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Intellectual capital and financial performance in social cooperative enterprises

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Abstract

Purpose – The purpose of this paper is to provide empirical evidence of the relationship between intellectual capital (IC) and economic performance, with focus on social cooperative enterprises (SCEs) that work in non-profit sectors.

Design/methodology/approach – A survey was developed and administered in Italy. A final sample of 151 SCEs participated in the study. Data were collected on IC measures, social enterprise activities and economic and mission-based performance outcomes.

Findings – Two hypotheses that proposed a positive association between IC sub-components (i.e. human capital, structural capital and relational capital) and the economic and mission-based performance of SCEs were tested. Findings highlight that human capital contributes to explain economic performance which is positively affected by the presence of graduate employees and value added per employee. However, economic performance is negatively affected by the yearly training per employee. In addition, human and relational capital contribute to explain mission-based performance which is positively affected by yearly training, the value added per employee and the quality of relationships with customers. However, mission-based performance is negatively affected by the relationships' quality with the reference territorial community. Therefore, relational capital would seem to affect only mission-based performance, and human capital influences both dimensions of corporate performance. Structural capital does not affect social cooperatives' performance.

Practical implications – Some of the results in this study are particular to this research setting. It is therefore important for senior leaders of SCEs to take the results of general IC literature with a grain of salt. Whereas most of the academic literature generally supports the positive relationship of all IC sub-components (i.e. human, structural and relational capital) with performance outcomes, this is not the case in this particular study.

Originality/value – This is the first empirical study that has examined the linkages between IC sub-components and performance outcomes in SCEs in Italy.

Keywords Social capital, Italy, Human capital, Intellectual capital, Relational capital, Social cooperative enterprises

Paper type Research paper

1. Introduction

A great variety of organizations, classified under the not-for-profit sector, exist in Italy (Airoldi, 1995; Capaldo, 1995). These organizations operate for social usefulness and solidarity purposes and include: political parties, trade unions, churches, foundations, hospitals managed by religious orders, community care firms, museums, volunteer groups, professional centers and social cooperatives. The number of non-profit organizations (NPOs) has significantly increased in recent years with a growth rate of 28 percent in Italy from 2001 to 2011 (International Co-operative Alliance, 2016). The increase can be primarily attributed to the growth in the number of paid workers (approximately 681,000), volunteers (approximately 4.7 million) and an expansion in the services provided in several sectors (i.e. healthcare, education and social development).

Social enterprises are defined as hybrid organizations, since they are characterized by an entrepreneurial, social and participatory governance dimension (Defourny and Nyssens, 2012).

This means that they must face the challenge to create social and economic value (Dart *et al.*, 2010; Borzaga and Galera, 2012). The entrepreneurial dimension consists of running a commercial activity by producing goods or providing services in order to satisfy social needs. Being financially responsible and economically sustainable are necessary conditions in order to accomplish the institutional mission (Costa *et al.*, 2011). Thus, the commercial activities are carried out by combining a mix of intangible and tangible resources, internal and external (Ebrahim *et al.*, 2014; Epstein and McFarlan, 2011; Mook, 2014), in order to satisfy the social dimension, while preserving the financial and economic sustainability. Therefore, it is necessary to introduce accounting practices to measure not only economic and financial performance, but also social performance (Bagnoli and Megali, 2011; Ebrahim *et al.*, 2014).

Currently, there are over 300,000 NPOs that produce 3.3 percent of Italy's GDP. Social cooperative enterprises (SCEs) represent the most entrepreneurial and advanced example of social enterprises (Costa *et al.*, 2014; Borzaga and Galera, 2012; Defourny and Nyssens, 2010). In Italy, there exist 11,264 social cooperatives which have grown almost 100 percent in the last decade. Law 381/1991 adopted by the Italian Parliament distinguishes between two types of social cooperatives: those providing social, health and educational services (identifiable in Typology A), and those providing work integration for disadvantaged people and supplying other services, such as agricultural and commerce services, as well as general services (identifiable in Typology B). Ultimately, the aim of these organizations is to create social and economic well-being (Madill *et al.*, 2010; Meadows and Pike, 2010) and to promote the integration and development of people. At the same time, the development of people becomes both the necessary condition for their existence and the final outcome.

Intellectual capital (IC) is an important resource that SCEs need to develop in order to effectively implement corporate strategy, acquire and maintain a long-lasting competitive advantage and improve corporate performance (Martinsons and Hosley, 1993; Lettieri *et al.*, 2004; Murray and Carter, 2005; Hume and Hume, 2008). In the knowledge-based economy, IC is considered an essential intangible resource for business success and it is seen as the primary source of sustainable competitive advantage (Teece *et al.*, 1997; Choo and Bontis, 2002; Subramaniam and Youndt, 2005). IC produces multiple effects throughout the organization and guarantees real benefits, because knowledge-based resources tend to be valuable, rare and neither imitable nor substitutable (Nelson and Winter, 1982; Barney, 1991; Bolino *et al.*, 2002; Kong and Ramia, 2010).

Allocating the proper investment among IC sub-components becomes a crucial factor for the strategic positioning of a business (Kaplan and Norton, 2001; Kong and Prior, 2008; Teece, 2002, 2006; Kong and Ramia, 2010). We adopt a three-dimensional framework to analyze IC which includes: human capital, structural capital and relational capital (Stewart, 1997; Roos *et al.*, 2005; Guthrie and Petty, 2000; Bontis *et al.*, 2002; WICI, 2016).

