LUISS

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Italian industrial districts and relationship lending: an empirical analysis of the district effect

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1. THE ITALIAN CASE: A FRAGMENTED ECONOMIC SYSTEM

1.1 Introduction

This thesis aims to analyse the phenomenon of industrial districts and to measure the extent of benefits related to district affiliation.

The first chapter provides a comprehensive overview of the Italian manufacturing system, populated by many Small and Medium Enterprises and characterised by strong bank dependency.

The intent, indeed, is to give a wide understanding of the socio-economic reasons behind a bank-based system where firms' financing largely relies on financial institutions.

The chapter continues by describing a particular form of business aggregation: industrial districts.

In particular, it will explain the logic of autonomous productive systems located in limited areas and operating with a stable social and productive structure.

According to several authors, the relationship lending phenomenon is more intense within districts, as geographical proximity and high business concentration help banks to carry out screening and monitoring activities smoothly.

In the second chapter, four districts are presented, with a focus on their history, structure, and functioning.

They are selected from different businesses and regions: the footwear in Riviera del Brenta, the metallurgy in Lecco, the tannery in S. Croce sull'Arno and the agricultural in Gragnano.

The second chapter gives an understanding of heterogeneity of the sample of firms, in terms of size, activity and performance.

The dataset of districts, extracted from the *Aida* database, will be used in the final chapter to conduct the empirical analysis.

The third and main chapter is organised in two parts.

The first one proposes a quantitative analysis of profitability, liquidity and solidity. Data are examined also compared to a sample of non-district peers. This section allows to test the district effect using past data.

In the second and last part, a summary of the literature on district effect is provided and then three regression models are constructed to estimate and measure the impact of district affiliation on leverage, cost of financing and EBITDA.

1.2 Small and Medium Enterprises

Italy, notwithstanding being the third European economy by size, following Germany and France, has low levels of industrial concentration, having the largest Small and Medium Enterprises sector in the EU. It is therefore an outlier compared to other countries, with much bigger and more capitalised companies.

Furthermore, despite being the second-largest manufacturing economy (Camera dei Deputati) our country has a fragmented production system: Germany, the leading European country for manufacturing, counts half of Italian firms (Rossi, 2014), showing the existence of an 'Italian case', a deeply industrialised economy that relies for the most part on local and family-owned businesses.

The 2022 Regional report carried out by Confindustria and Unicredit on 160,000 Italian SMEs highlighted their role in promoting economic growth: the overall value created was around 204 billion euros in 2022, more than 10% of the country's GDP (Confindustria, 2022).

Not only, almost 95% of Italian companies are micro-firms, above the EU average (92%) (Rossi, 2014) suggesting that the economic development of the country is fostered by sized entities with little workforce.

Before providing further analysis, it is important to define SMEs.

According to the European Commission, two alternative criteria are being used to define firms' size: the number of employees and the sales turnover, or the total assets.

In particular, micro firms have less than 10 employees and less than 2-million-euro revenues or less than 2 million euros in assets.

Small firms have a workforce smaller than 50 individuals and below 10 million in sales or below 10 million in assets.

Medium firms count less than 250 individuals and 50 million sales or assets not exceeding an overall value of 43 million euros.

Lastly, big firms are all businesses exceeding medium ones (Confindustria, 2022).

Chart 1 - Firms Classification, European Commission

CATEGORY	EMPLOYEES		TURNOVER		ASSETS
Micro firms	< 10	and	≤ €2 mln	or	≤ €2 mln
Small firms	< 50	and	≤ €10 mln	or	≤ €10 mln
Medium firms	< 250	and	≤ €50 mln	or	≤ €43 mln
Big firms	≥ 250	or	> €50 mln	and	> €43 mln

Source: Confindustria, Regional Report PMI 2022.

Signorini (2000) in (Brasili, 2016/2017) refers to the Italian economic system as a "paradox" characterised by:

- Big population of SMEs;
- Sharp gap between North and South socio-economic systems;
- Low-technological and low-capital production.

As shown in Chart 2, the majority (39.3%) of Italian businesses have between 50-99 employees, followed by those with 100-149 representing 24.8% of the total (Mediobanca, 2022).
The data below point out an inverse relationship between dimension and diffusion on the territory: the smaller the firm (and the fewer the employees), the more common the presence.

Chart 2 – Number of firms and workforce per number of employees

	Italy			
Class of workforce	Firms		Employees	
	Number	*%*	*Number*	*%*
50-99	1,247	*39.3*	90,855	*19.1*
100-149	788	*24.8*	96,222	*20.3*
150-199	411	*12.9*	70,791	*14.9*
200-249	254	*8*	56,574	*11.9*
250-299	171	*5.4*	46,394	*9.8*
300-349	119	*3.8*	38,429	*8.1*
350-399	86	*2.7*	31,979	*6.7*
400-449	53	*1.7*	22,460	*4.7*
450-499	45	*1.4*	21,428	*4.5*
Total	**3,173**	***100***	**475,132**	***100***

Source: Mediobanca, 2022

But how are they located in the country? A Confindustria (2022) survey estimated the presence of around 153,000 SMEs, of which 92,000 in the North, counting for 60% of the total, and 30,000 both in the Central Region and in the South.

Not surprisingly, around 40% of SMEs is located in the North-West, with Lombardy being the most industrialised and productive region of the country. Then, the North-East with a value of 59 trillion euro produces 28% of the total. The Centre and the South host fewer firms, accounting for 17% and 14% respectively (Confindustria, 2022).

Similar data were provided in a survey by Mediobanca (2022) which focused on the distribution of manufacturing firms in 2020. The results underline the same differences in the distribution within the country: the North-West counted 1,265 medium firms (39.4%), the North-East 1,208 (37.5%), whereas the Centre only 424 (13.2%) and the South 318 (9.9%) (Mediobanca, 2022).

Beyond data on numerousness, distribution and GDP contribution, SMEs have a significant cultural impact.

They are defined as having a "social and economic role" (Gazzetta ufficiale delle Comunità europee, 1992), especially in terms of job occupation and creation.

Diffusion of the workforce among the different dimensions is coherent with an economy which has the cardinal force in sized businesses: micro-firms (with less than 10 employees) embrace

45% of the total workforce, well above the European average of 30% and even above the 30% of France and the 19% of Germany (Redazione Osservatori Digital Innovation, 2020).
Analysing the 2020 results of Mediobanca (2022), firms with less than 150 employees provide work to almost 40% of the total.

The social role mentioned above can be explained by the fact that small businesses share common characteristics that are not traceable in large companies, strictly related to the Italian culture and economy (Ang, 1991):

a) Absence of exchange-traded securities.
   By not being listed on the regulated markets, whose development is insufficient, they do not have a unique and clear value and they suffer from limited access to external financing resources.

b) Strong (familiar) relationship between ownership and control.
   Usually, family members control the entire, or almost, share capital (Ang, 1992). In 2018, 75% of businesses with more than 3 employees was controlled by an individual or a family (Istat, 2021). It reaches 80% in micro firms.
   The phenomenon has different implications.
   On the one hand, the manager-shareholder centralises main business decisions on his figure or his family. Therefore, a strong emotional involvement characterises the governance of the activity. Business plans, vision, innovation decisions, customer relationships, and bank trust reflect a predominant human trait where objectives transcend the seer profit maximisation. Understandably, running a personal family business is different from managing other's one for a limited period.
   On the other hand, the shareholder's comprehensive understanding of the process - from the realisation to the distribution of the product - unavoidably affects the management style implying a blurred distinction between personal and work life.
   The emotional attachment might obstacle to the growth of the activity as the owner usually has an "aversion to control loss" (Cressy & Olofsson, 1997).
   One of the major drawbacks of Italian small firms, indeed, is the restricted view and vision in the long term, which aims at protecting the business from external (and foreign) investors.

Furthermore, the business represents for the entrepreneur the major, and typically, the sole source of wealth so the participation will likely be direct and predominant, which is not traceable in large public companies where ownership and control are separated.

c) Lack of limited liability.
   As the personal wealth of the entrepreneur often coincides with the equity of the business, its failure would determine that of the owner too, especially because banks require a personal guarantee for corporate credit.

d) Informal organisational structure.
   The management team is small or consists of a single individual, so compensation schemes are unofficial. In most cases, the internal organogram is not well-defined as the business is run by a family. It could be referred to as "informal leadership" (Brezinova, 2021): the distinction of roles is opaque with the risk of overlapping, and familiar ties affecting business decisions.

The ownership structure and the management style have a paramount role in the economic performance of firms, due to the implications on the competitiveness of their productive systems (Istat, 2021).

The smallness of Italian companies, together with their difficulty in growing and pursuing a sectorial reallocation derive from informal and weak organisational structures, peculiar to family-owned businesses.

The unwillingness to technological innovation is caused not only by financial constraints but also by a sort of cultural aversion: Italian entrepreneurs tend to be technical-productive focused, overlooking the importance of technological investments (De Toni & Nassimbeni, 2003) and pursuing risk-averse strategies.

There is difficulty in developing forward-looking financial plans due to a lack of comprehensive understanding and sound programming of the business.

With this regard, one limit of our enterprises is the inability of hiring and retaining qualified personnel. They have a weak attractiveness – in terms of prestige, public image and salary. Almost half of the employers identify the cost of labour as the major obstacle to hiring new workforce (Istat, 2021).

Therefore, limited managerial competencies hold back innovation processes due to, beyond inefficacy to capture a skilled workforce, less capability to access external financing (De Toni & Nassimbeni, 2003).

To summarise, Italian firms struggle to grow due to several drawbacks strictly interdependent from each other: a lack of innovation in the production process, inadequate management skills and insufficient financing.
Another aspect undermining their existence is generational change, a critical phase for the life of the company that implies a shift in business control and structural transformation of the company (Istat, 2021), potentially undermining long-term projects.
Between 2013 and 2023, the phenomenon affects nearly 30% of SMEs with more than 10 workers and relates to problems of:

- Absence of capable heirs;
- Legal or fiscal obstacles;
- Difficulty to transfer the know-how;
- Financial difficulties (Istat, 2021).

1.3 External financing difficulties and a bank-based system

The restricted size and family governance result in financial markets being inaccessible or unaffordable raising significant problems for Italian SMEs in the access to financing.
Their balance sheets have significant traits of imbalance compared to large companies due to (Cressy & Olofsson, 1997):

- Lower fixed-to-total assets ratio;
- Higher amount of trade debt;
- Higher portion of current liabilities to total assets, especially bank debt;
- Significant use of retained earnings to finance investments;
- Bank financing as the main (and sometimes only) source of lending;
- Higher leverage ratio (D/E).

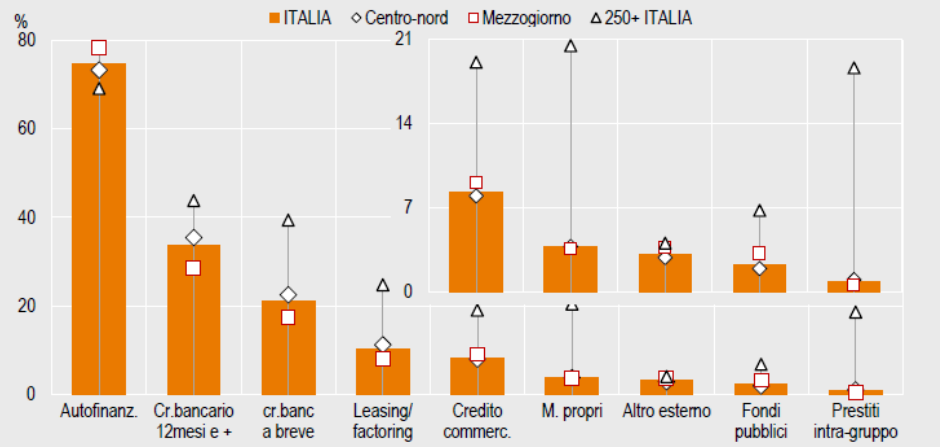
With this regard, financing decisions become essential for business activity. The availability of adequate financing, by supporting long-term business ideas, could enhance competitiveness. Sized firms face growth constraints as access to external financing is more difficult than that of large companies (Beck & Demirguc-Kunt, 2006). It has been demonstrated that they rely on internal financing sources, such as trade debts and retained earnings (Cressy & Olofsson, 1997).

Maintaining a balanced capital structure might be challenging for them. The choice between internal and external forms of financing depends on several variables and has different effects on the enterprise.

In such a scenario, bank loans are the preferred choice of external financing as they allow minimisation of ownership dilution (Cressy & Olofsson, 1997). The relationships built with banks are strong and exclusive.

Not only, 80% of manufacturing and trading SMEs holds relationships with at least three financial institutions suggesting the paramount role they play in the business survival (Istat, 2021).

Graph 1 – Financing sources per typology, region, dimension



Source: Istat, 2021

A capitalistic model which is family-controlled led to the rapid growth of indebtedness so that nowadays businesses' financing strongly relies on the banking system.

The Italian system is bank-centric, based on "geographical proximity" (Castelli, Dwyer, & Hasan, 2009).

A study by the Bank of Italy revealed that Italian SMEs are more bank exposed by 7% than the European average (Banca d'Italia, 2020). This data can be explained by an inverse relationship between size and leverage (Maglietta, 2004) and therefore gives further support to the argument that the peculiarities of our system push in the direction of a bank-oriented economy.

Especially after the financial crisis, SMEs' balance sheets witnessed high-leverage capital structures, encouraged by friendly and informal relationships with lenders.

The 2022 Cerved Report spotlights the steady growth of all-size firms' leverage: medium enterprises increased their debt by 7%, more than small firms (6%) (Cerved, 2022).

Graph 2 – Financial debts per size

Source: Cerved PMI Report, 2022

The trend is justified by pandemic-related difficulties and favourable cost of debt, which has been diminishing since 2013, as shown in Graph 3.

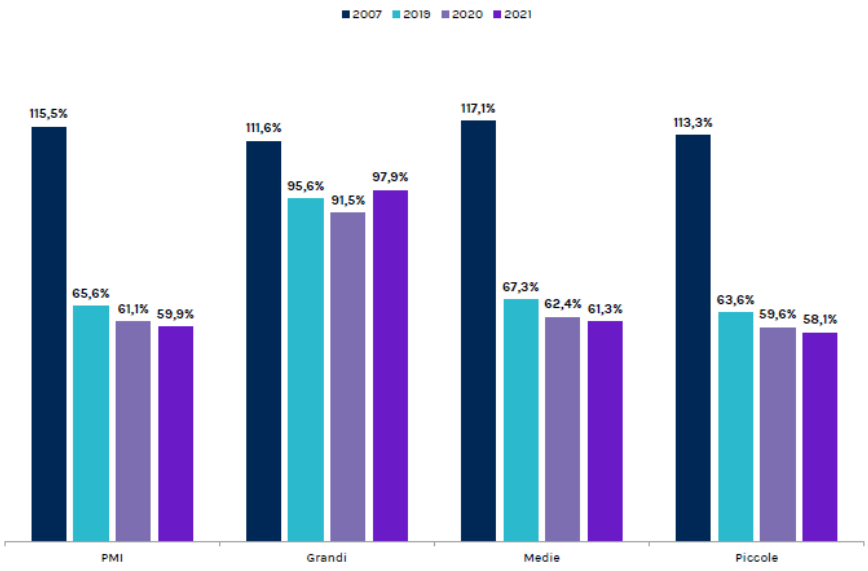
Graph 3 – Cost of debt per size

Source: Cerved PMI Report, 2022

Graph 4 shows the breakdown of leverage per dimension (expressed in %) and highlights a deleveraging process common across companies with the only exception of big firms whose leverage raised from 91.5% in 2020 to 97.9% in 2021.

However, considering the whole period from 2007, the amount of debt halved for SMEs and decreased, in a minor part, for big companies.

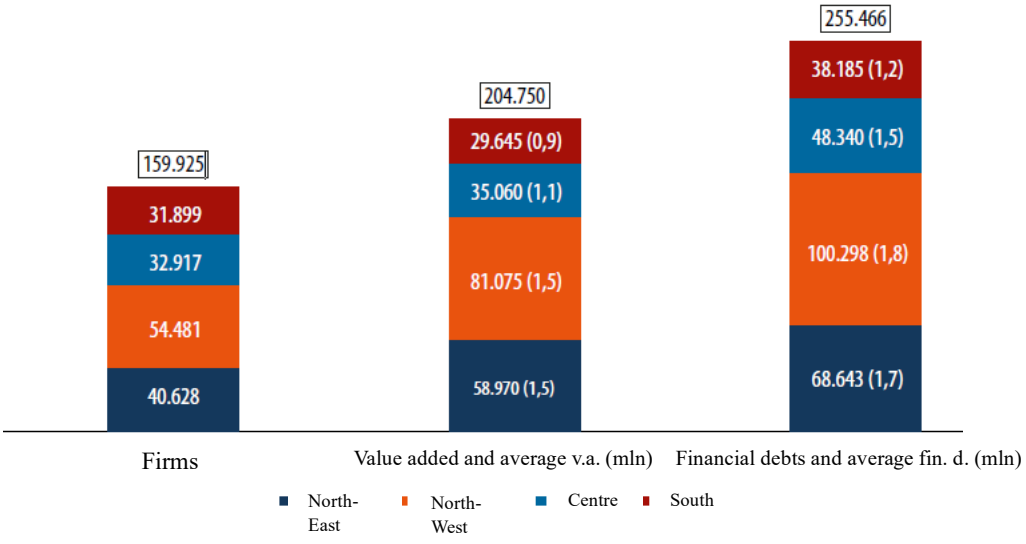
Graph 4 – Leverage (%) per size



Source: Cerved PMI Report, 2022

Most of the debt against banks is held by SMEs in the North, consistent with the dense population of firms that characterises the territory (see Graph 5). In particular, of a total of 255 billion of debt, two third come from the North amounting to 170 billion euro, of which almost 70 billion in the East and 100 billion in the West (Confindustria, 2022).

