

Analysis of the local food sector: the case of the Italian region of Campania

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Abstract

In recent years special attention has been given to the local food sector. For many authors this sector has a lot of potentialities: local food production can contribute to the creation of value for the different actors involved in the value chain but also for the growth of the whole territory in which the companies of this sector are located. In accordance to this view, the present research, using a sample of 407 companies of the Italian region of Campania operating in the local food sector, has investigated the variables which affect the profitability of the local food sector companies operating the Campania region. Results evidence that the companies operate in the local food sector of the Campania region are quite young and have a good profitability. This profitability is generally connected to a small firms size, to a low level of debts and a high level of liquidity.

Keywords: Local food, supply chain, profitability

1. Introduction

In recent years, the issue of heritage assets acquired considerable importance due to the increasing value, not only artistic and cultural but also economic and social recognized to these assets (Barton, 2000, Wanda George, 2010). “*Heritage, cultural and community assets (HCA)*” incorporate a series of material and immaterial elements of the economic, artistic and natural capital of several public sector institutions (Wild, 2013, p.4). Several authors argued that these assets contribute to the social value creation in the territories they belong to, improving the spirit of social union as well as encouraging the creation of national identity and improving the life quality (Barton, 2000; Tellstrom *et al.*, 2006; Wild, 2013). They also represent an important communication vehicle of artistic and cultural tradition (Bessiere, 1998; Barton, 2000). Thus, Thorsby (1999, p.6) highlighting these remarkable characteristics, defined these assets as a “*stock of cultural value embodied in an asset*”.

With regard to heritage assets, in recent years special attention has been given to the local food sector (Jones *et al.*, 2004; Ilbery *et al.*, 2006; Seyfang, 2006; Bianchi and Mortimer, 2015). The issue of local food is capturing the attention of many political and economic institutions (Galli *et al.*, 2015) due both to the importance attributed to it by producers and consumers (Morris and Buller, 2003) than to the benefits that may flow from it to communities.

Indeed, as pointed out by several authors (Morris and Buller 2003, Ilbery *et al.*, 2006; Seyfang, 2006; Guerrero *et al.*, 2010; Bianchi and Mortimer 2015, Galli *et al.* 2015) standardization and globalization of food production and food markets have created a huge information gap between consumers and producers. This distance has led to a decline in consumer trusting food products as well as in companies which produce them, thus, leading to a change in consumer buying behaviour, who, now, pay much more attention to food origin and production process.

Consumers today are in fact very interested in the provenance of the food they consume and in production processes that involve them, being increasingly looking for quality and transparency (Bianchi and Mortimer, 2015; Galli *et al.*, 2015).

For this reason, today, the local food can overcome these problems by returning credibility to a system of production that has lost reliability.

In fact, although there is no commonly accepted precise definition (Jones *et al.*, 2004), it can be said that the local food concerns those products manufactured, cultivated and sold or consumed within circumscribed geographical boundaries (Morris and Buller, 2003; Jones *et al.*, 2004; Miroso and Lawson, 2012; Bianchi and Mortimer, 2015).

These products, belonging to restricted territories, can reduce the distance and the information asymmetry between producers and consumers by ensuring greater quality especially about their source of origin, nutritional values and production processes (Ilbery *et al.*, 2006; Seyfang, 2006; Rapisarda *et al.*, 2015).

Moreover, given the importance and the development that the sector of the local food is taking in recent years, both in economic terms and social terms, (Morris and Buller, 2003; Jones *et al.*, 2004; Bianchi and Mortimer, 2015), it can be said that local food production can contribute to the creation of value for the different actors in the supply chain, from producer to consumer, thus contributing to the growth of the whole territory in which the companies of this sector are located (Morris and Buller, 2003; Tellstrom *et al.*, 2006; Bianchi and Mortimer, 2015).

In this way Governments, Public Institutions and Policy makers, throughout Europe, are encouraging the production and consumption of local food products by developing specific projects and legislative plans (Tellstrom *et al.*, 2006; Anderson, 2008; Miroso and Lawson, 2012; Galli *et al.*, 2015; Rapisarda *et al.*, 2015). They are convinced that, if the local food sector will continue to develop by the achievement of good economic performance of companies operating in it also the domestic economy of the territories will grow (Morris and Buller, 2003; Guerrero *et al.*, 2010; Bianchi and Mortimer, 2015) triggering a virtuous circle.