According to Kong (2010), IC can be applied as a conceptual framework for effective strategic management of NPOs. In particular, IC can play a strategic role for social cooperatives in order to achieve the mission or the *raison d'être* for which they have been established and to satisfy the general interest of local communities, persons or social groups, by operating commercial activities. Therefore, investing in IC becomes crucial for the strategic positioning of NPOs (Kong and Prior, 2008; Kong and Ramia, 2010).

This paper contributes to the IC literature in several ways. First, the purpose of this paper is to identify the principal components of IC sub-dimensions (human, relational and structural capital) for Italian SCEs. Second, the paper aims to highlight the effect of IC sub-dimensions on the social and financial performance of SCEs. In fact, the paper tries to answer the following three research questions:

RQ1. Which are the principal components of IC sub-dimensions for SCEs?

RQ2. Which elements of IC influence the financial performance of SCEs?

RQ3. Which components of IC affect the social performance of SCEs?

This work can be considered original for two reasons: the use of a survey methodology in the Italian context, and the use of not-for-profit SCEs as a research setting.

2. Literature review
There are two characteristics that SCEs in the non-profit sector have in common. First, they are mission-driven organizations. This means that most decisions and operational activities are based on a mission, vision and strategic plan. Second, they are characterized by human-capital intensive processes. In fact, members of these organizations are directly involved in the production of goods or in the provision of services (Boyle *et al.*, 2007; Kujansivu and Lonnqvist, 2009). The supplied services and goods are tailored to meet the user needs and they are characterized by a high relational capital content.

Social cooperatives are characterized by their private nature. They are autonomous associations of people who voluntarily cooperate for mutual, social, economic and working benefits. In addition, the decision-making power is not based on capital ownership but on the principle of one member one vote. Generally speaking, these businesses are owned and managed by partners and their purpose is to satisfy the needs of people who have been ignored (or inadequately fulfilled) by the private or public sectors.

The realization of organizational mission is intimately connected to the motivation, skills, knowledge and experiences of employees and volunteers (Hudson, 1993). These factors become a key component in executing a strategy and maintaining high levels of organizational performance. Social cooperatives operate in a highly competitive environment, which is characterized by increasing requests for services from the community (Pierson, 1998; Kalisch, 2000), growing competition with public and profit-based sectors (Brown III, 2005; Ramia and Carney, 2003; Tuckman, 1998), declining volunteer support (Clary and Snyder, 1991; Lyons, 2001; Lyons and Fabiansson, 1998), decreasing commitment by non-profit employees (Eisenberg, 1997, 2000) and mostly tighter government funding (Craig *et al.*, 2004; Flack and Ryan, 2005; Keating and Frumkin, 2003).

In this new context, IC becomes one of the most important resources to exploit and effectively manage in order to pursue economic and social objectives (Serenko and Bontis, 2013). As such, the hypothesized outcome of effective IC management in the non-profit sector is similar to that of private enterprise (Bontis *et al.*, 2000; Riahi-Belkaoui, 2003; Youndt and Snell, 2004; Chen *et al.*, 2005; Bismuth and Tojo, 2008; Chareonsuk and Chansa-Ngavej, 2010).

The 1990s represented a flurry of activity in the study of IC. A multitude of researchers and practitioners developed a theoretical framework of IC and its sub-components: human capital, structural capital and relational capital (Bontis, 1996; Edvinsson and Sullivan, 1996; Ross and Ross, 1997; Stewart, 1997; Bontis *et al.*, 2000; Marr and Roos, 2005; Subramaniam and Youndt, 2005). This raised the awareness of IC's role in creating and managing sustainable competitive advantage and established a roadmap for measuring, managing and reporting intangible assets (Boedker *et al.*, 2008; Ricceri, 2008; Dumay and Garanina, 2013). Generally speaking, the hypothesized relationship of IC sub-domains has shown to be positively associated with business performance.

Human capital is one of the most important resources for social cooperatives. They are labor-intensive organizations and the effective management of the workforce is crucial for corporate performance. People play a fundamental role to realize the mission (Veltri and Bronzetti, 2015). Training and education are the most important investments in human capital. SCEs are made of people who are made of knowledge, skills, capabilities, problem solving abilities, personal traits, creativity and willpower, all principally emanating from education (Hudson, 1993; Bontis *et al.*, 2000). The ability of NPOs to achieve their objectives

deeply depends on the knowledge, innovations, experiences, skills, willpower of corporate members from the top to lower levels (Bontis, 1999; Kong and Ramia, 2010). A high number of specialized employees guarantees more competences, stability and services of quality; moreover, the contribution of a collaborator increases over time, as result of learning process from experience if adequately integrated with specific investments for staff development (Bontis *et al.*, 2000; Kong, 2010; Defourny and Nyssens, 2010; Veltri and Bronzetti, 2015). Table I shows the main key performance indicators (KPIs) for human capital.

SCEs are heavily involved in external relationships with government agencies, business corporations, different types of NPOs, potential donors, employees, volunteers, customers and end users making their relational capital extensive. The strength and quality of relationships with external stakeholders foster the continuous flow of information among the network partners, providing opportunities of resource sharing while improving corporate performance (Ordóñez de Pablos, 2003; Kong, 2010). Additionally, web presence is essential for every business because it provides collaborative opportunities and information sharing, reaching and engaging existing and prospective partners (Greenberg and MacAulay, 2009). Table II proposes some KPIs for relational capital.

