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# **Manufacturing location choice: Empirical evidence from Italy**

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## **INTRODUCTION**

Firms' manufacturing location decision has been widely studied during last decade within the international business literature. There still remains many doubts to discuss about.

One of the critical choices regarding the manufacturing location activities is whether internalization of these activities should be within firms' home country or abroad (Ellram et al., 2013). Studies on international business suggest that location represents an important variable for firms that are both market and efficiency-resource seeking (Doh, 2005). Indeed, many firms were forced to rethink about the geographical distance between production unit and their core activities. This happens due to different factors of location decision such as: organizational factors (the interdependences between the units and problem solving communication), locational factors (access to knowledge, proximity to markets) and, temporal factors (lead time) (Ketokivi et al., 2017; Rallet & Torre, 1999) .

Within the last decade many firms from high-cost countries have internationalized their business location activities although they recognize that this is not always beneficial (Ellram et al., 2013; Martínez-Mora & Merino, 2014; Meo Colombo & Pellicelli, 2013). Changes in technological and environmental characteristics have determined the need for co-location of R&D and production (Albertoni et al., 2015; Delis et al., 2017). This issue was identified by previous studies but it became more relevant in recent studies.

In particular, there is still the debate about the relationship that exists between the country of origin (COO) or "made in" and relocation of manufacturing activities in the high-cost countries in order to gain competitive advantage (Bertoli, 2013; Fratocchi et al., 2014; Kinkel, 2014; Liu, 2008; Tate et al., 2014; Tate, 2014).

COO effect or country image has been widely studied as one of the attribute that helps firms in order to gain competitive advantage in particular in cases in which firms decide to internalize their activities abroad, knowing as offshoring phenomenon (Di Mauro et al, 2017; Fratocchi et al., 2014). It refers to 'the picture, the reputation, the stereotype that businessmen and consumers attach to products of a specific country', while 'image' refers to history, national characteristics, traditions, economic and political background (Nagashima, 1970). For Bilkey and Nes, (1982) the COO or "Made in" refers to the quality perception of the products.

Because a specific product may be produced in one country and designed in others is important to identify two elements that characterize COO that are country of manufacturing (COO) and country of design (COD) (Hamzaoui & Merunka, 2007). This decomposition of COO in two parts

is important because they may have different influence on firms' location decision in order to gain competitive advantage.

Several studies on international business conclude that COO may influence firms location decision on where to manufacture and where to design a specific product (Di Mauro et al., 2017). In particular, for manufacturing firms that operate in international markets the location decision is very important if they have to consider how country image, both COM image and COD image can influence on consumers products evaluation.

Looking for cost advantage many firms from high-cost countries decide to delocalize their manufacturing activities in low-cost countries. However, choosing the right location firms have to cope with strength and weakness that the host country offers (Joshi & Mudigonda, 2008; Stack & Downing, 2005; Vestring et al., 2005). For this reason many firms decide to bring back home their manufacturing activities that previously were offshored, this phenomenon is known as reshoring (Albertoni et al., 2015). Producing in high-cost countries leads firms to a geographical proximity between manufacturing and R&D or design activities (Buciuni & Finotto, 2016). For instance, the co-location of these two units leads firms to seek for innovation in that high-cost countries often are seen as attractive locations for research activities.

The need for co-location may depend from different factors such as better coordination between R&D and production function (Ashby, 2016), its impact on product innovation (Robinson & Hsieh, 2016; Wendy L. Tate, 2014) and, the range of products and whether industries in which firms operate are classified as low or high tech (Albertoni et al., 2015; Delis et al., 2017). In particular, in the fashion industry the co-location is important in that there is a need to exchange information constantly between two units especially when firms have complex product, difficult to code and high level of product customization (Pisano & Shih, 2012).

Most of the studies argue that firms that produce in high-cost countries are more market-driven rather than efficiency-driven (Di Mauro et al., 2017). Market-driven strategies are related most to the characteristics of products such as the value of products' made in, manufacturing and design quality, technological skills and products brand name while efficiency-driven strategies are more focus on product process characteristics such as internal coordination, logistics operations and products delivery times (Fratocchi et al., 2016; Yegul et al., 2017).

The aim of this study is to investigate the relationship between manufacturing location choices and firms' competitiveness in high-cost countries by analyzing different strategies of location choices. This research question will be developed in two chapters. The elaboration of the two chapters benefits also from a visiting period of research at the Henley Business School in University of Reading, UK under the supervision of Prof. Davide Castellani.

Chapter 1 analyses the impact of COO on companies offshoring and reshoring decisions in order to achieve competitive advantage. In particular it offers some insights on main motivations of offshoring and reshoring strategies. The main attractive indicators of these locations where manufacturing activities are established and finally the COO seen as an indicator of competitive advantage for firms that operate in offshoring/reshoring process.

While many studies focus only on investigating the role of COO on both offshoring and reshoring strategies, this study aims in analyzing in specific how COM and COD as two components of COO influence on firms' manufacturing location choices. A multiple case studies of 8 Italian manufacturing firms that operate in fashion industry is conduct in order to clarify better this issue.

Chapter 2 investigates the relationship between different strategies of manufacturing location choices and innovation. In particular, firstly it aims to examine the importance of co-location of R&D and manufacturing, and secondly the relationship between the latter and different strategies of manufacturing location choices in high-cost countries is analyzed. The methodology used in this chapter is on a cluster analysis of strategies of 37 Italian firms that operate in fashion industry.

In both chapters Italian manufacturing firms are used as unit of analysis in order to investigate the relationship between different strategies of location choices and firms' competitiveness. While most of the studies on internationalization of production focus more on analyzing emerging countries, this study aims to leverage the role of high-cost countries as an opportunity for manufacturing firms to gain competitive advantage. For instance, high-cost countries are seen as a possibility for firms to get innovation, access to skills and where there is high perception of product "made in" (Bailey & De Propriis, 2014; Gray et al., 2017). More specifically, firms that operate in fashion industry are recently object of study in internationalization of production influencing firms location choices (Global Powers of Luxury Goods, 2018).

After analyzing each chapter, the rest of the thesis describes the main findings and it ends with some discussions and conclusions.

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# **Offshoring and reshoring: Does country of origin influence firms' manufacturing location decision?<sup>1</sup>**

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## **Abstract**

A lot of manufacturing companies decide to locate their production abroad. This leads to problems such as the selection of the host country and risk transfer to the home country reputation from operating abroad. These risks may impact the competitive advantage of the home company. The purpose of this paper is to examine how country of origin influences companies' offshoring and reshoring decisions in order to gain competitive advantage. 8 Italian manufacturing companies (operating in clothing, footwear and eyewear industry) are analyzed. Findings offer a contribution in understanding the key factors that drive offshoring and reshoring process and their impact on country of origin.

**Key words:** offshoring, reshoring, country of origin, manufacturing, competitive advantage

**JEL Classification code:** F23, L10, M11

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## 1.1 Introduction

Offshoring represents an interesting phenomenon that offers a possibility for an enterprise to profit from cost advantage (Jahns et al., 2006) through expanding its activities or a part of them in foreign countries. However, choosing a foreign location it is not very easy taking into consideration strengths and weaknesses of the host country (Joshi & Mudigonda, 2008; Stack & Downing, 2005; Vestring et al., 2005). This phenomenon becomes even more interesting when these elements influence the country of origin (COO) (or “Made in”) of a company that usually refers to the evaluation of products by customers referring on its geographic origins (Bilkey & Nes, 1982). In the offshoring manufacturing process, products can be designed in one country and manufactured in others consequently, it is important to distinguish between country of design (COD) and country of manufacturing (COM) as two important dimensions of COO (Hamzaoui & Merunka, 2006). This paper focuses on analyzing COM as a specific characteristic of offshoring process. Most of the studies argue that COM is less important compared to the origin of the brand and this is why for many companies the “name” of the host country is not relevant compare to what it offers in terms of cost advantages. It means that these companies choose to relocate manufacturing activities in lower cost countries (Thakor & Lavack, 2003) independently of the country image in which the products will be manufactured or assembled. It is evident that when a company decides to offshore its activities it has to cope with the problem of choosing the right location to design or to manufacture. This decision making that derives from the process of offshoring influence the COO of products. Looking for low cost manufacturing countries through cheap labor force (Houseman, 2007) or lower taxes in order to gain competitive advantage (Kotabe et al., 2008), companies often do not consider how this decision making impacts on country image (Essoussi & Merunka, 2007; Pappu et al., 2006). It means that choosing the right location that offers benefits for a company in terms of reinforcing the COO as a competitive advantage is a delicate decision (Liu et al., 2008). However, once firms establish their manufacturing activities into foreign locations, for many reasons, it may happened that they have to reshore home a part of manufacturing process or the total of the manufacturing process. As an example, in their study Fratocchi et al., (2014) find that this might happen due to the wrong managerial decisions. Considering the COM as key dimension of COO, in some cases this can influence the decision process to reshore the production in home country. Hamzaoui and Merunka, (2006) conclude that customers evaluate products according to the COM in that they might not believe in the capacity of the emerging country (characterized for example by cheap labor force) to produce quality products (Steffen Kinkel, 2012). This could be a factor that can obligate some enterprises to reshore their production in home country in order to leverage the

reputation of COO. Stentoft et al., (2016) identify different factors that constrain companies to reshore related to time and flexibility, market, risk, cost, access to skills and knowledge and, quality.

The objective of this paper is to offer some insights regarding the impact of COO on companies offshoring and reshoring decisions in order to achieve competitive advantage. The second and third section summarize literature review focusing on factors that motivate manufacturing firms in conducting the offshoring or reshoring process. The main attractive indicators of these locations which are manufacturing activities established and finally the country of manufacturing will be analyzed as a key dimension of country of origin seen as a competitive advantage for firms that operate in offshoring/reshoring process. The fourth section describes 8 case studies of Italian manufacturing companies operating in clothing, footwear and eyewear industry. Finally, the fifth and sixth sections conclude with results, discussions and conclusions.