Therefore, considering the strong interest about the local food sector and the very few research in this field, the present research examines a sample of 407 companies belonging to the local food sector of the Italian region of Campania and has two main objectives:

- to better understand the structure and the peculiarities of local food sector in the Campania region;
- to analyze the economic performance of a sample of firms belonging to the local food sector of the Campania region and, using a linear regression model, test potential explanatory factors which can affect the level of profitability.

So, this paper provides a contributions to the existing literature by investigating the local food sector of a renowned for local food production Italian region and highlighting the main categories of firms operating and the special features. Moreover, this study analyses the economic performance of these firms and provides empirical evidence on the potential factors that can affect the level of profitability, measured as the return on assets (ROA), of the local food sector companies of the Italian region of Campania.

The paper is organized in seven sections. Following the introduction, the second section presents an overview of the literature relating to the local food sector. The third section is devoted to the hypothesis while the fourth section describes the sample selected and the research methodology. The local food sector of the Campania region is described in the fifth section. Finally, the sixth and seventh are devoted to the discussion of the results and the conclusions.

2. Previous studies on the local food sector

Local food sector has many definitions; nevertheless, there is still no common accepted definition of local food sector (Wilkins, 2002; Jones *et al.*, 2004; Ilbery *et al.*, 2006; Bianchi and Mortimer, 2015). Features related to the geographical area of production, the composition of the production process and the distance between producers and consumers have been used to define more precisely the territorial boundaries of the local food sector (Morris and Buller, 2003; Jones *et al.*, 2004; Seyfang, 2006; Ilbery *et al.*, 2006; Miroso and Lawson, 2012; Bianchi and Mortimer, 2015).

The product designations like the French certification (“Appellation d’origine controlee”, “EU’S PDO and PGI labels”) (Morris and Buller, 2003, p. 561) or the Italians quality brands and product certifications: D.O.P; D.O.C.; D.O.C.G.; I.G.P. (Table 1) acknowledged the foods of the European community. This provides assurance to the consumer about the origin of the product and that the product/process is related to a typical territory.

Table n. 1 - Italians quality product certifications

Denomination/Acronym	Description
D.O.P.	<i>“Protected designation of origin”</i>
D.O.C.	<i>“Designation of controlled origin”</i>
D.O.C.G.	<i>“Designation of guaranteed and controlled origin”</i>
I.G.P.	<i>“Protected geographical indication”</i>
I.G.T.	<i>“Typical geographical indication”</i>

Source: personal elaboration

As Jones *et. al* (2004) have pointed out, some national associations have set limits and parameters related spatial catchment area of the market (30 miles or 50 miles) to be able to attribute the quality of "local" to a food product.

Further, as highlighted by Morris and Buller (2003), in other contexts such as the UK, for the attribution of the characteristic "local food" to the products it is necessary that the production take place in a specific area or limited territory. In the same way in the USA, it is very important that a product is treated and cultivated within a defined area, to be considered “local” (Wilkins 2002; Bianchi and Mortimer, 2015).

Moreover, another important aspect is the consumer’s personal perception of the attribute “local”, linked to factors such as: traceability, freshness, flavor, taste and environmental sustainability that give quality and reliability to the products

consumed and encourage the purchase of local food products (Seyfang, 2006; Miroso and Lawson, 2012; Bianchi and Mortimer, 2015).

Therefore, it seems that we can define "local" a product mainly produced, processed and grown or cultivated in a specific geographical area (Morris and Buller 2003; Jones *et al.*, 2004; Seyfang, 2006; Miroso and Lawson, 2012; Bianchi and Mortimer, 2015) and simultaneously sold in a market adjoining not too far from the place of production.

Thus, in literature, several authors have investigated the importance of the local food industry and of the value of Heritage and Cultural assets in general.