Structural capital is a supportive infrastructure for human resources and knowledge (Benevene *et al.*, 2017). Numerous elements are relevant, such as innovative behavior, investment in networking activities, sustainability and quality certifications and the dissemination of corporate culture among workers, volunteers and board members. The implementation of sustainability or quality certifications (i.e. ISO 9001, EMAS, SA 8000, etc.) can represent a fundamental change in business philosophy and corporate practices,

Human capital KPIs	Measures
Training	The number of yearly training hours for employee
Graduate	The number of graduate employees scaled by total employees
Employee satisfaction	The employee satisfaction is assessed through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the degree of employees' satisfaction
Value added_EmpCost	The total value added (total revenues minus external operating costs) scaled by the total employee cost

Table I.
Human capital KPIs

Relational capital KPIs	Measures
Customer	The quality of relationships with customers. It is measured through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the quality of relationship with customers
Community	The quality of relationships with the reference community. It is measured through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the quality of relationship with the community
Partnership	The quality of relationships with partners. It is measured through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the quality of relationships with partners (other social cooperatives, for-profit enterprises, associations, universities, government agencies, users, etc.)
Web presence	The quality of presence on the web. It is measured through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the quality and effectiveness of web presence through a site, blog, etc
Network	The belonging to a network. It is a dummy variable that takes the value 1 if the social cooperative enterprise belongs to a network (Consortium, association, etc.), otherwise 0

Table II.
Relational capital KPIs

generating a common and shared language. The innovative behavior strongly impacts the corporate success and makes people and enterprises able to continually adapt to the environmental changes. In SCEs, innovation is considered a key factor to create value and it is assessed through the ability to develop new services, which can satisfy different needs and beneficiaries (Knight, 1999; Skandia 1994; Bontis 1998). Table III shows some KPIs for structural capital.

The main aim of SCEs is to create social value, boost cultural wealth, promote socio-economic development and stimulate social change. So, intangible assets become a crucial lever for corporate performance and effectiveness (Onyeiwu, 2003; Kong, 2010). Therefore, the outcome of cooperative enterprises is twofold: to increase economic performance (i.e. financial outputs), and to promote mission-based performance (i.e. execution of social outputs) (Drucker, 2006; Borzaga and Defourny, 2004; Young *et al.*, 2007; Zamagni, 2011).

3. Hypotheses development

SCEs necessarily combine social and commercial activities and their corporate success includes both dimensions (Ebrahim *et al.*, 2014). It follows that it would be appropriate to implement a multidimensional performance system that simultaneously considers the social purposes and the economic-financial aims. The assessment of economic-financial performance is necessary to assure if SCEs are able to satisfy in a continuous, durable and autonomous way the social purpose they have been created for (Costa and Carini, 2016; Magnanelli *et al.*, 2016; Andreaus and Costa, 2014). The social performance considers the social impact, in terms of benefits and positive effects, generated by the business activity toward specific categories of individuals or stakeholders. The mission-based performance can be measured through the social outcomes related to the development and enhancement of resources in terms of employees' number, volunteers, satisfied users, provided services and others (Ebrahim and Rangan, 2014; Andreaus and Costa, 2014; Epstein and McFarlan, 2011).

IC is considered an essential intangible resource for business success and it is seen as the primary source of sustainable competitive advantage also for SCEs (Teece *et al.*, 1997; Choo and Bontis, 2002; Subramaniam and Youndt, 2005). IC is a crucial resource that SCEs need to develop in order to effectively implement corporate strategy, acquire and maintain a long-lasting competitive advantage and improve corporate performance (Martinsons and Hosley, 1993; Lettieri *et al.*, 2004; Murray and Carter, 2005; Hume and Hume, 2008). Thus, the first research hypothesis is as follows:

H1. IC sub-dimensions (human capital, relational capital, structural capital) affect the financial performance of SCEs.

Structural capital KPIs	Measures	
Users	The number of served users scaled by total employees	
Services	The number of provide services scaled by total employees	
New services ability	The ability to provide new services. It is measured through a 1-to-8 Likert-type scale and it represents the judgement given by the respondent about the capacity to supply new services to users	
Certifications	The certifications holding by the social cooperative enterprise. It is a dummy variable that takes the value 1 if the cooperative enterprise holds one or more certifications (ISO 9001, ISO 14001, EMAS, SA 8000, etc.), otherwise 0	**Table III.** Structural capital KPIs

In addition, IC can play a strategic role for SCEs in order to achieve the mission or the *raison d'être* for which they have been established and to satisfy the interests of local communities, persons or social groups. The social dimension concerns the strategic goals related to the corporate mission which are not easy to define and measure (Bagnoli and Megali, 2011; Ebrahim *et al.*, 2014). This dimension can be measured through the assessment of the social needs' satisfaction degree. The assessment of mission-based performance has to consider the corporate inputs (tangible and intangible) used to support activities or processes for the production of goods or supply of services (Ebrahim and Rangan, 2010). The second research hypothesis is as follows:

H2. IC sub-dimensions (human capital, relational capital, structural capital) influence the social performance of SCEs.