## **1.2 Theoretical framework**

### *1.2.1 Location decision and COO effect*

The eclectic paradigm of Dunning (1980, 1988) is one of the main theories of internationalization that focuses on characteristics and attributes that resources must have in order to gain competitive advantage. He argues that not only how ownership advantages and location advantages play an important role in enhancing the possibility of the enterprises to internalize abroad but as well these elements determine the competitive advantage of these enterprises. When it comes into analyzing the internationalization of production, this may be part of competitive process consequently the market will pay attention to where these products are made. In the localization choices, companies are going to choose one or more countries that will allow them to increase the visibility of the country of origin.

The sources of competitive advantage are firms resources that are imperfectly imitable, rare, valuable and non-substitutable (Barney, 1991). One of the attributes that helps firms to gain competitive advantage is the country image or country of origin effect considered as one of the elements of the ownership advantages and which plays an important role for firms in order to gain competitive advantage in particular on cases of product internalization abroad. It is evident that the attribute of “not been copied” is strongly incorporated in a product’s COO determining the latter as source of competitive advantage.

In particular a positive perception of country of origin image can have benefits for the domestic producers in enlarging and defending their home market (Baker & Ballington, 2002). This means that the country of origin of a specific product can influence costumers purchasing decision.

In international markets, for customers is easy to define the COO of a specific product based on elements such as brand, package and advertising. There are different definitions about the COO concept in the literature. In his study Nagashima, (1970) uses the concept “made in” image referring to “the picture, the reputation, the stereotype that businessmen and consumers attach to products of a specific country”, where “image” he refers to history, national characteristics, traditions, economic and political background. For Bilkey and Nes, (1982) the COO or “Made in” refers to the quality perception of the products. Taking into consideration that costumers have different perceptions regarding products made in different countries means that costumers have different country image. These different perceptions are due to the fact that they use information cues that refer to products’ brand image, price and COO (Wall et al., 1991).

According to Han (1989) brand image includes products information as a summary construct. In cases in which consumers are not familiar with certain products, they may refer to the product country image as a “halo” influencing their evaluation of products attributes through their beliefs. In this case, country image “may affect indirectly consumers” brand attitude through their inferential beliefs. While consumers become familiar with the products of a specific country, country image can serve as a summary construct of consumers’ beliefs about the characteristics of the products and in this case country image directly affects the consumers’ brand attitude (Han, 1989).

According to Hamzaoui and Merunka, (2006) consumers use COO in order to evaluate products from a specific country basing on their stereotypic beliefs related to that country. They use the image of a country, so all the information that they know related to that country that include its people, characteristics, people habits and products linked with it (such as technology, typical products, innovation, price, reliability, overall quality). Country image refers to stereotypes held about the economic and political environment of a country (Ahmed et al., 2002; Wall et al., 1991).

As an example Nes, (1981) while studying the impact of the state of economic development on consumers product evaluation finds that consumers perceive products made in developing countries to be of lower quality while well-known brand name are perceived to be of higher quality. The perception of customers regarding country’s products may depend from products brand image and their country of origin because if brands have identical country of origin means they have similar product attributes (Han, 1989).

These findings offer important insights especially for firms that operate in international markets in order to understand better the impact of the origin of products in the evaluation of these products. Since the internationalization process gives firms the possibility to profit from cost advantages through relocation or delocalization of their manufacturing activities in countries that offers these advantages (for example in offshoring or reshoring decision), they need to evaluate if changing the origin of a country can change the perception of consumers relating to the image of these countries. Brands can be produced in different countries, the perception of consumers regarding products' brand image may be different and influenced by the origin of the country (Koubaa, 2008).

### *1.2.2 The dimensions of COO*

Some studies show how brand image is strongly related to the COO meaning that firm's location choice where a specific product is made influence on consumers' product perception. Reardon et al., (2005) consider that when consumers are unfamiliar with products characteristics and benefits, COO and brands may serve as indicators in order to evaluate their quality.

In a market globalization context, a specific product can be manufactured in one country and can be designed in another country, the COO per se includes the country of manufacturing (COM) and country of design (COD). Both dimensions of COO may influence consumers' products evaluation and consequently the perception of consumers regarding products' brand image.

From the firm's perspective the COO may influence firms' location decision on where to manufacture and where to design a specific product. In particular, for manufacturing firms that operate in international markets the location decision (both in offshoring and reshoring strategies) is very important if they have to consider how country image, both COM image and COD image can influence on consumers products evaluation.

Many studies investigate the role of COO on products evaluation from the consumers from marketing perspective and they paid less attention in what can be the consequences in terms of firm's location decision from a managerial perspective (Bilkey & Nes, 1982; Che-Ha et al., 2016; Eng et al., 2015; Han, 1989; Wernerfelt, 1984b). There is a need to define how COO may influence firm's location decision in terms of production and design in order to achieve a positive evaluation for these products from the consumers point. In offshoring process it is not only important to consider the COM of manufacture or assembled products but even the location advantages related to what makes attractive the foreign locations (Johansson & Nebenzahl, 1986).

Producing in the firm's home country is more convenient in terms of competitive advantage for consumers of the country of origin because they prefer more products made in their country rather than made in foreign country due to consumer ethnocentrism (Pecotich & Rosenthal, 2001). Consumer ethnocentrism can be a disadvantage for firms that decide to move their manufacturing activities in foreign countries where consumers may discriminate against the firm's country of origin (Cuervo-Cazurra, Maloney, & Manrakhan, 2007).

When focusing on resources that help firm to gain competitive advantage, brand image is one of them (Wernerfelt, 1984). The COO referring to the origin in which the product is made influences not only the perception of consumers on brands but even the brand images in terms of brand equity as argued by Hamzaoui and Merunka, (2006). It represents the state of health of the brand, in the internationalization aspect considering brand as resource that drive firms to gain competitive advantage, the COO plays a fundamental role in that influence brand image (Pappu et al., 2006).

If the COO is important to determine indirectly the firm's competitive advantage, it is as well an indicator that determines when it is convenient for a firm to offshore or reshore its production considering the importance of choosing the right country in which products will be manufactured or assembled in that will affect the origin country image.

This question naturally emerges: How can be COO choices managed in order to determine competitive advantage? Roth and Romeo, (1992) after examining the products perception of consumers based on their country of origin, found four dimensions that characterize country image. These dimensions are summarized as:

- Innovativeness - use of new technology and advanced engineering;
- Design - appearance, style, colors, variety;
- Prestige - exclusivity, status, brand name reputation;
- Workmanship - reliability, durability, craftsmanship, manufacturing quality.

Base on these dimensions Chao, (1998) considers that country of assembly and country of parts have significant effect on product quality perception where innovativeness, design and prestige refer to design quality while workmanship refers to product quality (Insch & McBride, 2004).

However, Bose and Ponnampalnam, (2011) transform the dimensions individuated by Roth and Romeo (1992) in innovativeness, variety, exclusivity and quality instead of design, prestige, workmanship and innovativeness.

Brand reputation refers to the perception of quality while brand name relates to the extrinsic attribute of the product not part of physical product itself (George et al., 2016; Grewal et al., 1998; Musteen, 2016; Rashid & Barnes, 2017; Robinson & Hsieh, 2016; Selnes, 1993; Shen et al., 2014).

Manufacturing quality refers to the judgment of consumers about the superiority of a product in terms of assembly, materials or parts (Insch & McBride, 2004).

If COO is strongly related to brand image, this means that strong brand image might be a crucial factor to determine a successful global manufacturing that can lead to competitive cost advantage (Jo et al., 2003). Choosing where to manufacture or assemble a products may bring cost savings or quality improvements affecting customers' purchasing decision (Brodowsky et al., 2004).

COO as part of country brand needs to be strongly tied with parts of manufacturing process in the country of origin (FutureBrand, 2014) in order to be considered as essential strategy for competitive advantage and success. This may depend on the level of perception by consumers on COM (Eng et al., 2015) and in particular if COM is the same as the country brand. Country brand has a competitive advantage over other countries as showed in the report of FutureBrand, (2015) only 22 out of 75 countries are qualified as country brands using the six dimension of 'status' (value system, quality of life and business potential) and 'experience' (heritage and culture, tourism and made in). Furthermore, Rashid et al., (2016) find that COO of a brand is strongly related to the country where the brand is originated and developed, to the country origin of company's founder and to the heritage and culture associated to the brand.

If COM is strongly related to the country brand in that determining competitive advantage, why some companies originated from country brand decide to offshore a part or a total of their manufacturing activities in other countries while others decide to reshore them? In order to answer this question, it is important to distinguish two main concepts that are offshoring and reshoring. An important contribution in order to understand better these two concepts is the study conducted by Fratocchi et al., (2014).

While focusing on the *offshoring* concept that refers to the relocation of manufacturing activities in international countries, the authors distinguish between *near-shoring* and *off-shoring*. In the first case the location is placed in the firm's home region and, in the second case the location is concentrated far away from the firm's home region. When firms decide to relocate the offshored manufacturing activities distinctions can be made between *reshoring*, *near-reshoring* and *further off-shoring*. When firms adopt *reshoring* strategy, defined by authors as "voluntary corporate strategy", the manufacturing activities that before were offshored come back in the home country. Other studies use the concept of nonlinear internationalization that refers both to market de-

internationalization and re-internationalization (Robinson & Hsieh, 2016; Vissak & Francioni, 2013; Vissak & Zhang, 2016). In particular, it refers to ‘the increases and decreasing of international activity’ (Denicolai et al., 2015).

The database of Uni-CLUB MoRe Back-reshoring Research Group (Fratocchi et al., 2014), examining 500 Italian and foreign companies that implement *reshoring* strategy, shows that from year 2008 to 2014 there was an increase number of companies that bring back home their manufacturing activities. For example, about 85 companies during the year 2013 adopt *reshoring* strategy and most of them operate on clothing and footwear sector. On the other hand, *near-reshoring* corresponds the offshored manufacturing activities is relocated in a country concentrated in the same region of firm’s home country. In the database of Uni-CLUB MoRe Back-reshoring Research Group a few companies decide to near-reshore their manufacturing activities and most of them operate on clothing and footwear sector. And finally, in the *further off-shoring* strategy, firms decide to relocate the earlier offshored manufacturing activities in a country concentrated far away from the region of firm’s home country.

