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Italian Network Contracts: A New Instrument for Successful Cooperation

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Abstract

The study focuses on SMEs which decide to develope inter-firm cooperation through"network contracts", the purpose is to evaluate the usefulness of this new legal instrument provided by Italian law in 2010. In particular the paper aims to verify the ability of a "contract" to formalize an inter-firm relationship allowing a successful cooperation between SMEs. Moreover it identifies and analyzes the characteristics of networks based on this flexible contract, looking for the reasons why it should ensure, to the involved firms, an increased performance.

After a preliminary secondary data review, conducted on 3300 firms (which signed network contracts between 2010 and 2012) aimed at identify the sectorial, territorial and dimensional peculiarity of this networks; the phenomenon is investigated through 5 case studies looking for field evidence, on the advantages perceived by firms signing network contract, by identifying the elements of the contract able to support successful networks.

Moreover, a first attempt to measure the effect of contract networks on performance is realized through a descriptive statistical analysis of the Return on Investment (ROI) on a sample of 122 network firms.

The study main findings are the identifications of the reasons of effectiveness of network contracts and the advantages potentially achieved by network firms because of the contract. The study allows the identification of recommendation about industrial policy regarding SMEs, mainly suggesting Governments to incentive the participation of SMEs to networks by introducing network contracts.

JEL Classifications: L1, L11, L2, L22

Keywords: business network, network contracts, SMEs, inter-firm cooperation

Abbreviations: Network Firms "NF"; Non Network Firms "NNF"

1. Introduction

1.1. The Research Problem

In 2009 the Italian legislator has formalized networks through the recognition of a specific contract called "network contract" (law n.33/2009 and law n.122/2010). It is a new contractual structure for business networks, allowing them to formalize their agreements in a publicly relevant organizational structure, able to contracting and negotiating with external parties, while at the same time transparently regulating the internal cooperative relationships of the network.

In particular, these contracts have to include specific contents, as define the strategic and operative objective, specify the governance of the network and provide some performance measures aimed to verify the ability in reaching network objectives. Network contract, widespread rapidly in Italy with more than 1200 contracts signed in three years, involving more than 6000 firms after only two years.

In consideration of the difficulties to compete encountered by SMEs in global economies and of the severe effects of the economic crisis on SMEs' performance, this new instrument could be able to support firm's growth and competitiveness, helping them achieving higher performance.

Moreover, as the Network Contract must be published through the Register of Firms (held by the Chambers of Commerce), all the clauses, structures and features of the networks are available and research can benefit of unprecedented systematic and public data on formal business networks.

In previous years, on the opposite, the unavailability of public information about the networks, the firms participating to a network and the contents of the contractual relationship were a severe limitation for accounting empirical research in the network field.

This paper analyses a sample of formalized Business Networks, aiming at discussing two main research questions:

- Is the "network contract" useful to formalize an inter-firm relationship? Why and how it can support network success?
- Which is the effect of network contract participation on the firm's profitability? In particular, do firms in a network contract ("network firms - NF)" have a better performance comparing to non-network firms ("non-network firms – NNF")?

The paper is structured as follows: part 1 provides a brief background, part 2 defines the methodology of the analysis, part 3 and 4 is dedicated to results and their discussion.

The paper has theoretical implications contributing to the literature on business networks by identifying new mechanisms supporting successful networks and practical implications related to Governments' suggestion of new industrial policies capable of supporting the growth of SMEs, as in particular the introduction of network contracts.

1.2. Background and Literature Review

This study relates to previous work in the area of management which analyses the reason why business networks are able to support a better performance and innovation in SMEs and identify policy suggestions and incentives to support business networks development (Kingsley & Klein, 1998; Rosenfeld, 1996, Hanna & Walsh, 2008).

Literature on inter-firm relationships highlights the synergies arising from cooperation among interconnected firms and describes the peculiarity of networking. Firms network have been defined (Hanna & Walsh, 2008) as a complex pattern of formal and informal linkages between individuals, businesses and third parties as brokers or not –for-profit agencies.

Firms network have been deeply studied worldwide and the participation to a network has been shown to influence the viability and development paths of member firms. Inter-firm relationships were seen as a positive factor influencing firm performance (Zott & Amit, 2007) and allowing innovation (Capaldo, 2007) nevertheless many authors (Hanna & Walsh, 2008) found evidence of difficulties in establishing successful cooperation for SMEs, suggesting the use of network brokers to ensure effective cooperation.

At the same time, other authors argued that SMEs particularly benefit from networks because they are often isolated and they have the necessity to develop relations with the external world in terms of communication, information, ideas. Powell (1990) based his analysis on small-firms business network as a new emerging organizational form in which aggregation is determined by reasons different from proximity or homogenous social community (that are the typical determinants of networks like the industrial districts). In these networks, members are neither homogenous nor fungible and rather than developing spontaneously, they are intentional constructs. Moreover, Mort and Weerawardena (2006) consider networking an essential capability in SMEs to compete globally.