4. Methodology

A survey instrument was sent via e-mail, together with a cover letter, during the period March 2016-January 2017 to the founding members of SCEs in Italy. The total population of 2,480 organizations belonging to the five specific sectors (Ateco codes 2007: 85. Education, 86. Health service activities, 87. Residential care services, 88. Non-residential social activities, 96. Other personal service activities) composed of all social cooperatives according to Italy's legislative decree 381/1991. They are identifiable as Typology A (i.e. healthcare, social or educational services) and Typology B (i.e. other services, such as agricultural and commerce services as well as general services).

A total of 151 completed surveys were returned for a response rate of 6.1 percent. The final sample consists of 124 enterprises providing social, health and educational services (i.e. Typology A), and 27 enterprises providing work integration for disadvantaged people (i.e. Typology B).

The survey was designed to gather background information about the SCE, as well as data pertaining to the three sub-components of IC and financial performance. The survey asked a variety of questions in three sections as follows. The first section requested general information about the enterprise (such as sector of activities, mission and vision, and geographical area) and the respondent (education level, experience and role within the organization). The second section investigated the mission-based performance of the enterprise by analyzing its social impact. This dimension focused on qualitative results, with the aim of evaluating the positive effects emerging from activities undertaken to accomplish the mission. The outcomes can be measured through KPIs related to development and exploitation of resources. Finally, the third section identified the most representative and valuable intangible assets for social cooperatives through a set of indicators representing the three sub-categories of IC (human capital, structural capital and relational capital).

A principal component analysis (PCA) followed by an orthogonal varimax rotation identified the principal components for each IC sub-dimension. Two ordinary square regression models were used to test the hypotheses and to verify the effect of each IC sub-dimension on the financial and social performance of cooperative enterprises.

The first model developed investigates the effect of IC sub-components on economic performance for fiscal year 2014. The dependent variable was represented by ROA, an operating profitability measure commonly used in financial analysis calculated as the ratio between operating profit and total assets (Kong and Thomson, 2009; Sanchis-Palacio *et al.*, 2013). Although social cooperatives are NPOs, they must be able to operate in balance and effectively manage their assets in order to survive in the long term. Thus, they have to be capable to effectively and efficiently employ tangible and intangible resources, expressed by total assets. The independent variables are the KPIs per IC sub-dimensions previously identified.

The second model investigates the effect of IC sub-components on social performance for fiscal year 2014. The dependent variable was represented by the number of served users (Ebrahim and Rangan, 2014; Andreaus and Costa, 2014; Epstein and McFarlan, 2011) that represents the social output, calculated as the ratio between the users' number and the employees' number in 2014.

The independent and control variables are the same variables for both models. The Likert scale from 1 to 8 is used to avoid that respondents would choose the mean value, without expressing a positive or negative judgement. In this case respondents can make a positive or negative assessment with a different degree of intensity. All variables have been normalized. Three control variables have been used as follows:

- Sector is a dummy variable that takes the value 1 if the enterprise belongs to the Typology A, otherwise 0.

- North is a dummy variable that takes the value 1 if the enterprise is located in the North regions of Italy, otherwise 0.

- Center is a dummy variable that takes the value 1 if the enterprise is located in the central regions of Italy, otherwise 0.

These control variables are traditionally used in performance studies for NPOs (Core *et al.*, 1999, 2006; Bhagat and Bolton, 2008; Kirk and Nolan, 2010).

Model 1 dedicated to the financial performance is presented as follows:

$$\begin{aligned}
\text{ROA14} = {} & \alpha_i + \beta_1 \text{ Training}_i + \beta_2 \text{ Graduate}_i + \beta_3 \text{ EmplSatisf}_i \\
& + \beta_4 \text{ ValueAdd\_EmplCost}_i + \beta_5 \text{ Services}_i + \beta_6 \text{ NewServicesAbil}_i \\
& + \beta_7 \text{ Certifications}_i + \beta_8 \text{ Customer}_i + \beta_9 \text{ Community}_i \\
& + \beta_{10} \text{ Partnership}_i + \beta_{11} \text{ Webpresence}_i + \beta_{12} \text{ Network}_i \\
& + \beta_{13} \text{ Sector}_i + \beta_{14} \text{ North}_i + \beta_{15} \text{ Center}_i + \varepsilon_i
\end{aligned} \tag{1}$$

Model 2 devoted to the social performance is presented as follows:

$$\begin{aligned}
\text{USERS14} = {} & \alpha_i + \beta_1 \text{ Training}_i + \beta_2 \text{ Graduate}_i + \beta_3 \text{ EmplSatisf}_i \\
& + \beta_4 \text{ ValueAdd\_EmplCost}_i + \beta_5 \text{ Services}_i + \beta_6 \text{ NewServicesAbil}_i \\
& + \beta_7 \text{ Certifications}_i + \beta_8 \text{ Customer}_i + \beta_9 \text{ Community}_i \\
& + \beta_{10} \text{ Partnership}_i + \beta_{11} \text{ Webpresence}_i + \beta_{12} \text{ Network}_i \\
& + \beta_{13} \text{ Sector}_i + \beta_{14} \text{ North}_i + \beta_{15} \text{ Center}_i + \varepsilon_i
\end{aligned} \tag{2}$$