Other studies have been conducted in order to analyze the motivations of firms to offshore or reshore their manufacturing activities. Analyzing German manufacturing firms Kinkel and Maloka, (2009) find that low labour costs drives offshoring process while flexibility to supply in the international supply chain and quality issues in the foreign country motivate firms to reshore.

Also Fratocchi et al., (2016) through a literature review built a framework regarding the motivation for reshore and find “made in effect” as one of the fourth main motivation for enterprises to reshore. This happens in that consumers perceive the quality of products depending from the location where these are produced. They also argue that offshoring process usually is influenced by cost consideration while reshoring decisions are driven by value added issues.

However, one of the aspects that should be considered on COO effects is that there are differences of products in terms of quality and these differences depend from the perceptions of consumers on COO (Agrawal & KamBetara, 1999). This happens because consumers evaluate the quality of the product according to the country image and these differences on quality are explained by the fact that COO influence the pricing decision of firms (Bertoli, 2013). Also consumers are able to individuate and to evaluate products countries according to the importance of design (developed countries) and the importance of manufacturing and assembly (developing ones) (Hamzaoui & Merunka, 2006). All these studies show how COO impacts the internationalization process of the firm in that it creates competitive (dis)advantage.

While considering the motivation for location choice, Bailey and De Propris, (2014) find innovativeness as one of the main driver of reshoring for UK manufacturing companies while Elia

et.al, (2014) argue that use of technological resources is one of the main factors that motivate companies in order offshore their manufacturing activities abroad. In a study conducted by Bals et.al, (2016) advanced engineering and use of new technology are conceptualized as the main drivers for future reshoring decisions giving the possibility at companies to gain competitive advantage.

For many companies the offshoring process brought advantages and disadvantages. For some offshoring firms, the main advantages are related to knowledge and innovation acquisition from other firms that experienced offshoring strategy, increasing the capacity of the firm to produce more and also to accelerate the process design of products (Mohiuddin & Su, 2013). Ricciardi et.al, (2015) analyzing some US offshored companies, identify some offshoring critical factors such as quality, lead time and freight cost that forced these companies to reshore. The main motivation to reshore are related to government incentives, skilled workforce and the “made in USA”.

Choosing the right country of manufacturing or design will have significant effect on all dimensions of country of origin, in particular brand name reputation, manufacturing quality, innovativeness and design. It means that firms will decide whether to offshore or reshore driven by the added value derived from the “made in”.

As it was mentioned in previous literature the two dimensions of COO are COM and COD. It means that in order to examine the effect of COO on firm’s manufacturing location decision, it is important to distinguish which are the effects of one dimension and the other. Referring to COM, it is important to investigate how producing in a country can determine the quality perception of products. Analyzing the place where a specific product is manufactured means that the manufacturing quality such as craftsmanship, durability and workmanship depends from that place.

The quality perception of products from firms’ point of view depends not only from manufacturing quality but also considering how innovative are they such as using new technologies and advanced engineering. Consequently, firms when choosing a country to run the manufacturing process must also consider if that country offers innovation possibilities. An important factor that influences product quality perception is also the brand name reputation.

From consumers point of view COO is the country that they link to the brand name reputation, - this means that the evaluation of the quality of products made in a specific country may depend from the image of that country. While brand name reputation can determine if a country has positive image, this can also influence on firm’s manufacturing location decision.

Regarding the second dimension COD it is important to investigate if designing a product in a specific country can impact on design product evaluation such as on evaluation of product appearance, product style, product colors and product variety basing on the country where this



product is designed. After determining the effects of COD and COM on product evaluation, it is important in that firms can understand the importance of where to produce and where to design. Finally, these two dimensions can influence on firm's location decision both for manufacturing and design.

Based on the literature the four main research questions addressed in this paper are:

RQ1: How can innovativeness influence manufacturing location choice?

RQ2: How can brand name reputation influence manufacturing location choice?

RQ3: How can manufacturing quality influence manufacturing location choice?

RQ4: How can product design influence on design location choice?

### **1.3 Firm's manufacturing decision location: case of "made in Italy" industries**

Many studies have been focused in offering important insights on how "Made in Italy" represents for Italian companies a competitive advantage due to consumer association of brands with specific countries. (Aiello & Donvito, 2011; Di Maria & Finotto, 2008; Fortis, 2005).

Italian brand has a strong influence on consumers' perception in particular regarding to the Italian product design and manufacturing quality creating an impression that these processes are performed in Italy. The evaluation of Italian products is linked with Italy as a country or, the place where they are manufactured or designed. A strong brand determines if a specific country can be considered as a country brand.

Considering Italy as one of the countries brands and in particular for fashion industry (such as clothing, footwear and eyewear) (FutureBrand, 2015), this paper is addressed to this country, in order to investigate the role of COO or "Made in Italy" in influencing Italian firm's manufacturing location decision. This decision is important because the evaluation of a product is done considering the place where is manufactured or design. Italy is as one of the countries with positive image perception, this can help to examine the role of "Made in Italy" in influencing Italian firms to decide the place for product manufacturing and design. Moreover "Made in Italy" has a positive impact over the product perception value in particular when production takes place in Italy (Bertoli, 2013).

For Italian companies, strong brand means not only being physically present in Italy but also brand needs to be linked with manufacturing and design process in the country of origin. In order to understand better how "made in" or COO can determine competitive advantage, it is needed to be analyzed in this context. Two main elements of COO that are COM and COD are need to be

pointed out. This categorization should be underlined because sometimes consumers evaluate the products based on COM and COD. The report of FutureBrand, (2014) finds that the more brands are known as originated from a specific country, the more this country will be preferred by consumers as a COO.

Taking in consideration the importance of COO in country brands, this report ranks Italy in the 5<sup>th</sup> position, while in particular based on industry sectors, in 2<sup>nd</sup> position for food and beverage, in 7<sup>th</sup> position for personal care and beauty, in 4<sup>th</sup> position for automotive, in 10<sup>th</sup> position for electronic good, 2<sup>nd</sup> position for fashion and in 3<sup>rd</sup> position for luxury. A strong brand makes more easier for companies in order to achieve competitive advantage in particular in international markets.

Many Italian firms decide to offshore their manufacturing activities in foreign countries and others decide to reshore them. Most of the previous studies demonstrate that COO or “made in” plays an important role in for firm drive to offshore and to reshore. For example the database of Uni-CLUB MoRe Back-reshoring Research Group, (Fratocchi, et al., 2014) offers important insights on how consumers are able to pay for a premium price for the “certificate of origin” of “made in”.

For the firms “100% made in Italy” that decide neither to offshore nor to reshore, having the production is 100% concentrated in Italy, the key factors that determine their competitive advantages are design and quality. This is why these firms prefer home country production due to the difficulties to control the quality of their manufacturing activities abroad compare to other firms that decide to offshore their production driven by lower production costs factor.

Most of the Italian firms have played an important role on international market leveraging the image of “made in Italy” (Chiarvesio & Di Maria, 2009). Italy is considered as a “second largest industrial manufacturing in the Europe” (Bertoli, 2013). Fortis, (2005) defines the four As of “made in Italy” that stand on apparel and fashion (*abbigliamento e moda*), furniture (*arredocasa*), automation (*automazione*), food and beverages (*alimentari*) as main sectors of Italian manufacturing industry having a positive trade balance. Consumers are more likely to prefer products “made in” a certain country, this determines a competitive advantage for the companies of that country (Albertoni et al., 2015).

Based on the database of Uni-CLUB MoRe Back-reshoring, during the years 1980-2014 about 20% of Italian companies adopt reshoring strategy, while most of them operate on clothing and footwear sector (about 43%) and about 22.6% of them adopt near-reshoring strategy while most of them operate on clothing and footwear sector (about 67%). According to the Research Group most of the firms that decide to offshore their manufacturing abroad have to with main problems

such as production quality and delivery time, such as Zara company (Fratocchi, et al., 2014) and while examining Italian footwear manufacturers companies, 62,5% of them decide to near-reshore, 50% of them to reshore while 37,5% decide to further off-shore.

Brand and quality represent for these companies the main motivations to reshore in order to allow to them to achieve competitive advantages. Thus this study focuses on Italian manufacturing companies that experienced the offshoring and reshoring process offering important insight on how COO can be a determinant factor to achieve competitive advantage. When it comes into analyzing country brands, Italy ranks in the top five position for fashion industry and luxury (FutureBrand, 2014). COO or “made in Italy” influences firms to adopt reshoring strategy as the right decision to add value to their products, such as the case of And Camicie (Fratocchi et al., 2014). Gianecchini and Campagnolo, (2015) examine 50 Italian companies that decide to reshore their manufacturing activities in Italy, in proximity with Italian region and far away from Italy. For those companies that reshore their manufacturing activities from countries in proximity from Italy, characterized by elevate cultural distance and a long prior period of offshoring (about 19 years), the main motivation to reshore is quality, as essential element for enhancing the prestige of original “made in Italy” products (Savi, 2015). For others, companies that reshore their manufacturing activities from countries far away from Italy, the main motivations are both quality and “made in Italy” issues.

If quality of the product is positively linked to the country of manufacturing image (Hamzaoui & Merunka, 2006), that means better perception of consumers for that product in terms of quality (Aiello & Donvito, 2011), the probability for Italian offshoring manufacturing firms to reshore in order to achieve competitive advantage will be higher. The use of COO image by Italian manufacturing firms gives them the possibility to enlarge and grow the home market in order to achieve competitive advantage (Baker & Ballington, 2002). When the focus is on being competitive in international markets in terms of leverage the value of “made in Italy” Italian manufacturing firms are seen more propensity to produce in the home country rather than adopt offshoring strategy.

