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Intellectual capital in action: evidence from Italian local governments

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Abstract

Purpose – Intellectual capital (IC) is attracting increasing attention from scholars and practitioners in the private sector, while research in the public sector is still in its embryonic stage, especially in regards to local governments. The purpose of this paper is to fill this gap by channelling conceptual and empirical findings from the large body of IC literature.

Design/methodology/approach – The research investigates IC in action in the local government domain. A survey has been carried out involving both managers and politicians of all Italian local governments (ILGs) with more than 40,000 inhabitants. In order to define the constituents of each IC dimension perceived by ILGs, principal component analysis was used in investigating the results.

Findings – Results highlights how IC components are perceived in ILGs: human capital is a combination of aptitudes in pursuing target performances, sense of ownership and motivations; relational capital is a combination of values, relationships and acts; structural capital includes procedures and routines supporting the decision-making process, the ability of achieving objectives and handling changes.

Research limitations/implications – While the research findings are limited due to being based on a survey in a single country, they present opportunities for future research regarding further testing of how IC is perceived in LGs in different context. The conclusion could be beneficial also for standard setters, providing a path to support the IC disclosure by LGs.

Originality/value – The paper contributes to a narrow strand of research – IC in LGs – adding new knowledge in “IC in action” research stream.

Keywords Intellectual capital disclosure, Intellectual capital, Principal component analysis, Local governments

Paper type Research paper

1. Introduction

The increasing importance of the knowledge economy has aroused a considerable discussion among scholars concerning the definition, role, management and disclosure of the Intellectual capital (IC) (Guthrie *et al.*, 2001; Lev *et al.*, 2005; Marr *et al.*, 2004; Guthrie and Petty, 2000; Ramírez-Córcoles, 2010; Ricceri, 2008). The importance initially given to identifying and disclosing IC in the private sector (see a synthesis in Zambon, 2016) has led to an osmosis in the non-profit and public sectors (Guthrie *et al.*, 2009; Ramírez-Córcoles, 2010; Schneider and Samkin, 2008; Serrano Cinca *et al.*, 2003), even as a consequence of the introduction of new public management (NPM) philosophy.

NPM has determined a process of deregulation, decentralization, subcontracting, substitution of input control systems for output control systems, management by results and responsibility assignment in public entities. Additionally, NPM has been characterized by a related attention on methodologies and management tools (Dunleavy and Hood, 1994; Hood, 1995; Pollitt *et al.*, 2007), including changes in the accounting and reporting systems (Humphrey *et al.*, 1993; Jackson and Lapsley, 2003; Ter Bogt, 2008), typically adopted in the private sector. NPM paradigm has meant



greater attention on efficiency, effectiveness and better public service quality, designating a dominant role to knowledge and intangibles as source of competitive advantages for public entities (Ramírez-Córcoles, 2010). However, research on IC in the public sector is still exiguous, basically focussed on universities, (Bezhani, 2010; Ramírez-Córcoles and Gordillo, 2014; Secundo *et al.*, 2015; Silvestri and Veltri, 2011), while only a few have concentrated on local governments with scant reference to their empirical practices (Bronzetti and Sicoli, 2011; Cohen and Vlismas, 2013; Ramírez-Córcoles, 2010; Serrano Cinca *et al.*, 2003).

Following the public sector research agenda drawn by Dumay *et al.* (2015), this study is dedicated to investigating IC in action in the local governments, channelling the findings from the large body of IC literature and combining the possible ways to measure and disclose its components (human, relational and structural capital (SC)).

In the local government context, it would be interesting to understand to what extend both politicians and managers have a proper consciousness regarding the relevance of IC and if it is considered necessary to measure and disclose the IC components. This kind of research could potentially support a different approach to the performance measurement system, adhering the management of IC to the resulting performance obtained. To run an empirical analysis, Italy was selected as a country where NPM reforms have been implemented since the beginning of the 90s and where in the last decades several recommendations and laws have been issued focussing on both human and relational capital (RC). To this end, a survey involving managers and politicians of all Italian local governments (ILGs) with more than 40,000 inhabitants has been performed.

Additionally, the research would propose a definition of the three IC components congenial to LGs and, more broadly, public sector entities. In this way, the paper may provide a path for elaborating a conceptual framework in public entities, as well as for developing guidelines on how IC could be managed and disclosed in this context.

The paper is then structured as follows. Section 2 presents the literature review on the matter while Section 3 sets the context. After illustrating the research design and methodology in Section 4, Section 5 presents and discusses empirical findings, upon which Section 6 attempts to offer a definition of IC constituents. The final section draws a conclusion and limitations as well as further development of research on IC in LGs.

2. Reasoning on IC in the public sector

A considerable time has gone by since IC was defined as an organization's most valuable asset, being a mix of non-physical resources, such as the wealth of knowledge, information, intellectual property and experience, to be used to achieve common welfare (Stewart and Losee, 1994).