In this research field, Italian industrial model has been a unique laboratory as it is traditionally strongly based on networks. Cooke and Morgan (1991) consider the district of nord-east and center of Italy an acknowledge example of successful inter-firm cooperation. In Italy, industrial districts and other strategic networks have been seen as a means to affect firms' competitive position through cross-firm knowledge diffusion (Lorenzoni, 2010; Camuffo & Grandinetti, 2011; Trequattrini, Russo, & Lombardi, 2012). Other studies approached the advantages of inter-organizational accounting information sharing, which supports inter-firm collaboration (Ditillo, 2012). With reference to the organizational model of business networks, Lorenzoni and Ornati (1988) anticipated the concept of networks, early on, by using the model of constellation to map the variety of firm's network present in Italy. Few years later, Gray, Golob, and Markusen (1996) set the famous "hub and spoke model" and highlighted, in a context of high homogeneity among actors, the diversity in term of role that different actors hold.

If all the theoretical approaches seem to agree on potential points of strength of networks (increased innovation and competitiveness, better performance, sharing of knowledge and information, higher resources available, etc.) is argued if SMEs are able to catch these advantages and if the policy makers actions or other instruments (as network contracts, network brokers, etc.) can positive influence inter-firms cooperation.

2. Method

To analyse the usefulness of network contracts in allowing successful cooperation this study uses, as stating point, a descriptive statistics, based on a secondary data review, to drawn a picture of networks structure and of the contracts contents speculating on its point of strength and identifying the reason why it could make a network successful. This information is useful also for a better understanding of the rationale of firm's choices when starting inter-firm relationships. Then real word is studied through a multiple case study approach. This second research strategy has been used because it is considered appropriate for investigating "*what and how*" type research questions (Yin, 1984; Eisenhardt, 1989) and considered by the literature "*a powerful research method, particularly suited to the study of industrial network*" (Easton, 1995).

More in detail, to explore the two research questions this article uses different methodologies and different samples:

- for research questions number 1, aimed at understand if and why network contract is useful to formalize an inter-firm relationship, we developed a multiple case study technique to analyze what happens "on the field" through in depth semi-structured interviews.

As this research is attempting to extend our understanding of the reason of success of specific business arrangements the participants were no chosen randomly as suggested by Markovsky, Willer, and Patton (1988). Marxt & Link's (2002) four criteria of success were used as the basis for inclusion. In addition both primary and secondary data were collected for each case.

In particular, key informants were identified prior interviews and public information on the firms was gathered as financial statements, on-line information, dimensional and organizational information on the observed networks. The interviewees were asked to describe their network explaining how they get in touch, why they chose a contract structure, which were the planned activities and the achieved results.

- For research question number 2, we looked for first evidence on the effect of network contract participation on firm's profitability through a descriptive statistical analysis of the Return on Investment (ROI) on sample of 122 firms. We performed a descriptive statistical analysis of the ROI of a NF sample aimed at verify if their Return on Investment (ROI) was higher of the average ROI of their competitors and of their sector in 2012, for each industry. For this reason the initial data universe of 3300 firms was reduced considering only contract signed ante 2012 and NF have been grouped, based on their activities. In particular, Italian firms are categorised by a code called "ATECO". This code ranges from two to five figures, depending on the level of detail in the description of the activity. The sample has been stratified using the three figures ATECO. Performance data were gathered by AIDA database. In some cases data were not available because of very small size firms participating to network contracts, or of a legal form not included in AIDA database.

The research methods chosen to explore these issues are both qualitative and quantitative. If normally quantitative approach is distinguished by qualitative approach, in the light of the a "critical realism" approach of Fleetwood (2005), we assume business network research is particularly suited for a mixed approach in which, moreover, the formation of a background and theoretical rationale is useful to develop survey instruments for the field research phase.

3. Results

3.1. Characteristics of Firms Signing Network Contracts

Firm's networks already exist and are quite spread, as an informal cooperation pattern and organizational model worldwide. In Italy, there is, since 2010, the opportunity to formalize the contractual relationship by subscribing and publishing a written contract (Network Contract). In this section we find evidence from the analysis of the universe of Network Contracts (contracts signed since the institution by law in 2009 to the end of 2012), looking for typical characteristics of NF (prevailing industry, size, etc.) and the ability to allow interaction between firms in the same territory or in different ones.

The Structural Characteristics of Network Contracts

Dividing Italy in 4 geographic macro areas (north east, north west, center, south) it is possible to observe that 80% of Network Contracts are signed among firms in the same geographic macro-area and 20% among firms in different geographic macro-areas. More in detail 71.9% of the NF is from the same region, 19.5% from two regions. Only a few Network Contracts aggregate firms from more than 3 regions (see figure 1).

This means that territorial proximity is relevant for aggregations, probably because of existing informal relationships or, as alleged by the literature, because of the role of territorial Institutions able to support aggregations.

Analyzing the size factor, more than 30% of network contracts aggregate 4-5 firms with a growing trend of the number of firm involved in network contracts. In 2012, 28% of the networks aggregate more than 6 firms. The descriptive analysis of networks, performed on three years basis, allows appreciating a changing trend evolving toward more structured forms. In particular, the number of NF and the number of sectors involved are growing significantly over the last three years. The evolution towards more structured forms of networks show that the network contract is able to activate multiple collaborative relations, well beyond the basic situation in which the contract allows the formalization of a pre-existing relation between firms that already knew each other (see figure 2).