Graph 5 – Regional distribution of SMEs, value added and financial debt in 2020



Source: Confindustria, Regional Report PMI 2022.

Further, the average amount is higher (1.7 and 1.8) than the rest of the country, justified by bigger production and higher financial needs.

1.4 Relationship lending

The entrenched presence of banks in the industrial system and the role played in the traditional intermediation is referred to as 'relationship lending'.
Banks are the major financing solution due to the limited size of Italian firms, the confidentiality of the information and the absence of dynamic financial markets.
Relationship lending can be defined as long-term oriented ties between the firm and the bank which consists of the "information privilege" (Brancati, 2015) that the latter holds by establishing close bonds with the client.
It comprises the exchange of soft and qualitative information acquired over time, based on experience, not easily observable, verifiable, nor transmitted outside the borrower-lender relationship itself (Caruso).

The three features of relationship lending are (Boot, 2000):

1. Exchange of borrower-specific information;
2. Multiple interactions and several financial services offered;
3. Confidentiality of information provided.

By being strictly related to the relation, the information disclosed reduces information asymmetries and liquidity constraints.
Moreover, the continuity of interaction over time provides superior knowledge compared to transaction-based reporting, where the contact is limited to a single operation (Castelli, Dwyer, & Hasan, 2006).
Therefore, the fiduciary boundary becomes a positive credit relationship providing a better understanding of the business riskiness which, in turn, allows for greater credit availability and flexibility.
Sized businesses, indeed, bear less availability and higher cost of credit because they are more subject to informational asymmetries (Russo & Rossi, 1999).
Less convenient terms are applied for two main reasons.

First of all, small firms are perceived as riskier due to a lack of financial resources, the impossibility to attract the same skilled workforce and the difficulty to face high-interest rates charged on debt. The literature refers to it as 'the risk of smallness'.
Secondly, they have weak bargaining power in negotiations with banks. Given that the traditional financing channels, such as public and bond markets, are not accessible and developed, bank debt is the primary and fundamental source of liquidity. This poses the lender in a quasi-monopolistic bargaining position during negotiations (Ang, 1991).

Relationship lending's benefits can be summarised as follows:

- The confidentiality of the relationship has the only purpose to ease the firm's access to borrowing;
- The bank develops trust toward the debtor bringing more flexibility in the negotiation of terms and conditions. The use of private, "non-contractable information" (Boot, 2000) facilitates long-lasting bonds. Further, banks can apply non-standardised covenants that fit the specific case curbing conflicts of interest;
- Limit of firm's opportunistic behaviours: the bank can monitor and screen information, data and reports;
- The trustworthiness of the borrower grows, improving its position towards clients, suppliers and other financial institutions;

  In such cases, the lender benefits mostly from the long-term expectation from relation with the debtor.

These benefits are stronger for smaller firms as they are "informationally captured" (Castelli, Dwyer, & Hasan, 2009), i.e. they struggle to convey their quality to banks: sized enterprises usually do not disclose financial statements and enter private contracts resulting in opaque public image.
Greenbaum et al. (1989) in (Castelli, Dwyer, & Hasan, 2009) demonstrated that the longer the relationship, the greater the benefits: they proposed a model showing that the borrowing rate is a non-decreasing function of the length of the boundary. The monitoring and screening activities carried out by the lender can indeed mitigate asymmetric information.
In other words, the firm's access to credit is improved in terms of availability and conditions.
Firstly, they benefit from greater availability of credit and have wider protection against credit crunches.

Secondly, they subscribe to cheaper loans with the possible provision of implicit interest rates (Castelli, Dwyer, & Hasan, 2006). Berger and Udell (1995) in (Castelli, Dwyer, & Hasan, 2009) found that longer banking relationships allow firms to pay lower interest rates usually without pledging collateral.

Besides screening private information, banks observe over time borrowers' performance under credit arrangements and therefore assess their creditworthiness.

A theoretical model provided by Petersen and Rajan (1995) in (Castelli, Dwyer, & Hasan, 2009) showed that in the first period, banks charge higher interest rates and lower them as the debtor's reliability is verified.

Furthermore, banks are interested in building solid long-term relationships with borrowers: sized firms represent loyal clients, that they manage to retain from competing financial institutions.

Over time, when the lender acquires valuable information and a full understanding of the business, the renewal of credit arrangements reflects the reduced risk perceived, compared to the initial credit assessment, where the information asymmetry is maximum.

1.5 A particular case: the industrial districts

It is very common that SMEs do not want to grow beyond the *Minimum Efficient Scale*, the level of output at which the company pays the lowest average cost.

This is because managers, that are also owners, want to keep control of their firm and ensure an acceptable level of wealth without interference from external investors.

Our enterprises lack dimensions to internationalise and/or to make significant process innovations.

Such constraints facilitate collaborations and partnerships, especially exploiting the geographic concentration of SMEs, and create benefits not available for operating alone businesses.

According to a Istat survey (2021), the main objectives are expansion in new markets (38.7%) and cost reduction (36.1%).

In 2018, more than half (52.5%) of businesses with at least 3 employees held at least one network bond. Sales and sub-supply contracts were the most used, especially in the building and manufacturing sectors.

The intercompany ties are widespread in Veneto, where they count for almost half of the total (44.9%) and Friuli-Venezia Giulia (42.8%) (Istat, 2021).

Whereas, in the South cooperation is more intense with the public administration.

In some cases, intracompany cooperation and collaboration become so intense that the performance of one entity is related and influenced by the result of the others within the system. It is the case of industrial districts, a phenomenon resulting from peculiar urbanisation trends and the combination of culture and business activities.

A district is defined as a productive system located in a restricted geographical area with a large number of firms that are linked and involved in different stages of the production process for the realisation of a homogeneous good (Russo & Rossi, 1999).

The geographical perimeter is usually restricted as proximity is one of the main features of districts.

As stated by Becattini (1991), a scholar expert on the district's phenomenon, many small firms tried to expand their markets to make profits, despite having several reduced-scale difficulties in terms of production, sales, and financing. This occurred in the post-war era when Italian enterprises were experiencing a loss in competitiveness in favour of foreign competitors.

The academic suggests that the industrial district notion stems from Alfred Marshall's theories: a combination of several SMEs gathered in a restricted area can significantly expand their production. The essential point is the different levels and types of specialisations of businesses that "can find their labour supply in a single local market" (Becattini, 1991).

The aggregation of production systems throughout the country grew in a natural and prosperous way, fostered by a huge "material and immaterial heritage" (Ponzini, Gugu, & Oppio, 2015), and based on common infrastructures and values.

There is a combination between firms and people who live in the territory: the social and cultural identity of communities becomes and matches that of the district itself.

Furthermore, a district is not a sheer agglomeration of near-located businesses operating in similar sectors, yet it is a real socio-economic system, a community whose functioning depends not only on economic relationships but also on the coordination of a social, political and institutional organisation.

The local environment is the basis for district development. It is however also true the opposite: the district sustains the social development of the area by providing employment and by identifying with the territory, the people, and the culture (Sforzi, 2002).

As stated by Sforzi (2002), the land is characterised by its inhabitants, workers, traditions, customs, knowledge and all the legal, economic and social structures on which the district develops.

Usually, districts comprise a heterogeneous population of family-owned SMEs linked by informal and long-term bonds. Each company is highly specialised in a step of the manufacturing process so that they build derp linkages and are strongly dependent on each other. Labour division and specialisation are paramount: it should be possible to divide the production system into phases that can be transported "through space and time" (Becattini, 1991). Some firms sell final goods directly on the market, while other produce intermediate products for the final production of the district.

It is a "large production unit" (Becattini, 1991) where mechanisms are not rules but rather automatisms generally accepted and shared by the community.

The firms can be either intra- or infra-industry, but the result is the creation of an autonomous production system. In the first case, the business is specialised in one or a few stages of production, either upstream or downstream, in the second, the company is involved in related sectors (e.g. accessories, machines production, buildings) or supports activity for innovation and development within the district.

According to the phase they live in and the strategies implemented, districts can be classified as follows (Armano, Bondonio, & Cancila, 2010):

a) Dynamic: the performance is positive and export grows. The cooperation within the structure is effective and major firms lead for innovation and have a positive impact on other components;
b) Mature: there is a lack of an efficient governance system where collaboration is random rather than organised. However, the attachment to the territory is strong;
c) Vulnerable: the businesses compete rather than cooperate. The strongest firm governs;
d) Virtual: not proper districts, but areas where industrialisation is concentrated.

In 2011, Istat counted 141 industrial districts, constituting one-fourth of the country's production in terms of population (22%), occupation (24.5%) and local production units (24.4%).

Half of districts is located in the so-called 'industrial triangle' of Lombardy, Veneto and Emilia-Romagna (Istat, 2021).

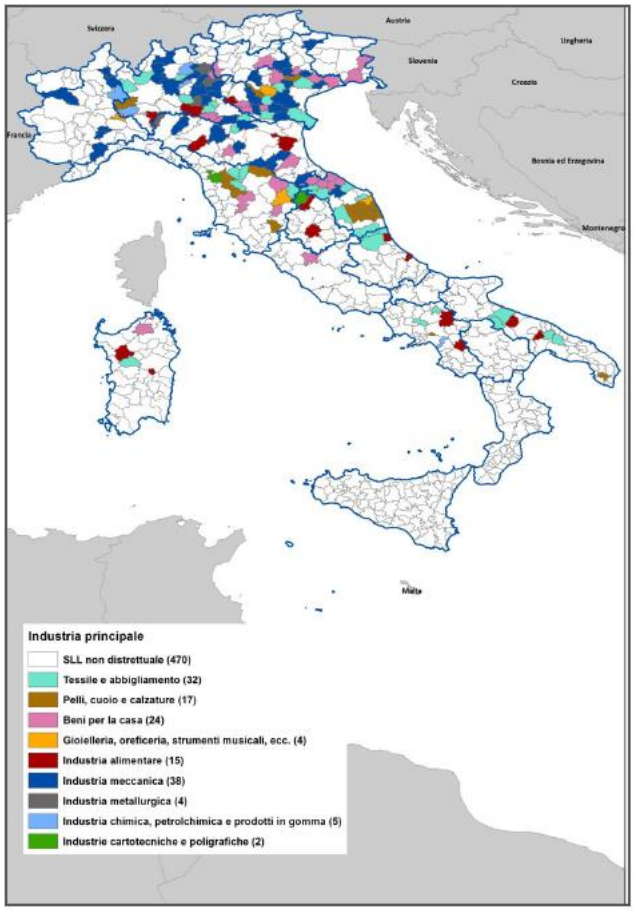
The North-East counts 45 districts, the North-West 37 and the Centre 38, as shown in Chart 3.

The most populated regions are Lombardy with 29 districts (20.6%), Veneto with 28 (19.9%) and Tuscany with 15 (10.6%) (Istat, 2021).

The sectors are:

- Textile and clothing
- Leather and shoes
- Furnishing
- Jewellery, musical instruments
- Food
- Mechanical
- Metallurgic
- Chemical, rubber products
- Paper

Figure 1 – Industrial Districts distribution in 2011



Source: Istat, 2021

Chart 3 – Industrial Districts per Region

Region	Districts	Percentage
North-West	37	26.2%

North-East	45	31.9%
Centre	38	27%
South	21	14.9%
Total	**141**	**100%**

Source: Istat, 202.

Another interesting aspect is that in 2011, nine districts out of 10 (92.2%) are specialised in *Made in Italy* products: mechanical (27%), textile and clothing (22.7%), furnishing (17%), leather and shoes (12.1%), food, jewellery and musical instruments (Istat, 2021).

Usually, districts have governance systems that pursue shared strategic goals, monitor and implement the desired objectives, rule the functioning of businesses and promote cooperation among firms.

The collaboration comes together with competition so that Becattini (1989) refers to "coopetition" as the mechanism governing the success of districts.

However, over the years, there has been growing cooperation among enterprises focused on specialisation in each stage of the production, expansion in new markets - especially abroad - and, if needed, resizing or revitalisation processes.

Districts can plan their development more efficiently than 'isolated' businesses. The optimisation of resources and the high level of specialisation allow the creation of economies of scale, by reducing the average cost and increasing productivity.

Not only, geographical proximity generates a reduction in transportation costs and cost savings thanks to shared resources.

Organisational efficiency, practical skills, strong know-how, expert workforce, and craftsmanship give a competitive advantage in the national and international market.

District performance usually has a superior capability of regularly selling abroad its products. To have strong credibility and appeal, they should convey to final markets the right message of their identity: in a certain sense, they summarise the image of the single enterprises part of the community (Becattini, 1991).

Selling *Made in Italy* products helps these conglomerations to dominate foreign markets by offering fine, high quality, and unique final goods (usually food, textile and clothing, leather and shoes, furnishing). The Italian industry is indeed specialised in sectors with high levels of know-how, design, creativity.

Furthermore, the high level of flexibility, both in terms of adaptability and innovation is granted by a system whose firms can transmit know-how and skills through informal channels.
The productive infrastructure is organised to quickly respond to consumer demand and market trends.
To summarise, industrial districts have high flexibility, rapid adaptability to market trends, stronger productivity and possession of know-how, organisational skills and innovative attitude. It is a (quasi) market system with a stable social structure.

Despite their functioning has been thoroughly analysed, the literature has not covered yet one important point: the optimal capital structure and access to financing.
Business concentration in a limited area could facilitate relationships with banks resulting in better conditions in credit access.
Not only, greater efficiency and flexibility make the system more resilient which means better performance and a solid reputation among the general public and the financial community (Giordano, Pastore, Primerano, & Tommaso, 2016). This implies smoother access to financing. Several studies, indeed, have tried to demonstrate whether SMEs within districts have greater – and better – access to bank financing than those competing alone.
It seems, indeed, that in Italy the geographical location of firms might influence the cost of financing and the credit access to external borrowing.
A paper from Russo and Rossi (1999) refers to this phenomenon as the “district effect”, i.e. lower cost of bank financing and easier credit access thanks to geographical proximity and cooperation among firms. A coordinated network of firms enjoys, indeed, stronger bargaining power towards banks than that of isolated businesses.
According to Becattini (1999), given the proximity, the local bank has a paramount role in the district infrastructure as it owns superior and more detailed information than a generic bank. Less information asymmetry results in lower moral hazard and larger credit availability for enterprises. The control and pressure exercised in an unspoken way by other firms of the district tend to reduce opportunistic behaviours that would cause negative externalities for the whole system.
A previous study by Russo and Rossi (1999) conducted on 1,700 manufacturing firms analysed whether firms located within districts have different characteristics in terms of capital structure, access to bank lending and borrowing conditions. In particular, the results are interesting.
Firstly, community businesses pay cheaper financial charges to their lenders.
Secondly, they borrowed from local banks more than isolated firms.

Thirdly, during crises local banks tend to support businesses, while generic institutions implement credit crunches and raise interest rates (Armano, Bondonio, & Cancila, 2010).
The result is that the overall leverage is higher within districts considering the same industry.
However, some other aspects should be considered in district financing.
Defining the borders of districts is not always easy and immediate and it is even harder to assess a single company. The strong interconnection and the dense network of relationships make the identification of single entities more difficult. Strong ties can result in a higher concentration of credit risk for banks, much more than for identical-isolated businesses.
Furthermore, many shared assets belong to the district, not attributable to a single enterprise. Such assets, referred to as goodwill, contribute to the overall performance and are not therefore ascribable to any single firm, rather they result from the cooperation and social-economic structures on which the district is based.

2. INDUSTRIAL DISTRICTS: GENERAL OVERVIEW AND ANALYSIS OF THE DATASET

2.1 The footwear district of Riviera del Brenta

The area of Riviera del Brenta, located among Venice and Padua, hosts one of the most iconic and long-established industrial districts, specialised in footwear production.
The area is extended to the municipalities in the province of Venice - Campagna Lupia, Campolongo Maggiore, Camponogara, Dolo, Fiesso d'Artico, Fossò, Pianiga, Stra, Vigonovo - and Padua - Arzergrande, Brugine, Casalserugo, Codevigo, Correzzola, Legnaro, Noventa Padovana, Piove di Sacco, Polverara, Pontelongo, Sant'Angelo di Piove di Sacco, Saonara, Vigonza, Villanova di Camposampiero (Innoveneto, 2019).
According to a research by the Veneto Region (2019), the district includes 552 local units (comprising also public and non-profit institutions), with an estimated turnover of 1.5 billion euros.
The footwear cluster offers luxury shoes characterised by a high sense of style, quality and precision.
The layout is classic and targets both women and men but is oriented mainly to the couture female segment (Belussi & Scarpel, 2002).
Design and quality are ensured by small batch production where specialised manufacturers create fine shoes that are in large part sold abroad, as the district is strongly export-oriented (Rabellotti, 2003). The shoes of Riviera del Brenta combine precision, the elegance of shape and design, distinguishing features of *Made in Italy* products.

The roots of the district originate from the 13th century when the Venetian "calegheri" instituted the first association of shoemakers in 1268.
Since then, many corporations were established in the territory.
The structure of the modern district started in 1898 when Giovanni Luigi Voltan founded the first footwear company near Stra, a tiny village around Venice (Belussi & Scarpel, 2002).
Voltan was the first to introduce an advanced manufacturing system in a very traditional and artisan production such as that of shoes. Recalling *Fordism*, he established the first shoe factory entirely mechanised in Italy.