A great deal of research has been dedicated to define IC, to clarify its elements and to discuss its management and disclosure, even if the largest part of this research has been developed in the private sector (see the literature review in Guthrie *et al.*, 2012), while research on IC in the public sector, especially at a LG level (Dumay *et al.*, 2015; Garlatti *et al.*, 2014; Massaro *et al.*, 2015), is still exiguous.

In the last few decades, public administrations have been involved worldwide in a wide process of reform, due to the NPM approach and the related changes in public service management and delivery (Broadbent and Guthrie, 2008). According to scholars (Guthrie and Dumay, 2015), there is a need to find a suitable way of optimizing the relationship between resources, services and citizens and to relate correctly the accountability of the performance achieved. IC plays a key role in this approach, "as it provides a lens into the inner workings of public services and ways to measure

and manage resources to meet citizens' expectations" (Guthrie and Dumay, 2015, p. 260). Moreover, the NPM offers a theoretical rationalization for IC, being a concept profoundly embedded in the private sector, that can be seen as a new conceptual framework for public strategic management (Cohen and Vlismas, 2013).

According to Serrano Cinca *et al.* (2003), public sector entities tend to have multiple objectives of non-financial nature. Additionally, the public sector is the ideal framework where IC theory can be applied, since the final products of public administrations are principally services (intangibles by nature); therefore, the production process is based on a very intense use of human resources, requiring specific knowledge (Bronzetti and Sicoli, 2011). In fact, public entities are largely based on intangibles, including skills, competencies, procedures and information systems controlled by the entity (Schneider and Samkin, 2008). Moreover, these elements generate other intangibles of collective nature, such as the public welfare, the quality of life, the protection of the environment, the reputation of a territory and so forth (Del Bello, 2006). However, the use of IC in practice in public sector organizations nowadays is still scant, and disclosure is largely underdeveloped (Guthrie and Dumay, 2015).

Even if the holistic nature of IC is largely recognized, as a *fil rouge* connecting intangibles responsible for innovation and growth (Zambon, 2006), identifying the different IC components is pivotal in attaining NPM principles of excellence and innovation together with a greater care toward citizens in delivering public services. It would be especially beneficial for a better decision-making process, that is making the IC components supportive both for strategic and operative decisions. However, aspects related to the knowledge management (Petty and Guthrie, 2000) are not discussed in this research, which rather focusses on problems related to the identification, the definition and the disclosure of IC components.

Following a largely recognized classification (Guthrie *et al.*, 2001; Meritum, 2002; Bozzolan *et al.*, 2003; Serrano Cinca *et al.*, 2003; Bronzetti and Sicoli, 2011; Cohen and Vlismas, 2013; Secundo *et al.*, 2015), the three different classical aspects, attuned to summarize the several IC components, were considered as a starting point of this research:

- (1) human capital (HC) refers to all aspects involving the aptitudes and competences of civil servants, since their knowledge and abilities are pivotal in the achievement of the objectives of an entity;
- (2) RC refers to the intangible resources and capabilities, which contribute to external relations, useful for the value creation; and
- (3) SC (also identified as organizational capital) regards the entity resources, such as databases, information systems, research projects, work procedures and routines, governance principles, ethic codes and management philosophy.

Starting from these widely accepted definitions and considering the lack of consensus on the categorization of the different IC components (Zambon, 2016), according to Massingham and Tam (2015), the paper intends to operationalize concepts upon which classifications are built, in order to translate them into management actions within the specific LG context. As a matter of fact, the recognition of IC both by managers and politicians in public entities is obviously prodromal to its management, measurement and disclosure.

Taking into due account the literature on the matter and considering that a critical analysis of "IC practices in action" (Guthrie *et al.*, 2012, p. 69) is highly desirable, the study deals with the third development stage of IC research (Massingham and Tam, 2015). This stage has a more practical orientation, since it is "based on a critical

and performative analysis of IC practices in action” (Guthrie *et al.*, 2012, p. 69), emphasizing the growing use of IC in assisting strategic planning (Whyte and Zyngier, 2014). Additionally, this third step deals with IC reporting, whose timeliness could affect positively the perception of IC in practice (Dumay and Tull, 2007). Accordingly, the main aim of this study is not to explain through a prescriptive approach how IC should work, but to investigate how IC is perceived and works in LGs. The desire is to elaborate a definition of the constituents of IC based on the concrete perception of managers and politicians involved in the management of ILGs. To this end, an empirical analysis has taken place and definitions are founded on results collected, conducting to possible guidelines to managing and disclosing IC in LGs, also taking into account the voluntary nature of IC disclosure (Schneider and Samkin, 2008) coupled with the distinctive features of accountability for LGs.

3. Setting the context

The Italian public administration has a three-tier structure: national government, regional governments (21) and local governments, comprising 110 provinces and 8,092 municipalities.

Focussing on this last level, municipalities are all of different sizes. In fact, about 85 percent (6,888) of them have a population of less than 10,000 inhabitants while only 52 municipalities have more than 100,000 inhabitants.