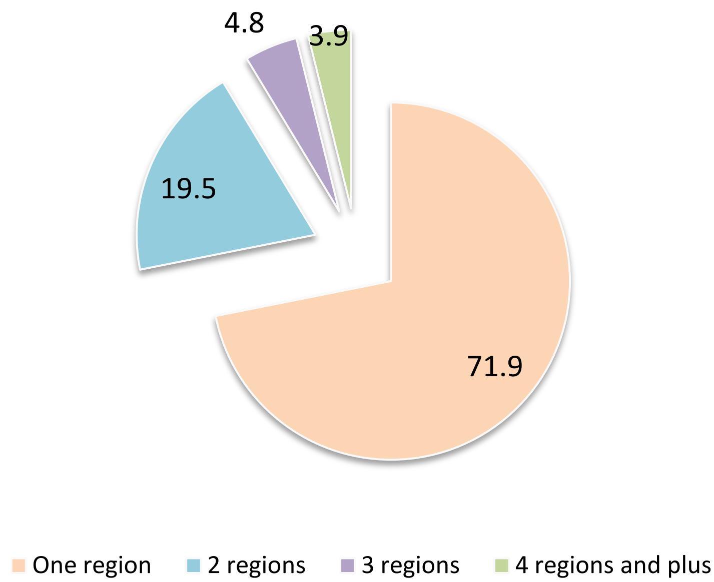

Figure 1. Distribution of NF for geographic area and regions (Year 2012, percentage)

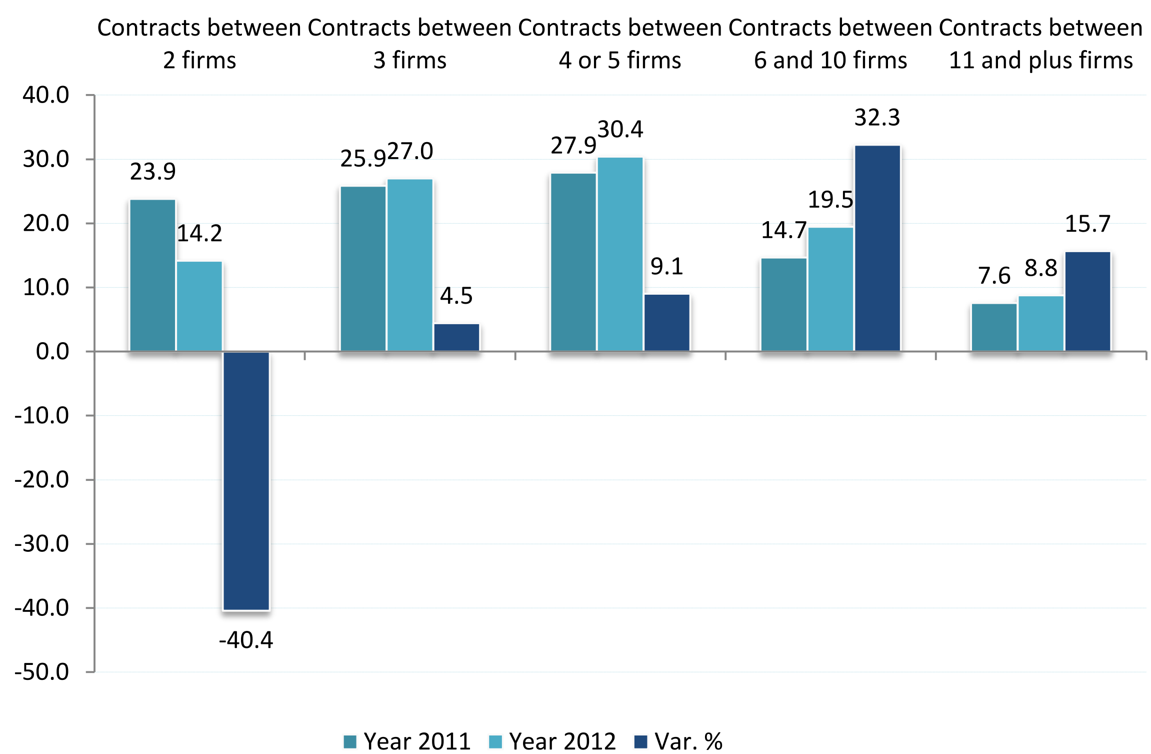

Figure 2. Distribution of NF for number of firms involved (Year 2012, 2011, difference)

A very interesting variable is the ability of network contracts to aggregate firms from different sectors. About 24.3% of contracts aggregate 3 or more sectors against the 37.4% aggregating only one sector (see figure 3). The described evolution of the network contracts shows firms' interest in powering the cross-firm knowledge diffusion enlarging the network both horizontally and vertically in terms of number of firms and sectors involved.