The techniques apprehended in the US and the use of new technology led Voltan's firm to expand in a short time. The use of machines allowed to reduce costs, realise bigger production and create a network for direct sale to final consumers.

Such a phenomenon was exceptional considering the predominance of craftmanship in Made in Italy products and the resistance of Italian consumers to recognise quality in large-scale and automated production.

At this initial point, social imitation (Belussi, 2000) helped the formation of the industrial district. Artisans exploited the notions of Mr Voltan and started to create their workshops, being that the first step in the birth of the district (Belussi & Scarpel, 2002).

The establishment of art schools for artisans and labourers in 1923 encouraged the formation of the modern footwear district.

In the following decades, the areas of Stra, Fiesso d'Artico and Mirano witnessed the settlement of many industrialised businesses, adding to the existent laboratories.

However, the outstanding success occurred after the Second World War, between the 50s and the 70s, when production was estimated to increase by 368% (Gaibisso, 1992).

The sized dimension of factories and the diffusion of homeworkers gave birth to an elastic production chain, ideal for accommodating different trends of demand, which varied for taste and shoe type.

The shoes of Brenta were particularly appreciated also abroad: in a few years, the pairs exported went from 16% to 60%, with the German market absorbing the biggest stake.

The success relies on a winning value for money - delivered by an efficient and dynamic organisational structure -, superior quality items and direct access to raw materials of the neighbouring leather district of Arzignano.

The functioning of Riviera del Brenta is based on production decentralisation (Belussi & Scarpel, 2002) that, over the years, has become stronger and more efficient with clear goals: satisfying demand peaks and benefitting from the convenient cost of labour with the use of irregular and temporary contracts. Little factories, indeed, hire expert manufacturers for each phase of the process. Some more specific activities such as hemming and cutting are externalised.

Together with labour division, collaboration among businesses is significant and affects the production, distribution and commercialisation of shoes, creating a sort of hierarchisation.

Small firms, indeed, manage the whole production system by internalising the most advanced technologies and controlling the last steps of the cycle (Belussi & Scarpel, 2002).

This allowed an advanced specialisation within each production unit and the formation of specific skills for each phase of manufacturing.
The firms operating in Brenta are diverse as they carry out different activities:

- Firms directly serving the final market.
  The medium-sized ones have exclusive partnerships with sellers and agencies and pursue independent selling strategies: offer a niche product in small quantities.
  The smallest entities approach the market through international exhibitions or acquisition groups of importing countries.
  Micro artisan laboratories rely on sub-supply contracts with more structured companies that use them to cope with unexpected demand peaks.
- Parts and components producers.
  Some of them became real leaders, thanks to research and innovation activities they adapted to specific needs.
  Moreover, they were able to maintain a certain level of independence towards shoes producers, with which they established stable commercial links (Belussi & Scarpel, 2002).
  The diversification of the client base, as they naturally work for several shoes manufacturers, reduced their vulnerability and created economies of scale thanks to specialisation and standardisation of their work.
- Commercial firms.
  Essential for small entities' survival without access to the final market.
  The commercialisation of the product, indeed, has always been the shortcoming of the district as very few firms internalise this function.

Furthermore, firms can operate at different levels as contractors, with their brand, or working for other brands.
The first are usually at the top of the productive chain and perform purely manufacturing activities.
Businesses with a trademark suffer more than others, especially if their brand is not sufficiently competitive among consumers.
Companies working for others, instead, can survive difficult periods with more stability given the support of other brands: long-term partnerships prompt enhancement of internal processes and investment in R&D delivering the best service and quality possible. Not only concerning

process rearrangement but also product innovation, which responds to models of shoes created by designers.

Given the expertise shared within the district, over the years luxury companies targeted firms of Riviera del Brenta as the preferred producers for subcontracting, recognising their refined manufacturing skills.
Despite being an unquestionable recognition of success for the area and a growth opportunity, some "undesired" effects arose.
It created cost competition within the district as subcontractors committed to offering better conditions than their district competitors and even suppliers of countries with low cost of labour, therefore creating an international market of sub-supply (Belussi & Scarpel, 2002).
Subcontractors aim indeed to establish solid bonds with large international fashion groups and commit to maintaining them in the long term.
To conclude, the success of the Stra shoes before, and of Brenta later relies on a competitive product with high value for money, a strong reputation on international markets and a significantly flexible production (Belussi & Scarpel, 2002). The restricted dimensions of production units, together with capable and experienced professional manufacturers allowed de-verticalization which largely benefitted from the cooperative linkages with the neighbouring tannery district of Arzignano, that supplied the best quality leather and contributed to the creation of significant synergies (Belussi & Scarpel, 2002).
To conclude, the determinants of Riviera del Brenta's success in the 60s can be summarised in a few points:

- The adaptability of the productive system;
- Development of collaborative bonds and realisation of economies of scale;
- Cost advantages with respect to importing countries;
- Significant growth of local and international demand, fostered by increased wealth;
- Expansion of desire for fine footwear products;
- Permeation of manufacturing activity into the daily life of the community.

In 2001 the district, in order to preserve its identity and strengthen its competitiveness abroad established the Footwear Polytechnic in Capriccio di Vigonza, in the province of Padua.
The institute aims at fostering research and innovation of production systems, handles the technical formation of workers and entrepreneurs, and improves the quality of services and work environment.

2.2 The metallurgic district of Lecco

The productive system of Lecco constitutes a centre of primary standing in Lombardy and all the country. The area has a long vocation in the metallurgic and textile sectors, thanks to the wide availability of raw materials.
Over the decades, the diffusion of traditional manufacturing of metallics created the premises for the birth and development of the modern metallurgic district (Valassi).
It specialises in the production of metals and their alloys and the realisation of derived products. Currently, it comprises 40 municipalities between the provinces of Lecco, Como and Monza-Brianza with more than 1500 businesses, representing 10% of the total in the sector and generating a value added of around 500 million euros, of which 40% is exported (Distretto Metalmeccanico Lecchese).

The success of the territory dates to the 50s, when local entrepreneurs' initiatives and qualified workers' expertise promoted an outstanding expansion. In those years, many activities moved to Milan maintaining connections with the territory of Lecco. The influence of an industrialised city created the opportunity for developing sophisticated techniques and launching new initiatives (Valassi).
During the 80s, the firms of the district promoted a resizing of products offered: they started to differentiate with better quality productions, diversify the risk by targeting new international markets, and internalise activities with the highest value added.
New production factories were opened especially abroad, instead of expanding local firms: the productive chain remained very slim.
The district assumed a star-shaped structure with management and design functions being run by parent companies: they had a coordinating role and became main committers to several small businesses (Valassi).

Nowadays, the region is characterised by a widespread network of engineering firms with a fully integrated, interconnected, and specialised production chain.
The entities are either suppliers of well-known brands or sized businesses leading specific market niches (Distretto Metalmeccanico Lecchese).
In the first case, the cooperative relationship with big companies promotes the mutual exchange of knowledge. However, the absence of exposure to final consumers could result in overlooking

market trends and in a slower innovative attitude, being more focused on maximising productivity and cost efficiency.

In the second case, the strategy implemented addresses niche markets: specific categories are targeted with low volumes. Together with the smallness of businesses, it allowed great specialisation and qualified technical expertise: specific engineering issues can be rapidly solved.

As a result, the population of companies is flexible, thin and dynamic ensuring responsiveness to market changes, high-quality items and effective services to customers.

Recently, firms have started to decentralise giving a new layout to the productive chain: digitalised management, new planning structures, standardisation of intermediate goods and flexibility of manufacturing techniques.

The result is a "strategic adaptability to change" (Valassi) that, together with the cheap cost of labour and expertise in the steel industry of experienced businessmen, represents the major competitive advantages.

A hallmark of the district of Lecco is, indeed, the presence of a homogeneous entrepreneurial class both for generation and cultural identity: in 1965, 15 businessmen established in the city the first Italian export-oriented consortium: Ilexport.

A survey conducted by Intesa San Paolo, shows that in 2021 exports reached 1.9 billion euros with a 24.3% increase in 2021 and 3.1% in 2020, suggesting a full recovery to pre-Covid levels (Intesa Sanpaolo, 2022).

To give a better idea, the export of Lecco district weighs 25% of Lombardy and 12% of Italy (Il Giorno, 2018) which is outstanding considering the restricted stake of firms based in the area. Nowadays, the main export destinations are Germany, France and Switzerland.

2.3 The tannery district of S. Croce

In the flourishing region of Tuscany, the tannery district of S. Croce covers around 10 km in the province of Pisa and is widely known for leather manufacturing.

The district comprises the municipalities of Castelfranco di Sotto, Montopoli Val d'Arno, Santa Croce sull'Arno, Santa Maria a Monte, San Miniato and Fucecchio (the only in the province of Florence) hosting around 90 thousand people.

The area is the second pole for leather processing, after the one located in Arzignano, as it creates 35% of the national production (Assoconciatori) with a total turnover of 2.4 billion euro in 2018, of which 70% was generated with export (Pieraccini, 2018).
The area specialises in the transformation of raw animal skin, obtained from slaughter, into leather. As the final product is used for bags and accessories in the haute couture, the result must be flawless, resistant, elastic and breathable.
According to the leatherworkers association, in 2015 the area hosted the highest population of businesses in leather processing as it counted 600 firms, equally divided among tanneries - that process the leather and realise the final product - and subcontractors - specialised in specific steps of the supply chain (Assoconciatori).

The first activities in animal skin's process in Tuscany date to half of the 19th century, but the consolidation occurred between the 50s and the 70s when productive plants were moved from cities to industrial areas with wider area and space.
Furthermore, leather production was eased by the geographical characteristics of the territory: water availability thanks to proximity to the river Arno, extended woods that provide vegetal ingredients used in leather transformation, capable workforce and well-organised infrastructures.
The district was formally established in 1995 and thanks to centralised coordination and promoting activities of the management body (composed also of local public institutions, category associations, trade unions and consortia), the region has earned the name of international pole for leather and hide.

The district of S. Croce is characterised by a large number of medium, small, and micro firms with high levels of specialisation in specific phases of the productive chain.
Dimensions vary depending on machinery used and the type and number of phases carried out within the business.
The area presents a peculiarity with respect to other districts: the businesses operate in the whole supply chain, from leather processing to delivery of the final product.
This feature does not involve single entities of the area, as it would be impossible to internalise all steps and remain profitable, yet it regards the district as a whole.
Therefore, tanneries with a fully internalised production are very rare, as the whole process is complex making it not sustainable nor affordable to deal with all manufacturing phases,

especially due to the economic burden required for machinery, plants, equipment and a trained workforce.
Nonetheless, the district is not a closed and independent entity for different reasons.
Firstly, most tanneries work for clients outside the organisation: fashion companies, as they represent the main buyers (Il Post, 2015).
Secondly, product design is made by external stylists.
Finally, the district is interconnected with upstream firms - for materials supply - and downstream - for the commercialisation of final products (Airoldi & Zattoni, 2002).
Consequently, work organisation is based on the fragmentation of the industrial cycle in different steps: mechanical processing is assigned to contractors, selected depending on specific needs and becoming *de facto* de-centred divisions for shoes realisation, while tanneries perform the chemical transformation.
Furthermore, over the years the district witnessed the establishment of firms carrying out related activities, like chemical products and machines, and becoming paramount for whole system survival.
Hence, the district relies on an associative structure with a strong integration among economic and institutional entities. Businesses search for cooperative ties with long-term strategic goals where demanding qualitative standards are required by committers.
As a result, the performance of the district and its growth relies on interdependent bonds among various economic actors, especially considering the sized dimension of businesses.

Tanneries usually rely on partnerships with their suppliers: the subcontractors, that must respect strict standards to satisfy final clients, i.e. the international groups of the fashion industry.
Suppliers mainly provide:

- Raw materials or semi-finished products, where quality is paramount;
- Machinery and equipment, with increasing care for efficiency and security issues, both in terms of workforce safety and environment (Giannini, 2016);
- Chemical products, with increasing attention to ESG impact;
- Services, provided by accountants, engineers and technicians.

However, it must be said that the cooperation is only partially related to the necessity of improving the cost structure, rather it responds to the demand for quality and craftsmanship ensured by certified management systems.

The designers of the most famous brands commit to tanneries fine products for their collections. In this context, timing and quality are cardinal and due to large volumes of orders, they hold a strong bargaining power. Hence, SMEs of industrial districts are strongly dependent on their committers (in terms of revenues and reputation).

It is indeed true that for each big *maison*, there are many tanneries and local factories that could replace each other. Recently, contractors have been suffering from strong competitiveness becoming vulnerable: without long-term contracts, they would struggle to cope with unpredictable demand characterised by long depressing periods and short peaks.

As a result, district firms are trying to distinguish them from competitors.

First of all, they enhanced the productive structure with advanced machinery capable of delivering better productions. A new form of innovation spread out: deliver a unique product either in terms of quality or features, without impairing the cost efficiency.

Several successful ideas originated from production adaptability combined with qualified manufacturing. With this regard, human capital is a competitive factor itself, as many activities cannot be replaced by machine automation and every step of manufacturing is guided and supervised by headcounts.

Furthermore, some firms started to accept a maximum number of orders by a single client in order to reduce their dependency and vulnerability. By doing so, they have been able to diversify the demand and avoid sudden reduction of sales in case of big clients loss.

Notwithstanding with severe competition and recent recession that affected the entire economic system, the district of S. Croce continued to be one of the most performing.

The major success factors were identified in the:

- Specialisation and delivery of a fine product, thanks to advanced techniques for refinishing leather;
- Long-settled tradition granted by shared behavioural habits and developed information channels (Camuffo & Grandinetti, 2005);
- Entrepreneurial abilities: local tanneries have been able to expand into structured firms with skilled workforce (Camuffo & Grandinetti, 2011) reaching internationally recognised clients;
- Presence over the territory of all the activities within the leather production chain: geographical proximity boosted cooperation, knowledge transmission and synergies creation;
- Human capital, essential in each aspect of the process;

- Production flexibility, research and innovation as large investments were deployed;
- Marketing;
- Relations with the most valuable luxury brands creating competition among suppliers. They were prompted to increase productivity and know-how and to focus on quality and service. Some of them even invested directly in local firms or created joint ventures with entrepreneurs in order to deliver flawless products.

2.4 The agricultural district of Gragnano

The region of Campania has a historical food vocation, testified by the international popularity of local ingredients and traditional recipes that represent a considerable source of wealth.
The entrenched tie of the territory with the agricultural world is traceable in the 28 products protected by DOC, DOCG and DOP labels and in the good results of the sector, which outperformed the manufacturing one.
The province of Naples hosts a big concentration of businesses that stand out for fruit and vegetables, dairy products and wheat derivatives, the main ingredients of the traditional Mediterranean diet of Southern Italy.
The drivers of the sector's success are quality, authenticity and tradition combined with long experience and mastery.
In 1997 the Region recognised the agricultural district of Nocera Inferiore-Gragnano, nowadays populated by more than 30 thousand enterprises and 50 thousand employees and extending to 19 municipalities, 15 of which are in the province of Salerno (Angri, Baronissi, Bracigliano, Castel San Giorgio, Corbara, Mercato San Severino, Nocera Inferiore, Nocera Superiore, Pagani Roccapiemonte, San Marzano sul Sarno, San Valentino Torio, Sant'Egidio del Monte Albino, Sarno, Scafati, Tramonti) and 4 in the province of Naples (Gragnano, Lettere, Santa Maria la Carità, Sant'Antonio Abate).
Beyond tomato cultivation, which is undoubtedly the excellence of the territory, the district is internationally celebrated for the finest quality production of pasta, protected by the IGP label since 2010.
The development of the area was encouraged by the presence of water and favourable soil conditions making it suitable for farming activity.
The little town of Gragnano, indeed, benefits from a strategic geographical position: it rises on top of a valley full of mountain springs, close to the sea, with windy and very warm weather.

This confers to the pasta a particular taste, recognised since the 6th century when the dehydration of the product occurred still outside.

The district consists of a few big enterprises and many small entities with strong and defined labour division and *one-to-one* relationships among operators (Fiorillo & Guadalupi, 2005).
The fragmentation of the productive process is large so subcontracting and commission orders are frequent. A survey by Tagliacarne (Fiorillo & Guadalupi, 2005) pointed out that one-third of firms have relations within and outside the local district. Of the intra-district ties, the majority are subcontracting (35%) and manufacturing orders (26%) as the more productive steps are assigned to external firms, whereas strategic decisions are taken within the district.
These involve research on raw materials, innovation, logistic organisation, advertisement, quality control, distribution channel and commercialisation. Such steps can be structured within a single vertically integrated company or a network of operative and decisional units with a decentralised structure.
The system is organised around several small and single-phase firms supervised by a function or by another company, responsible for the cohesion of the district production chain.
The Gragnano district is in fact built on a network model where a big central entity takes the strategic and financial decisions, builds and develops relations with the outside (from suppliers to final customers), and manages the activity of the small production units, usually subcontractors. The latter are executors that process orders and have weak decisional autonomy and bargaining power.
It is called "leader-follower relation" (Fiorillo & Guadalupi, 2005) where leaders exploit followers' capacity of absorbing short-term shifts in final consumers' demand.

Two aspects of the Gragnano-Nocera Inferiore production centre should be highlighted: the limited role of export and lack of innovation.
Firstly, exportations are much lower than that of any other industrial district of the country.
According to the Tagliacarne Institute (Fiorillo & Guadalupi, 2005), 74% of pasta production stays within the province of Naples and only 12% of the remaining part is traded outside national borders. The internationalisation is even lower if considering that most foreign sales is directed to other firms, not directly to the final market.
Secondly, the type of production (which requires less innovation than other sectors) and the district structure have not favoured the development of advanced research centres or functions.
The main aspects hindering a proper evolution of R&D activity is traceable in:

- Productive subcontracting, which focused strategic decisions on ordering parties therefore limiting contractors' internal growth that have inadequate research and innovation functions;
- Excessive fragmentation, causing insufficient financing resources for R&D.