Some authors have focused their attention on the analysis of the supply chain of the local-traditional food sector, trying to identify appropriate instruments for measuring the performance of those companies and considering the value generated for stakeholders and community. For example, Gellynck *et al.* (2008) have developed a valid measurement instrument of traditional food supply chain performance, which combines the perspectives of different stakeholders and consists of a system of key performance indicators.

In the same way, Aramyan *et al.* (2006) have developed a conceptual framework to analyse the performance of the companies in the agri-food supply chain based on existing performance indicators that in this model are grouped in four categories: efficiency, flexibility, responsiveness and food quality. A similar work was done by Galli *et al.* (2015) who have analysed and evaluated the sustainability of the bread supply chain in Italy and in the world. In the same way, Rapisarda *et al.* (2015) have analysed the Sicilian agri-food supply chain studying the strengths and the weaknesses of the sector using the theoretical model of "Swot analysis". Morris and Buller, (2003), instead, have conducted a study on assessment of the local food sector in the county of Gloucestershire UK, providing support for the dispute that the local food sector is a growing and dynamic element of the food system in the UK.

Moreover, Bregendahl and Henderton (2014) have studied the statewide impact of the local food industry on Iowa's (USA) economy in terms of job creation. Guerrero *et al.* (2010) have studied the perception of traditional food products in six European regions through a research based on interviews and free word associations. In the same way Bianchi and Mortimer (2015) have focused their research on the motivations that drive the purchase of local food in different cultural contexts. While Mazzanti *et al.* (2006) have investigated the Emilia Romagna food sector and the relationship between organizational innovation, industrial relations and economic performance at the firm level.

Another part of the literature instead takes care of heritage assets in general and of their accountability, evaluating the reflections of the management of cultural assets on the economy and on the wellbeing of a specific country. In particular, Bostedt and Lundgren (2010) have focused their works on macroeconomic aspects. They developed a "simple dynamic growth model" and the concept of Social Accounting Matrix (SAM) to develop a broader measure of welfare. Daugstad *et al.* (2006), instead, have investigated the relationship between agricultural and cultural heritage. Lastly, Sir Mason Durie (2006) in his work "measuring Maori Wellbeing", has delineated a set of principles for the

development of non-quantitative measures for the evaluation of organisational cultural objectives and outcomes.

3. Research question and Hypothesis

The section of the literature review evidences that, despite the growing number of studies on the local food sector across Europe, there are only few studies that investigate the local food sector both from a qualitative and quantitative perspective.

Therefore, following some previous studies on local food sector and agri-food supply chain (Morris and Buller 2003; Ilbery *et al.*, 2006; Mazzanti *et.al* 2006; Galli *et. al*; Rapisarda *et. al* 2015), our research question is:

RQ: What is the level of economic performance of the local food sector firms in Campania and to what extent potential explanatory factors can influence the profitability of that firms?

In order to respond to this research question three hypothesis have been set up with regard to some variables (Size, Leverage and Liquidity) that can affect the profitability of the companies that operate in the Campania local food sector.

3.1 Size

Several authors (Fitzsimmons *et al.*, 2005; Serrasqueiro and Nunes, 2008; Bhattacharyya and Saxena, 2009 and Almajali *et al.*, 2012) argued that larger firms are more efficient and achieve higher levels of profitability than smaller one, given the opportunity to take advantage of economies of scale.

Moreover, Kakani *et al.* (2001) and Bhattacharyya and Saxena (2009) highlighted that, larger companies are able to obtain more favorable economic conditions from their suppliers and have, also, better access both to the capital market than that of the raw materials. Therefore, from an empirical perspective, many authors (Kakani *et al.*, 2001; Agiomirgianakis *et al.*, 2006; Prasetyantoko and Parmono, 2008; Serrasqueiro and Nunes, 2008, Bhattacharyya and Saxena, 2009; Almajali *et al.*, 2012; Hunjra *et al.*, 2014) found a positive relationship between firm size and economic performance.

So, according to previous studies a positive relationship between firm size and economic performance is expected.