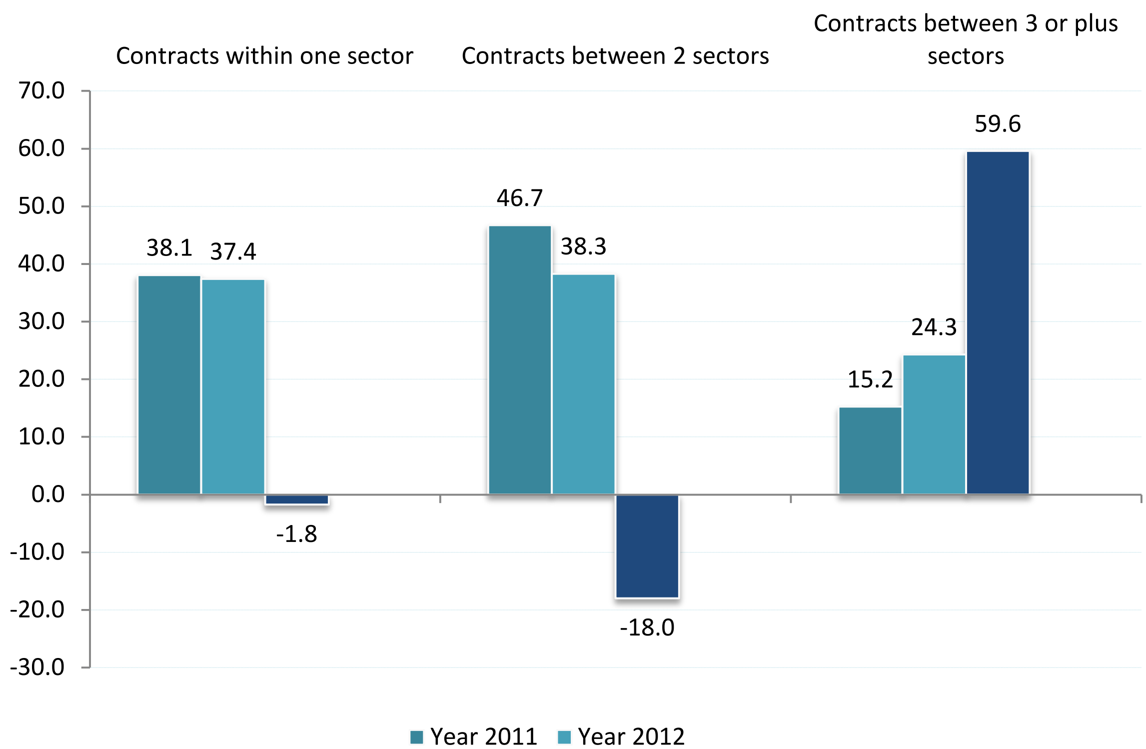

Figure 3. Distribution of NF for number of sectors involved (Year 2012, 2011, difference)

Dimensional and Territorial Characteristic on Network Contracts

Analyzing the network contracts per average revenues of NF, the territorial representation presents a low homogeneity (see figure 4). The majority of firms is small and has revenues between 100,000 and 1 million euro (34.6%). Nevertheless, in the southern part of Italy 30% of the NF have revenues lower than 100,000 euro.

On the contrary in the North West 32% of the NF have revenues between 1 and 5 million euro, in this area only the 9.6% of the firms have revenues lower than 100,000 euro.

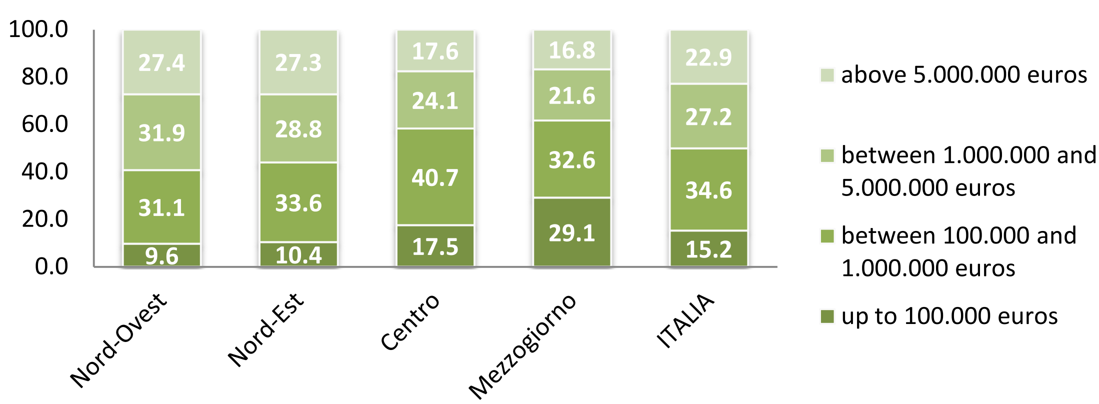

Figure 4. Distribution of in NF for class of revenue and geographic area (Year 2012, percentage)

The size factor is an important characteristic of NF, confirming that networks are used as organizational forms to overcome the limits of small size. Data show that 77% of NF are small firms with revenues lower than 5 million euros.