For this reason, the district of Gragnano, more than the others analysed in the present thesis, fully reflects the features of the Italian entrepreneurial structure characterised by numerous SMEs with weak competitiveness abroad and a lack of significant innovations.

2.5 Analysis of dataset

A brief description of the functioning, structure and production of the selected industrial districts have been proposed.
In the following paragraph, the thesis will focus on analysing the dataset and the main features for contextualising each district and then for developing an empirical analysis, presented in Chapter 3.
It is difficult to provide homogenous data on such diverse systems like industrial districts, located in different regions and operating in several industries. In order to make a coherent comparison, the dataset has been constructed by extracting information from the database *Aida* which contains the financial statements registered by all Italian companies.
However, the information available involves only the so-called "*società di capitali*", i.e. companies under the limited liability provision. Consequently, in conducting the present research, some information might be lost or distorted by the fact that small activities, which usually have an unlimited liability provision, are not considered.
For each district, the coherent Ateco codes (referring to the activity performed by a firm according to Italian law) and geographical settlement have been selected to extract information on businesses belonging to the selected districts.
In particular, in this chapter the information regarding headquarters, type of activity, number of employees, sales, total assets, EBITDA margin and Debt over Equity ratio are used as generic indicators for defining and comparing the main characteristics of each industrial district: size, structure, dimension, productivity and indebtedness. The data refer to 2021.

2.5.1. Brenta

The Ateco codes used for selecting firms of the Brenta district are:

- **15.20.10**: Shoes manufacturing;
- **15.20.20**: Hide shoes components manufacturing;
- **16.29.11**: Wood shoes components manufacturing;
- **22.19.01**: Soles and other shoes parts production;
- **22.29.01**: Plastic parts for shoes production;
- **46.42.40**: Wholesaler of shoes;
- **47.72.10**: Retailer of shoes.

The municipalities considered in the Venice province are:

- Campagna Lupia;
- Campolongo Maggiore;
- Camponogara;
- Dolo;
- Fiesso d'Artico;
- Fossò;
- Pianiga;
- Strà;
- Vigonovo;

and in Padua:

- Arzergrande;
- Brugine;
- Casalserugo;
- Codevigo;
- Correzzola;
- Legnaro;
- Noventa Padovana;
- Piove di Sacco;
- Polverara;
- Pontelongo;
- Sant'Angelo di Piove di Sacco;

- Saonara;
- Vigonza;
- Villanova di Camposampiero.

The dataset is composed of 180 firms, of which 114 are headquartered in the province of Venice (63.33%) and 66 near Padua (36.67%).

The most populated areas are Fiesso d'Artico, Vigonovo, Fossò and Noventa Padovana with 29, 28, 23 and 20 enterprises respectively.

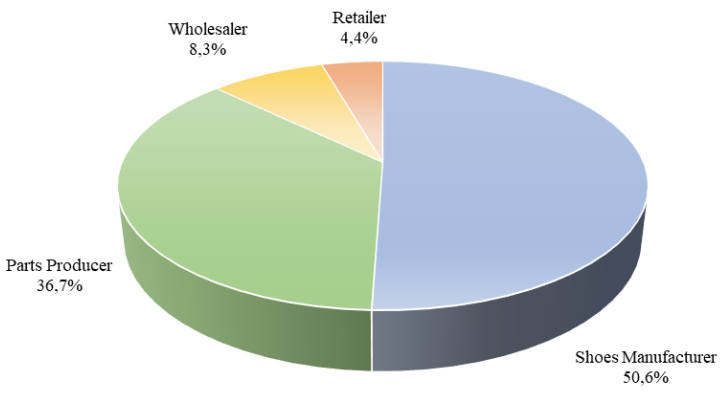
As shown in Chart 4 and Graph 6, and consistent with the structure of the district, half of businesses are shoes producer and one third are parts and components manufacturers, constituting together 87% of the total.

Chart 4 – District composition by type of activity

ACTIVITY	**FIRMS**	**PERCENTAGE**
Shoes manufacturing	91	*50.6%*
Hide shoes components manufacturing	55	*30.6%*
Wood shoes components manufacturing	2	*1.1%*
Soles and other parts production	1	*0.6%*
Plastic parts for shoes production	8	*4.4%*
Wholesaler of shoes	15	*8.3%*
Retailer of shoes	8	*4.4%*
TOTAL	**180**	***100%***

Source: personal elaboration.

Graph 6 – District composition by type of activity



Source: personal elaboration.

The population is mainly composed of small and micro firms, which constitute almost 90% of the sample and which is probably higher if considering that the most sized enterprises are not present in the Aida database.

The result is aligned for all three criteria considered: turnover, number of employees, and total assets. Chart 5 provides the dimension of the sample.

Chart 5 – Distribution of firms by size

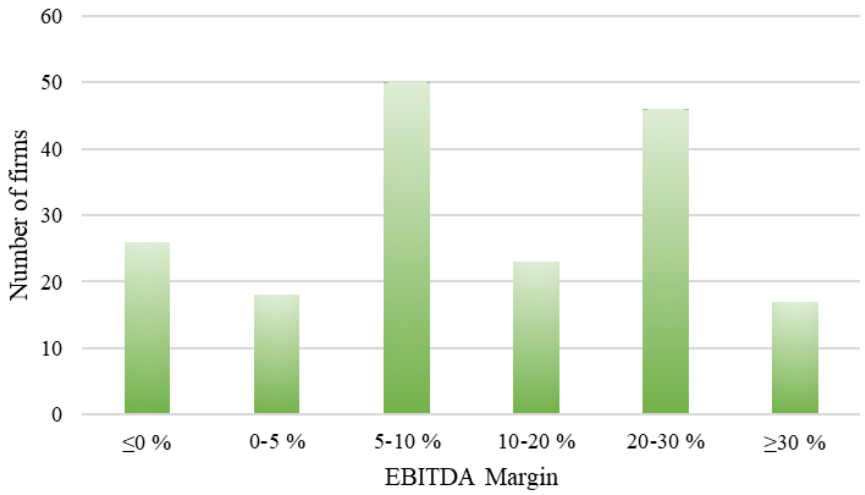
SIZE	**TURNOVER (€)**	**PERCENTAGE**	**EMPLOYEES**	**PERCENTAGE**	**ASSETS (€)**	**PERCENTAGE**
Micro	≤ 2 mln	*60.5%*	≤ 10	*48.3%*	≤ 2 mln	*62.8%*
Small	≤ 10 mln	*27.8%*	≤ 50	*38.9%*	≤ 10 mln	*25.5%*
Medium	≤ 50 mln	*10%*	< 250	*11.7%*	≤ 43 mln	*8.9%*
Big	> 50 mln	*1.7%*	≥ 250	*1.1%*	> 43 mln	*2.8%*
TOTAL		***100%***		***100%***		***100%***

Source: personal elaboration.

Therefore, for each criterion used, almost all entities have very limited dimensions, with annual sales and total assets between 2 and 10 million euros and little workforce.

Concerning the profitability, EBITDA Margin (EBITDA/Sales) and ROE (Profit/Equity) were considered. With respect to the first measure, the distribution is more homogeneous, as shown in Graph 7.

Graph 7 – Distribution of firms per EBITDA Margin



Source: personal elaboration

The data point out a satisfying level of operative income: 50 firms out of 180 (28%) have an EBITDA Margin between 5% and 10%, equally distributed in the interval. Another set of businesses registered even better performance: 46 enterprises position in the 20-30% range representing 26% of the sample.

Nonetheless, a considerable group of operators closed 2021 with negative EBITDA, some of which with significantly negative results: the lowest value reaches up to -214%. Despite being firms that will likely disappear, as the business is not sustainable anymore, it cannot be ignored the fact that almost 15% struggle to create operative returns (negative margin).

Furthermore, the sample is distorted by the fact that only surviving companies are considered, neglecting the ones that ceased their activity over the years and overestimating the performance of the district.

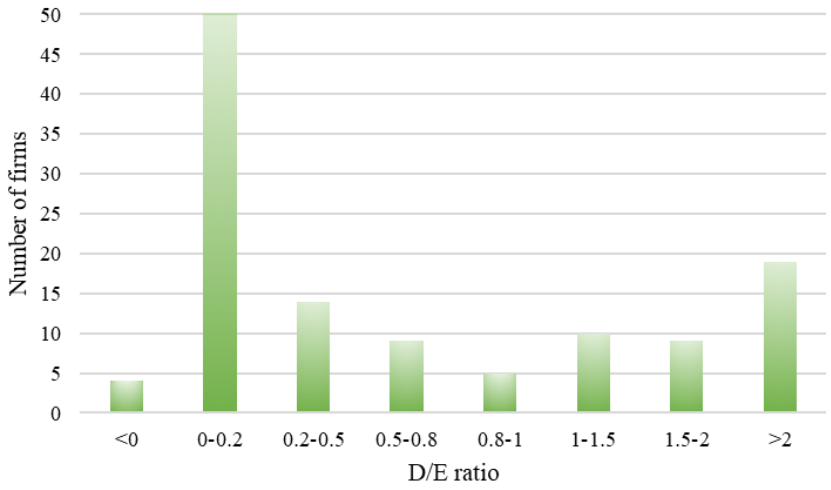
To conclude the general overview of the district of Riviera del Brenta, the level of indebtedness is considered by taking the Debt over Equity ratio (hereinafter D/E ratio).

The distribution is anything but homogeneous: 42% of the dataset shows a normal level comprised between 0 and 0.2 which means low financial debts, amounting to less than 20% of the equity.

Nevertheless, there are some cases of serious financial disequilibrium: more than 15% of firms have debts twice the amount of equity.

Graph 8 proposes a histogram showing the distribution.

Graph 8 – Distribution of firms per D/E ratio



Source: personal elaboration

To conclude the overview of Brenta districts, the area is characterised by many micro and small firms with a coherent structure considering the variables of total assets, total turnover and workforce.
Most businesses focus on shoes production, the core activity of the district, with a relevant group of entities involved in components manufacturing.
However, the district incorporates also companies that directly serve the final market, i.e. retailers, or that supply to vendors, i.e. wholesalers.

2.5.2 Lecco

The metallurgic district of Lecco is analysed by taking information from 485 firms located in different municipalities in the provinces of Lecco, Como, Monza-Brianza and Bergamo:

- Abbadia Lariana;
- Annone;
- Barzago;
- Besana Brianza;
- Bosisio Parini;
- Briosco;
- Brivio;
- Bulciago;
- Calolziocorte;
- Canzo;
- Caslino d'Erba;
- Cassago Brianza;
- Castello di Brianza;
- Castelmarte;
- Cesana Brianza;
- Cisano Bergamasco
- Civate;
- Dolzago;
- Eupilio;
- Galbiate;
- Garbagnate Monastero;

- Garlate;
- Lecco;
- Longone al Segrino;
- Malgrate;
- Mandello del Lario;
- Molteno;
- Monte Marenzo;
- Oggiono;
- Olginate;
- Pescate;
- Proserpio;
- Pusiano
- Renate;
- Rogeno;
- Sirone;
- Suello;
- Valgreghentino;
- Valmadrea
- Veduggio con Colzano.

Lecco has the highest concentration of firms (82%), followed by Monza-Brianza (10%), Como (6%) and Bergamo (2%).
The Ateco codes selected to capture businesses within the district are:

- **24**: Metallurgy;
- **24.1**: Iron metallurgy;
- **24.2**: Manufacture of tubes, conduits, hollow sections and related steel accessories;
- **24.3**: Manufacture of other products for steel processing;
- **24.4**: Production of precious metals and other non-ferrous metals;
- **24.5**: Foundries;
- **25**: Manufacture of metal products (excluding machinery and equipment);
- **25.1**: Manufacture of building metal elements;
- **25.2**: Manufacture of tanks, radiators and metal containers;
- **25.4**: Manufacture of arms and munitions;

- **25.5**: Forging, drawing, stamping and metal profiling;
- **25.6**: Treatment and coating of metals; general mechanics activities;
- **25.7**: Manufacture of cutlery, tools and articles of hardware;
- **25.9**: Manufacture of other metal products.

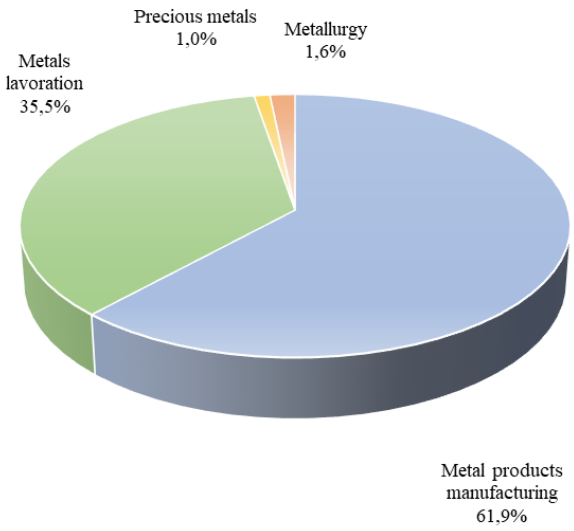
Most activities, as highlighted by Chart 6, focus on manufacturing metal products (Ateco 24.2, 24.3, 25, 25.1, 25.2, 25.4, 25.7, 25.9) which commits 62% of the overall activity. The remaining stake is mainly involved in metals and steel processing: activities carried out by foundries and other types of entities involved in complex processes such as forging and drawing (Ateco 24.5, 25.5, 25.6). District composition is shown in Chart 6 and Graph 9.

Chart 6 – District composition by type of activity

ACTIVITY	**FIRMS**	**PERCENTAGE**
Manufacturing of metal products	300	*61.9%*
Metals processing	172	*35.5%*
Precious metals production	5	*1%*
Metallurgy	8	*1.6%*
TOTAL	**485**	***100%***

Source: personal elaboration

Graph 9 – District composition by type of activity



Source: personal elaboration

The district is populated by micro and small firms for the 80%, considering the three criteria provided by the European Commission: sales, total assets and number of employees.

Chart 7 – Distribution of firms by size

SIZE	TURNOVER (€)	PERCENTAGE	EMPLOYEES	PERCENTAGE	ASSETS (€)	PERCENTAGE
Micro	≤ 2 mln	*49.5%*	≤ 10	*51.6%*	≤ 2 mln	*44.9%*
Small	≤ 10 mln	*33.4%*	≤ 50	*37.7%*	≤ 10 mln	*36.1%*
Medium	≤ 50 mln	*14%*	< 250	*9.7%*	≤ 43 mln	*15.1%*
Big	> 50 mln	*3.1%*	≥ 250	*1%*	> 43 mln	*3.9%*
TOTAL		***100%***		***100%***		***100%***

Source: personal elaboration

The dimension of Lecco is bigger than that of Brenta especially if considering total assets (Chart 7). The former, indeed, presents more medium-sized firms: they account the 15%, whereas in the footwear cluster they were only 9%. Such difference is offset also by fewer micro entities: 45% against 63% in Brenta.

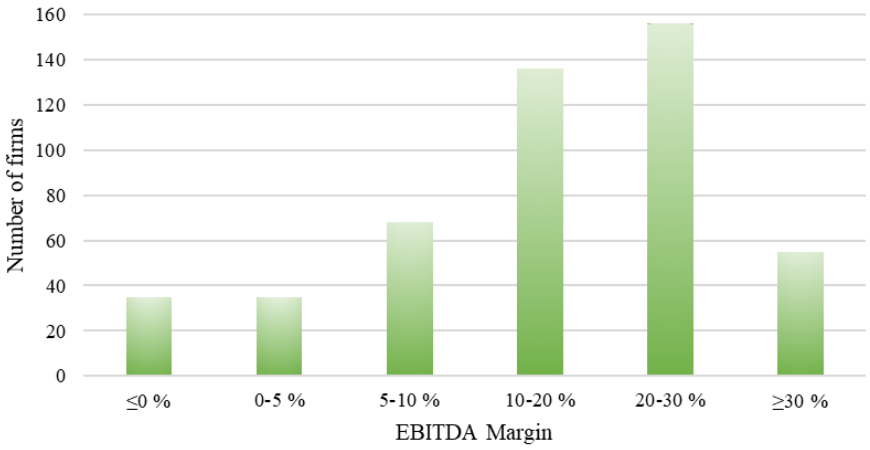
The same trend is true also considering sales, even if less relevant (14% in Lecco against 10% in Brenta).

Nonetheless, the opposite is true for the workforce: the shoe district presents more medium businesses (12%) than the metallic one (10%).

Such difference can be explained by the different nature of activities performed: while shoes production needs high productivity, technique and skills, and it is a human-intensive business; metal and steel processing are capital intensive, as large amounts of assets (property, plants, machineries) are required. It is therefore understandable that some differences arise depending on the criteria used to define the size.

Regarding the profitability of the sector, a significant part of the sample performs with outstanding EBITDA margins: half of them deliver a margin between 10% and 30%, especially in the 20-30% range, as shown in Graph 10.

Graph 10 – Distribution of firms per EBITDA Margin



Source: personal elaboration

It might seem that the Lecco district is more profitable than Brenta. However, some clarifications are needed.