where ROA14 is return on assets; Users14 is the number of served users scaled by total employees; Training is the number of yearly training hours for employee; Graduate is the number of graduated employees scaled by total employees; EmplSatisf is the employees' satisfaction assessed through a 1-to-8 Likert-type scale; ValueAdd_EmplCost is the total value added scaled by the total employee cost; Services is the number of provide services scaled by total employees; NewServicesAbil is the ability to provide new services assessed by a Likert scale from 1 to 8; Certifications is a dummy variable that takes the value 1 if the enterprise holds one or more certifications, otherwise 0; Customer is the quality of relationships with customers assessed by a Likert scale from 1 to 8; Community is the quality of relationships with the reference territorial community assessed by a Likert scale from 1 to 8; Partnership is the quality of relationships with partners assessed by a Likert scale from 1 to 8; Webpresence is the quality of presence on web assessed by a Likert scale from 1 to 8; Network is a dummy variable the takes the value 1 if the enterprise belongs to a

JIC

network, otherwise 0; Sector is a dummy variable that takes the value 1 if the cooperative enterprise is located in the North regions, otherwise 0; Center is a dummy variable that takes the value 1 it the cooperative enterprise is located in the central regions, otherwise 0.

5. Findings

The sample includes 151 social cooperatives in Italy. A total of 53 percent of the sample has total assets equal or superior to the sample's median equal to 1,366,000 euros. Social cooperatives located in the northern and in the central regions are on average bigger than social cooperatives located in the south of Italy. In addition, the A-type social cooperatives are characterized on average by a higher level of employment rate (209 employees) than B-type social cooperatives (69 employees). The employment level is on average higher for SCEs located in the northern regions than in the rest of Italy.

Table IV shows the geographical distribution based on the belonging sector. The sampled social cooperatives are mainly located in the northern regions with 61 percent of total type-A and 74 percent of total type-B, while the type-A cooperatives are prevalent (20 percent) in the central regions than the type-B ones (11 percent). In the south the type-A cooperatives represent 19 percent of total and the type-B ones are equal to 15 percent.

Table V represents descriptive statistics for the sample. The average ROA is equal to 2.88 percent with a standard deviation of 0.0843 and a minimum value of −43.06 percent and a maximum one of 37.04 percent. The number of served users is on average equal to 2,585, with a maximum value of 100,000 users. The total yearly training hours are on average 1,751, with a minimum value of 0 and a maximum value of 15,000. The mean value of graduate employees is 139, with the minimum and maximum values, respectively, of 0 and 3,500. The value added per employee cost is on average equal to 1.19, with a minimum of

Geographic distribution	Number of social cooperatives A-type	% of social cooperatives A-type	Number of social cooperatives B-type	% of social cooperatives B-type
North	76	61	19	74
Center	25	20	3	11
South	23	19	5	15
Total	124	100	27	100

Table IV.
Number of social cooperatives by geographic location and sector

Variable	Obs	Mean	SD	Min.	Max.
ROA	151	0.0288	0.0843	−0.4306	0.3704
Users14	150	2,585.5	9,866.2	0	100,000
Training	151	1,751.2	2,693.7	0	15,000
Graduate	151	139.90	403.26	0	3,500
EmplSatisf	123	6.9837	0.9231	1	8
ValueAdd_EmplCost	150	1.1903	0.9762	0.4250	12.744
Customer	151	7.1125	0.8682	1	8
Community	151	6.9403	1.1327	1	8
Partnership	151	5.6556	1.3713	2	8
Webpresence	151	5.3973	1.5623	1	8
Network	148	0.7635	0.4263	0	1
Services	151	5.0794	4.2560	1	39
NewServicesAbil	151	6.3245	1.4168	2	8
Certifications	151	0.7947	0.4052	0	1

Table V.
Descriptive statistics

0.42 and a maximum of 12.74. The capacity to provide new services takes on values from poor (2) to very good (8), but on average is assessed at (6.3). The cooperative enterprises holding one or more certifications represent 79.47 percent of sample firms. The quality of relationships with the customers takes values between very bad (1) and very good (8), but it is considered, on average, good (7.11). In addition, the quality of relationships with the reference community is assessed discrete (6.94) and ranges between very bad (1) and very good (8). The quality of relationships with partners is, on average, sufficient (5.65), with values that range between poor (2) and very good (8). The web presence by social cooperatives is considered, on average, sufficient (5.39). The social cooperatives belonging to a network represent 76.35 percent of the sample.

The significant findings of Pearson correlation are described in Table VI. The normalized variables have been used in order to obtain reliable results. In all cases, the coefficients of Pearson correlation are lower than 65 percent. A weak significant positive correlation exists between the dependent variable ROA and the quality of the relationships with the community (0.232). In addition, ROA is weakly and positively correlated with the value added per employee (0.277). Thus, the productivity per employee and the perceived quality of relationships with the community would seem to be positively associate to a better financial performance.

But ROA is weakly and negatively correlated with the training hours per employee (−0.244) and with the number of served users (−0.164). The negative signs of both the served users and the training hours are probably attributable to an important cost increase which necessarily reduces the operating profit.

A strong significant positive correlation (0.605) has been found between the number of served users and the number of training hours per employee. Additionally, the number of served users is weakly and positively correlated with the value added per employee cost (0.221) and moderately correlated with the number of provided services (0.462).