Finally, analyzing the distribution by sector we find that manufacture, services, and agriculture are prevailing in the southern part of Italy. Manufacture and services are prevailing in the center and in the northern part of Italy (where instead agriculture is much less present). For the whole sample more than 80% of NF operate in manufacturing or service industries (see figure 5).

The comparison with the percentage distribution of all the firms, shows a lower incidence of networks in manufacturing (1%) probably due to the higher average size of firms in this sector, that make the single firms less interested in the benefits of networks.

Sectors	Northwest	Northeast	Center	South	ITALY
Agricolture	1,7	2,7	5,4	11,8	4,7
Manifucture	40,0	45,4	41,2	30,2	40,1
Construction	11,7	9,5	8,2	10,5	9,9
Industry	1,0	0,7	0,5	2,5	1,0
Commerce	11,6	8,4	5,0	8,5	8,4
Turism	0,9	0,7	2,0	2,3	1,4
Transport and logitic	1,3	2,4	1,2	4,2	2,1
Other Services	31,2	30,0	35,9	29,3	31,9
Real estate	0,5	0,3	0,6	0,7	0,5

Figure 5. Distribution of NF by sector and geographic area (Year 2012, percentage)

3.2. Empirical Evidence through Case Studies

In the beginning is necessary to describe briefly network contracts as defined by the Italian law. Two main strategic objectives of network contracts have been identified in the definition provided by the legislator. The first one is "innovation" and the second one "competitiveness". Moreover it is specified that firms' collaboration can be aimed to realize common industrial, commercial, technical or technological activities or share information. This definition includes many different model of cooperation but it is focused on the two strategic objectives recognized by theories as the main advantages of networks.

The peculiarity of Network Contracts is that each firm remains completely autonomous and its choices are driven by its management and administration, but cooperating firms are required to describe in the contract their common objectives and the strategic and operating program they intend to develop, jointly providing resources to realize it. This makes the Network Contract a stronger agreement than an informal inter-firm relationship, above all because of formally defined objectives, a likely longer cooperation pattern and dedicated resources.

It is important to clarify that Italian law requires some compulsory contents while leaving firms free to include other contents.

The following table 1 synthetize the different contents:

Table 1 – Contracts compulsory and free contents

Compulsory contents	**Free contents**
➢ Description of the firms	❖ Provision of funds
➢ Strategic objectives	❖ Management committee
➢ Working program	❖ Rules for an early termination of the contract
➢ Duration of the contract	❖ Rules of modification of the working program
➢ How to join/exit the network contract (for other entrepreneurs)	❖ Other…
➢ Decision making rules of participants on any subject of interest (governance mechanisms)	

In addition, law n.134/2012, modified the existing legal framework introducing, as an additional option, the possibility of signing a network contract with "legal subjectivity". This means that networks contracts with certain compulsory characteristics (capital funds, a management committee and a registered office) once published through the Register of Firms can act as a "subject" with third parties, assuming legal positions and managing autonomously the administrative flows as a network.

With law n. 221/2013, it was clarified that firms can choose between network with or without legal subjectivity. Since its recent introduction some researchers and practitioners observed that, in case of "legal subjectivity", we are going toward a too rigid and formally structured network very similar to a consortium (ex. for its fiscal and administrative requirements) limiting the benefits of flexibility and autonomy searched by firms in these type of agreements.

Preliminary, it is possible to observe that a year after the introduction of "legal subjectivity" only 43 contracts with legal subjectivity have been signed out of more than 500 contracts, without legal subjectivity, signed in the same period. These data seem preliminary confirm that a too formalized and rigid structure is not preferred by firms, while the flexible contract model turns out to have a good success between entrepreneurs with an incredibly high number of contracts signed in a few years (more than 1200).

It is interesting to observe that previous empirical studies on networks (Hanna & Walsh, 2008) point out a series of limits of traditional networks, that network contracts could overcome, and in particular: i) in-depth knowledge of the firms (in term of product, process, customers) is essential to visualize how to get opportunities from the market; ii) partners do not accept joint liability for their work and for this reason they "avoided developing any legal contract"; iii) trust between participants is essential and it has to be developed in working policies; iv) coordination modus operandi is often not explicit in networks.

In response to these limitations previous studies conducted by the Italian observatory on network contracts (of the Ministry of Economic Development, 2014), by the Bruno Visentini Foundation (2012) and by independent researchers have shown that network contracts present the following characteristics:

➢ Working program is usually well detailed providing also same indicators to measures the achieved results, helping firms to visualize how to get opportunities from the market.

➢ The average length of this contract is medium – long (almost 5 years) by ensuring a sufficient time to develop a trust relation between participants.

➢ Financial resources involved are very low, the majority of network contracts provide very limited resources. This decision could be influenced by the rationale of the partnership that in the majority of cases is to cut costs, share information, enlarge the offered services to the market and more rarely to realize investments or research and development activities, whose effects are normally produced in every firm's financial statement, with the result to avoid joint liabilities.

- The majority of contracts present well-structured Governance with a shared decisional system based on a management committee normally composed by one member for each network firm. It is possible to identify an additional intermediate category with "management committees plus a network manager" supporting specific activities and identifying opportunities from the market.