In the 90's, ILGs as well as other public sector entities have been involved in the pattern of NPM reforms, which sought to introduce innovations from many different perspectives:

- The governance system, which consists of three main bodies: the council (representative body), the cabinet (executive body) and the mayor.
- The managers' autonomy and responsibility, which established a separation between the competencies of politicians and those of managers.
- The performance measurement of organizational assessment and personnel evaluation; according to the law 15/09, managers are held responsible for the use of resources and the results achieved. Therefore, management control systems have been formally introduced (Kuhlmann and Fedele, 2010).
- The regime of administrative functions. ILGs have to provide several local public services of the utmost importance for citizens. To this end, ILGs are allowed to raise local taxes. However, it is important to clarify that there has been a process of corporatization and agencification that have led to a loss of direct control of ILGs on the delivery of services (Grossi and Reichard, 2008).
- The accounting system. Prior to the last reform process, ILGs adopted a modified cash basis of accounting, even though, since 1995 the financial reporting is supposed to be completed with accrual accounting data. However, this system in most cases did not affect the management of ILGs (Anessi-Pessina *et al.*, 2010; Caperchione, 2003). In the pattern of the Italian reform process, a common set of accounting principles has been developed, leading to a new modified cash basis system accompanied by accrual reporting (Manes-Rossi, 2015). It should be noted that the move towards a responsible budgeting system is still in course (Ongaro *et al.*, 2013).
- The knowledge resources. Nowadays, intangible resources related to the knowledge (i.e. quality of the services provided, professionalism and skills of

employees, the adequacy of technology and propensity for innovation and research) are not included in the traditional financial reporting. Therefore, in the pattern of the reform process, the Directive 2003/98/EC about the re-use of public sector information, encouraged a broader availability of public sector data since it would represent a sort of added value also for the public body itself, by promoting transparency and accountability. Following this open data policy trend, the Italian Government issued a regulation concerning the principle of transparency, aiming to encourage widespread forms of control over both the pursuit of the institutional functions and the use of public resources as well as to enhance the efficiency and the performance of public administrations. So far, ILGs have to provide citizens with full information accessibility about their future strategies and activities (Manes-Rossi and Aversano, 2015).

Nevertheless, a strong implementation gap in public management reform has been observed (Ongaro and Valotti, 2008), and a process of change is still in action where a new equilibrium has not been achieved yet (Ongaro *et al.*, 2013).

Despite the open data policies, there are no specific requirements about measurement, disclosure and reporting of IC in the public sector; consequently, ILGs that are willing to disclose the above-mentioned information as well as any other data concerning the several IC components, are doing so voluntarily (i.e. they should disclose in financial statements, social reporting or ad hoc documents). As things stand, a clear management, measurement and disclosure of IC would also support the innovation in managerialism, which means more coherence with the set of NPM reforms introduced in Italy. In so doing, more attention is paid to the role of intangible resources, and especially human resources, aiming to develop different culture and values and to sustain innovation.

4. Research design and methodology

The study aims to test to what extent the IC components are perceived by managers and politicians and if the need to measure and disclose them is recognized. To this end, qualitative data were gathered through a questionnaire involving managers and politicians of all ILGs with more than 40,000 inhabitants (no. 181). The population threshold was chosen to include all LGs that represented about 20 percent of the population, according to the 2011 Census. Moreover, previous studies suggested that size is an important factor since it reflects organizational complexity in terms of magnitude and scope of information which must be handled by the organization itself (Anderson and Lanen, 1999; Anessi-Pessina *et al.*, 2008; Van Dooren, 2005).

In particular, the questionnaire was sent to two politicians (a financial councillor and a human resource councillor) and two managers (a financial manager and a human resource manager) of each ILG included in the sample; the institutional e-mail addresses were collected from the website of each ILG.

On the subject of the 724 total survey potential respondents, Table I shows that some e-mail addresses were invalidated since some politicians were at the end of their official term or the ILG was financially distressed (which, among other things, implied that a special commissioner was appointed; Bisogno *et al.*, 2014). Furthermore, some respondents did not indicate their e-mail address on the website. Finally, there were some duplicates because either politicians or managers were competent both in finance and human resource fields. Therefore, the final sample size involved 586 potential respondents (250 politicians and 336 managers).

The questionnaire gained a preliminary list of questions from Kamaruddin and Abeysekera (2013), who investigated IC in Malaysian public sector organizations (federal government, state government, local authorities, others). However, a validation of this list was required, since authors in their research investigated IC in relation to non-financial performance. Once the applicability of these lists was ascertained, several modifications were decided in order to take into account the context of the present study (ILGs) and its different aim (to investigate how IC is perceived and works in LG context). Accordingly, the final questionnaire was based on a different classification of the list of questions, aiming at referring to the IC components; additionally, it includes a section on IC disclosure, which was not considered in the Kamaruddin and Abeysekera (2013) list.