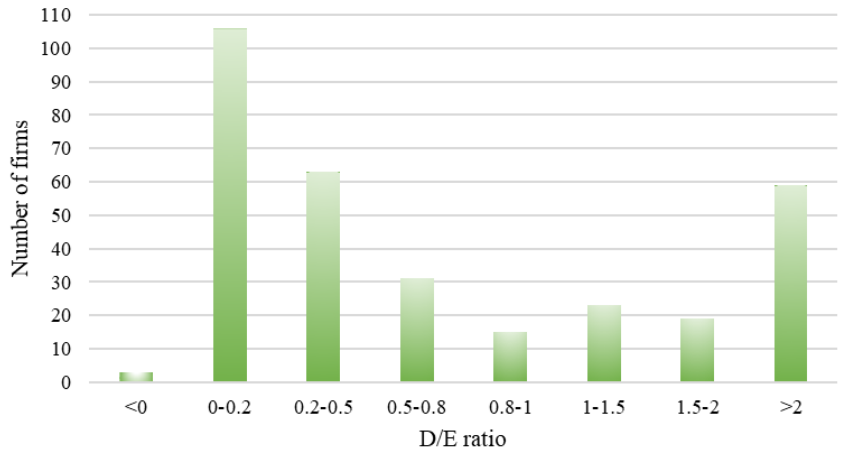
Firstly, as for the dimension, the different nature of the activity performed might affect and distort results. The huge amount of fixed assets required by the industry in Lecco implies that its companies have significantly higher depreciation and devaluation items, that are not considered by EBITDA.

Secondly, capital intensiveness usually means higher indebtedness and therefore burdensome financial charges, not recorded by EBITDA either.

The empirical demonstration of different leverage (motivated by different financial needs) is traceable in the D/E ratio.

The following Graph (11) shows the results of our sample.

Graph 11 – Distribution of firms per D/E ratio



Source: personal elaboration

The 33% of firms stay within 0-0.2 and almost 20% in the range of 0.2-0.5. What is remarkable, however, is the fact that almost 19% of firms in the Lecco district have a worrying level of debt, twice as the equity.

If compared to Brenta, where most businesses (42%) fall in the 0-0.2 range and only 12% in the superior category, the presence of superior debts related to the sector seems to be true.

2.5.3 S. Croce

The district of leather processing is analysed considering data on 397 firms located in Castelfranco di Sotto, Montopoli in Val d'Arno, San Miniato, Santa Croce sull'Arno, Santa Maria a Monte and Fucecchio (in the Florence province).

The 49% is concentrated in the town of Santa Croce, after which the district is named, and the 22% is in San Miniato.

The Ateco code selected is **15.11.00** which refers to processing and manufacturing of leather and hide and to preparation and dyeing of fur coats.

Results on dimension are reported in Chart 8.

Chart 8 – Distribution of firms by size

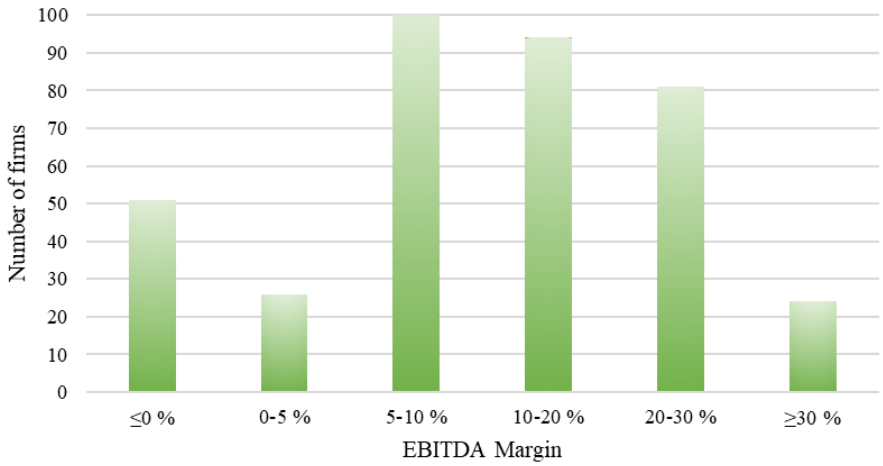
SIZE	TURNOVER (€)	PERCENTAGE	EMPLOYEES	PERCENTAGE	ASSETS (€)	PERCENTAGE
Micro	≤ 2 mln	*58.7%*	≤ 10	*56.2%*	≤ 2 mln	*54.2%*

Small	≤ 10 mln	*28.2%*	≤ 50	*39.3%*	≤ 10 mln	*31.5%*
Medium	≤ 50 mln	*12.3%*	< 250	*4.5%*	≤ 43 mln	*12.6%*
Big	> 50 mln	*0.8%*	≥ 250	*0%*	> 43 mln	*1.7%*
TOTAL		***100%***		***100%***		***100%***

Source: personal elaboration

The dimension of the area highlights interesting differences with respect to workforce: 56% of the sample is categorised as micro firms, suggesting that the tannery district occupies on average fewer employees than Brenta and Lecco. This is confirmed by the same distribution of micro entities if considering annual sales (59% against 60% of Brenta and 50% of Lecco).
Tanneries and leather processing are conducted by huge machinery and advanced automatic systems where human contribution is important but limited to control and monitoring activity.
Regarding the amount of assets, S. Croce stays in between the districts previously analysed: micro and small firms constitute respectively 54% and 32% of the total, being more extended than footwear but less than metallurgic.
However, the profitability resembles that of Brenta district with around 20/25% of companies generating an operative margin between 20-30% and 27% in the range 5-10%. Also with respect to the worst performing (EBITDA ≤0%), the stake is similar: 27%.

Graph 12 – Distribution of firms per EBITDA Margin

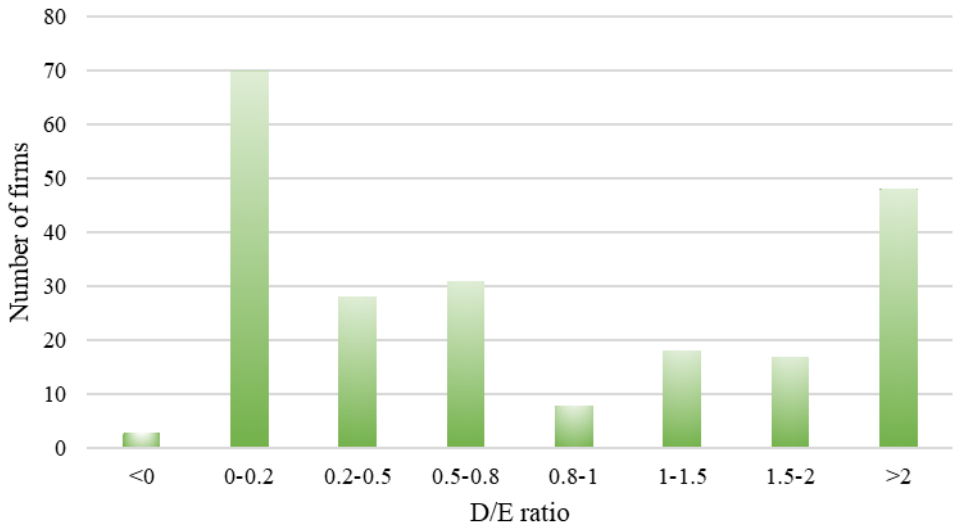


Source: personal elaboration

The histogram points out homogeneity in the distribution, with a significant group of businesses performing poorly.

With respect to Lecco, S. Croce presents more companies in both the negative and positive (the 5-30%) class, whereas there are fewer outperforming cases (≥30%).
While for productivity, the tannery district is more similar to the footwear one, for the indebtedness the opposite is true. Data are proposed in Graph 13.

Graph 13 – Distribution of firms per D/E ratio



Source: personal elaboration

Most of the sample has a D/E ratio between 0-0.2 (31%), which is much less than Brenta (42%) and very close to Lecco.
The most leveraged companies represent 22%, very close to the metallurgic centre of Lecco.
Overall, it can be summarised as follows: the marginality is quite the same as Brenta, with Lecco being the least profitable (mainly due to high fixed costs) and S. Croce the most indebted.

2.5.4 Gragnano

The district of Gragnano-Nocera Inferiore, due to its specialisation in the production of pasta has more 'industrial' characteristics and somehow mirrors the Italian entrepreneurial system.
The sample of 70 firms focuses on 15 municipalities near Salerno:

- Angri;
- Baronissi;
- Bracigliano;

- Castel San Giorgio;
- Corbara;
- Mercato;
- San Severino;
- Nocera Inferiore;
- Nocera Superiore;
- Pagani Roccapiemonte;
- San Marzano sul Sarno;
- San Valentino Torio;
- Sant'Egidio del Monte Albino;
- Sarno;
- Scafati;
- Tramonti;

and 4 near Naples:

- Gragnano;
- Lettere;
- Santa Maria la Carità;
- Sant'Antonio Abate.

The Ateco codes of reference are **10.73**, i.e. pasta production, and **10.6**, i.e. processing of wheat and starch production.
The two provinces share equally the activities (56% in Salerno and 44% in Naples) with Gragnano being the most concentrated town (26 activities) followed by Nocera Inferiore (7).
The sample is likely to be incomplete as many small factories are, as mentioned above, unlimited liability provisions and are not contained in the Aida database.
Regarding the dimension, consistent with the type of activity handled in the area, there is a prevalence of sized realities, with respect to all the criteria considered.
Results are shown in Chart 9.

Chart 9 – Distribution of firms by size

SIZE	TURNOVER (€)	PERCENTAGE	EMPLOYEES	PERCENTAGE	ASSETS (€)	PERCENTAGE
Micro	≤ 2 mln	*82.8%*	≤ 10	*77.2%*	≤ 2 mln	*82.9%*
Small	≤ 10 mln	*8.6%*	≤ 50	*17.1%*	≤ 10 mln	*5.7%*
Medium	≤ 50 mln	*4.3%*	< 250	*5.7%*	≤ 43 mln	*5.7%*
Big	> 50 mln	*4.3%*	≥ 250	*0%*	> 43 mln	*5.7%*
TOTAL		***100%***		***100%***		***100%***

Source: personal elaboration

With respect to the other three districts analysed, where around 85/90% of the sample falls in the micro and small firms' category, Gragnano shows more reduced dimensions as the same portion of firms fall in the category of micro firms, with less than 2 million euros of both sales and total assets, and less than 10 headcounts.

The area, indeed, is populated by family activities where the realisation of handcrafted products is usually destined for local distribution and does not require business growth.

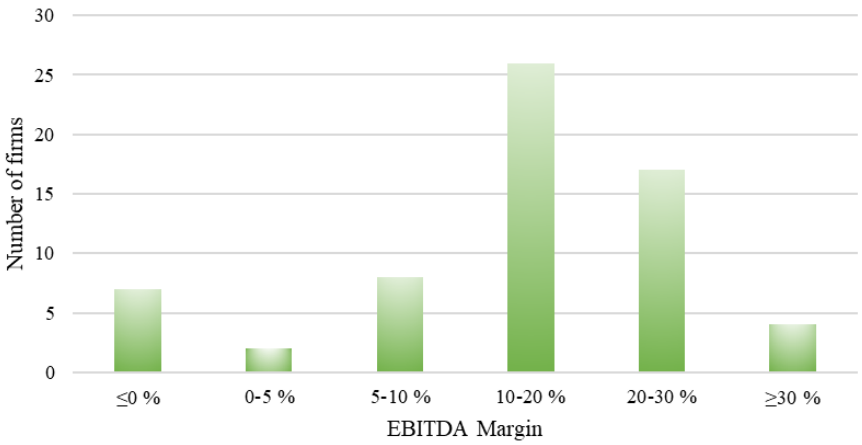
The 3 outlier firms with annual turnover exceeding 50 million euros are isolated cases of market leaders in pasta production. They are the well-known Pastificio Lucio Garofalo S.p.a., Pastificio di Martino Gaetano & F.lli S.p.a., and Liguori Pastificio dal 1820 S.p.a..

67% of the sample has a profitability between 10% and 30%, in line with the other industries analysed.

However, in Gragnano the 40% has a 10-20% operating return, which is significantly higher than both metallurgic, tannery and footwear districts (28%, 25%, and 13% respectively).

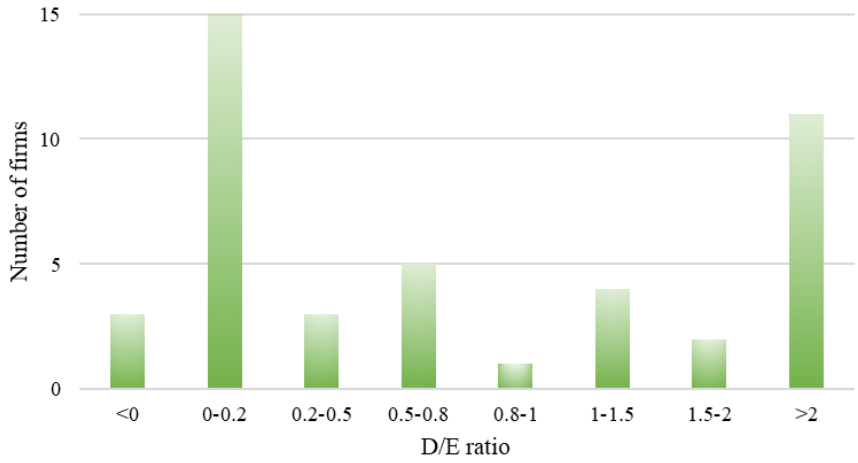
The Campanian district seems to be the most profitable as 67% of firms are concentrated in the two highest ranges (10-20% and 20-30%).

Graph 14 – Distribution of firms per EBITDA Margin



Source: personal elaboration

Graph 15 – Distribution of firms per D/E ratio



Source: personal elaboration

In Graph 15, the amount of debts over equity shows a similar pattern to both Brenta and S. Croce districts.

However, there are some differences with respect to the metal mechanic centre. Firms in Gragnano present worrying levels of indebtedness (25%), 6 points more than Lecco (19%), where the nature of the business should call for large debts, more than the food industry. This is coherent with the fragmented structure of the district where the smallness and underdevelopment of firms slow down proper growth and lead to financial disequilibrium.

With this regard, it can be affirmed that the structure of Gragnano presents the traditional issues affecting our country's economy: sized dimension, difficult to grow and burdensome debts.

3. AN EMPIRICAL ANALYSIS ON DISTRICT EFFECT

3.1 Introduction

The third and final Chapter of this thesis will focus on analysing performance and financial structure of the selected industrial districts, testing the existence of a competitive advantage related to district affiliation.
In the first section, profitability, liquidity and solidity analysis are proposed to underline differences between the four districts and with isolated entities for each sector.
Then, comparative analysis studies and examines several financial indicators of single firms in order to point out divergences in capital structure, level of financial independence, and cost of financing.
In the last section, a brief overview of the literature on district effect will introduce empirical analysis on the dataset.
Three regression models are constructed to analyse implications of relationship lending and test the existence of the district effect. The three variables chosen are total debts on total assets, cost of borrowing, and EBITDA margin.
Finally, the empirical findings will be interpreted to conclude whether theory can be observed in real cases and to accept or refuse implications of district effect.

3.2 Dataset analysis

3.2.1 Profitability analysis

Profitability analysis is conducted on the following indicators:

- Return On Equity (ROE);
- Return On Investments (ROI);
- Return On Assets (ROA).

ROE is a measure of the overall profitability of the company with no distinction between operating, financing and investing activities and is computed as net result over net equity.
Usually, the ROE is assessed with some methods.

First of all, main competitors are considered as they target same clients and deliver similar products. Then, past performance of the company is relevant as it indicates what direction the company is taking and the future expectations.
Lastly, the 'fair ROE', i.e. the one required by equity investors, is observed.

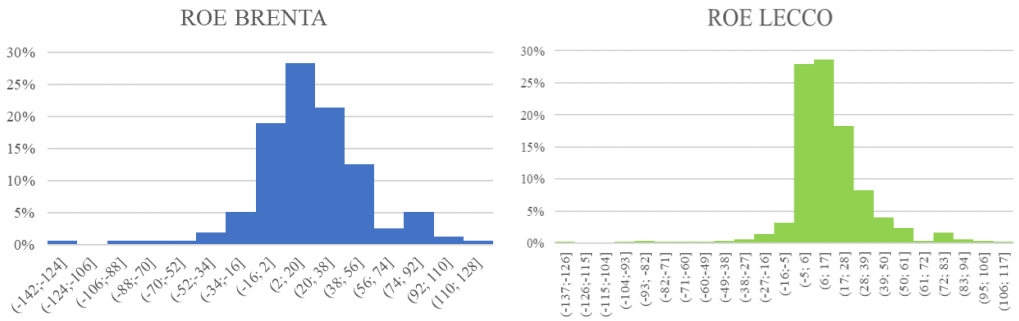
Chart 10 provides values of ROE (%) for each district: in particular, average, median, maximum value, minimum value, standard deviation. Graphs 16, 17, 18, 19 show distribution of the dataset for each of the four areas.