## **1.4 Methodology**

### *1.4.1 Empirical setting*

A qualitative multiple case study is used in order to examine how COO can influence offshoring and reshoring decisions on Italian manufacturing firms that operate in clothing, footwear

and eyewear sector. A multiple case study may be appropriate for a descriptive or explanatory purposes (K. R. Yin, 1979); for “how” and “why” questions (Yin, 1994). It may be used when “the boundaries between phenomenon and context are not clearly evident” (Yin, 2003); to “create and highlight theoretical construct” (Eisenhardt, 1989) and, where structured or semi-structured questionnaire are used in order to “replicate and deduce the generalizability of research findings” (Marschan-Piekkari & Welch, 2011).

Italian clothing, footwear and eyewear sectors are selected because they are one of the main industries and the most internationalized. According to the study conducted by Fratocchi et al., (2014) during the period 1997-2014 about 43% of Italian companies that operate in these industries decide to reshore and 67% to near-reshore.

Firstly, in order to identify reshoring cases of Italian companies that operate in these sectors some secondary data are used such as, consulting documents, articles, reports and companies’ websites (Marschan-Piekkari & Welch, 2011). 30 companies have retained for this research. Secondly, after identifying the companies, some semi-structured questionnaires were conducted with their CEOs. In particular all companies were contacted both by phone and e-mail from May to June 2017 and the questionnaires were compiled by the CEOs of each firm. For only 8 out of 30 companies was possible to collect complete information. In order to ensure their anonymity, the 8 companies are defined with the first 8 letters of the Greek Alphabet (Beta, Gamma, Delta, Epsilon, Zeta, Eta and Theta).

The reason of the sample selection is related to the fact that COO based on the literature has different relevance in determining competitive advantage according to when a firm decide to offshore and when to reshore or none of the two. Thirdly, a description of the characteristics of Italian clothing, footwear and eyewear sector is examined such as the year of establishment, industry sector, number of employees, brand name registered, turnover in EUR (2016), classification of the range of products, function design and their collaboration, suppliers’ characteristics, activities outsourced, starting year of offshoring, countries where these firms delocalize their production, and the reshoring year. These characteristics are shown in Table 1 where the 8 firms are listed according to the reshoring period.

Fourthly, CEOs were asked to explain the main reason that motivates them to offshore and then to reshore in order to evaluate the importance of “made in” effect in the respective decisions. CEOs of companies that decide neither to offshore nor to reshore were asked to explain the motivation of this decision.

The questionnaire aimed to obtain information regarding important aspects such as the sources of competitive advantage, criteria for suppliers’ selection, motivation for not offshoring,

motivation for offshoring and the respective advantages and disadvantages, motivation for reshoring and the respective consequences concluding with the main factors for designer selection.

Questions were formulated using 5-points Likert Scale where 1-point is for lowest relevance and 5-point stands for highest relevance. In order to examine the results, only alternatives evaluated with at least 4-point relevance and not considering the others with less than 4-point relevance were taken into consideration.

The questionnaire was structured basing on the framework developed by Fratocchi et al., (2016) that includes the main motivations for reshoring strategies. This is articulated in customers perceived value and internal environment motivations, cost efficiency and internal environment motivations, value driven and external environment motivations and, finally efficiency driven and external environment motivations. This analyze will offer as well information about the evolution of offshoring and reshoring process and the respective implication for the company in terms of gaining competitive advantage.

#### *1.4.2 Description of cases*

The description of cases is summarized in Table 1. As mentioned above, firms are listed according to the year of reshoring. Starting with Alpha firm that operates in footwear sector is founded in 1984 and offers mid-high range of products that has turnover of 13.8 ML EUR (2016) and 45 employees. After 13 years of establishment about 30% of manufacturing activities were carried out by Italian and foreign suppliers (in particular semi-finished and finished low or mid-low products). The main reasons for the foreign suppliers (located in Romania and Hungary) selection are costs issue and reliability while Italian suppliers are perceived as high qualified workforce characterized by technological and design skills. Driven by factors such as country image perception and reliability of Italian suppliers, since last year Alpha firm has been working in the idea of realizing all the production in Italy. Referring to the design process the firm has 2 internal design functions and also has occasional collaboration with external designers in Italy that contributes for the products' innovation and increase competitiveness. The reason why Alpha firm collaborates only with Italian designers is due to their design competences and their reputation and as well the fact that are located in Italy, a country with positive image perception. After 7 years of offshoring Alpha firm decided to reshore to Italy about 70-75% of manufacturing activities.

Beta firm founded 50 years ago, operates in footwear industry where its products are classified on high range. It has a turnover about 17.5 ML EUR (2016) and 58 employees among which 2 are from marketing department. Internal and external design function is in Italy with which

it collaborates often. Since it was founded, about 25% of manufacturing activities were carried out by Italian and foreign suppliers (in particular the realization of specific components, and mid-high products). For Italian and foreign suppliers located in emerging and advanced countries (such as Romania) there is no distinction for the criteria selection (since they all are chosen by technological and design skills, reliability, high quality workforce and costs issue) for the selection of Italian designer the motivations are related to design competences and design reputation. This may be justified by the fact why this company collaborates only with Italian designers. In Italy the company produces semi-finished, prototypes and finished high or mid-high products having also a manufacturing process abroad for the realization of semi finished products. Beta firm, after 31 years decided to offshore part of production abroad while reshoring process started after 12 years from offshoring.

**Table 1. Description of cases**

	<b>Case studies</b>							
Construct	Alpha	Beta	Gamma	Delta	Epsilon	Zeta	Eta	Theta
Year founded	1984	1967	1990	1960	1995	1979	2004	1934
Industry	Footwear	Footwear	Clothing	Clothing	Eyewear	Footwear	Footwear	Eyewear
Employees	45	58 (2 from marketing department)	35 (8 from marketing department)	350 (8 from marketing department)	270 (20 from marketing department)	18 (2 from marketing department)	60 (5 from marketing department)	7500 (200 from marketing department)
Registered brand	1	1	1	1	-	2	1	6
Turnover €	13.8 m	17.5 m	7.8 m	85 m	60 m	2.23 m	12 m	1.253 m
Product range	Mid-high	High	Mid-low	Mid-high	Mid-high	Mid-high	Mid-high	All
Function design and collaboration	-Internal and external (in Italy) - Occasional	- Internal and external (in Italy) - Often	- External (in Italy) - Often	- Internal (in Italy) and external (in Italy and advanced countries) -Systematical	- Internal (in Italy) and external (in Italy and advanced countries) - Occasional	- Internal (in Italy) and external (both in Italy) - Systematical	- External (in Italy) - Often	- Internal (in Italy, advanced and emerging countries)
Suppliers	Domestic and regional	Domestic and regional	Regional	Domestic, regional and global	Global	Domestic and regional	Regional	Domestic, regional and global
Activities outsourced	Semi-finished and finished low or mid-low products	Semi-finished and finished low or mid-low products	Finished low or mid-low products	Prototypes, finished mid-high, mid-low products	Specific components, of semi-finished and prototypes	Prototypes and finished high or mid-high products	Finished high or mid-high products	Specific components and finished products
% Activities outsourced	80	80	70	80	60	80	50	50
Offshoring year	1997	1998	2006	2000	1995	2004	2010	2010

Countries of offshoring	Advanced and emerging country	Advanced country	Emerging country	Advanced and emerging country	Advanced country	Advanced country	Emerging country	Emerging country
Reshoring year	2004	2010	2014	2015	In a near future	In a near future	In a near future	Within the year 2020
Countries of reshoring	In Italy	In Italy	Closest to Italy	Closest to Italy	In Italy	In Italy	In Italy	In Italy and closest to Italy
% reshored	75	50	60	70				



Gamma firm is founded in 1990 and it operates in clothing industry. It has 35 employees among which 8 are from marketing department and a turnover about 7.8 ML EUR (2016). It offers products classified as mid-high and mid-low range. It has only external design function localized in Italy with which it collaborates often. Italian designers are chosen according to their competences and reputation considering also the fact that they are locating in Italy, a country with positive image perception. After 14 years from its foundation the great part of manufacturing activities is carried out of Italy (in China and Romania), where the realization of finished low or mid-low products is managed by the same company abroad. The realization of semi-finished product is managed by suppliers located in a developed country (with about 70% of production). For the selection of Italian suppliers the main reasons are related to technological and design skills, the foreign suppliers located in advanced country are selected considering costs issue, reliability, proximity and low-cost production motivation. However, the firm decided in the year 2006 to offshore part of manufacturing activities and in particular referring to finished low or mid-low products while after 8 years of offshoring the company decided to near-reshore, localizing in a country closest to Italy (such Albania).

Delta firm has 57 years of experience operating in clothing and textiles industry and is specialized in clothing manufacturing and marketing. It has 350 employees among which 8 are from marketing department and a turnover of about 85 ML EUR (2016). In terms of price/quality its products are classified as mid-high range. Delta firm has both internal and external design function located in Italy and in advanced countries with whom has to collaborate systematically. In the same year when it was established, it started to outsource part of manufacturing activities in advanced and emerging countries (such as Romania, China and Portugal). The realization of about 35% of prototypes and 80% of mid-high and mid-low finished products is carried out by these suppliers. The motivations for the designer selection are quite similar (such as design skills, reputation of designers and motivation related to costs issue for the realization of design process for both Italian and foreign designer located in advanced countries), those for suppliers' selection are quite different. Reliability, proximity, technological and design skills, perception of country image and high qualified workforce are the main motivation for the selection of Italian suppliers. While foreign suppliers located in advanced countries are chosen according to reliability, technological and design skills criteria, those located in emerging countries are chosen considering cost issue and low production motivations. After 15 year of offshoring, Delta company decided to change localization and to reshore the production (from year 2015) in countries closest to Italy (near reshoring) such as Greece and Portugal.