The final questionnaire consists of three sections.

The first one aims to capture the familiarity of respondents with IC issues and it is made-up of four questions consisting in 82 lines. More specifically, question no. 1 refers to HC; questions no. 2 and no. 3 refer to RC; question no. 4 concerns SC.

The second section is made-up of two questions, aiming to investigate the measurement and the disclosure of IC components.

Finally, the third section requires some notes on the respondents' profile.

The respondents were asked to express for each question the extent of their agreement or disagreement (where six corresponds to "strongly agree" and one corresponds to "strongly disagree"). A six-point Likert scale was adopted in order to avoid that respondents would choose the moderate value (the middle point) (Garland, 1991).

The questionnaire was pilot tested in one ILG in order to spot unclear questions or a possible misunderstanding. The results of the pilot test were positive.

Therefore, the survey was launched via a web based survey host (Survey Monkey), including a cover letter to explain the purpose of the research and the basic concepts underpinning the questions (a broad definition of HC, RC and SC as reported in Section 2). In order to get a high response rate, the questionnaire was followed by direct phone calls to interviewees. Moreover, three follow-up reminders were sent every 15 days to the respondents to limit the lack of participation. The field study was started in March and was completed at the beginning of July 2015. Thus, the final response rate was about 20 percent (116 respondents out of 586).

Table II provides a detailed classification on the profile of survey respondents, showing a sensibly higher percentage of managers (55.17 percent) than of politicians (19.83 percent). Unfortunately, many respondents did not identify their role (25 percent), neither provided details on their experience and educational background, thus preventing further possible analysis.

In the aim of highlighting which are the constituents for each IC dimension perceived by ILGs, after descriptive statistics a manageable methodological approach

	Politicians	Managers
Total survey respondents	362	362
E-mail address not found because of resignation or LG bodies are at the end of official term	6	0
E-mail address not found because of the distress of the LG	18	0
E-mail address not found for other reasons	49	7
No. of total duplicates (i.e. a person who is competent both in finance and human resources)	39	19
Potential survey respondents (final sample size)	250	336

Table I.
Data collection

was adopted: the principal component analysis (PCA). PCA is defined in such a way that the first principal component explains as much of the variability in the data as possible, and each succeeding component in turn has the highest variance possible. It looks for a few linear combinations which can be used in order to summarize the data, losing as little information as possible (Mardia *et al.*, 2003, p. 213). Accordingly, PCA has several advantages (Karamizadeh *et al.*, 2013), since it extracts the most important information from the observed variable, compresses the size of the data set by keeping only this important information, and reduces noise and redundancy, resulting in a clearer interpretation. Additionally, this study adopts PCA instead of other approaches, such as factor analysis, since its aim is neither to assess the validity of an IC model (Huang *et al.*, 2007), nor to test hypotheses on the significance of factor loading (Bentler and Kano, 1990).

5. Looking at IC in action in ILGs

5.1 Results of the survey

As stated before, the survey included three sections, with the first one being dedicated to understanding if both politicians and managers of the investigated ILGs are aware of the importance of IC components.

According to the respondents (see Table III for the detailed questions), HC is considered a relevant “asset,” since the higher rating average concerns lines connected with: employees’ skills; access to training and further studies; identification of the organization’s trademark; and employees’ attitude to collaborating with other members of the organization. This result could be interpreted in the wake of Guthrie (2001), according to whom human resources should be considered not only as a cost, but also as an investment (Roslender, 1997), thus considering continuous training as a strategic tool for better allocating human resources as well as for improving their skills and abilities.

Questions no. 2 and no. 3 concerned RC (detailed questions in Table IV). The main emerging finding is a largely perceived positive relationship with both citizens and external organizations.

Question no. 4 concerned SC (detailed questions in Table V). Looking at this IC dimension, the crucial points seem to be work procedures and organizational routines as well as governance principles, as highlighted by the attention given to the sustainability development and the environmental issues.

Finally, questions no. 5 and no. 6 investigated the respondents’ viewpoint about the disclosure of each IC component (detailed questions in Table VI). Despite the limited experience existing in Italy, respondents recognize how important it is to disclose IC appropriately, highlighting the significant role IC would play in supporting decision-making. However, the investigated ILGs do not provide specific reports, offering information about IC through social reports (when they are drafted). According to Del Bello (2006), this could imply a risk of confusion between the content and the formal denomination of the document through which this information is provided.

Table II.