H1: There is a positive relationship between firm size and profitability of the firms operating in ocal food sector

3.2 Leverage

According to several authors (Kakani *et al.*, 2001; Serrasqueiro and Nunes, 2008; Almajali *et al.*, 2012) leverage is a relevant factor that may affect company performance. Indeed, companies with a high level of debt, have a greater possibility of experiencing bankruptcy problems and greater difficulty in obtaining new financing at advantageous conditions (Kakani *et al.*, 2001; Serrasqueiro and Nunes, 2008; Almajali *et al.*, 2012; Hunjra *et al.*, 2014). Moreover, higher leveraged firms, have also higher agency costs due to the potential benefits transfers from debt-holders to internal managers (Oliveira *et al.*, 2006; Oliveira *et al.*, 2011). On the other hand, the leverage can also have a positive effect on the economic performance due to tax benefits linked to the loans (Kakani *et al.*, 2001; Serrasqueiro and Nunes, 2008).

Many authors have empirically studied the relationship between leverage and company economic performance, obtaining different results: Kakani *et al.* (2001); Agiomirgianakis *et al.* (2006); Prasetyantoko and Parmono (2008) and Serrasqueiro and Nunes (2008) found a negative and significant association; while, Burja (2011); Almajali *et al.* (2012) and Hunjra *et al.* (2014) found a positive and significant association.

So, based on previous research, an association, without a particular sign, between company leverage and economic performance is expected.

H2: There is an association between firm leverage and profitability of the firms operating in local food sector

3.3 Liquidity

According to previous studies (Agiomirgianakis *et al.*, 2006; Prasetyantoko and Parmono, 2008; Almajali *et al.*, 2012) liquidity represents the extent to which a company is able to pay off short-term debt with short-term assets, so it can be seen as a short-term financial stability indicator. Serrasqueiro and Nunes (2008) and Almajali *et al.* (2012) argued that a high liquidity rate is linked to a high firm economic performance due both to the greater ability to respond to market changes in the short term than to the possibility of financing, partly, their investment when the credit cost is too high.

Several authors have empirically investigated the relationship between the company liquidity and economic performance: Almajali *et al.* (2012) found a significant and positive relationship; while, Agiomirgianakis *et al.* (2006) found a significant and negative relationship. Moreover, Serrasqueiro and Nunes (2008) didn't find a significant relationship between liquidity and small and medium firms performance.

So, based on previous studies, a positive relationship between company liquidity and profitability is expected.

H3: There is a positive relationship between firm liquidity and profitability of the firms operating in local food sector.

4. Methodology and sample

Before analysing the variables which affect the profitability of the firms operating in the Campania local food, the structure of the local food sector of the Italian selected region has to be analysed using a framework that allow identifying the main categories of companies belonging to the local food supply chain of the selected area.

The selection of this territory is a result of a choice based on the knowledge of the wide production of local food products as well as of the tradition and culture of this territory. Campania has a wealth of food products that is perhaps unique even in the vast territory of Italy; with a long agricultural food tradition, in the region of Campania operates the 12% of the total firms belonging to the food sector in Italy.

Whit regard to the sample, following the prevailing literature (Morris and Buller, 2003; Aramyan *et al.*, 2006 Gellynck *et al.* 2008; Bianchi and Mortimer, 2015), only the companies that process, preserve or manufacture food products in these restricted territories have been selected.

The Bureau van Dijk AIDA Database has been used and the Codes Ateco 2007¹ have been selected to track down the main target sector of the local food supply chain, taking as a reference the financial year 2014. Therefore, considering the codes Ateco, the companies of the sample have been grouped in five main sub-sectors (for simplicity we will call them only “sectors” in the continuation of treatment) (Table 3): Canned food; Milk and dairy products; Pasta, bread and pastry; Meat and fish; Beverage.

All these productions take place in selected provinces.

¹ Codes that describe briefly the economic activity of the company.