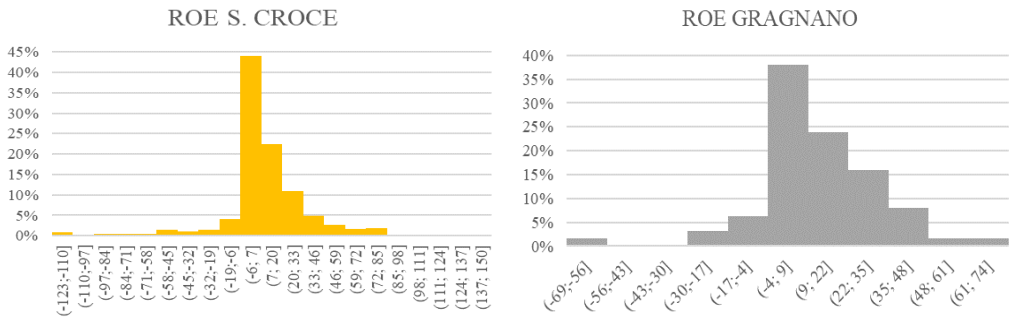
Chart 10 – ROE for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	17.82	14.15	9.47	12.39
Median	15.25	11.36	5.81	9.39
Maximum	124.1	112.48	147.24	68.53
Minimum	-142.36	-137.29	-122.94	-69.47
Standard Deviation	34.45	23.57	27.89	20.41

Source: personal elaboration

Graph 16, 17, 18, 19 – ROE distribution





Source: personal elaboration

Results can be summarised as follows:

- Riviera del Brenta is the leading district for average ROE, which is near 18%. The distribution is quite homogeneous and symmetric as the median is close to the mean value. However, it has the highest standard deviation (34.45);
- Lecco is on average the second most profitable (14%) with an asymmetric distribution: few largely negative results and many positive values. Dataset is indeed concentrated in the right-hand side of the graph;
- S. Croce is the least profitable, with an average ROE of 9.5%. However, some significantly positive results are delivered by few firms. The distribution is concentrated around the mean (almost half of the sample is in the range of -6%; +7%);
- Gragnano, despite having modest average ROE, present the lowest standard deviation (20.41) and a distribution balanced between -69% and +69%. Most values are concentrated in the right-hand side of the graph.

Given that ROE is a comprehensive measure of profitability, it can be correlated to level of indebtedness, which is the central idea of this work.
The measure selected is the amount of bank debt on total sales (expressed in %).
Chart 11 provides results for each district.

Chart 11 – Correlation of ROE with % of bank debt for selected districts

	Correlation
Brenta	-0.37
Lecco	-0.18
S. Croce	-0.11
Gragnano	0.07

Source: personal elaboration

Looking at the results, it is interesting to highlight that three of the four areas present negative correlation, meaning that an increase of bank debt results in ROE contraction.
Specifically, Riviera del Brenta has the most sensitive profitability: an increase of debt by 1% lowers Return on Equity by 0.37%.
Lecco and S. Croce show similar behaviour with negative correlation between -0.2 and -0.1.
What is surprising, instead, is the positive correlation in Gragnano meaning that ROE slightly benefits from debt increase (0.07).

To provide a better understanding of relationship lending mentioned in Chapter 1, random data of single entities were extracted by taking the same Ateco codes and by excluding regions hosting similar districts for type of activity (for example Veneto and Campania for tannery, Tuscany and Marche for shoes).
Results are shown in Chart 12.

Chart 12 – ROE comparison with isolated firms for each sector

	Shoe manufacturing	**Metallurgy**	**Tannery**	**Pasta production**
Average ROE (%)	7.74	11.75	-13.92	1.98
Delta with district (%)[1]	*+10.07*	*+2.39*	*+23.4*	*+10.41*
ROE correlation with % of bank debt	-0.09	-0.13	-0.02	-0.10

Source: personal elaboration

The sector with the smallest difference is metallurgy: the average ROE of single entities from the sample is 11.75%, whereas Lecco records 14.15%, only 2.4 percentage points above.
On the contrary, tanneries of S. Croce sull'Arno deliver considerable extra value, with a delta of 23% (9% versus -14%). In such case, the average ROE of single entities is extremely poor: we might conclude that tanneries in the Arno region exploit and create significant value thanks to synergies and geographical proximity.
Also, the nature of the business and the type of clients it serves allow district area to perform way better than isolated companies. Leather processing is a capital-intensive activity, where huge investments and know-how are required, therefore only the most structured, organised and advanced entities survive.

[1] Computed as district ROE – single firm ROE.

Moreover, as explained in Chapter 2, the role of fashion corporations is paramount: their presence is weak or absent with single firms as they prefer to address to a populated area of experienced tanneries rather than to entrust stand-alone operators across the country.
Brenta and Gragnano, which have less peculiarities in terms of type of activity and access to final markets, present similar district premiums (10%).
Focusing on the correlation, relationship lending theory is confirmed: single firms present less negative coefficients, meaning that an increase of bank debt affects to a lesser extent the profitability. It can be inferred that district companies are more dependent and vulnerable to the amount of debt they subscribe.
Riviera del Brenta is the most affected with respect to single peers (delta of 0.28), whereas Lecco stands at the levels of isolated businesses with a slightly higher coefficient by 0.05.

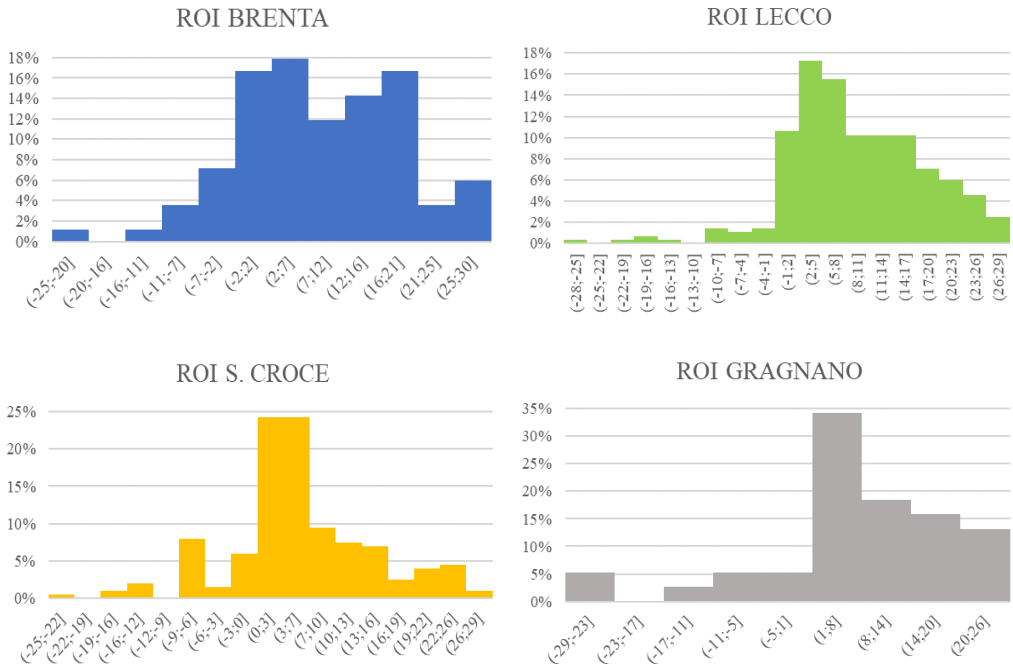
Two, more specific, profitability indicators are ROI and ROA.
The first measures the ability of the core business to create value and is computed as operating profit on net invested capital. Differently from ROE, it captures the performance related to operating activities of the firm, neglecting financial variables.
Chart 13 shows results and Graphs 20, 21, 22, 23 their distribution.

Chart 13 – ROI for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	8.08	9.35	5.62	7.43
Median	7.53	8.25	4.19	7.74
Maximum	28.89	28.95	27.97	23.15
Minimum	-24.86	-27.96	-24.92	-29
Standard Deviation	10.42	8.81	8.83	12.14

Source: personal elaboration

Graph 20, 21, 22, 23 – ROI distribution



Source: personal elaboration

Data show that:

- Brenta has good levels of ROI (8.08%) with significant standard deviation of 10.42;
- Lecco is the leading area for business profitability with an average return of 9.35% and the lowest standard deviation;
- S. Croce is the tail-end district with only 5.62% and almost half of the sample concentrated in the 0-7% range;
- Gragnano performs with a 7.43% ROI and a significant standard deviation of 12.14 as most of the sample is distributed in a positive range and has few negative data.

The second measure, ROA, is the net result over total assets and shows capability of a business to create profits from own resources.
Results and distributions are reported in Chart 14, Graphs 24, 25, 26, 27.

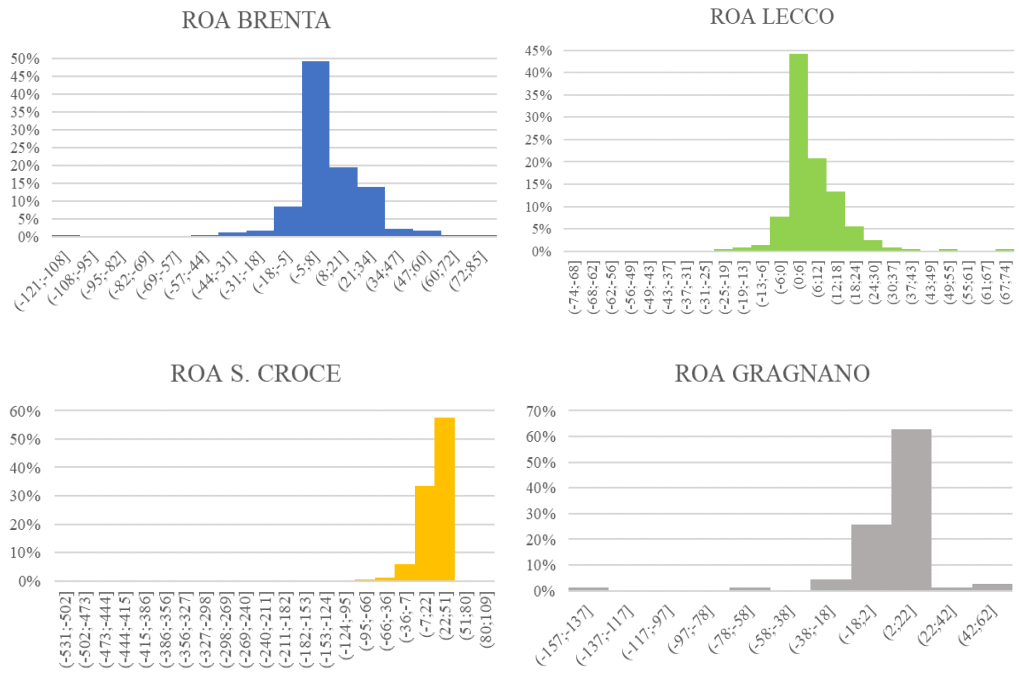
Chart 14 – ROA for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	7.42	7.26	0.12	1.49

Median	4.52	5.35	2.77	3.59
Maximum	84.44	72.29	107.2	60.54
Minimum	-120.98	-73.57	-530.1	-156.81
Standard Deviation	19.3	10.97	37.7	24.23

Source: personal elaboration

Graph 24, 25, 26, 27 – ROA distribution



Source: personal elaboration

Data can be summarised as follows:

- Riviera del Brenta has the most efficient use of its asset with a ROA of 7.42% and a concentrated distribution;
- Lecco has the second highest Return on Asset (7.26%), very low standard deviation with half of the firms staying in the 0-6% range;
- S. Croce has very poor values, being the district with the lowest (and close to 0) average return and the most diverse distribution (standard deviation reaches 37.7) as there are several significantly negative data (up to -530%) and almost 60% of the sample performing with a ROA between 22-51%;
- Gragnano records many isolated negative ROA and a weak average of 1.5%.

Finally, a comparison for both measures is provided in Chart 15.

Chart 15 – ROI and ROA comparison with isolated firms for each sector

	Shoe manufacturing	**Metallurgy**	**Tannery**	**Pasta production**
Average ROI (%)	4.93	6.32	4.46	3.62
Delta with district (%)[2]	*+3.15*	*+3.03*	*+1.16*	*+3.82*
Average ROA (%)	-22.95	-6.19	-11.23	-11.08
Delta with district (%)[3]	*+30.37*	*+13.45*	*+11.35*	*+12.57*

Source: personal elaboration

Also for ROI and ROA the district effect is confirmed: all the areas considered deliver higher performances than single entities. In particular, the district of pasta delivers an extra ROI of 3.82%, being the one with the highest difference and suggesting an outstanding benefit for business value creation by operating within a network of firms.
The ROA, instead, rewards the shoe manufacturing of Brenta that creates an additional 30.37% with the competitors having a significantly negative Return on Assets.
Lecco and S. Croce present better profitability which is more contained for ROI (3% and 1% respectively) and considerable for ROA (13% and 11%). The tannery district is however delivering the smallest benefit for both measures.

To conclude, the shoe district in Rivera del Brenta has the highest profitability, followed by the metallurgy production in Lecco.
The leather manufacturing in S. Croce is the least profitable, justified by a business which is capital intensive, requires huge assets and long-dated expertise. Nevertheless, tanneries are able to create way larger ROE than non-district competitors.
Gragnano, despite having the lowest ROA, delivers satisfying results with respect to single peers, especially on ROI.

3.2.2 Liquidity analysis

[2] Computed as district ROI – single firm ROI.
[3] Computed as district ROA – single firm ROA.

In order to provide a comprehensive understanding of the four districts, this thesis will extend the focus to the liquidity analysis. In particular, two measures were selected: current and liquidity ratio.

The current ratio is computed as current assets over current liabilities and points out whether a company is able to cover liabilities expiring in the short term (within a year) with current assets. The latter are items easily convertible or liquid such as cash, account receivables, inventory, prepaid expenses. The ratio should be at least 1.8, meaning that short-term assets almost double short-term liabilities. Results are shown in Chart 16.

Chart 16 – Current Ratio for selected districts

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	1.99	2.18	2.18	1.75
Median	1.63	1.65	1.81	1.33
Standard Deviation	1.22	1.55	1.57	1.37

Source: personal elaboration

All areas have satisfactory results with Lecco and S. Croce being the most liquid district (2.18) but also the most diverse. Gragnano is the tail-end with a ratio of 1.75, which means that on average current assets are 1.75 times the value of current liabilities, which is however a good value.

A more specific indicator is the liquidity ratio, computed as the most liquid assets (cash, cash equivalents, and accounts receivables) on current liabilities. By excluding inventory from current assets, it is a more conservative measure than the current ratio.
Basically, liquidity ratio indicates the ability of a firm to cover instant liabilities without selling its inventory. The latter is excluded because it is not immediately cash convertible and behaves like long-term assets as companies maintain a fixed level of stock to ensure correct and continuous functioning of the business.
To be liquid, a company should have current assets at least equal to current liabilities, i.e. a liquidity ratio higher than 1. However, optimal values vary depending on type of industry and company.
Mean, median and standard deviation values are provided in Chart 17.

Chart 17 – Liquidity Ratio for selected districts

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	1.65	1.8	1.62	1.50
Median	1.32	1.32	1.25	1.10
Standard Deviation	1.19	1.46	1.36	1.34

Source: personal elaboration

The metallurgic district of Lecco has the best liquidity ratio (1.8) and the most diverse sample (standard deviation of 1.46). Shoes and tannery follow with values above 1.6 which remain satisfactory. Lastly, the pasta district has an average liquidity ratio of 1.5, which is nevertheless an adequate value considering the necessary adjustments and considerations that the business is completely different from that of Lecco: the use of big machinery, huge plants and massive amounts of materials, whose processing is complex and onerous, requires large availability of cash.

On the opposite, pasta production has different financing needs: lower investments and more rapid production cycle, implying different liquidity demand.

Considering peers data, the district effect is proved for both ratios, as shown in Chart 18.

Chart 18 – Liquidity and Current ratio comparison with isolated firms for each sector

	Shoe manufacturing	**Metallurgy**	**Tannery**	**Pasta production**
Average Current Ratio	1.39	1.57	1.51	1.47
Delta with district[4]	*+0.60*	*+0.61*	*+0.67*	*+0.28*
Average Liquidity Ratio	0.91	1.35	1.23	1.24
Delta with district[5]	*+0.74*	*+0.45*	*+0.39*	*+0.26*

Source: personal elaboration

Shoes, metallurgy, and tannery districts deliver similar values with current ratio higher by 0.6 with respect to single firms.

[4] Computed as district current ratio – single firm current ratio.

[5] Computed as district liquidity ratio – single firm liquidity ratio.

S. Croce has the highest delta (0.67), which is not confirmed for liquidity ratio, thus revealing the importance role played by inventory in ensuring tanneries' liquidity. Disposing of an adequate stock of raw leather is paramount as they usually come in big slots and overcoming a shortage is much more challenging than for retail goods like pasta.
Lecco presents modest differences between the two ratios: 0.45 and 0.61 positive deltas, benefitting from greater inventory than single peers.
Brenta shows the best delta for liquidity ratio (+0.74). Further, difference is higher if inventory is not considered (as for liquidity ratio), meaning that the stock is lower than that of non-district companies.
Finally, Gragnano is the industrial area which seems to have less benefits from the district infrastructure: delta is around 0.2 for both ratios.

To sum up, the metallurgy of Lecco is the district with the highest liquidity (both ratios), whereas Brenta and S. Croce are the ones performing better with respect to their non-district competitors, the first for liquidity and the second for current ratio.
Furthermore, the region most affected by inventory is S. Croce, whose delta significantly varies depending on whether ratio computes or not the stock.

3.2.3 Solidity analysis

Solidity analysis studies the financial equilibrium of a firm in the long term. In particular, the attention is focused on the level of indebtedness and the ability to cope with it.
In a bank-centric country as Italy, debt is the first source of liquidity and, according to the literature, it is more relevant for districts, as usually local financial institutions hold deep ties with the territory and its network of activities.
Two types of indicators are therefore considered: the first to understand reliance on external financing and the second to analyse the terms applied and their sustainability.
They are the degree of independence from third parties, on the one hand, and financial charges on revenues, cost of borrowing, financial interests coverage, on the other hand.

Firstly, the degree of independence from third parties, computed as equity[6] on total debts, measures how much of borrowings are covered with own funds. Therefore, the higher the value, the more independent the company.

[6] Net of dividends, shareholders receivables and net result.

Data are shown in Chart 19 for the four districts considered.