Survey respondents

Total responses		Role of respondents									
		Financial councillor		Human resource councillor		Financial managers		Human resource managers		No indication	
No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
116	100	13	11.21	10	8.62	30	25.86	34	29.31	29	25

	PC 1	PC 2	PC 3	PC 4	PC 5
<i>Human capital (Question no. 1)</i>					
Question no. 1: in my opinion, the employees of my organization:					
Know how to do the job	0.133	0.208	0.674	-0.031	0.407
Have opportunities for further studies	0.192	0.031	0.056	0.283	0.793
Have access to training	0.157	0.238	0.103	0.191	0.759
Have the required qualifications	-0.009	0.031	0.662	0.394	0.234
Receive incentives	0.085	0.018	0.060	0.869	0.082
Have positive work attitudes	0.304	0.213	0.718	0.091	-0.017
Participate actively in the activities of their entity	0.345	0.238	0.634	0.180	0.086
Are highly skilled	0.131	0.329	0.543	-0.249	0.090
Get job satisfaction	0.212	0.379	0.325	0.527	0.122
Receive awards for their services	0.154	0.045	-0.069	0.831	0.149
Are involved in job evaluation with their superiors	0.068	0.020	0.191	0.478	0.424
Offer new ideas	0.611	0.178	0.549	0.119	-0.116
Are able to maintain self-control	0.447	0.420	0.424	0.014	0.037
Are attentive to the general public	0.684	0.225	0.476	0.101	0.092
Understand KPI of their entity	0.758	0.254	0.292	0.209	0.158
Adopt KPI of their entity	0.874	0.163	0.120	0.103	0.155
Are aware of the changes made by the entity	0.775	0.156	0.035	0.087	0.216
Identify the trademark (logo, citizen charter, etc.) of their organization	0.012	0.829	0.193	0.111	0.020
Are able to give opinions, comments and recommendations to their organization	0.275	0.705	0.071	-0.030	0.096
Have sense of ownership	0.215	0.799	0.158	0.251	0.081
Believe that they are getting high quality services	0.290	0.666	0.400	-0.006	0.196
Have good knowledge of the services offered	0.055	0.492	0.359	-0.130	0.511
Have excellent leadership	0.341	0.568	0.190	-0.020	0.356

Table III.
Human capital:
factor loadings of
extracted PCs

	PC 1	PC 2	PC 3
<i>Relational capital (Questions no. 2 and no. 3)</i>			
Question no. 2: in my opinion, the employees of my organization:			
Easily access official websites	0.300	0.679	0.314
Understand the responsibilities of their organization towards citizens and users	0.114	0.812	0.095
Are involved in assessing user satisfaction	0.355	0.539	0.250
Are aware of outsourcing services of the organization	0.084	0.649	0.511
Are aware of the environmental commitment of their organization	0.331	0.352	0.629
Receive their entity's services promptly	0.453	0.383	0.572
Understand that changes in central government policies affect the running of their entity	0.702	0.393	0.313
Question no. 3: my organization:			
Is never too busy to respond	0.631	-0.011	0.529
Instils confidence in citizens	0.688	0.343	0.328
Makes citizens feel respected	0.707	0.322	0.294
Is admired	0.794	0.179	0.295
Is respected	0.865	0.245	0.160
Is trusted	0.874	0.163	0.278
Is affected by the changes in central government policies	0.606	0.325	0.216
Collaborates with external organizations	0.339	-0.008	0.797
Is characterised by good relationships between departments	0.221	0.282	0.746