Table n. 2 - Description and composition of sample: Categories Ateco

N.	Sector	Description– Codice ATECO 2007
1	Canned food	Processing and preserving of fruit and vegetables.
2	Milk and dairy products	Production of milk derivatives, Dairy industry, Hygiene treatment for milk.
3	Pasta, bread and pastry	Production of bakery, Manufacture of pasta, noodles, couscous and similar farinaceous products, Manufacture of rusks, biscuits and chocolate; preserved pastry goods.
4	Meat and fish	Processing and preserving of fish, crustaceans and molluscs by freezing, salting etc. ..., processing and preserving of meat and production of meat, Manufacture of condiments and spices. Other Products.
5	Beverage	Manufacture of wine from grapes, Processing of tea and coffee

Source: personal elaboration

Moreover, in order to evaluate the evolution and development of the industry of local food in the areas selected, considering the data collected about the years of constitutions, the companies have been distinguished in four categories:

- category “A” (company formed before 1980);
- category “B” (company formed during the period 1981 – 1990);
- category “C” (company formed during the period 1991 – 2000);
- category “D” (company formed during the period 2001 – 2013).

The companies of the local food sector of Campania that were initially selected from the database were 564. Then, due to lack of data related to the financial statements, 157 companies of the sample have been eliminated. Therefore, the final database used is composed by 407 companies for the financial year 2014.

With regard to the variables select for the analysis, Table 2 reports the hypothesis, variable definitions, proxies and expected signs.

Table n. 3 – Variable measurement

Hypothesis	Variable	Variable type	Variable proxy	Expected sign
Y	Profitability	Dependent	Return on Assets (ROA)	
HC1	Size	Independent	Natural logarithm of total assets	+
HC2	Leverage	Independent	Ratio of total debt to total assets	+ / -
HC3	Liquidity	Independent	Ratio of current assets to current liabilities	+

Source: personal elaboration

As regards the dependent variable, according to Kakani *et al.* (2001); Agiomirgianakis *et al.* (2006); Prasetyantoko and Parmono (2008); Hunjra *et al.* (2014), in order to measure firms profitability, the Return On Assets (ROA) has been used. Indeed, as several authors highlighted (Tangen, 2003; Agiomirgianakis *et al.* 2006; Almajali *et al.*, 2012), ROA is an expression of the company's ability to profitably manage their assets and one of the most used indicator for performance and profitability measurement.

As regards independent variables, consistent with Kakani *et al.* (2001); Prasetyantoko and Parmono (2008), Serrasqueiro and Nunes (2008) and Hunjra *et al.* (2014) as a proxy of Size, the natural logarithm of total assets has been used.

Moreover, leverage was measured by the ratio of total debt to total assets (Agiomirgianakis *et al.*, 2006; Oliveira *et al.*, 2006; Oliveira *et al.*, 2011; Hunjra *et al.*, 2014).

At the end, as a proxy of liquidity, the ratio of current assets to current liabilities has been used (Agiomirgianakis *et al.*, 2006; Almajali *et al.*, 2012).

The variable "industry", even if considered relevant as an independent variable, was not included in the model because the low number of firms in some sectors could undermine the significance of the model.

Thus, an Ordinary Least Square (OLS) regression model, with robust standard errors, has been employed in order to test the three hypothesis as follows:

$$Y_i = \beta_0 + \beta_1 (\text{Size})_i + \beta_2 (\text{Leverage})_i + \beta_3 (\text{Liquidity})_i + \varepsilon_i$$

Where:

Y = Firms profitability;

β_0 = Constant;

$\beta_1 - \beta_3$ = Coefficient of the explanatory variables;

ε_i = Error or disturbance terms of company.

5. The local food sector in the Italian region of Campania

The crisis that Italy is passing is still very deep, both at national level and at regional level. In this framework, the economies in greater structural difficulty are the regions of the South. However the case of Campania is, in this respect, really emblematic.

The Campania region, despite the crisis that has dramatically reduced its production (the added value of industry has decreased by 4.7 % in 2014) remains the first industrial context of the southern regions.

The total exports of the Campania region have been reduced (-1.7 %); however, the agro-food industry exports, nearly a quarter of the regional total, continued to grow (1.9 %). The agro-food industry performance of Campania

region was affected by the sharp decline in sales of dairy products (-31 %) while overseas sales of bakery products (9.2 %) and canned (3.5 %) have increased.

The share of exports canning of the regional total (13.9 % in 2014) has been growing for three years and, in particular, the regional canned exports continue to rise in East Asia, Australia and North Africa (Banca d'Italia, 2014).