Epsilon company with 22 years of experience operates in eyewear sector. It has 270 employees among which 20 from marketing department, a turnover about 60 ML EUR (2016) and its products are classified as mid-high range of the line production. It has both internal and external design function, in particular external design function is located in Italy and in developed countries which it collaborates occasionally. The main reason for Italian designer selection is because of the positive perception of the country image. The great part of the production is carried out by the same company in Italy (in particular the realization of specific components, of semi-finished, of prototypes and finished high or mid-high products). About 40% is outsourced and runs by Italian suppliers (in particular the realization of specific components, of semi-finished, of prototypes and finished high or mid-high products) and foreign suppliers located in China (in particular the realization of specific components, of semi-finished and prototypes). While foreign suppliers located in advanced and emerging countries are chosen for cost and low-cost production motivation, the main motivation for Italian suppliers' selection is the exclusivity of the supply.

Zeta company operates in footwear industry, in particular in production of sport footwear with about 38 years of experience in this industry. It has 18 employees among which 2 are from marketing department. For the year 2016 it has a turnover about 2 ML EUR offering products classified as mid-high range of line. It has both internal and external design functions in Italy with which collaborates systematically. The main reason for collaborating only with Italian designer located in Italy is due to their high design skills. For this company part of production process is outsourced (about 20%) starting since it was founded. Italian and foreign suppliers (such as suppliers located in Romania) play an important role in realizing part of manufacturing process (in particular for the realization of semi-finished products), while other part of production is carried out by the same company in Italy (in particular the realization of prototypes and finished high or mid-high products). The main motivation for the suppliers located abroad are due to costs issue and low-cost production while Italian suppliers are chosen for reliability and high skills workforce motivation. After 25 year from when it was founded decides to offshore for 13 years.

Eta was founded in 2004 operates in footwear industry having 60 employees among which 5 are from marketing department and having a turnover with about 12 ML EUR (2016). Its products are classified as mid-high range of line production, in particular finished mid-high products are carried out by the same company located in an emerging country (such as China). Semi finished products are manufactured by suppliers located in advanced country (such as Albania) due to costs issue and low-cost production. Referring to the products design the company collaborates often with external designers located in Italy. While about reshoring decision, it may be realized in a near future.

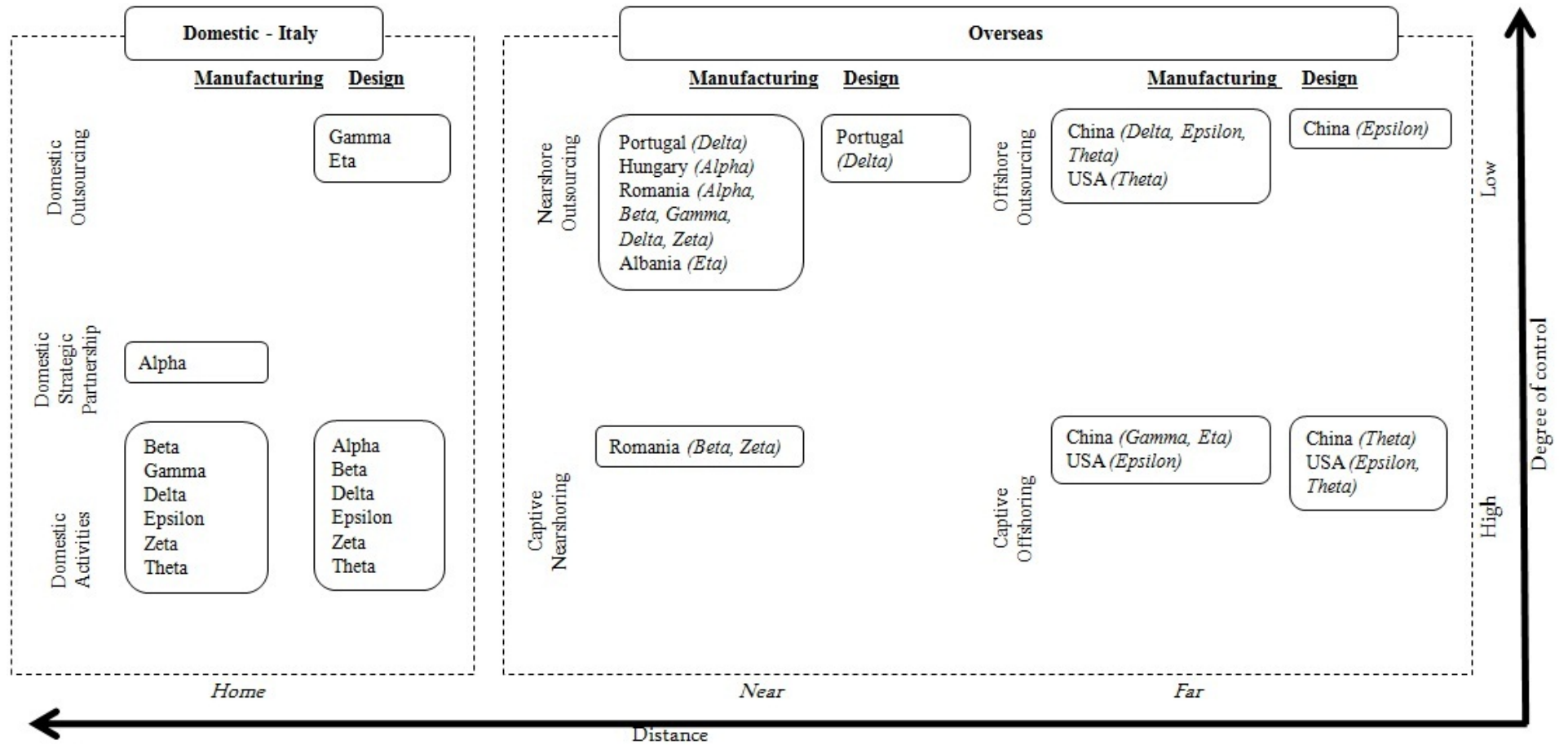
Finally, Theta firm operates in eyewear sector with 83 years of experiences in the market specialized in production, marketing and framing of glasses and sunglasses under 5 brands. With more than 7500 employees among which 200 are from marketing department and a turnover of about 1.253 ML EUR (2016), it offers all line range of products. It has 5 internal design functions located in Italy, in advanced countries (such as USA) and emerging countries (such as China) where there is no distinction for their selection criteria such as all of them are selected due to design skills and same costs for the realization of design process. Only 50% of the manufacturing activities is outsourced, in particular the realization of specific components and finished products is carried out by suppliers located in advanced and emerging countries. Costs and reliability are the main motivation for the selection of all of them, following by low cost production and high skills workforce.

As shown in Table 1 Delta company has recently (2015) reshored part of manufacturing process in particular the realization of prototypes, and finished products after 15 years of offshoring. It is followed by Gamma that after 8 years of offshoring decides to reshore in 2014, by Beta that reshores in 2010 after 12 years of offshoring and finally by Alpha that reshores in 2004 after 7 years of offshoring. These are the only companies that finalized the reshoring process in Italy (for example Alpha and Beta) and in countries closest to Italy such as in Albania for Gamma and in Greece and Portugal for Delta while the other companies that still experiencing offshoring process expresses their intent for a future reshoring in Italy (for example Epsilon, Zeta and Eta) and in countries closest to Italy (for example Theta).

## **1.5 Result and discussion**

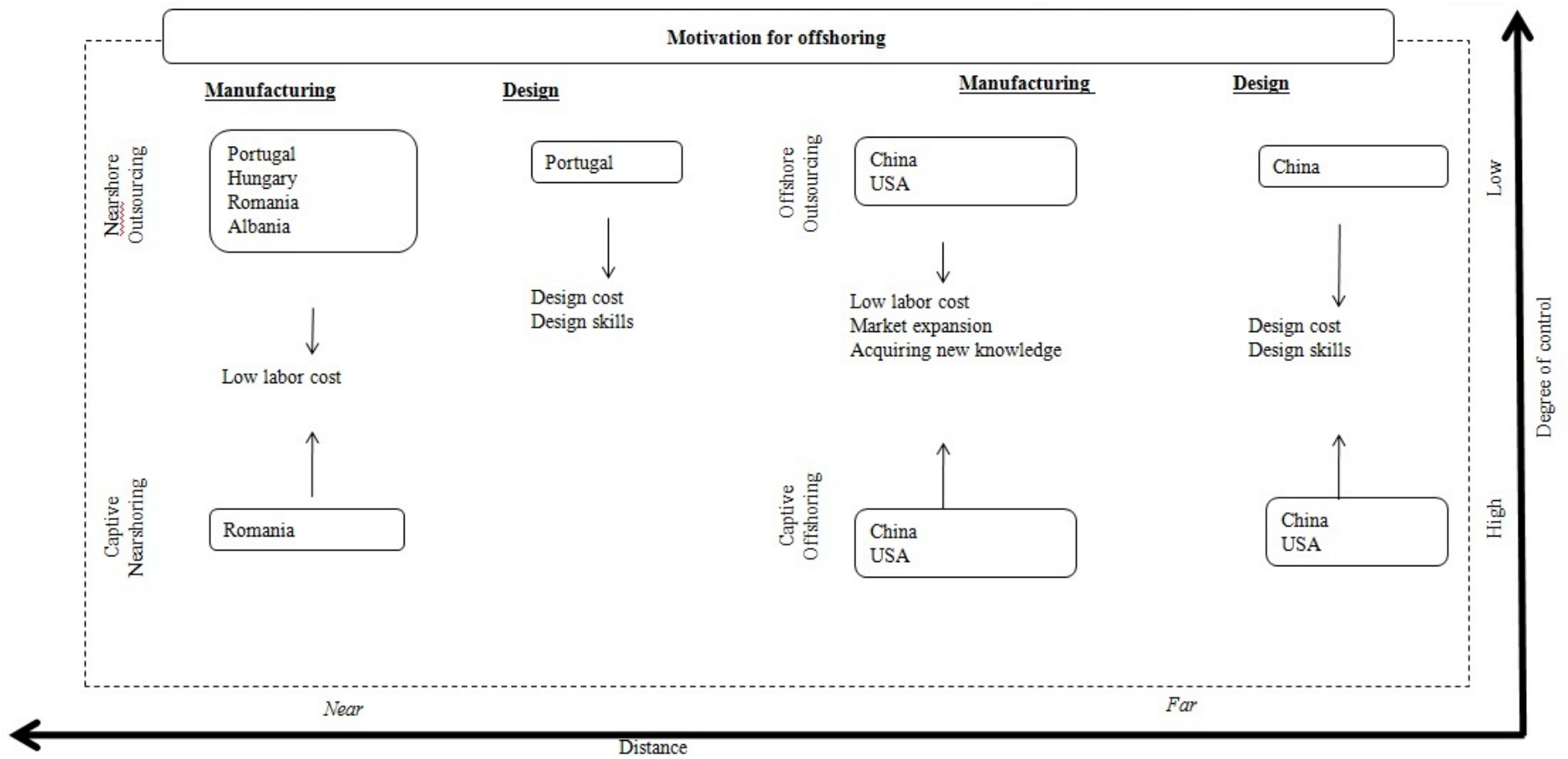
### *1.5.1 Manufacturing and design offshoring decision*

All the companies that has been examined, operates in clothing (2), footwear (4) and eyewear (2) industry offering the realization of finished high or mid-high range of products. Referring to the internationalization process, not all the manufacturing process is outsourced but only some activities (Fig. 1). In particular, great part of manufacturing process is run by companies in Italy (in specific the realization of finished or mid-high range of products) while the rest is carried out by the same companies or suppliers located abroad (in specific for the realization of finished or mid-low range of products).



