to the largest number of cooperatives whose revenue surpasses 2.5 million Euros, and that employ a significant number of people.

This study has confirmed the disparity between North and South, and among the sectors of activity; it has also shown the relatively small size of cooperatives, and the difficulty that young organizations have to face in order to achieve positive results.

Finally, this analysis highlights the important role that cooperatives have in the national economic system, especially in the delivery of social services.

The study of the economic situation, within these sectors, of a territory or region cannot be confined to the analysis of the services offered by the public authority and by businesses, but must also take into consideration the nonprofit organizations and, specifically, the social cooperatives.

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