Training hours result to be positively correlated with the number of graduates (0.410) and with the number of provided services (0.559). A high level of training hours, graduate employees and productivity guarantees more competencies, skills, stability and ensures a better satisfaction justifying a greater number of services provided and served users (Kong and Ramia, 2010).

The ability to create new services results to be weakly and positively correlated with the quality of the relationships with partners (0.174) and the presence on web (0.197), while the capability to create new services by the cooperatives is moderately and positively correlated with the quality of the relationships with the customers (0.436) and the community (0.452). The number of provided services results to have a moderate and positive correlation with the graduate employees (0.378) and the value added per employee (0.287).

In addition, the quality of relationships with the customers is strongly and positively correlated with the quality of relationships with the community (0.610), while the quality of partnership is positively correlated with the web presence (0.475) and with the quality of relationships with the community (0.192).

A negative significant correlation exists between the number of served users and the reference community (−0.338). Training hours per employee and number of provided services are also weakly and negatively correlated with the quality of relationships with the reference community (−0.255). Probably, the negative signs are attributable to difficulties to communicate and collaborate with the external stakeholders such as public and private institutions, other enterprises, governments, etc. This could reduce the capacity to access to resources which could be effectively allocated for the training programs or useful to establish relationships with external training institutions, given that training and education are the most important investments in human capital (Hudson, 1993; Bontis et al., 2000).

Finally, the employees' satisfaction is positively correlated with several variables: with the ability to provide new services (0.164) and with the relationships' quality with the

JIC

	ROA14	Users14	Training	Graduate	EmplSatisf	Value Add_Empl Cost	Services	New Services Abil	Customer	Community	Partnership	Webpresence
ROA14	1											
Users14	−0.164*	1										
Training	−0.244*	0.605*	1									
Graduate	0.118	0.143	0.410*	1								
EmplSatisf	0.118	−0.053*	−0.114	0.058	1							
ValueAdd_EmplCost	0.277*	0.221*	−0.034*	0.003	0.081	1						
Services	0.005	0.462*	0.559*	0.378*	0.002	0.287*	1					
NewServicesAbil	0.102	−0.054	0.042	−0.003	0.164*	0.092	0.014	1				
Customer	0.143	−0.025	0.022	−0.013	0.221*	−0.002	0.015	0.436*	1			
Community	0.232*	−0.338*	−0.255*	0.054	0.161*	0.046	−0.192*	0.452*	0.610*	1		
Partnership	0.038	−0.021	−0.143	−0.041*	0.184*	0.129	−0.040	0.174*	0.088	0.192*	1	
Webpresence	−0.037	−0.023	0.017	−0.026	0.146	0.100	0.109	0.197*	0.129	0.115	0.475*	1

Note: *Correlation is significant at the 0.05 level (2-tailed)

Table VI.
The Pearson
correlation

reference community (0.161), customer (0.221) and partnership (0.184). The strength, the loyalty and the quality of relationships with customers, community and the co-operation among partners help to keep employees motivated (Schein, 2010).

In order to identify the main factors per IC sub-dimensions, a PCA was performed. As for human capital two main factors have been identified (Table VII); the first component is called education and it includes training and graduate, which represent the most important investments in human capital by SCEs. The second component is called employees' productivity and satisfaction and it refers to the value added per employee cost and to the degree of employees' satisfaction. In fact, a positive correlation exists between the two variables, but not significant. These two components for human capital explain 63.03 percent of cumulative variance.

Two main components have been found for the relational capital (Table VIII). The first one is called relationships' quality and it concerns the quality of relationships with customers and the reference territorial community, while the second component is called collaborative and communicative capacity and it is related to the corporate capacity to effectively collaborate with external partners and to effectively communicate to the outside by website. A cumulative variance of 77.19 percent is explained by two components.

Finally, after performing a factor analysis of structural capital variables, two main components have been identified (Table IX). The first one is called social needs' satisfaction and it is related to the capability to satisfy social needs through provide services and served users, while the second component is called services' innovation and it concerns the ability to provide new services. The explained cumulative variance is equal to 82.26 percent.

Variable	Education	Employees' productivity and satisfaction
Training	*0.7014*	−0.1680
Graduate	*0.7109*	0.1589
EmplSatisf	−0.0307	*0.7264*
ValueAdd_EmplCost	0.0419	0.6472
Cumulative variance	0.3527	0.6303
Note: Italic values are above the 0.7 threshold		

Table VII.
PCA for human capital (rotated components)

Variable	Relationships' quality	Collaborative and communicative capacity
Customer	*0.7130*	−0.0302
Community	*0.7010*	0.0312
Partnership	0.0120	*0.7050*
Webpresence	−0.0124	*0.7079*
Cumulative variance	0.4025	0.7719
Note: Italic values are above the 0.7 threshold		

Table VIII.
PCA for relational capital (rotated components)

Variable	Social needs' satisfaction	Services' Innovation
Users14	*0.7048*	−0.0744
Services14	*0.7094*	0.0736
NewServicesAbil	0.0002	*0.9945*
Cumulative variance	0.4875	0.8226
Note: Italic values are above the 0.7 threshold		

Table IX.
PCA for structural capital (rotated components)

The results of the first model are discussed in Table X. This model investigates the effects of IC components on the economic performance of social cooperatives. The adjusted R^2 of the model is 19.69 percent. The quality of relationships with the reference community affects positively and significantly at 5 percent the performance. This finding implies that if the cooperative enterprise is able to satisfy social needs, interacting with all stakeholders, this could guarantee a long-term survival. The presence of graduate employees positively affects the operating profitability at 1 percent with a coefficient of 0.262. In addition, the value added per employee positively influences the performance at 5 percent with a coefficient of 0.201. Thus, productivity is a fundamental variable also for the NPOs.