**Fig. 1.** Manufacturing and design offshoring decision.

For companies that decide to offshore the main motivation is due to low labor cost issue (Fratocchi et al., 2014) (Fig. 2). Only Theta company shows that beside low labor cost others main motivations to offshore are market expansion and acquiring new knowledge. This may be related to the fact that this company has more experience in its sector, and decides to offshore after 76 years from its foundation in order to acquire new knowledge.



**Fig. 2.** Offshoring motivation

In accordance with the literature review firms that decide to internalize into foreign countries have difficulties in acquiring new knowledge about targeted market and also in establishing the manufacturing process. For this reason firms due to the lack of knowledge offshore first in countries that are similar in terms of language, culture and business practices (Johanson & Vahlne, 1977) delocalizing then in countries more distant. Most of these companies delocalize in countries that have these similarities. As an example, Eta company initially offshores in Albania so learning experience based on physical distance and for then further offshore in China, a country more distant to Italy. Other companies that delocalize their production in countries closest to Italy are Alpha (in Romania and Hungary), Beta (in Romania) and Delta (in Romania and Portugal) firm.

Other difficulties that companies have to cope during the offshoring process are related to staff qualification (Fratocchi et al., 2014) and geographical and cultural distance while not highly skilled labor force was the main disadvantage. This is the case for example of Alpha, Gamma and Delta firm that experienced same difficulties in terms of geographic and cultural distance and cultural and linguistic difference.

However, delocalizing the manufacturing process abroad has some advantages, the flexibility in production capacity was the main advantage from producing abroad following by the increase of the level of production capacity and the level of profitability. These results are in accordance with the motivations of offshoring in that most of these firms delocalize for low costs motivation. However, from Fig. 2 we can see that these firms have difficulties in acquiring knowledge from other delocalized companies.

The main factors for the suppliers' selection are high-quality workforce, reliability and technological and design skills for Italian suppliers, reliability for suppliers located in advanced countries and cost issues for suppliers located in emerging countries. These evidences show how important is the perception of the country of origin in the selection process of suppliers. This justifies for example why Italian suppliers are chosen by companies according to technological and design competences. This is the case for example of Beta and Theta companies that show some similarities for both three categories of suppliers' selection. It means that innovativeness (use of new technology and advanced engineering) influences companies manufacturing location choice.

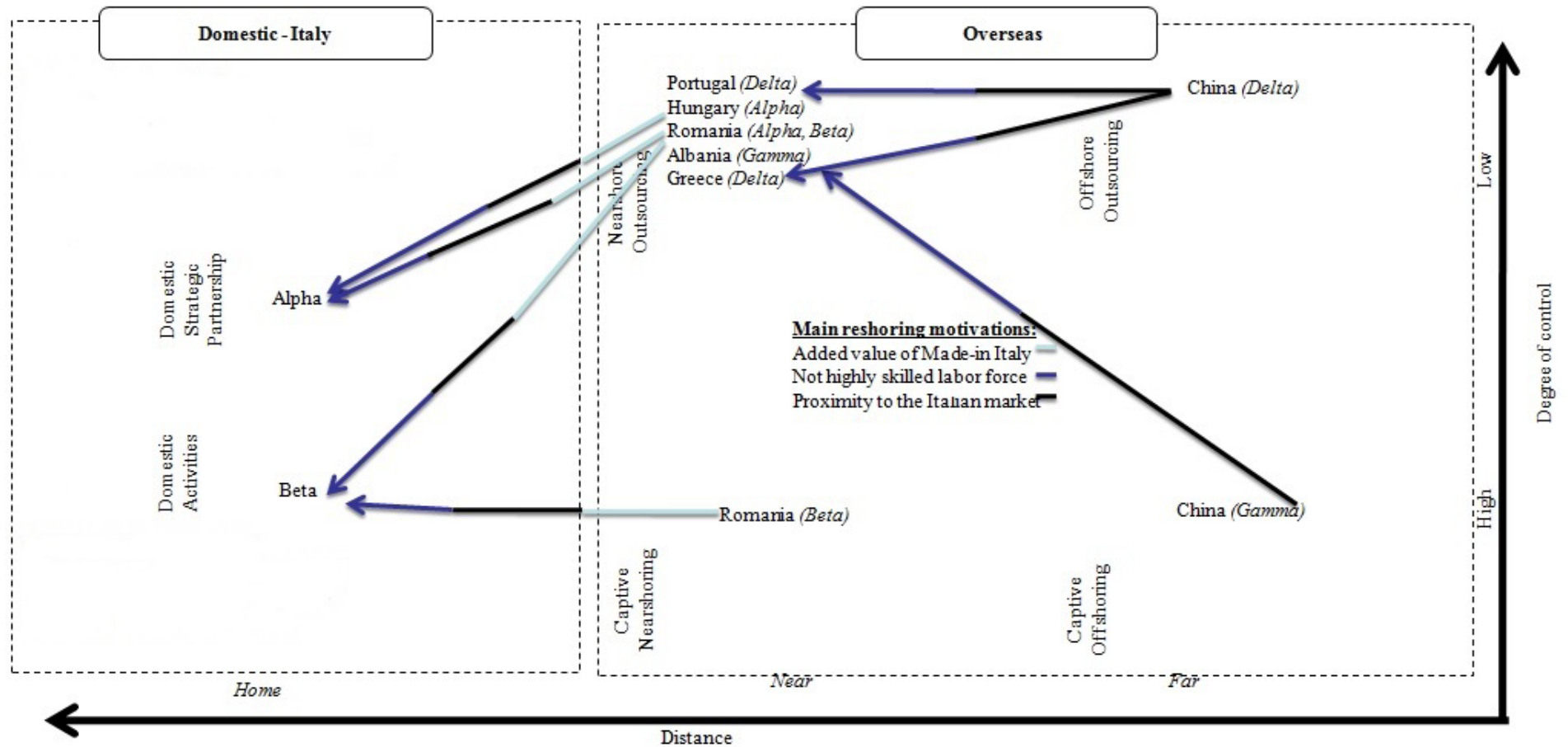
When it comes to the factors that determine a competitive advantage for all companies the results are quite similar where the more relevant factors are brand name reputation (prestige, exclusivity, status) and design (appearance, style, colors, variety) (Bose & Ponnampalasa, 2011; Fratocchi et al., 2014).

These results are in accordance with previous studies showing that in internationalization aspects brand name reputation and product design as part of COO are relevant factors in

determining a successful global manufacturing in order to lead to competitive advantage (Jo et al., 2003). Considering that Alpha, Beta, Gamma and Delta decide to reshore while the others express the intent to reshore in a near future, this means that brand name reputation and product design influences these companies to bring part of manufacturing activities in Italy or in countries closest to Italy. So, these two factors can influence the manufacturing location decision in order to help firms gaining competitive advantage (Pappu et al., 2006).

### *1.5.2 Reshoring decision*

Most of the companies decide to reshore in countries (in particular manufacturing process for the realization of finished products) closest to Italy (near-reshoring) with the perspective to relocate in a near future their production in Italy and to realize a product 100% Made in Italy (Fig. 3). For the companies that decide to reshore their manufacturing process in Italy or express the intent to implement this decision in the future, the main motivation is the added value of “Made in Italy” (Fratocchi et al., 2014). However, for Gamma and Delta company almost all elements influence on reshoring decision and this is due to their similar experienced period of reshoring.



**Fig. 3.** Manufacturing reshoring decision

These results are in accordance with the current bodies of literature (see for example Nagashima, 1970) where “made in” may be seen as summary construct of consumers’ beliefs regarding their perception on products’ evaluation such as the reputation that consumers attach to products of a specific country.



The decision to reshore may depend by the fact that firms consider that the perception of consumers regarding Italian products' brand image may be influenced by the origin of the country in which these Italian brands are produced (Koubaa, 2008).

These findings show how brand image is strongly related to the COM meaning that firm's location choice where a specific product is made influences on consumers' product perception. The more brand name image is associated to the COM the more products' brand name reputation is higher influencing in this case the manufacturing location choice, and in particular when it comes into manufacturing reshoring choice. The place of origin seems to attract firms to reshore home their manufacturing process in order to enrich the value of Made in Italy.

For the companies that decide to reshore part of production in Italy the main motivation is related to the higher value perceived by customers to the Made in Italy products thinking that the quality of the products is higher if production takes place in Italy. From Fig. 3 similarities can be noted between Alpha, Beta, Gamma and Delta companies in that for all of them almost all elements mentioned above are important as motivation for producing in Italy. These are 4 out of 8 companies that decide to reshore and almost all of them benefits from producing in Italy.