Table IV.
Relational capital:
factor loadings of
extracted PCs

	PC 1	PC 2	PC 3	PC 4	PC 5	PC 6
<i>Structural capital (Question no. 4)</i>						
Question no. 4: in my opinion, my organization:						
Protects knowledge	0.184	0.179	0.211	0.726	0.171	0.103
Has easily understood managerial procedures	0.521	0.484	0.074	0.462	0.287	0.010
Has a good website for communicating with citizens	0.374	0.143	0.285	0.541	-0.094	0.368
Has good ergonomic workstations	0.235	0.165	0.157	0.646	0.189	0.247
Benchmarks with other public sector entities	0.336	0.437	0.088	0.510	0.293	0.101
Has transparent workplace policies	0.625	0.360	0.264	0.281	0.234	0.152
Provides good support to managers	0.238	0.106	0.233	0.387	0.588	0.187
Is performance oriented	0.685	0.278	0.242	0.348	0.146	0.058
Has a working environment which encourages responsibility	0.426	0.288	0.082	0.374	0.591	0.124
Conforms to central government policies	0.737	0.352	0.199	0.301	0.275	0.089
Is constantly improving	0.342	0.076	0.718	0.175	0.156	0.016
Uses adequate advertising campaigns to promote services	0.669	-0.018	0.445	0.200	0.237	0.191
Focuses on work quality	0.577	0.421	0.269	0.327	0.285	0.036
Has good managerial capabilities	0.504	0.454	-0.082	0.320	0.294	0.217
Focuses on citizen satisfaction	0.679	0.187	0.255	0.284	0.151	0.334
Focuses on employee needs	0.451	0.316	0.167	0.307	0.433	0.324
Has strong organizational values	0.617	0.369	0.296	0.309	0.297	0.167
Has the support of the central government	0.438	0.323	0.181	-0.076	0.562	-0.007
Has measurable goals	0.448	0.250	0.274	0.202	0.608	0.265
Is committed to achieve objectives	0.704	0.222	0.287	0.083	0.347	0.187
Is well aligned with the objectives of the various levels	0.708	0.310	0.167	0.188	0.361	0.157
Is able to handle changes	0.807	0.166	0.175	0.158	0.191	0.259
Focuses on the overall effect of long-term organizational vision	0.773	0.347	0.212	0.181	0.203	0.094
Considers changes in central government policies making it more effective	0.809	0.226	0.242	0.133	0.248	0.071
Is able to optimize resources	0.561	0.570	0.134	0.207	0.149	0.207
Reduces operational costs	0.494	0.585	0.185	0.152	-0.067	0.441
Has sustainable developments	0.604	0.498	0.285	0.151	0.085	0.207
Strives for excellence	0.583	0.534	0.197	0.303	0.087	0.266
Accurately focuses on each ensuing action	0.612	0.433	0.303	0.183	0.261	0.298
Aims at total quality services	0.603	0.459	0.142	0.243	0.116	0.384
Measures the outcome of its activity	0.480	0.343	0.402	0.288	0.345	0.060
Respects its deadlines	0.254	0.243	0.182	0.069	0.394	0.664
Adopts advanced technologies	0.257	0.165	0.694	0.133	0.147	0.271
Has appealing promotional brochures	0.253	0.303	0.533	0.260	0.016	0.455
Informs citizens on operating hours	0.120	0.146	0.163	0.230	0.120	0.799
Exists for the common good	0.255	0.762	-0.023	0.145	0.338	0.130
Stands behind its services	0.294	0.626	0.426	0.223	0.183	0.269
Provides innovative services	0.364	0.554	0.496	0.277	0.051	0.284
Is an environmentally responsible organization	0.158	0.592	0.548	0.138	0.320	0.206
Has a clear vision of the future	0.392	0.627	0.373	0.238	0.270	0.003
Recognizes and takes advantages of market opportunities	0.326	0.518	0.132	0.242	0.499	0.248
Supports good causes	0.245	0.586	0.459	0.126	0.199	0.186

Table V.
Structural capital:
factor loadings of
extracted PCs

	PC 1	PC 2	PC 3	PC 4	PC 5	IC in action	
<i>Measuring and disclosing IC (question no. 5 and no. 6)</i>							
Question no. 5: in my opinion, in my organization:							
An explicit strategy of managing IC is adopted	<i>0.903</i>	0.079	-0.039	0.208	0.139	705	
An explicit strategy of managing human capital is adopted	<i>0.842</i>	0.157	-0.058	0.087	0.042		
An explicit strategy of managing relational capital is adopted	<i>0.862</i>	0.153	0.082	0.202	0.089		
An explicit strategy of managing structural capital is adopted	<i>0.796</i>	0.274	0.135	0.174	0.017		
There is an IC manager	<i>0.890</i>	-0.125	0.085	-0.055	0.049		
Information about IC affects the management of resources according to economic development	<i>0.946</i>	0.002	0.091	0.046	0.063		
Social reports are drafted	<i>0.272</i>	-0.072	0.054	<i>0.885</i>	0.025		
A social report provides information about IC	0.459	0.018	0.020	<i>0.840</i>	0.023		
Internal reports concerning IC are drafted	0.715	0.019	-0.102	0.532	0.056		
External reports concerning IC are drafted	0.757	0.030	-0.041	0.480	0.061		
Question no. 6: in my opinion, measuring and disclosing IC:							
Supports strategic planning of the entity	0.032	0.343	<i>0.758</i>	0.106	0.132		
Supports career advancements	0.003	0.151	0.605	-0.409	0.348		
Supports personnel training	0.111	0.527	0.600	0.001	0.144		
Sustains a continuous updating in the knowledge of the organization	0.093	<i>0.826</i>	0.267	-0.063	0.012		
Increases the sense of belonging of the employees	0.079	<i>0.821</i>	0.284	-0.013	0.149		
Sustains growth in organizational culture	0.039	<i>0.855</i>	0.179	-0.058	0.143		
Improves flexibility and attitude to changes of the organization	0.051	0.571	0.593	0.054	0.113		
Stimulates innovations	0.080	0.779	0.356	0.004	0.239		
Attracts agreements and conventions with other private and public organizations	0.073	0.696	0.079	0.133	0.540		
Integrates financial data	0.203	0.428	0.144	0.059	<i>0.773</i>		
Compares development of the organization with that of other similar organizations	0.077	0.158	0.366	0.005	<i>0.804</i>		
Demonstrates its own attitude towards innovation	0.161	0.636	0.156	-0.078	0.574		
Demonstrates that knowledge and human resources are the most relevant assets of the organization	-0.015	0.372	<i>0.718</i>	0.032	0.151		

Table VI.
Measuring and disclosing IC:
factor loadings of extracted PCs

5.2 PCA

The PCA was implemented for each IC component, in order to have a clearer picture of the most relevant answers concerning human, relational and SC as well as issues concerning measurement and disclosure. The literature (Jolliffe, 2002; Di Franco and Marradi, 2003) suggests selecting the first k components, which have an eigenvalue greater than 1. Accordingly, the following tables show the rotated component matrices of factor loadings of the extracted principal components. Through an interpretation of items having a high factor loading (indicated in italic in the following tables), an explanation of them will be provided, also endowing taxonomy. This taxonomy, in turn, would represent the base for the definition of IC components in the public sector domain (see Section 6).