The yearly training hours also affects the performance but negatively and significantly at 1 percent. The negative sign is attributable to an important cost increase which necessarily reduces the operating profit.

The independent variables with positive signs but not significant are as follows: the ability to provide new services, the number of provided services the quality of relationships with customers and community, belonging to a network and the employees' satisfaction. The certifications holding by the social cooperatives, the quality of relationships with partners and the quality of web presence have negative signs but not significant.

Finally, belonging to the educational-health sector positively and significantly affects the performance while the localization in the northern regions has a negative and significant effect on the profitability. Therefore, we can conclude that IC components affects the corporate performance of social cooperatives. So the first research hypothesis can be accepted.

Now we analyze the results of the second model (Table XI) that investigates the effects of IC components on the social performance of cooperative enterprises. The adjusted R^2 of the model is 46.93 percent. The yearly training per employee and the value added per employee cost positively and significantly (1 percent) influence the social performance with a coefficient, respectively, of 0.580 and 0.252. Also, the quality of relationships with customers has a positive and significant effect on the social performance (at 10 percent with a coefficient of 0.142); instead, the quality of relationships with the reference territorial

ROA14	Coef.	SE	t	$p > |t|$
Training	−0.3782216	0.104702	−3.61	0.000***
Graduate	0.2625356	0.088723	2.96	0.004***
EmplSatisf	0.0200473	0.0262821	0.76	0.447
ValueAdd_EmplCost	0.2013862	0.0825518	2.44	0.016**
Services	0.0842117	0.1016459	0.83	0.409
NewServicesAbil	0.0581564	0.0910196	0.64	0.524
Certifications	−0.1327697	0.1943693	−0.68	0.496
Customer	0.08677	0.104251	0.83	0.407
Community	0.0692234	0.112429	0.62	0.539
Partnership	−0.0487759	0.0924215	−0.53	0.599
Webpresence	−0.1365988	0.0882334	−1.55	0.124
Network	0.1860484	0.1887248	0.99	0.326
Sector	0.4665086	0.2032136	2.30	0.023**
North	−0.4097888	0.2057281	−1.99	0.048**
Center	−0.2701472	0.2590494	−1.04	0.299
_cons	−0.0784108	0.348322	−0.23	0.822

Table X.
IC and financial performance of social cooperatives for 2014

Notes: Number of obs $= 149$, $F(15, 133) = 3.42$; Prob $> F = 0.0001$; $R^2 = 0.2783$; Adj $R^2 = 0.1969$; Cameron and Trivedi's decomposition of IM-test: heteroskekasticity $\chi^2 = 141.36$, df $= 129$, $p = 0.2156$; skewness $\chi^2 = 24.11$, df $= 15$, $p = 0.0632$; Kurtosis $\chi^2 = 3.50$, df $= 1$, $p = 0.0615$. *,**,***Significant at 0.10, 0.05 and 0.01 levels (two-tailed test), respectively

USERS14	Coef.	SE	t	$p > t$
Training	0.5801097	0.0848637	6.84	0.000***
Graduate	−0.1186319	0.0719122	−1.65	0.101
EmplSatisf	−0.0083963	0.0213023	−0.39	0.694
ValueAdd_EmplCost	0.252143	0.0669103	3.77	0.000***
Services	0.0707742	0.0823866	0.86	0.392
NewServicesAbil	−0.0609908	0.0737737	−0.83	0.410
Certifications	0.0824832	0.1575413	0.52	0.601
Customer	0.1421005	0.0844981	1.68	0.095*
Community	−0.2461014	0.0911266	−2.70	0.008***
Partnership	0.1206211	0.07491	1.61	0.110
Webpresence	−0.0832551	0.0715155	−1.16	0.246
Network	0.0680823	0.1529663	0.45	0.657
Sector	−0.270629	0.1647098	−1.64	0.103
North	0.2328493	0.1667479	1.40	0.165
Center	0.1415751	0.2099662	0.67	0.501
_cons	−0.0736461	0.2823239	−0.26	0.795

Notes: Number of obs $= 149$, $F(15, 133) = 9.72$; prob $> F = 0.0000$; $R^2 = 0.5231$; Adj. $R^2 = 0.4693$. Cameron and Trivedi's decomposition of IM-test: heteroskekasticity $\chi^2 = 147.31$, df $= 129$, $p = 0.1290$; skewness $\chi^2 = 22.38$, df $= 15$, $p = 0.0983$; kurtosis $\chi^2 = 2.24$, df $= 1$, $p = 0.1342$. *,**,***Significant at 0.10, 0.05 and 0.01 levels (two-tailed test), respectively

Table XI.
IC and social
performance of social
cooperatives for 2014

community has a negative effect, significant at 1 percent. The second research hypothesis can be partially accepted.