This result may be due to the fact that for example Gamma and Delta experienced both the same period of reshoring. It means that these companies are ready to support higher costs for producing part of manufacturing process in Italy, in order to enhance the perception of customers regarding the Made in Italy product.

Another aspect very important to be considered is that these firms once they establish their production abroad do not profit from the acceleration of the design process. Maybe the lack of design competences influences somehow them to reshore in Italy. In particular, referring to the country in which products of these companies are designed, most of them have an internal design function, however they collaborate often even with external designers located in Italy in that Italian suppliers are seen as having more design skills comparing to other suppliers located outside Italy. Most of the firms, Alpha, Beta, Gamma, Zeta and Eta collaborate only with designers located in Italy while Delta, Epsilon and Theta collaborates even with designers located abroad. This indicates how COD as part of COO can influence firms reshoring in Italy where the design function can benefit from high skills designers determining so a positive perception for the Italian design products highlighting so the

importance of Made in Italy. This means that product design influences design location choice and in design reshoring choice.

One of the main market consequences after reshoring is that the companies become more competitive in terms of quality products and consumers recognize the value added to the product 'made in Italy'. However, they have to cope with some problematic aspects of reshoring where the most relevant are to recreate a highly qualified workforce and to support higher production costs. Creating a high qualified workforce may impact positively on manufacturing quality that refers to product quality (Insch & McBride, 2004). For most of the companies that consider where to manufacture a product, this may bring quality improvements affecting so the consumers' purchasing decision. This indicates that manufacturing quality may be a potential driver of manufacturing location choices and in particular when it comes into manufacturing reshoring choices.

Alpha, Gamma, Delta and Zeta show similar results when it comes into market consequences, this is due to the fact that almost all of them started the offshoring process in the same period having so same experiences deriving from offshoring process. Theta company has more problematic aspects deriving from reshoring process. It has started the reshoring process in 2010 and it will end probably within the year 2020. All these problematic aspects such as re-establishing the supply relationship at the local level, recreating a highly qualified workforce, reorganizing the internal processes, recovering of the internal know-how and supporting higher production costs are justified by the fact that Theta has more than 83 years of experience, 7500 employees and a turnover in EUR about 1.253 ML in 2016. On the contrary for small firms these problematic aspects are quite lower such as for the Zeta firm that experienced only problems related in supporting higher production costs.

## **1.6 Conclusion**

Through a multiple case studies this paper aimed to analyze how the link between country of origin and the international organization process of manufacturing process influences the competitive advantage of a firm. At the same time, it analyzes the cases where companies, once established their production abroad, decide to reshore part of manufacturing process in Italy. Even though only half of companies that offshored have reshored, the results indicate that COM and COD are not only drivers of companies for manufacturing/design

location decisions, but as well determinants of when they have to delocalize or relocalize their manufacturing activities in order to gain competitive advantages.

#### *The "how" innovativeness, brand name reputation, manufacturing quality*

Innovativeness or the use of new technologies and advanced engineering results to influence firm's manufacturing location choice in particular when it comes into reshoring decision.

The decision to reshore may be driven by Italian products perception of consumers. Consumers associate the quality of Italian products with Italy where Italian brands are produced. This means that the more brands are linked with their country of origin the more products' brand name reputation is higher.

The linkage that exists between products brand name and the country where these brands are produced may impact on the perception that consumers have on manufacturing product quality.

The results indicate that all companies that reshored did it to gain benefits from producing in Italy, in terms of added value of "Made in Italy", improvement of customer service, effective delivery times and better internal coordination. Most of the benefits achieved were in line with their expectations such as being competitive in terms of quality products, consumers' recognition of the value added to the products "Made in Italy", high perception of customers regarding the company reputation, greater efficiency and better customer service. Firms that initially offshore for efficiency and flexibility issue motivation, realized the organizational difficulties and skills in producing abroad compared to a market that recognizes the value of "Made in Italy".

Another important finding is that firms that have reshored their activities realized a bigger value added. The value of "Made in Italy" has much more value added than costs savings that firms have achieved from offshoring meaning that firms' competitive advantage is their location bounded in Italy.

#### *The "how" product design*

Product design as a dimension of COD results to be less relevant on manufacturing location choices. In particular, firms choose the designers according to their design competences rather than where these designers are located.

Overall, the results indicated that the four dimensions of COM and COD can influence on firms' manufacturing location decision. COM has more impact on companies when it comes into reshoring decision rather than COD. The results indicate as well how COO impact may vary across categories of products offered by these companies. In our sample for mid-high range of products COM might matter more than mid-low products.

Another consideration is that on one hand we explore COO in COD and COM in terms of number of activities and on other hand we explore it in terms of value added. While the COO in terms of number of activities is the country where the activities are located (for example China), in terms of value, the design has much higher value comparing to manufacturing (Mudambi & Venzin, 2010).

The major contribution of this paper consists on enhancing the importance of country image and in particular considering the role of Made in Italy as driver of reshoring manufacturing companies.

This paper has managerial implication on decision making in organization. In particular, a list of offshoring and reshoring motivation resulted from this study can help managers in order to understand better which are the effects of COD (country of design) and COM (country of manufacturing) on product evaluation. Furthermore, managers should evaluate COD and COM by taking product design, innovativeness, manufacturing quality and, brand name reputation into analysis. While the three elements that characterize COM seem to have more relevance on firm's manufacturing location decision, product design that characterizes COD seems to have less relevance.

This study involves some limitations in that first, few companies are examined and second it is limited to clothing, footwear and eyewear sector, however these are the main sectors to analyze in order to enhance the role of Made in Italy as driver of competitive advantage. Considering that it was possible collect complete information for only 8 companies, research needs to be further deepened in order to overcome this limitation by focusing on a large number of companies and industry sector.

## **Acknowledgement**

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## **Co-location of R&D and production in fashion industry: The case of Italy**

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### **Abstract**

Within the last decade many firms originated from high-cost countries have internationalized their business activities although it has been recognized that it is not always beneficial. Changes in technological and environmental characteristics have determined the need for co-location of R&D and production. The objective of this paper is to analyze how important is co-location of R&D and production for firms originated from high-cost countries and to provide evidence of the relationship between the different strategies of location choices and co-location. Through a cluster analysis of 37 Italian firms that operate in fashion industry it was found that co-location results a dominant strategy for firms under the following conditions: high level of product customization, coordination difficulties between R&D and production, rapid change in production process technologies and product complexity difficult to be coded.

**Key words:** location decisions, co-location, R&D, design, high-cost countries, production, innovation

**JEL Classification code:** L10, L67, O30

## 2.1 Introduction

Many studies have been conducted in the field of internationalization in order to investigate the main motivations for firms' location decision (Aaboen & Fredriksson, 2016; Søndergaard et al., 2016; Steven & Britto, 2016). This becomes even more interesting when it comes into analyzing the motivations of production firms that decide to re-evaluate the manufacturing activities location decision. More in particular firms originated from high-cost countries decide to internationalize their activities in low-cost countries seen as an opportunity to profit from cost advantages (Baraldi et al., 2017; Bramucci & Zanfei, 2015; Di Mauro et al., 2017; Doh, 2005; Elia et al., 2014; Hartman et al., 2017; Tate & Bals, 2017).

However, firms have recognized that locating the production abroad it is not always beneficial. This because globalization has caused a positive development in low-cost countries due to economy improvement and also the market and the infrastructure have developed (Rice & Stefanelli, 2014). For instance, many firms re-evaluated their production location decision and to build production activities close to their domestic R&D operation. This phenomenon is known as manufacturing reshoring and it consists on a decision of a company to bring the manufacturing activities back to its home country (Fratocchi et al., 2016; Fratocchi et al., 2015). There is also other motivation why firms decide to reshore. In particular for firms that operate in fashion industry the "Made-in effect" results to be one of the main motivations of reshoring in which the quality perceived is affected by the real production location in particular for high-end range of production (Ancarani et al., 2015; Fratocchi et al., 2013). Bulte and Moenaert, (1998) find that "physical distance is an important barrier to communication in R&D settings, and that co-location can overcome it" which is the theoretical basis of many studies in international business literature. Ketokivi and Ali-Yrkkö, (2009) consider knowledge intensity of activities such as product/process complexity and the industry rate of change as a need for co-location. Product complexity includes the characteristics of the specific product that is produced while production complexity refers to the characteristics of production process that manufactures the final products. The need for co-location may depend also from the high level of tacit process knowledge (Gray et al., 2015) and in particular from the extent to which the product and process design may be coded (Pisano & Shih, 2012). Pisano, (2012) argues that in fashion industry the co-location is important in that there is a need to exchange information constantly between two units especially when firms have complex product, difficult to code and high level of product customization.

Taking in consideration how firms have relocated their production activities seeking efficiency or market advantages (Ancarani et al., 2015) this paper aims to provide evidence of the relationship between the different strategies of location choices for production and co-location between production and innovation activities.

The main research questions are:

RQ1: What is the relationship between location choices for production and co-location with R&D activities?

RQ2: Which conditions are necessary for production and R&D to be physically co-located?

The rest of the paper is structured as follows. Section 2 analyzes the relationship between different strategies of location choices and the importance of co-location. Some insights will be given on the main motivation of producing in high-cost country leveraging the role of country of origin or “made in”. Literature review on the importance of co-location and the main motivation for maintaining close R&D with production will be analyzed. Section 3 analyzes the methodology and section 4 describes the main findings. Finally, section 5 ends with some discussions and conclusions.

## **2.2 Theoretical framework**

### *2.2.1 Location decisions in high-cost countries*

International country location choices have been studied in order to investigate determinants of location choices. High cost-countries are considered as countries characterized by level of cost above the average for a given set of production activities (Roos, 2016). Ketokivi et al., (2017) refers to the high Gross Domestic Product (GDP) in order to define high-cost countries. In this study high-cost countries as countries are considered as countries characterized by high level of production cost with a specific focus on labor cost. Most of the previous studies use labour cost as one of the main factors in order to differentiate high-cost countries from low-cost countries (Ketokivi et al., 2017; Roos, 2016; Yin et al., 2017). For many firms originated from high-cost countries that decide to relocate their manufacturing activities in low-cost countries it represents a possibility to profit from labor cost advantage (Jahns et al., 2006).