The food chain is the great challenge of the re-launch of Made in Italy. According to a recent survey by Unioncamere, products such as pasta, wine, coffee and processed tomatoes are within the top twenty Italian products of excellence on the international markets.

The food chain is thus one of the big bets that the Campania region has to win, to be able to raise. The companies in the industrial processing of agricultural products, at the end of 2014, 17.6% of the total size of the Campanian manufacturing sector, thus signaling a strong farming industry vocation.

The table 3 shows the analytical composition and the numerical weight of the different sectors of the local food supply chain of the Italian Region of Campania.

The majority of the companies operates in the canned food that, with 134 company (32.92%), is an industry with a strong tradition rooted in the territory.

Then, 115 (28.26%) companies belong to the sector of milk and dairy products; they evidence the importance that the dairies have for the territory, especially in the "Cilento" area. Moreover, there are 61 companies (14.99%) that operate in the sector of pasta, bread and pastry and 61 companies (14.99%) belonging to the sector of meat and fish. In the end, there is the sector of beverage that comprises the production of wine, tea and coffee and that has a weight of 8.85% on total sample.

Table n. 4 - The local food sector in Campania region: analytical composition

Sector	Frequency	Percentage %	Cumulative Percentage
Canned food	134	32.92	32.92
Milk and dairy products	115	28.26	61.18
Pasta, bread and pastry	61	14.99	76.17
Meat and fish	61	14.99	91.16
Beverage	36	8.85	100,0
Total	407	100,0	

Source: personal elaboration

The analysis of the production structure of the provinces showed high concentration of companies in the province of Naples (38%), followed by the province of Salerno (34%), the province of Caserta (12%) and the provinces of Avellino and Benevento for 10% and 5%.

Regarding the distribution of the several sector in the five provinces, Table 4 evidences that the majority of the company of the *Canned food sector* and *Milk and dairy products* operates in the province of Salerno. Moreover, the majority of

company of the *Pasta, bread and pastry sector, Meat and fish sector and beverage sector* operates in the province of Naples.

Table n. 5 - The local food sector in five provinces of Campania region: analytical composition

	N	Canne d food	Milk and dairy products	Pasta, bread and pastry	Meat and fish	Beverage
Avellino	42	14	8	9	7	4
Benevento	22	2	5	6	6	3
Caserta	50	5	33	5	6	1
Naples	154	40	31	32	30	21
Salerno	139	73	38	9	12	7
TOTAL	407	134	115	61	61	36

Source: personal elaboration

Furthermore, it is very interesting to note that, in recent years, as widely emphasized in literature (Morris and Buller, 2003; Jones *et. al*, 2004; Bianchi and Mortimer, 2015; Galli *et. al* 2015), the local food sector is experiencing a great development. Indeed, as shown in Table 5, the highest percentage of sample selected consists of companies formed after 2001 (39.8 %, category D), followed by companies belonging to the categories C (28.01 %), A (16.71 %) and B (15.48%).

Table n. 6 - Years of constitution – Region of Campania

Category	Frequency	Percentage %	Cumulative Percentage
A (up to 1980)	68	16.71	16.71
B (1981 – 1990)	63	15.48	49.61
C (1991 – 2000)	114	28.01	77.62
D (2001 – 2015)	162	39.80	100.0
Total	407	100	

Source: personal elaboration

Moreover, analysing the specific provinces, for the Table 6 can be noted that, in each province the majority of companies were set up after 2001; therefore, they are companies particularly “young”.

Table n. 7 - Years of constitution – The five province of the Campania region

	N	A (up to 1980)	B (1981 – 1990)	C (1991 – 2000)	D (2001 – 2015)
Avellino	42	3	7	13	19
Benevento	22	2	4	7	9
Caserta	50	5	11	12	22
Naples	154	29	20	46	59
Salerno	139	29	21	36	53
TOTAL	407	68	63	114	162

Source: personal elaboration

As regards the main products of this territory, the region of Campania is renowned for realization of products with a label of designation recognized and “Traditional Products”. As pointed out in the literature, these products being processed and grown in a restricted geographic area (a province or a region in the case of Italy) can fully enjoy the feature of “local food products” (Wilkins, 2002; Morris and Buller, 2003; Jones *et al.*, 2004).