Table III expresses the rotated component matrix of factor loadings concerning HC (question no. 1).

Five PCs were extracted; interpreting items having the highest factor loadings, the following taxonomy can be proposed:

- (1) "Performance measurement." The first PC shows that the highest factor loadings concern performance measurement issues, highlighting the relevance of the adoption of KPIs and the comprehension of how they would affect organizational role and profile of employees;
- (2) "Identification and collaboration." The second PC deals with the sense of identification and "ownership" of employees, indicating their positive attitude toward collaboration;
- (3) "Professional employees' profile." According to the factor loadings concerning the third PC, employees of the investigated ILGs have both a positive work attitude and a good knowledge, also playing an active role in organizational activities;
- (4) "Incentives and awards." Results concerning the fourth extracted PC illustrate the relevance of receiving incentives and awards for the services provided; and
- (5) "Improving knowledge." The last PC sheds light on future opportunities of improving knowledge through further studies and training activities.

In short, the analysis of responses concerning HC highlights the importance of both performance measurement issues and the employees' knowledge in the achievement of the entity's objectives; therefore, incentives and training activities would increase HC, which is considered not as a cost but as an investment (Roslender, 1997).

Table IV expresses the rotated component matrix of factor loadings concerning RC (questions no. 2 and no. 3).

Three PCs were extracted and, interpreting the items with the highest factor loadings, the following taxonomy can be proposed:

- (1) "Trust and respect." Focussing on the first PC, according to the respondents, the relationship between the LG and its citizens is largely based on trust and respect;
- (2) "Values and responsibility." Results concerning the second PC illustrate the perceived relevance of being responsible toward citizens and users; and
- (3) "Awareness of relationships." The third PC shows a positive attitude in collaborating with other organizations.

In short, the analysis of responses concerning RC underlines that trust and responsibility as well as the ability to cooperate are considered pivotal elements of the LG's mission, representing intangible resources of great value for the community.

Table V illustrates the rotated component matrix of factor loadings concerning SC (questions no. 4).

Six PCs were extracted and, interpreting the items with the highest factor loadings, the following taxonomy can be proposed:

- "Decision-making." The first PC expresses the relevance of both conformity with central government policies and pervasive alignment with the entity's objectives. Moreover, having a versatile approach in managing organizational changes, results are pivotal for a proper decision making;
- "Governance policy." The second PC highlights the importance of having a clear vision of the future for the benefit of the community;

- “Advanced IT system.” The third PC emphasizes the key role of IT systems and their constant technological improvements; and
- “Knowledge protection.” The fourth PC focusses on the importance of protecting knowledge and guaranteeing good working conditions.

In addition, the fifth PC focusses on “goals’ measurement” while the sixth one on “organizational routines.”

In short, according to the respondents, SC is largely based on internal and organizational resources, such as decision-making processes, governance principles, information systems and work procedures and routines.

Finally, questions no. 5 and no. 6 concerned the perception of the respondents on the way of measuring and disclosing IC components; Table VI expresses rotated component matrix results.

These two last questions aim to understand the awareness of respondents on the importance of disclosing IC. Results highlights three key elements:

- (1) “Vision of IC.” The first PC is strongly based on the relevant role of IC, which can be considered as a prerequisite of both measuring and disclosing its components;
- (2) “Sense of belonging.” The second PC shows that the main perceived effect of measuring and disclosing IC is to enhance both organizational culture and the employees sense of belonging; and
- (3) “Intangibles.” Results concerning the third PC emphasize the valuable role of disclosing IC, since knowledge and human resources are considered as relevant assets.

The fourth and fifth PCs, respectively, named “Social reports” and “Integrated reports,” dealt with communication tools. A large portion of the investigated ILGs do not provide internal or external reports on IC; however, some of them try to disclose IC within social reports, aiming at integrating this information with traditional financial data. In a country with a strong legislative environment, the lack of a specific regulation or guidelines has possibly limited the adoption of IC disclosure.

6. Toward an “empirical” definition of IC in LGs

The results collected through the survey bring to light certain insights that deserve to be appropriately acknowledged.

6.1 HC

Respondents seem to be aware of the relevance of the first IC component. A performance measurement system able to support the measurement of objectives achieved and the adequate profile of employees for the role they play in the organization, are considered essential elements for the appropriate growth of HC. Additionally, the sense of ownership is salient for the development of HC. Contemporarily, the dynamic nature of HC appears important for managers and politicians, considering the relevant role recognized for the improvement of knowledge and skills that would motivate employees to be more effective and efficient. Therefore, investing in these knowledge and skills would be beneficial. These results are coherent with previous research: as stated by Bronzetti and Sicoli (2011), investments in the training of both managers and employees aim to achieve a result-oriented culture, coherent with the NPM approach. The results have managerial implications, such as evaluating employees’ performance according to

their involvement in the activities of their entity and work toward the alignment with targets determined through KPIs.