Chart 19 – Degree of independence from third parties for selected districts

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	0.94	2.27	1.82	1.37
Median	0.47	0.7	0.54	0.27
Standard Deviation	1.33	7.3	6.75	3.65

Source: personal elaboration

Results suggest that Lecco is the most independent district or, more precisely, with more own capital covering external borrowing: equity is more than twice the debt.
S. Croce follows with 1.82 which means capital almost doubles borrowings.
Surprisingly, the district of Gragnano presents a value in line with other districts: 1.37.
What is remarkable, instead, is that Riviera del Brenta has the lowest independence of 0.94: it means that equity on average is not sufficient to cover all the debt subscribed.

Beyond the level of indebtedness, financial interests need to be considered, in particular with respect to their weight, cost, and coverage by the firm.
Chart 20 shows the interests paid within each district with respect to annual revenues.

Chart 20 – Financial charges on revenues for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	0.88	0.79	0.99	2.38
Median	0.28	0.36	0.49	1.06
Standard Deviation	2.2	1.18	1.75	4.9

Source: personal elaboration

The shoes of Brenta, the tannery of S. Croce and the metallurgy of Lecco are reasonably affected by the financial burden: charges amount to less than 1% of total revenues, whereas Gragnano suggests some solidity problems with more than 2% of sales deployed to interests.
The tendency is confirmed also with respect to borrowing cost (Chart 21).

Chart 21 – Borrowing cost for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	3.53	2.92	2.66	4.54
Median	2.73	2.26	1.94	3.9
Standard Deviation	2.4	2.52	2.39	3.26

Source: personal elaboration

Some correlation is shown between amount of charges paid and their cost: Lecco and S. Croce, the districts that are more financially independent and with smallest percentage of interests, remain the best in class with the cheapest charges paid: 2.92% and 2.66%, respectively.
Interests are more expensive for businesses in Riviera del Brenta (3.5%), which is the most dependant from banks, and especially Gragnano (4.5%) which is the area with the biggest stake of financial interests.
Since amount of charges and their expensiveness show similar patterns, it is interesting to provide evidence of their correlation (Chart 22).

Chart 22 – Correlation of borrowing cost with amount of financial charges

	Correlation
Brenta	0.48
Lecco	0.01
S. Croce	0.03
Gragnano	0.25

Source: personal elaboration

Positive value for all the industrial clusters hints some form of correlation, more or less intense: the greater the financial interests, the higher the cost. Unsurprisingly, the area of pasta production is quite sensitive, as an increase of 1% of interests paid on debt raises by 0.25% the borrowing cost. Brenta is even more affected: 1% more charges will increase the cost of debt by almost 0.5%.
The other two regions are positively affected by dimension of financial expense, but by a lesser extent: lower than 0.1.

Data show that: Riviera del Brenta is the region with highest debt compared to equity and with a considerable (and sensitive) cost of financing, Gragnano suffers from burdensome charges (more than 4.5%), Lecco is the least indebted area, and S. Croce benefits from the cheapest cost of debt.

To complete the analysis, it is interesting to study the capability of districts to deal with their leverage levels.

Chart 23 provides data on financial charges coverage, expressed as amount of borrowing expenses covered by operative income (EBITDA).

Chart 23 – Financial charges coverage for selected districts (%)

	Riviera del Brenta	*Lecco*	*S. Croce*	*Gragnano*
Mean	55	51.46	39.93	32.59
Median	19.85	20.13	11.75	13.46
Standard Deviation	79.09	75.6	67.26	57.09

Source: personal elaboration

The districts in the North (Brenta and Lecco) generate enough operative income to cover more than half of financial interests (55% and 51%). It is interesting to highlight that despite being the most leveraged area, the shoe district is also the one with the highest coverage.

On the contrary, the metallurgy district is the most independent area.

Therefore, the most and least indebted districts are the ones with the highest financial charges coverage.

S. Croce and Gragnano, instead, show weaker financial structures, especially the district of pasta production which is not only the less capable to cope with the cost of debt, but also the one paying more charges, in terms of cost and % on revenues.

It can be inferred that Gragnano is a highly indebted area where the cost of financing is burdensome and the ability of businesses to cope with financial expenses is poor.

S. Croce presents the opposite situation: it has the cheapest borrowing cost, but the EBITDA covers only the 39% of them suggesting some problems in the business profitability.

3.3 Comparison with isolated businesses

In order to test whether the theory of relationship lending introduced in the first Chapter is verified or not, a comparison with non-district firms is proposed.
Chart 24 provides level of financial independence of single entities in the analysed sectors.

Chart 24 – Financial independence comparison with isolated firms for each sector

	Shoe manufacturing	**Metallurgy**	**Tannery**	**Pasta production**
Degree of independence from third parties	1.15	1.27	1.31	1.39
Delta with district[7]	*-0.20*	*+1.00*	*+0.51*	*-0.02*

Source: personal elaboration

Results are diverging: single firms in shoes and pasta sectors have stronger independence than districts (Brenta and Gragnano), whereas the opposite is true for Lecco and S. Croce, which have higher financial independence and therefore less debt than non-district competitors.
Brenta and Gragnano would confirm the theory that within districts firms hold stronger relations with banks resulting in a lower financial independence.
If considering Lecco and S. Croce, instead, the two measures go in the opposite direction: districts seem to count less on external financing: the index is lower by 1 for metallurgy firms and by 0.5 for tanneries.
Therefore, data do not provide enough evidence to either accept or refuse the literature assumptions.

Furthermore, to verify the other financial aspects, comparison with amount of financial charges on sales, cost of borrowing, and interests coverage are provided in Chart 25.

[7] Computed as district– single firm financial independence.

Chart 25 – Financial charges ratios comparison with isolated firms for each sector

	Shoe manufacturing	**Metallurgy**	**Tannery**	**Pasta production**
Financial charges on revenues (%)	1.48	1.33	1.12	1.54
Delta with district (%)[8]	*-0.60*	*-0.53*	*-0.13*	*+0.85*
Borrowing cost (%)	6.09	5.3	4.57	3.96
Delta with district (%)[9]	*-2.56*	*-2.37*	*-1.91*	*+0.58*
Financial charges coverage (%)	30.5	40.04	39.15	35.07
Delta with district (%)[10]	*+24.50*	*+11.43*	*+0.78*	*-2.48*

Source: personal elaboration

Results support the thesis of district effect: district areas (with the only exception of Gragnano) benefit from lower interests paid, cheaper cost of borrowing (i.e. more convenient terms), and higher coverage.

In particular, regarding amount of interests paid:

- Riviera del Brenta has the highest delta with isolated firms for charges paid on total turnover (-0.6%: 0.88 versus 1.48);
- Gragnano is the only district having on average more financial interests than single peers (+0.85%);
- Lecco and S. Croce benefit from negative delta (-0.53% and -0.13% respectively) suggesting slightly less charges paid than non-district firms.

The borrowing cost applied on bank debt is:

- Lower for Brenta, Lecco and S. Croce, paying between 1.9% and 2.6% less than single entities;
- Higher only for Gragnano which is charged with almost 0.6% more than the rest of the sample.

[8] Computed as district – single firm financial charges.
[9] Computed as district – single firm borrowing cost.
[10] Computed as district – single firm financial charges coverage.

The coverage of financial charges is:

- Significantly higher in Riviera del Brenta, as it covers 25% more than non-district competitors;
- Bigger for Lecco with a 11.43% difference;
- Slightly better in S. Croce (0.78%);
- Negative in the area of pasta production, covering less financial interests by 2.5% than isolated firms.

To summarise, the district effect is confirmed for three out of four districts analysed: Brenta, Lecco, and S. Croce. Despite operating in different sectors and regions of the country, the impact of financial charges is lower, both in terms of percentage on revenues and cost of borrowing, with also a better capacity to cover them with operating profit.
The district located in Campania, however, seems to be an outlier as all benefits related to district affiliation are not confirmed, rather they are inverted: higher cost paid and more charges with respect to turnover. This can be explained by location of the district in the South, which is historically affected by lower profitability and higher cost of money than the North. The sample of non-district firms, indeed, is influenced by many businesses located in the North, the richest area of the country.
Finally, the correlation between amount of financial interest and cost of financing applied by borrowers is considered (Chart 26).

Chart 26 – Correlation of borrowing cost with amount of financial charges

	Correlation
Shoe manufacturing	0.06
Metallurgy	0
Tannery	-0.07
Pasta production	0.01

Source: personal elaboration

Chart 26 shows that correlation is much stronger within district areas: some sectors, indeed, have no correlation (metallurgy) or even negative (tannery) meaning that an increase of charges reduces the cost of financing.

3.4 The "district effect": literature and empirical analysis

The concept of "district effect" was introduced in literature by the Italian author Signorini (1994) referring to the competitive advantage achieved by district firms.
It refers to specific efficiency conditions (Claver-Cortés, Marco-Lajara, & Seva-Larrosa, 2019) achieved by companies integrated into a network of firms with common goals and principles.
The effect regards economies outside single entities, but within the local system of a district, whose benefits and relations are not available to isolated businesses.
Advantages arise from social and economic benefits and can result in lower borrowing cost, wider credit availability (especially for sized entities), and higher leverage, favoured by smoother activities of screening and monitoring carried out by banks (Arrighetti & Ninni, 2014).

The first empirical evidence was conducted by Signorini (1994) and aimed at measuring the extent of the effect in the district of Prato. He demonstrated a positive influence on firm profitability.
Afterwards, between the 1990s and 2000s, several studies were conducted and suggested large benefits from district affiliation.
Nevertheless, latest papers proved that such benefits have decreased if not disappeared (Cucculelli & Storai, 2018). The global competition, through significant shifts and disruptions, modified the productive systems weakening the premium for district companies (Cucculelli & Storai, 2018).
However, it is important to specify that the positive effect on firm's performance depends not only on its affiliation to the district, but also on how district's assets impact on firms' assets with respect to resources and capabilities, and on the individual and internal characteristics of companies such as age, size, and industry.

Two important research were carried out in the last decade.
Firstly, Arrighetti and Ninni (2014) implemented an econometric analysis on financial statements of around 25,000 manufacturing firms, with a mix of single and district entities, between 1991 and 2006.
One of the major results is that in the first years (1991-1994), districts delivered better performance in terms of revenues, which is however not confirmed in the other years of the period considered.

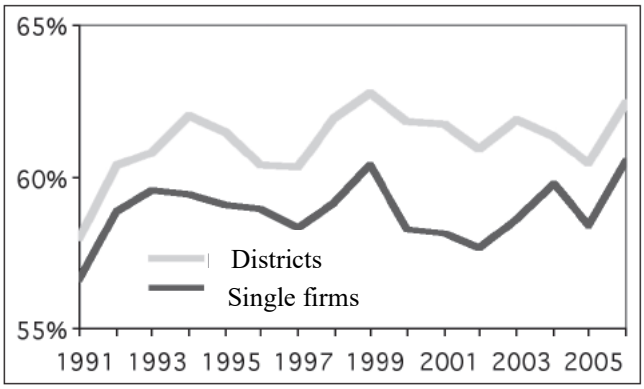
Further, operative margins happened to contract within industrial areas so that isolated businesses delivered even better results.
The study points out that districts are affected by periods of expansion and recession with more intensity. In fact, the *dummy* of district, i.e. the variable considering the company's affiliation to the industrial quarters, is negative during international crises that hit the Italian manufacturing industry: between 1996-1999 and 2002-2006.
It seems therefore that business networks are more sensitive to changes of economic cycle as the reticular organisation amplifies both positive and negative periods.
Secondly, Cucculelli and Storai (2018) constructed a model to test the effect of location, size and firm specialisation on profitability. Evidence proves absence of remarkable district effect on businesses performance in the last decade.

As gleaned by Becattini and Musotti (2012), the district effect originates from local concentration of external economies of various types.
Firstly, the economies of organisation favour labour division creating efficient subcontracting markets and full allocation of funds. Consequently, companies can achieve optimal production levels through economies of scope and scale.
The economies of knowledge allow for constant innovations that create the premises for lower costs and premium prices for differentiated products.
The economies of concentration let firms of a district to play as a unique purchaser therefore acquiring at more convenient prices, especially for raw materials and intermediate goods.
The economies of training ensure capable human resources.
The economies of transaction reduce (or eliminate) information asymmetries thanks to cooperative and close ties built within the district area. All operators know each other favouring mutual trust.
Finally, economies of change adaptability, deriving from the shared belief of working for the benefit of the district, are identified in a set of social, cultural and political structures and in an attached community.

Furthermore, evidence is diverging also with respect to the financial structure: Signorini (1994) sustains a significant leverage effect, whereas Fabiani et al. (2000) found out lower indebtedness for industrial clusters.
However, as clarified by Arrighetti and Ninni (2014), these studies do not consider other variables influencing the capital structure, such as geographical location, specialisation, dimensions, longevity.

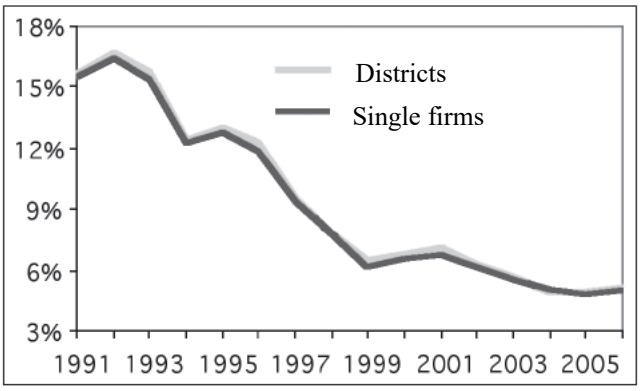
Not only leverage, but also for cost of financing results go in different directions: terms applied by banks are proved to be more convenient in some cases and more expensive in others. Results provided in Graphs 28 and 29 are taken from Arrighetti and Ninni's study of 2014.

Graph 28 – Financial leverage



Source: Arrighetti and Ninni, 2014.

Graph 29 – Borrowing cost



Source: Arrighetti and Ninni, 2014.

For all the period considered, district firms were more indebted especially between 1994-2004 and in 2006.

Nevertheless, the higher dependence on banking system does not seem to be correlated with lower cost of debt, rather it is slightly higher, as shown in Graph 29.

The research concluded that district operators despite being more indebted are not charged with cheaper financial interests.

To summarise, the literature on district effect has provided diverging results over the past 30 years due to, on the one hand, rapid changes of economy and consequently of the production

chain and, on the other hand, the fact that there is no clear evidence of a general verified district effect.

The present thesis aims at testing the phenomenon in terms of leverage and performance by answering two questions:

1) Are district firms more indebted than isolated entities? Do they benefit from cheaper cost of financing?
2) Are they capable to deliver superior performance because of the context in which they operate?

In order to understand whether these two conditions are observed in reality, three models of multiple regression are run: two to explain the level of indebtedness and terms applied and one to test performance results.
The models were developed extracting information from the Aida database on the districts selected in Chapter 2 and from random isolated businesses of same sectors.
Two *dummy* variables were introduced: one to capture the affiliation to the district and one to distinguish companies' location across the country.
In particular, for the dummy district, 1 was assigned to all firms located within the area and 0 to the ones outside.
The regional dummy classifies firms within two big areas assigning 1 to the ones located in the North and 0 to the ones in the Centre and the South, considering that Italy suffers from uneven growth and development between the North and the South.
The following sections are dedicated to each problem.

3.6.1 The level of indebtedness

The first model is constructed to analyse the leverage of the sample in order to test whether the theory of districts being more indebted is verified.
The dependent variable is total debts on total assets (%), a satisfying proxy of leverage that measures the amount of assets being financed with debt.
The independent variable selected is the dummy district and it is used to reveal whether firms located within a district show higher leverage than those outside it.
The control variables are size, age, location, asset composition and their return (ROA).

To summarise, the model is constructed as follows:

- Dependent variable: debts on total assets (%);
- Independent (explanatory) variable: dummy district;
- Control variables: employees, age, geographical dummy, tangible assets on total assets (%), ROA (%).

The regression equation is:

$$Debts = \beta_1 district + \beta_2 employees + \beta_3 age + \beta_4 region + \beta_5 \, tangible \, assets + \beta_6 ROA \quad (1)$$

The model, constructed on 6,082 observations, has a Standard Error of 76.9 and a *p value* of 7.1E-19. Results are shown in Chart 27.

Chart 27 – Regression on total debt %

Predictor	*Estimate*	*Standard Error*	*t*	*p value*
Intercept	70.63508828	2.278229703	31.00438	4.5783E-196
District	-5.633748271	2.858868272	-1.97062	0.048812480
Employees	0.001787429	0.013927833	0.128335	0.897888104
Age	-0.406976905	0.069400523	-5.86418	4.75114E-09
Location	-3.403308641	2.038471292	-1.66954	0.095062002
Tangible assets %	-0.087822098	0.054249058	-1.61887	0.105527447
ROA %	0.466907305	0.096982308	4.814355	1.51252E-06

Source: personal elaboration

The control variables having a *p value* lower than 0.1, meaning that they are significant to level of leverage, are the dummy district, age, geographical location, percentage of tangible assets and Return on Assets. The size, expressed in terms of total workforce, does not seem to have a significant effect on total debts, as the *p value* is higher than 0.1.

Results on the other variables are interesting.

First of all, the explanatory variable of district is negatively correlated with debts, with a coefficient of -5.63. Therefore, if the firm belongs to an industrial district, leverage is estimated to reduce by 5.63%.

Furthermore, longevity of a business is demonstrated to have a positive effect. The coefficient estimate is negative: the higher the age, the lower the indebtedness. A year more of activity results in less liabilities by around 0.4%.