The picture of the Italian network contracts drawn through the descriptive statistical analysis and the literature analysis is brought back on the field with 5 case studies of successful inter-firm cooperation on the base of network contracts, intentionally chosen: 1 network manager (for Buon Gusto Veneto network) and four entrepreneurs, taking part in the management committee of network contracts, were interviewed.

The semi-structured interviewed were prepared to allow an exploratory investigation of the reasons of the contract sign and practices adopted by network contract firms. All the networks were working by almost one year and achieved good results being able to realize all or part of the planned objectives. A triangulation method was used to combine different data and results from say, interviews, survey and archival data collection.

In particular, data review shows that only one of the networks involves a consist number of firms (17) and presents high revenues (by adding the total revenues of each firm independently by network activities), only one network (MIDIAN) was born by the initiative of a single leading company, two firms use a network manager to support their activities (see table 2).

Table 2 – Description of the 5 networks from primary and secondary date review

NETWORK NAME	N° firms involved	Tot. revenues of the network firms (euro/000)	Leading company	Presence of a network manager
BUON GUSTO VENETO	17	126804	NO	YES
ENERGY 4 LIFE	5	54500	NO	NO
NAT	10	26764	NO	YES
MIDIAN	6	9434	YES	NO
MARET	10	2615	NO	NO

**for Buongusto Veneto, Antonveneta Bank is excluded by total revenues calculation*

Case 1: Buongusto Veneto

Network of 17 SMEs from different sectors, mainly in the food industry and wholesale. In the network there is a bank (Antonveneta Bank).

Half of network firms show annual revenues higher than € 5 million euro, half do not reach one million euro. Network contract is aimed to promote typical food products from Venice area in Italy and in the world.

This network has been ideated and created by a manager operating in the wholesale that is actually the network manager. Network contract was chosen (in 2010) because it is a flexible tool that allows companies to work independently but with a sole director and shared goals.

The network bank has granted favorable terms to the individual companies of the network. *"It is a friendly bank," said the manager of the network that also gave a grant to the network, but mostly recover the relationship with SMEs and overcome the mistrust that had arisen between companies and banks with the credit crunch.".*

Buongusto Veneto	
Strategic objectives	Increase competitiveness of the firms through quality improvements and commercial development in Italy and in foreign markets
Work program	i) registration of a brand; ii) preparation of product sheet and marketing activities; iii) realization of a web-site; iv) joint logistic services; etc.
Performance indicators	Not provided – annual report prepared by the management committee
Enter/exist rules	Admission only of no direct competitors, vote by 2/3 of the assembly. Possibility of exit on request.
Governance rules	Assembly composed of one member per firm + management committee between 3 and 7 members elected by the assembly. There is a network manager. In the opinion of the interviewee "The network manager plays a crucial role and should be an external entity. If the head of the network is one of the participants that generates envy, jealousy, etc. ".
Financial resources	10500 euro + 20000 euro (from Antonveneta bank- una-tantum)
Duration	Six years

Case 2: Energy for Life

Network of 5 companies which present a medium-high dimensional profile. Network is aimed at promoting the diffusion of a new brand in the field of renewable energy.

The companies knew and esteemed each other from first and were operating in complementary areas. Together they have been able to expand the range of products offered and better address the market.

In establishing the network were supported by local institutions (Confindustria Verona) and by a consultant. Network contract was chosen because it provides autonomy to firms that previously were involved in consortiums.

Energy for life	
Strategic objectives	Promoting the use of renewable resources, technology transfer, products and processes innovation through dissemination and awareness of the brand.
Work program	i)management of a common brand; ii) promotion and integrated use of advanced technologies; iii) availability of a single contact point for the integration and management of information technology, iv) brand diffusion; etc.
Performance indicators	Not provided – annual report prepared by the president
Enter/exist rules	Admission only of no direct competitors, vote by 2/3 of the assembly. Possibility of exit on request.
Governance rules	Assembly + President and Vice president. In this network there is no network manager. The President is responsible for the planning and development of activities. According to the interviewee, the presence of a network manager could be useful in a second phase especially for commercial purposes, such as the promotion of the catalog and internationalization.
Financial resources	100000 euro
Duration	Five years

Case 3: NAT "Network Automotive Triveneto"

Network of 10 companies. It aggregates substantially ltd companies and a cooperative. The majority of them exceed 10 employees and one million euros revenues. The companies are mainly manufacturing companies, ranging from the processing of rubber and plastics to the automotive industry.

Network borne by initiative of a service company (exit the network after one year) and it is aimed at integrating several skills to propose products directly to the suppliers of the automotive industry and car manufacturers bypassing intermediation and providing innovation and integration of their respective powers . Network contract was chosen because it was considered the most suitable instrument for the variety of companies involved and the time horizon of collaboration rather long (up to 2020) with an evolutionary program and not a single project to realize.