As reported in the document “*Mettiamo in moto una nuova economia – la Campania riparte dai territori*”², in the Italian Region of Campania 12 DOP, 8 IGP, 18 DOC and 9 IGT are produced. In addition, further 320 traditional products are produced (Table 7).

Table n. 8 - Excellence of local food in the region of Campania: quality products and traditional products

Product designation recognized	Campania
DOP	12
IGP	8
DOCG	3
DOC	18
IGT	9
Traditional Products	320

Source: Assessorato Agricoltura; Fondo Europeo Agricolo per lo sviluppo rurale, 2013

² Document sponsored by Assessorato dell’Agricoltura Regione Campania; Fondo Europeo Agricolo per lo sviluppo rurale; Programma di sviluppo rurale PSR Campania; Ministero delle Politiche Agricole e forestali; Provincia di Salerno. 2013

6. Results

Table 9 shows the results of the descriptive statistics for dependent and independent variables.

Table n. 9 – Descriptive statistics

Descriptive Statistics						
Variable	Variable type	N	Minimum	Maximum	Mean	Std. Deviation
ROA	Dependent	407	-30.47	52.9	5.4026	7.368
Size	Independent	407	5.23799926	12.968025	8.16110845	1.435975881
Leverage	Independent	407	0.0498643	1.32694264	0.68019575	0.20775108
Liquidity	Independent	407	0.04	9.25	1.2043	0.93552

Source: personal elaboration

The dependent variable ROA has an average value of 5.40 with a maximum value of 52.9 and a minimum value of -30.47.

As regards the size, measured as the natural logarithm of total assets, the average value is of 8.16 with a maximum value of 12.96 and a minimum value of 5.23.

Moreover, the leverage, measured as the ratio of total debt to total assets, has a mean value of 0.68, a maximum value of 1.32 and a minimum value of about 0.05.

Finally, the liquidity, measured as the ratio of current assets to current liabilities, has an average value of 1.20, a maximum value of 9.25 and a minimum value of 0.04.

Table 10 illustrates the ROA of each sector evidencing that all sectors investigated have a good profitability. The sectors with higher profitability are the Beverage and the Milk and dairy products and the sector with lower profitability are Canned food and Meat and fish.

Table n. 10 – ROA of the five local food sector in Campania

Industry sector	N	ROA
Canned food	134	4,15 %
Milk and dairy products	115	6,28 %
Pasta, bread and pastry	61	5,64 %
Meat and fish	61	4,94 %
Beverage	36	7,65 %
TOT	407	5,40 %

Source: personal elaboration

Table 11 illustrates the ROA of each province in which Campania is divided, evidencing that all provinces investigated have a good profitability. The province with higher profitability is Napoli while the lower profitability is registered in Avellino.

Table n. 11 – ROA of the five province of the Campania region

Province	N	ROA
Avellino	42	2,91 %
Caserta	22	4,41 %
Benevento	50	5,45 %
Napoli	154	6,23 %
Salerno	139	5,38%
TOT	407	5,40%

Source: personal elaboration

Table 12 shows the results of the OLS regression model employed to test the three hypothesis.

In order to ensure the empirical validity of the model, the model was subjected to tests for multicollinearity (Variance Influence factor test) and heteroskedasticity (White's test).

The variance inflation factor (VIF) score was calculated for each independent variable; the highest VIF obtained is 1.602 for the variable Leverage, so, multicollinearity issues are not present.

Moreover, White's test for heteroskedasticity was performed and a negative result has been obtained, confirming that heteroskedacity problems were not present (see table 11).

Therefore, the regression model is statistically significant (P-value <0.05) with an Adjusted R-Squared of about 0.16.

Table n. 12 – Ols regression model results and tests

	Hypotesis	coefficient	Standard Error	T- statistic	p-value	Significance
Const						***
Size	H1	-1,01128	0,25744	-3,9282	0,0001	***
Leverage	H2	-8,86059	2,42973	-3,6467	0,0003	***
Liquidty	H3	1,29557	0,623769	2,0770	0,0384	**
White Test: T Statistic: LM = 14,2282; p-value = P(Chi-quadro(9) > 14,2282) = 0,114436 (Not heteroskedasticity);						
Variance Influence Factors Test= Maximum value Leverage 1,602 (Not Collinearity)						

Significance at the following levels: * 10%; ** 5%; *** 1%.