The presence of graduate employees and the employees' satisfaction have negative signs but they are not significant, as well as the ability to provide new services and the web presence. The number of provided services, the certifications, the quality of partnership and the belonging to a network have positive signs but not significant. Thus, structural capital as well as the employees' satisfaction and the collaborative and communicative capacity are not relevant, they would seem to not directly affect social performance. Also in this case, the choice of indicators may not be suitable to catch the intangible elements or the effect could be mediated or moderated by other variables.

6. Discussion
The aim of this paper is to investigate the effect of IC on SCEs' performance, identifying which IC components are more valuable for corporate performance and more effective for the implementation of business strategies. IC is a fundamental resource that NPOs need to develop, in order to successfully implement corporate strategy, acquire and maintain a long-lasting competitive advantage and to improve corporate performance for a long-term sustainability (Bontis *et al.*, 2000; Chen *et al.*, 2005; Kong, 2010; Youndt and Snell, 2004).

The findings show that single sub-components of IC are interrelated and are also correlated with economic and social performance. This result extends similar notions espoused by earlier research in the private domain (Skandia, 1994; Knight, 1999; Benevene and Cortini, 2010; Kong, 2010). Structural capital is positively correlated with human capital, while the correlation between relational capital and human capital is mainly positive, even if the quality of relationships with the reference territorial community is negatively correlated with yearly training, and also with two variables of structural capital, such as the number of served users and provided services. The variables of relational capital are positively correlated with each other. Therefore, the single elements of IC sub-dimensions interact with each other activating a virtuous circle which develops the IC, consequently the knowledge, contributing to the value creation for both enterprise and stakeholders.

The factor analysis allows to identify six principal components of IC in NPOs: education, employees' productivity and satisfaction, relationships' quality, collaborative and communicative capacity, social needs' satisfaction and services' innovation. These factors represent effective levers used to foster IC that contributes to guarantee the long-term corporate survival.

Human capital contributes to explain economic performance which is positively affected by the presence of graduate employees and the value added per employee (Benevene and Cortini, 2010; Cesaroni *et al.*, 2014). However, it is negatively affected by yearly training because of the significant cost increase. It implies that social cooperatives should pay more attention to the yearly training trying to exclusively select the training activities that are able to improve the productivity per employee and the quality of service provided to users. Human capital plays a key role for economic performance of SCEs.

Human capital is also fundamental for social performance together with relational capital. In fact, the social output measured by the number of served users is positively affected by yearly training and value added per employee. In this case, the sign of training is positive while it is negative for financial performance. It implies that training is important to guarantee a specific quality standard of provided services to users, but the cost decreases operating profitability. The presence of graduate employees is not significant for social performance but the sign is negative; in fact, sampled social enterprises operate in the sectors of healthcare, social or educational services and other services, such as agricultural and commerce services as well as general services, for which degree is not requested except for the educational and healthcare services.

Moreover, the quality of relationships influences social performance; particularly, the quality of relationships with customers has a positive sign while the quality of relationships with the reference territorial community has a negative sign. Probably, this discordance is attributable to a different level of perceived quality of relationships, lower for community than customers. It suggests that SCEs should try to improve the relationships with stakeholders of reference territory, investing in transparency and communication, through which obtain social legitimacy. Thus, the good relationships with stakeholders promote the sharing of knowledge, competencies, loyalty and reciprocal trust (Alexander, 1999; Anheier, 2000; Kong, 2010).

7. Conclusion

The empirical analysis shows the key role of human capital for social and financial performance of SCE; also relational capital affects social performance, highlighting the importance of relationships' quality with the reference stakeholders. The single elements of IC sub-dimensions interact with each other, activating a virtuous circle that promotes the IC development.

The main limitation of this work is represented by the restricted sample size, thus generalization must be curtailed. Moreover, the sample includes social cooperatives belonging exclusively to five specific sectors. Furthermore, there are no shared models to evaluate and estimate the effects of IC on the financial and social performance of NPOs.

These findings imply that the capability to effectively deploy corporate resources in order to produce an operating profit pursuing the corporate mission is further increased by human capital through the productivity per employee and by good relationships with stakeholders which promote the sharing of knowledge, competencies, loyalty and reciprocal trust (Alexander, 1999; Anheier, 2000; Kong, 2010).

This study tries to identify significant indicators, useful to explain the impact of IC components on economic and mission-based performance of SCEs. This identification could increase the awareness of managers about the significance of human, relational and structural capital for the non-profit sector, in order to pursue social outcomes

(Benevene and Cortini, 2010; Rija and Bronzetti, 2012). This is important because the predominant extant literature focuses on empirical studies based in primarily Anglophonic settings (i.e. USA, Canada and UK) in private enterprise. Our research attempts to fill the void in studying IC within social enterprises in Italy.

The main limitation of this work is represented by the restricted sample size so generalizability must be curtailed. However, the sample does include a wide variety of both typologies of social cooperatives belonging exclusively to five specific sectors. Furthermore, there are no shared models to evaluate and estimate the effects of IC on the economic and mission-based performance of NPOs.

Further research should try to develop shared and effective KPIs, to measure the impact of the IC, in order that decision makers are able to manage the value drivers. It would be interesting to focus the attention on relational and structural capital, trying to identify better KPIs, because these IC sub-dimensions are positively correlated with human capital that is the main IC dimension impacting on corporate performance; to that end it could be useful to assess the effects of structural and relational capital on human capital. Moreover, it could also be interesting to extend the survey to the other European countries in order to compare the findings and understand the weight of the reference context in which NPOs operate.

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