Assuming all the above considerations, in the LG domain, HC can be defined as a combination of the following features: attitude in pursuing target performances in a work environment which recognizes the efforts carried out; the sense of ownership and the ability to cooperate with the organization; and aptitudes and competences of civil servants, whose knowledge and abilities are pivotal in the achievement of the objectives of the entity.

6.2 RC

This second IC component, already considered an advantage for a public sector entity due to a fruitful association with the general public (Cohen and Vlismas, 2013), has emerged as crucial in enabling LGs to be more responsive and effective, enhancing their responsibility. In this way, politicians and managers consider the relation with citizens a question of trust and respect improving transparency and, in turn, accountability and responsibility (Pallott, 1994; Schneider and Samkin, 2008). Consequently, adequate investments in widening the opportunities for communication, the exchange of opinions and suggestions, have a pivotal role in increasing RC. All in all, RC in LGs can be defined as a combination of values, relationships and acts, which are capable of enhancing trust and respect between the entity and the general public.

6.3 SC

SC appears to be a crucial IC component in encouraging both politicians and managers in improving procedures and routines, in this way enhancing the decision-making process for the benefit of the community as well as for the sustainability of future developments.

Therefore, according to the respondents, SC can be defined as the combination of both the ability to achieve objectives and handle changes, therefore improving the decision-making process as well as organizational procedures and routines. The results also show a clear vision of the future of the entity. This definition further specifies the concept of IC in LG domain, highlighting the similarities with empirical results collected in public universities (Ramírez-Córcoles *et al.*, 2011).

6.4 Disclosure of IC

Despite the relevance of IC component recognized by the respondents, very few entities clearly disclose IC and, if this is the case, it is contained in the social report. However, the relevance of a report dedicated to the disclosure of IC has been recognized as beneficial for the general public as well as for managers and politicians. The lack of a specific IC report could induce the concrete risk that managers would disregard it (Guthrie and Petty, 2000), since IC recognition and measurement is a logical prerequisite for properly managing its components (Cooper and Sherer, 1984; Schneider and Samkin, 2008).

7. Conclusion

This study is founded on the third development stage of IC research (Massingham and Tam, 2015), with the main aim being not to explain through a prescriptive approach how IC should work, but to investigate how IC is perceived and works. Actually, this third stage has a more practical orientation, since it is based on a critical analysis of “IC practices in action” (Guthrie *et al.*, 2012, p. 69), emphasizing the growing use of IC in assisting strategic planning (Whyte and Zyngier, 2014), also dealing with IC reporting, whose availability would positively affect the perception of IC in practice (Dumay and Tull, 2007).

The findings collected through a survey distributed to managers and politicians of all ILGs with more than 40,000 inhabitants, provide the support for defining the basic IC components (human, relational and SC) according to the “IC in action” perspective.

Results emphasize the perceived relevance of HC component: even though it has to be essentially considered as a cost from an accounting perspective, both politicians and managers seem to join a broader view, considering it as an investment. Furthermore, the ILGs included in the sample seem to pay adequate attention on both relational and SC. Accordingly, some relevant points to take note of emerge, even considering the approach to NPM reform: in a country where the context has been considered not favorable to the fundamental spirit of these reforms (Ongaro and Valotti, 2008), a growing attention on the role played by human resources would be potentially useful to overcome the implementation gap in public management reform in Italy. The use of a questionnaire offers the possibility to investigate the domain of LGs, paying attention to the views of the main actors. However, it cannot be denied that a more in-depth investigation through case-studies would be advisable, in order to apprehend more about the individual learning of each actor and which organizational developments are concretely brought by proper IC management, as well as what the benefits perceived by politicians and managers would be.

Therefore, results collected pave the way for discussing new questions about the consequences deriving from a better IC managing and disclosing. First of all, assuming the voluntary nature of IC disclosure (Schneider and Samkin, 2008) and the distinctive features of LGs’ accountability, a few guidelines to support a specific report on IC could be solicited. Additionally, starting from the results achieved, future research – even through case-studies – will concentrate on how IC could affect strategic planning and decision-making supporting innovations in managerialism, which means more coherence with the NPM approach to LGs.

However, the explorative approach of the present study, even though it is opportune to achieve a more insightful knowledge of IC within the LGs’ realm, in a way expresses a limitation of the study, since some results could be context specific. Therefore, a comparative analysis involving different countries would be beneficial.

Further efforts are also required in order to provide longitudinal studies, so that IC could be considered as a journey, rather than as an event (Dumay *et al.*, 2015).

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IC in action

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