Even a stronger effect is played by geographical position: -3.4 translates into debts lower by 3.4% if the company is based in the North. The estimate is coherent with the deep division between the Northern and Southern part of the country, with the former being highly productive and competitive and the latter struggling with low productivity and inefficient public administration.

Previous variables explain either external or dimensional factors, whereas tangible assets and ROA focus on firms' structure and profitability.

Real assets determine a company's ability to obtain financing, as they are used to secure loans. Moreover, plants, machinery and buildings, beyond increasing the book value, can be sold representing a source of income.

The regression estimate confirms a negative coefficient, i.e. an inverse correlation between tangible assets and debts. However, effect and significance are negligible.

Remarkable influence is assumed by ROA, that measures business' profitability in relation to its assets and the ability of management to employ them efficiently.

On top of having strong significance (*p value* of 1.51E-06), the impact is relevant: an increase by 1% of ROA lowers leverage by 0.46%.

To summarise, the regression model rejected the district effect theory as firms' indebtedness is significantly lower for industrial districts. The result denies empirical findings of Arrighetti and Ninni (2014) (see Graph 28) and confirmed findings of Fabiani et al. (2000).

3.6.2 The cost of debt

After having tested whether the district effect can be verified in terms of indebtedness, the thesis continues the empirical analysis with the cost of borrowing. The dependent variable is financial charges on bank debt (%).

The other variables are the same as the previous model, with the qualitative variable of district being the explanatory term.

The regression equation is:

$$Cost\ of\ debt = \beta_1 district + \beta_2 employees + \beta_3 age + \beta_4 region + \beta_5 tang.assets + \beta_6 ROA \quad (2)$$

The model, constructed on 2,620 observations, has a Standard Error of 3.28 and a *p value* of 7.1E-16. Results are shown in Chart 28.

Chart 28 – Regression on cost of debt %

Predictor	*Estimate*	*Standard Error*	*t*	*p value*
Intercept	5.266976638	0.164882818	31.9437568	2.5795E-189
Dummy district	-0.841326028	0.178759183	-4.706477259	2.65177E-06
Employees	-0.001018193	0.000642520	-1.58468640	0.113158611
Age	-0.010424528	0.004341923	-2.400901317	0.016424241
Location	-0.241867160	0.133418395	-1.812847181	0.069970099
Tangible assets %	-0.018163512	0.003531525	-5.143248189	2.90032E-07
ROA %	0.009975912	0.008776338	1.136682719	0.255775176

Source: personal elaboration

The significant variables are dummy of district, age, location and tangible assets. Dimension (employees) and Return on Assets will not be mentioned as not important to the model.

The explanatory variable, which has a considerable effect on the dependent factor, is estimated with a -0.84 coefficient. In other words, operating within the district boundaries ensures cheaper financing by 0.84% than isolated entities.

Within the regression model the dummy district has the biggest impact than any other control variable.

Age, location and amount of tangible asset have negative values meaning that duration of activity, location in the Northern regions of Italy, and big stake of tangible assets determine less expensive financial charges. In particular, age and amount of hard assets impact with a modest 0.01%, whereas the region impacts more business in the North which benefit from a more affordable cost of borrowing by 0.24%.

To sum up, despite the non-verifiability of more indebted districts, the district effect is confirmed for cost of financing. Affiliation to districts helps to save almost 1% on financial burden.

The model therefore rejects findings of Arrighetti and Ninni (2014) showed in Graph 29.

3.6.3 The performance

The last part of the empirical analysis is dedicated to performance in order to demonstrate whether the district effect operates also with respect to profitability.
The EBITDA margin, computed as operating profit on total revenues, measures the profitability of operations, as it neglects the impact of financial charges, depreciation and taxation.
The explanatory and control variables selected are the same of the previous models, with the only difference of ROA which has been excluded by being a measure of profitability too.

The regression equation is:

$$EBITDA = \beta_1\, district + \beta_2\, employees + \beta_3\, age + \beta_4\, region + \beta_5\, tangible\ assets \qquad (3)$$

The model, constructed on 6,360 observations, has a Standard Error of 11.94 and a *p value* of 1.04E-25. Results are provided in Chart 29.

Chart 29 – Regression on EBITDA %

Predictor	*Estimate*	*Standard Error*	*t*	*p value*
Intercept	11.68651561	0.288548781	40.50100493	0
Dummy district	0.542980646	0.438080537	1.239453937	0.215223214
Employees	-0.009108408	0.002124314	-4.287694117	1.83209E-05
Age	0.078370773	0.007694383	10.18545213	3.52939E-24
Location	0.004652756	0.010461473	0.44475151	0.656514489
Tangible assets %	-0.430085969	0.31606534	-1.360750184	0.173640912

Source: personal elaboration

The variables playing a significant role in the explanation of EBITDA margin are only age and employees.
Belonging to a district area seems to have a negligible role as the *p value* is 0.21, which means that the null hypothesis cannot be rejected. Non significancy might relate to the fact that operative results are determined by single capacity of a business to create value, and that the impact of synergies and know-how deriving from districts affiliation is not verified.

While for relation with banks the membership to a network of cooperating entities could be considered an advantage, the same cannot be inferred for performance.
Nevertheless, age results to have some influence: a year more of experience increases the performance by 0.07%. The longer the activity, the better the results delivered. Entities with a long-dated experience in the sector acquired business understanding, developed operations efficiency, and achieved contractual and competitive positioning, all factors that require time and expertise. Older firms have established routines and expertise, on top of solid relation with borrowers and suppliers, that represent a competitive advantage (Cucculelli & Storai, 2018).
Furthermore, a negative but irrelevant effect is given by employees.

To summarise, the district effect is not verified in real cases with respect to performance as the variable of district affiliation has not significant impact.
The only variables explaining the EBITDA margin is the age but with such a low significance that is not explanatory.
It can be therefore gleaned that Cucculelli and Storai (2018)'s affirmation of district premium gradually diminishing over the last decades is consistent with the regression model's result.

3.5 Conclusion

The scope of the thesis was to examine the peculiar phenomenon of industrial districts and to measure the district effect.
After an overview of the Italian entrepreneurial structure, several socio-economic reasons were analysed trying to explain firms' constant need for financing. With this regard, the Italian system was defined as bank-centric due to the great relevance played by banks in companies' growth.
Then, the concept of industrial districts was presented as a particular form of SMEs aggregation and a widespread phenomenon in our country.
In the second chapter, four districts were selected and described in their functioning and structure.
According to the literature, relationship lending, i.e. the fiduciary relationship between firms and banks, is even more intense within districts where geographical proximity helps to reduce information asymmetries.
The third chapter concluded this dissertation with the objective to test whether there are real advantages in terms of leverage and performance for districts, as largely claimed by the literature.

With this regard, quantitative and empirical analyses were carried out on a dataset of district and non-district firms.

The first analysis considered economic and financial ratios. Specifically, profitability, liquidity and solidity analyses were performed on past results both to define differences between the four areas of interest and to give a comparison with isolated peers.

Data showed that districts delivered higher profitability for all three metrics (ROE, ROI and ROA) and had stronger liquidity than single businesses.

Concerning solidity, industrial clusters pay lower financial charges, both in terms of percentage of revenues and cost of borrowing, and have better capacity to cover them with operating profit, with the only exception of Gragnano.

By considering past data, it can be gleaned that the district effect is confirmed and unambiguous. Nonetheless, the empirical analysis provided diverging results.

In the second part, three regression models estimated district effect on different dimensions: leverage, cost of financing and performance with level of indebtedness, cost of debt, and EBITDA margin as dependent variables.

However, the three models did not bring to the same conclusion.

As for leverage, the theory was rejected as the model predicts that district affiliation lowers firms' indebtedness by around 5%, instead of increasing it as stated by the literature.

Regarding the cost of borrowing, on the contrary, district affiliation turned out as a negative component of financing cost, reducing it by almost 1%.

Finally, the model found no significance to explaining firms' performance as the district variable has p-value higher than 0.1.

To conclude, despite the literature has largely claimed the advantages related to district affiliation, there are doubts about its existence in reality.

Rejecting results are confirmed also by other studies. The weakening of district effect, indeed, has been intensifying in the last few decades as global competition and technology disruptions are undermining districts' competitive advantage.

It can therefore be concluded that while in the past districts created positive externalities, nowadays greater flexibility, increasing capital requirements and the opening to markets outside the district borders have almost attenuated gains on leverage and profitability.

The current competitive environment of globalisation has indeed made districts' productivity not sufficient for outperforming foreign rivals. As suggested in the first chapter, Italian companies lack international vocation limiting access to a broad target of clients and reducing knowledge incorporation from abroad.

On top of that, undoubtedly some shortcomings of Italian industrial districts might have favoured a shift of the competitive advantage to emerging countries, more able to offer (cost and product) advantages.

References

Agostino, M., Ruberto, S., & Trivieri, F. (2023, March). The role of local institutions in cooperative banks' efficiency. The case of Italy. *International Review of Economics and Finance, 84*, pp. 84-103. doi:https://doi.org/10.1016/j.iref.2022.11.001

Airoldi, G., & Zattoni, A. (2002). Lo sviluppo imprenditoriale delle economie locali.

Ang, J. S. (1991). Small Business Uniqueness and the Theory of Financial Management. *Journal of Small Business Finance, 1*(1), pp. 11-13. doi:https://doi.org/10.57229/2373-1761.1108

Ang, J. S. (1992, December). On the Theory of Finance for Pirvately Held Firms. *Journal of Small Business Finance, 1*(3), pp. 185-203. doi:https://doi.org/10.57229/2373-1761.1121

Armano, E., Bondonio, D., & Cancila, E. (2010). *Quaderni di ricerca sull'artigianato.* Rivista di Economia, cultura e Ricerca Sociale dell'Associazione Artigiani e Piccole Imprese Mestre CGIA.

Arrighetti, A., & Ninni, A. (2014). La trasformazione 'silenziosa'. *Dipartimento di Economia Università di Parma*.

Associazione conciatori. (n.d.). Retrieved from https://www.distrettosantacroce.it/

Assoconciatori. (n.d.). *Il distretto di S. Croce sull'Arno.* Retrieved from http://www.assoconciatori.com/

Banca d'Italia. (2020). *Relazione annuale 2019.*

Becattini, G. (1989). *Riflessioni sul distretto industriale marshalliano come concetto socio-economico.*

Becattini, G. (1991). Italian Industrial Districts: Problems and Perspectives. *International Studies of Management & Organization, 21*(1). Retrieved from https://www.jstor.org/stable/40397178

Becattini, G., & Musotti, F. (2012). Measuring the district effect. Reflections on the literature. *PSL Quarterly Review, 56(226)*.

Beck, T., & Demirguc-Kunt, A. (2006). Small and medium-size enterprises: Access to finance as a growth constraint. *Journal of Banking & Finance*, pp. 2931-2943. doi:10.1016/j.jbankfin.2006.05.009

Belussi, F. (2000). Il distretto calzaturiero della Riviera del Brenta come forma organizzata di capitale sociale.

Belussi, F., & Scarpel, M. (2002). L'evoluzione recente del distretto della Riviera del Brenta: un approccio organizzativo.

Berger, A. N., & Udell, G. F. (1995). Relationship Lending and Lines of Credit in Small Firm Finance. *The Journal of Business, 68*(3), pp. 351-381.

Boot, A. W. (2000). Relationship Banking: What Do We Know? *Journal of Financial Intermediation*, 7-25. doi:10.1006/jfin.2000.0282

Brancati, E. (2015). Innovation financing and the role of relationship lending for SMEs. *Small Business Economics, 44*(2), pp. 449-473. Retrieved from https://www.jstor.org/stable/43553058

Brasili, C. (2016/2017). *The Italian Industrial Districts: evolution and features.*

Brezinova, M. (2021, November). Basic Characteristics of Small and Medium-sized Enterprises in Terms of Their Strategic Management. *International Journal of Systems, Engineering & Development, 15*. doi:10.46300/91015.2021.15.11

Camera dei Deputati. (n.d.). La politica industriale dell'UE e gli strumenti di difesa commerciale.

Camera di commercio Como-Lecco. (2023). Le imprese metalmeccaniche lariane: demografia di impresa, addetti, congiuntura al 31 dicembre 2022 e interscambio commerciale al 30 settembre 2022.

Camuffo, A., & Grandinetti, R. (2005). Distretti industriali in evoluzione: il ruolo dei knowledge intensive business services. *Quaderni di Management*.

Camuffo, A., & Grandinetti, R. (2011). I distretti industriali come sistemi locali di innovazione.

Caruso, A. (n.d.). *Il finanziamento tramite capitale di debito: un'indagine su PMI e micro imprese italiane.*

Castelli, A., Dwyer, G. P., & Hasan, I. (2006). Bank Relationships and Small Firms' Financial Performance. *Federal Reserve Bank of Atlanta*.

Castelli, A., Dwyer, G. P., & Hasan, I. (2009). Bank relationships and firms' financial performance: the Italian experience. *Bank of Finland Research*(36). Retrieved from https://ssrn.com/abstract=1527041

Cerved. (2022). *Rapporto Cerved PMI 2022.*

Chiarvesio, M., Maria, E. D., & Micelli, S. (2004). From local networks of SMEs to virtual districts? Evidence from recent trends in Italy. *Research Policy*, 1509-1528. doi:10.1016/j.respol.2004.08.009

Claver-Cortés, E., Marco-Lajara, B., & Seva-Larrosa, P. (2019). Competitive advantage and industrial district. *Competitiveness Review, 29*(3), 211-235.

Confindustria. (2022). *Rapporto Regionale PMI 2022.* Confindustria Servizi.

Cressy, R., & Olofsson, C. (1997, April). European SME Financing: An Overview. *Small Business Economies, 9*(2), pp. 87-96. Retrieved from https://www.jstor.org/stable/40228632

Cucculelli, M., & Storai, D. (2018). Indusrial districts, district effect and firm size. The Italian evidence. *Cambridge Journal of Economics, 42(6)*, 1543-1566.

De Toni, A., & Nassimbeni, G. (2003). Small and medium district enterprises and the new product development challenge. *International Journal of Operations & Production Management, 23*(6), pp. 678-697. doi:DOI 10.1108/01443570310476672

Distretto Metalmeccanico Lecchese. (n.d.). Retrieved from http://www.leccomech.com/it/

Fabiani, S., Pellegrini, G., & Signorini, F. (2000). *L'efficienza delle imprese nei distretti industriali italiani* .

Ferri, G., & Rotondi, Z. (2006). *Does Finance Matter in the Re-specialization of Italy's Industrial Districts?*

Fiorillo, D., & Guadalupi, L. (2005). Attività economiche nel distretto industriale di Nocera Inferire-Gragnano.

Gaibisso, A. M. (1992). Struttura e competitività del settore calzaturiero in Italia.

Garrone, P., & Vittadini, G. (2015). Sistema imprenditoriale italiano: originalità, cambiamento e sviluppo. *Atlantide 34*.

Gazzetta ufficiale delle Comunità europee. (1992). *Parere sulle PMI ed artigianato.*

Giannini, M. (2016). Lezioni di organizzazione delle aziende industriali.

Giordano, G., Pastore, P., Primerano, I., & Tommaso, S. (2016). *I distretti industriali italiani. Un'analisi comparativa.*

Il Giorno. (2018). Lecco medaglia d'oro nazionale delle trafilerie. Retrieved from https://www.ilgiorno.it/lecco/economia/lecco-medaglia-oro-nazionale-trafilerie-1.4297226

Il Post. (2015). Perché Chanel, Hermès e altri marchi di lusso comprano le concerie di pelle. Retrieved from https://www.ilpost.it

Innoveneto. (2019). *Reti innovative regionali e distretti industriali.*

Intesa Sanpaolo. (2022). *Monitor dei distretti della Lombardia.*

Istat. (2021). *Rapporto sulle Imprese 2021.* doi:doi.org/10.1481/Istat.Rapportoimprese.2021

Maglietta, N. (2004). *La struttura finanziaria obiettivo nel sistema impresa.* Torino: G. Giappichelli Editore.

Mediobanca. (2022). *Le medie imprese industriali italiane (2011-2020).*

Pieraccini, S. (2018). Distretti, Santa Croce sull'Arno diventa centro di formazione per la concia. *Il Sole 24 Ore*.

Ponzini, D., Gugu, S., & Oppio, A. (2015). Is the concept of the cultural district appropriate for both analysis and policymaking? Two cases in Northern Italy. *City, culture and society*, 75-85.

Rabellotti, R. (2003). How globalisation affects Italian industrial districts: the case of Brenta. Pisa.

Redazione Osservatori Digital Innovation. (2020). Le PMI nell'ecosistema imprenditoriale italiano: un confronto con l'UE. Retrieved from https://blog.osservatori.net/it_it/pmi-ecosistema-imprenditoriale-italiano-confronto-ue

Regione Campania. (n.d.). *Il distretto agroalimentare campano.* Retrieved from http://www.regione.campania.it/assets/documents/brochure-agroalimentare-cmpj6q6fxeu9oth0.pdf

Rossi, M. (2014). Capital structure of small and medium enterprises. the Italian case. *International Journal of Globalisation and Small Business*, 130-144.

Russo, P. F., & Rossi, P. (1999). Costo e disponibilità del credito per le imprese nei distretti industriali. *Temi di discussione - Banca d'Italia*(360).

Sarno, D. (2007, January). Financial structure and Southern Italy firms' growth.

Sforzi, F. (2002). The Industrial District and the 'New' Italian Economic Geography. *European Planning Studies, 10*(4). doi:10.1080/0965431022013016 7

Signorini, F. (1994). The price of prato or measuring the ID effect. *Papers in Regional Science*(73), 369-392.

Valassi, V. (n.d.). *Il distretto meccanico di Lecco.*