NAT	
Strategic objectives	To promote competitiveness and access financial resources.
Work program	i)to promote contacts with major clients (car manufacturers); ii) obtain quality certificates, iii) to realize a financial audit; vi) sharing strategically relevant information, etc.
Performance indicators	Realization of the planned activities
Enter/exist rules	Admission of competing or complementary firms voted by 2/3 of the management committee. Exit on request. Possible penalty of 25000 euro.
Governance rules	Management committee (one representing for participant). This network has chosen to organize themselves as a company. Have been identified some key functions: research and development, administration, sales, quality, etc. and each network firms is responsible for an activity. Moreover, there is a one year part-time manager which carries out coordination activities. The manager is an external entity that was part of one of the services company getting out by the network in the first year.
Financial resources	180000 for the first year activities.
Duration	Nine years.

Case 4: MIDIAN "Mini DIgestori Anaerobic"

It is a network of 6 firms aiming at producing prototypes of anaerobic digesters (bioreactors) of small size for the production of biogas. Companies (except one) are in the industrial sector.

The network borne by a collaboration between two companies that already knew each other and aggregate other companies to participate in the announcement of the Lombardy Region "Ergon1" on the creation of business combinations in order to realize a new idea. The network was able to access public funds, (at the moment paid in part) but allowed companies to launch a virtuous cycle of work and innovation.

The choice of the network contract was influenced by the wish to access a public grant, but also by the desire to provide a long-term cooperation and future development.

Tasks are divided between the network participants. The firm "Sintec" has a majority stake, but despite this, networked enterprises take collective decisions. This network shows a significant sensitivity to innovation and there is much enthusiasm for the project undertaken hoping in the medium-long term it could bring good results to the network companies. Having a goal in a strategic area such as renewable energy enables a long-term vision that is considered highly motivating.

MIDIAN	
Strategic objectives	Sharing of knowledge and information aimed at increasing competitiveness and innovation.
Work program	Rrealization of prototypes of anaerobic digesters accessing external financial sources and public funds.
Performance indicators	Not provided
Enter/exist rules	Admission of new firms voted by 2/3 of the assembly. Free exit on request with six months' notice.
Governance rules	Assembly + Management committee of two members.
Financial resources	Between 800 and 2000 euro for firm
Duration	Eighteen years

Case 5: MARET

Network of 10 companies located in Tuscany, with the exception of one company based in Emilia Romagna. The network is characterized by the preponderance of individual firms operating in cleaning services aimed at becoming more competitive by increasing their dimensions.

The companies in question had never worked together before. Through category association has intermediate the network that has selectively reduced from the initial 50 to 10 participants firms.

The idea of establishing a network was born from the need to find an innovative way to overcome the problems of a market characterized by high competition.

MARET	
Strategic objectives	Increasing competitiveness and the ability to award public contracts.
Work program	i)preparation of joint tenders, ii) preparation of disciplinary; iii) search for new markets and areas of interest; etc.
Performance indicators	Not provided
Enter/exist rules	Admission of new firms (only after the second year from establishment) voted by 2/3 of the assembly + no competition clause. Free exit on request.
Governance rules	Assembly + Management committee. There is a management committee composed of one representative from each of the network companies.
Financial resources	400 euro per firm
Duration	Three years

3.3. Measuring the Effect of Networks on Performance

In order to measure network firm (NF) performance this paper uses the typical performance indicator Return on Investment (ROI), making two different tests, based on:

1) Comparing NF performance to the average ROI of their sub-sector, in year 2012.
2) Comparing NF performance with other firms non in network (NNF) in the same sub-sectors, in year 2012.

This descriptive analysis covers a three years period from 2010 to 2012 but focus on year 2012 because we assume that only after almost two years from network contract sign it is possible to appreciate first economic results. Accounting performance is expressed by the return on investment (ROI). To isolate the differential effect of the network contract on performance, it has been necessary to calculate the average ROI for each sector (classified according to the Ateco code) and for each year.

To allow a significant comparison the average ROI is calculated for a three figure Ateco code; this means that any NF will be compared exactly with firms in the same sector. The sample has been stratified using the three figures ATECO and ordering the results in terms of frequency of the firms. Then the firms categorised under the first 7 ATECO, for number of firms, have been selected identifying the universe (for Ateco) of 61 firms in three macro-sectors: manufacture, construction, services.

In order to create the matched groups, each NF was matched with a NNF based on the following requirements:

- Activity: same 3 figures Ateco of NF;
- Size: in terms of employees equal or similar to NF;
- Geographic area: dividing the country in 4 macro-areas (North West, north east, centre, and south).

This criterion has been used because performance can be influenced by the firm size and by geographic area. We aimed at obtaining a well matched sample, whose results in terms of performances could be compared without sectorial, dimensional or territorial distortions.

Each NF was matched with a NNF firm, creating a choice-based sample of NF and NNF.