Source: personal elaboration

As regards the H1, contrary to our expectation, results evidence that there is a negative relationship between Size and profitability (significant at 1%); therefore, in local food sector of the Campania region, smaller-sized companies tend to achieve higher levels of profitability. This means that, the profitability of the local food sector of the Campania region probably derive from the close relationship that smaller firms are able to engage with the territory. In this case, scale economies or access to market are not instrumental in achieving a high profitability

However, this result is not consistent with previous studies of: Kakani et al. (2001); Agiomirgianakis et al. (2006); Prasetyantoko and Parmono (2008); Serrasqueiro and Nunes (2008); Bhattacharyya and Saxena (2009); Almajali et al. (2012); Hunjra et al. (2014).

As regards the H2, a relationship, without a particular sign, between leverage and profitability was expected. Leverage is statistically significant at 1% level and has a negative coefficient. This result is consistent with Kakani et al. (2001); Agiomirgianakis et al. (2006); Prasetyantoko and Parmono (2008) and Serrasqueiro and Nunes (2008), who found a negative and significant association between leverage and firms' profitability. This result highlights the bankruptcy problems and the agency costs issues linked to high leveraged firms, confirming that, in local food sector of Campania, a lower level of debt is linked to a higher level of profitability.

Finally, regarding the H3, a positive association between liquidity and profitability was expected. This hypothesis is supported by results. Liquidity is statistically significant at 5% level with a positive sign. This result is in accordance with previous studies of Almajali et al. (2012), who found a significant and positive relationship between liquidity and firms' profitability, highlighting that high liquidity is linked to high profitability.

7. Conclusions

Traditional-local food is a significant element of a social and cultural identity of a country and can represent an important vehicle for the tourist attraction and for the social and economic development of the territory (Bessièrè, 1998; Ilbery et al., 2006).

The relevance and the growing of the local food sector in economic and social terms (Morris and Buller, 2003; Jones et al., 2004; Bianchi and Mortimer, 2015) has contributed to the creation of value for the several actors in the supply chain (Morris and Buller, 2003).

In fact, the literature review (Ilbery et al., 2006; Tellstrom et al., 2006; Miroso and Lawson, 2012; Galli et al., 2015) evidenced that the increasing importance of the local food sector creates a virtuous circle for the companies that operate in this sector (Morris and Buller, 2003; Bianchi and Mortimer, 2015).

In line with this view, the present paper focuses the attention on the local food sector of the Italian region of Campania. A sample of 407 firms of local food sector have been analysed in the aims to identify the variables affect the profitability.

In Campania the 12% of the local food Italian firms are located and, together with Lombardy and Sicily, it represents the much relevant region in the food industry.

The analysis of the five sectors in which the local food industry is divided evidences that the majority of the companies operates in the canned food and milk and dairy products. Moreover, the majority of the company are particularly "young" (formed after 2001) and the sector with higher profitability are Beverage and the Milk and dairy products. Additionally, the province with the higher concentration of companies is Naples that represents also the province with higher profitability measured by ROA.

The analysis of the variables effecting the profitability of the company operating in the local food sector evidences that the size and leverage are negatively correlated with the firms' profitability; while the liquidity is positively correlated.

In conclusion, the analysis evidences that the local food sector is very deep-rooted in the Campania region, although the companies that operate in this sector were generally set up in recent years. Moreover, these companies present a good profitability measured by ROA, that is connected to a small firm size, high level of liquidity and a low level of debt.

However, the research presents some limits. Firstly, it utilises only ROA as financial performance indicator for a better accuracy in our statistical analysis but, for a more complete analysis, additional indicators - such as ROI, ROE - could be considered. Furthermore, the analysis is focused only on Campania region, that is one of the most relevant Italian region for the local food industry, and it not considers other regions or Italy as a whole.

However, these limitations can represent the starting point for future researches in which other factors can be considered and further areas can be analysed.

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