Table 3 – Average ROI of the sector and of NNFs, in year 2012

ATECO	average ROI of the sector	average ROI "NNF"	average ROI "NF"	average ROI NF>NNF	average ROI NF>sector	average ROI NNF>sector
151	8,6%	8,59%	16,05%	OK	OK	NO
222	6,4%	3,10%	4,98%	OK	NO	NO
251	7,1%	-1%	6%	OK	NO	NO
271	7,9%	8,05%	8,95%	OK	OK	OK
282	8,4%	5,01%	6,84%	OK	NO	NO
289	7,9%	4,60%	11,90%	OK	OK	NO
432	9,5%	4,78%	5,02%	OK	NO	NO
620	10,6%	3,80%	11,17%	OK	OK	NO
711	8,2%	4,64%	9,30%	OK	OK	NO

The comparison of results gives a first descriptive evidence of the better performance of NFs, compared to NNFs in terms of average ROI of their sub-sectors. As shown by data, average ROI of network firms is always higher the average ROI of a matching sample of NNF in the same sub-sector. Moreover, network firm's shows, in a majority of cases, a ROI higher of their sub-sector, while no-network firms show, in a majority of cases, a ROI lower of their sub-sector (see table 3).

4. Discussion

As stated before our research allows drawing a picture of network contracts in Italy highlighting, through a field analysis, the characteristics of network contracts and identifying the reasons why it should be a good instrument for setting successful inter-firm relationship.

The first part of the analysis confirms that network contracts involve small local firms, operating mainly in the same geographic area. This means that territorial proximity is still relevant for aggregations, probably because of existing informal relationships and of the role of territorial Institutions able to support aggregations. This assumption is supported by the answer of all the interviews. The majority of them declared to know each other well before getting in the network, some of them having experimented informal collaborations prior to decide to sign the contract. In different cases there was a support of local category organizations or other institution (ex. Chamber of Commerce) to arrange the network.

This analysis produces first evidence of network firm’s interest to evolve into more formal arrangements and in particular toward network contracts.

A very interesting variable is the ability of network contracts of aggregating more firms from different sectors. We appreciate a growing dimensional trend with network enlarging, on average, by 4-5 to more than 6 companies. Moreover, 24.3% of contracts aggregate firms of 3 or more sectors against the 37.4% aggregating only firms by one sector. The described evolution of the network seems showing firms’ interest in powering cross-firm knowledge diffusion enlarging the network both in terms of number of firms and sectors involved. Also many of the interviewed includes among their goals enlarging knowledge and competitiveness.

Previous studies confirm what found during the case studies, NF chose mainly a flat governance, providing a core mix of strong strategic objectives, well detailed in the network contract in operating activities (work program), while financial resources provided to the network are quite low (excepted a few cases) with a consequently limited possibility to finance investments or to develop new routines and promote innovation (Szulanski, 1996). Nevertheless, some successful networks interviewed show financial funds significantly higher the average. This could be an additional reason of their success.

The advantages of network contracts is, according to research evidence, the possibility to formalize the relationship between the firms in terms of strategy; operational objectives and governance, powering the trust in a medium-long relationship regulated by the contract. During the case studies, all interviewed explicitly mentioned the importance of long term well-defined objectives, while at the same time maintaining a high level of autonomy in running their own business. This allows identifying an operational model, in which the contract plays a positive role by supporting:

- The visualization of market opportunities through the provision or clear strategic and operative objectives well detailed in a work program;
- The provision of rules on the entrance/exit of new firms with the possibility to enlarge the network with pre-agreed procedures or to exit easily from the agreement;
- The provision of a clear coordination of the modus operandi, because explicitly regulated in the contract with a set of governance rules mainly based on shared decisional process through the provision of a management committee with one member for each network firm.

All these benefit are obtained without reducing firms' autonomy and flexibility because administrative and fiscal effects of network activities are produced directly in the juridical sphere of participants (except in case of network with legal subjectivity) and there are not common liabilities because the network presents a responsibility limited to the financial fund of the network that we saw to be very limited and linked to a precise working plan.

Ultimately network contracts seem potentially increasing performance, or at least creating the pre-condition for doing so. The capacity of networks of enabling better economic results has been established by theory but rarely supported with data. The first evidence on a restricted sample of network contracts show return on investments higher of the average of their sub-sector and higher of their no-network competitors.

5. Conclusion

In Italy a large number of firms signed network contracts to increase cultural diffusion, innovation, growth and competitiveness. This paper has identified the reasons of the effectiveness of network contracts.

In particular, the necessity to formalize network objectives and prepare a detailed program is a point of strength of the network contracts. The possibility to formally set governance rules is another point of strengths of the formal network contract. Moreover, providing higher financial resources in the network could became interesting for companies in presence of fiscal benefits as de-taxation of re-invested profits, recently introduced by Italian law.

If the first advantage of networks is probably not immediately economic, in the long run NFs are expected to increase their performance in term of revenues and returns. The observation period is probably too narrow to appreciate long term differential results between NFs and NNFs, because network contracts were signed between 2010 and 2012 and they are likely to produce clearer effects only in the future. Nevertheless, a first attempt to monitor performance of NFs compared to NNFs shows signals of a higher performance, in terms of change in ROI, of NFs compared to the average change in ROI of their sub-sector.

These results have important implications for the industrial policy regarding SMEs and suggest that Governments should introduce network contracts and should incentive SMEs to sign this kind of contracts.

Future research directions are: i) the extension of the analysis on a wider sample of firms and on an extended observation period; ii) the analysis of the effects of fiscal benefits and other legal incentives on network creation.

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