Location decisions in high-cost countries have been studied also due to recent phenomenon of reshoring where firms decide to bring back home their manufacturing

activities (Ancarani et al., 2015; Fratocchi et al., 2013) Location decision as a decision is considered as well as a decision where the interdependencies of manufacturing and R&D activities in high-cost countries become relevant (Ketokivi et al., 2017).

Location decisions have been examined mostly in low-cost countries setting, neglecting the importance of producing in high-cost countries. Recently high-cost countries have adopted a political agenda fostering the reshoring production rather than moving abroad as an opportunity for firms to look for innovation (Bailey & De Propris, 2014a; Buciuni & Finotto, 2016; Roos, 2016). In low-cost countries, most of the studies find cost reduction (Ashby, 2016; Di Mauro et al., 2017), flexibility and responsiveness in operations” as main motivations for many firms to establish their production activities (Foerstl et al., 2016; Mugurusi & Bals, 2016). For some firms the experience of internationalization was not often beneficial and there was a need to re-evaluate the location decision. An important issue to discuss is why firms decide to remain or to bring back their manufacturing activities in high-cost countries in order to identify if they adopt market or efficiency-driven strategies of location choices.

Zhai et al., (2016) estimate that market-driven strategies of location choices characterized by elements such as product quality, technological skills while for efficiency-driven strategies find factors such as lead time, effectiveness to customer response.

Motivations for producing in high-cost countries are related to market-driven strategies such as to the made in effect on consumer product perception (Di Mauro et al., 2017), to the presence of capital intensive production (Yegul et al., 2017) and, high perception of product quality (Fratocchi et al., 2016). For others such as Robinson and Hsieh, (2016) the proximity of production and design influences on improvement of product quality brand. Country of origin somehow has resulted as an important factor on strategies of location choices (Di Mauro et al., 2017; Fratocchi et al., 2014). This happens in that high-cost countries are seen as attractive locations for research activities. Choosing the right location it is not always easy and this is due to the geographical dispersion of value creation (Mudambi, 2008).

### *2.2.2 Determinants of co-location*

Producing in high-cost countries means offering “highest value for the lowest cost” and this could be possible only when firm engages in a continuous process of innovation (Roos, 2016). Often high-cost countries are seen as potential environments for high-end design,

product development and R&D while low-cost countries are seen more as potential environments for establishing production activities (Bailey & De Propriis, 2014b). For many firms there was a need to maintain their production activities close to R&D/design function thinking that domestic production drives innovation (Gray et al., 2017).

Co-location of R&D and production has been widely studied within the international business literature focuses in particular on a country level and different interpretations of co-location have emerged. In particular it consists on “the bringing together different departments into the same physical location” (Kahn & McDonough, 1997) and reducing the geographical distance between organizational functions (Gray et al., 2015a).

Ivarsson et al., (2016) study co-location in order to examine how it may impact on global technological development. In particular analyzing 146 foreign R&D units of Sweden’s 17 largest manufacturing MNEs they separate between R&D co-located units as those that are located in the same premises or in the same city as the production units and “stand-alone” units as those located to a longer geographical distance from the production units within the country. The co-located R&D units have more relevance on new technology development comparing to “stand-alone” units. Buciuni and Finotto, (2016) after analyzing the role of co-location of R&D and production in Italian low-tech industries argue on how firm’s regions where most of the R&D units are located became attractive locations of the product development process. Another study defines co-location of R&D and production when the R&D unit is located in the same city as the firm’s production unit (Gray et al., 2015). It was found co-location has a positive impact on manufacturing conformance and quality performance. Similar observation was done by Ketokivi and Ali-Yrkkö, (2009) while studying the physical co-location of R&D and production using a sample of 241 Finnish industrial firms within the same country. The need for physical co-location related with knowledge intensity of activities.

Recent studies investigated the relationship between co-location of R&D and production with firms’ performance. Firms that do engage in co-location offer better performance comparing to other that are not involve in co-location (Alcacer & Delgado, 2016; Brache & Felzensztein, 2018; Gray et al., 2015; Wadho & Chaudhry, 2018) while others find no direct relationship between the two (Kahn & McDonough, 1997). Overall the geographical distance of co-location of R&D and production matters in both cases in which the two functions are located in the same region or neighboring region but still close to each other (Defever, 2011).

Most of the studies that have been conducted on co-location of R&D and production focus more on analyzing cases when firms decide to co-locate their R&D abroad (i.e in their own foreign affiliates) close to their manufacturing activities in order to investigate the effect of co-location on firms' performance (Castellani & Lavoratori, 2017) (Steinberg et al., 2017). Other studies that analyze the effect of co-location on firms' performance consider cases when firms decide to co-locate the production function that previous were offshored close to the R&D function in their home country (Di Mauro et al., 2017; Fratocchi et al., 2014).

This study focuses on analyze the effect of co-location on firms' performance considering that companies instead of locating abroad decide to stay in a high-cost country due to the advantages of staying close to the R&D function. For instance, considering the effect of co-location on firms' performance for cases of firms that are 100% producer in a high-cost country and the R&D function is located within the same country. This consideration was neglected by the literature while this study aims in filling this gap. An interesting consideration is investigating the relationship between different strategies of location choices and co-location and how the latter can affect firms' performance.

Recent studies argue the importance of co-location of R&D and production function in high-cost countries. The main motivation of co-location is due to better coordination between R&D and production function (Ashby, 2016). Others scholars argue that the co-location between production and design activities may have an impact on product innovation (Robinson & Hsieh, 2016; Tate et al., 2014). This is why for some firms R&D-production relationship may influence on strategies of location-choices in that developed countries are seen as attractive location for research activities (Bresciani & Ferraris, 2014).

The co-location in some cases may depend from the range of production that products are classified and whether industries in which firms operate are classified as low or high tech (Albertoni et al., 2015; Delis et al., 2017). Firms that offer finished high product profit more from advantage of co-location R&D and production (Di Mauro et al., 2017).

The need for co-location may depend also from firm's strategy and business network and in the same time can impact on improving customer service, accessing to qualified personnel, innovation and skills. For some firms the co-location of production and design is important in particular when it comes into labour-intensive production. Firms that offer complex production have a greater focus on access to innovation, qualified personnel, technology and proximity to R&D. This means that the knowledge intensity of activities such as the

complexity of the production may influence on location decision that requires a constant R&D-production interaction (Ketokivi & Ali-Yrkkö, 2009).

The co-location is also important in particular for firms characterized by complex products and systems and rapid technological change contributing for transfer of tacit knowledge between R&D and production function (Ivarsson et al., 2016).

Table 1 summarizes the main factors that drives co-location.

**Table 1.** Main factors driving co-location

<b>Factors</b>	<b>References</b>
Coordination difficulties between R&D and production	(Ashby, 2016; Pisano & Shih, 2012)
Rapid change in production process technologies	(Robinson & Hsieh, 2016; Ivarsson et al., 2016; Tate, 2014)
High level of product customization	(Albertoni et al., 2015; Delis et al., 2017; Pisano & Shih, 2012)
The internal R&D intensity	(Robinson & Hsieh, 2016; Tate, 2014; Ketokivi & Ali-Yrkkö, 2009; Ivarsson et al., 2016)
Conditioning of design activities related to the process/production capacity	(Ketokivi & Ali-Yrkkö, 2009)
The extent to which the product and process design may be coded	(Pisano & Shih, 2012)

## **2.3 Empirical analysis**

### *2.3.1 Data collection*

In order to investigate the relationship between R&D/design-production co-location and strategies of location choices for production we examined Italian firms that operate in fashion industry. The sample retained for analysis was composed only by firms that are 100% producers “Made in Italy” (Caniato et al., 2011). The reason of this sample selection is based on three considerations. Firstly, recent studies on internationalization of production investigate why do companies produce in high-cost countries. High-cost countries are seen as attractive locations for accessing to skills where the knowledge is widespread and there is a

high perception of product quality by consumers due to the “made in” effect (Di Mauro et al., 2017; Fratocchi et al., 2015). Taking into consideration only firms that are 100% certified companies “Made in Italy” their production location choices, motivations, and innovation management strategies in terms of co-location R&D and production can be better understood.

Secondly, fashion industry is particularly subject of internationalization of production and choosing only Italian firms that operate in this industry can offer some insights on the role of “Made in Italy” on strategies of location choices. The label “made in” represents for many firms a competitive advantage and has a strong influence on consumer perception for products originated from a specific country (Fratocchi et al., 2016; Fratocchi et al., 2014; Fratocchi et al., 2016). This happens because consumers associate brand with specific countries image. Indeed, a consumer that thinks that both R&D or design and production processes are performed in a country with positive country image is more likely that the products originated from this country to have better perception in terms of design and production quality. The need for co-location is important when firms that operate in fashion industry characterized by product/process complexity since there is a need to exchange information constantly between the two function (Pisano & Shih, 2012) are taken into consideration. Product complexity in fashion industry includes the characteristics of the specific product that is manufactured while production complexity refers to the characteristics of production process that manufactures the final products (Ketokivi & Ali-Yrkkö, 2009). Complexity of a product/process is defined as well as “a state of processing difficulty that results from a multiplicity of, and relatedness among, product architectural design elements” (Closs et al., 2008). Employees in wear department have to deal with design change request following the trends very closely in order to make good decisions regarding the design of the firms’ products.

Thirdly, the reason of selecting Italy as a target country for our analysis is based as follows: According to the annual report of Global Powers of Luxury Goods, (2018) Italy ranks as the leading luxury fashion brand country in terms of number of companies. According to The National Register Office of Italian Manufacturers<sup>2</sup>, most of the Italian firms that are 100% producers Made in Italy operate in fashion industry.

The sampling procedure was as follows:

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<sup>2</sup> See [https://produttori.net/en/manufacturers\\_map.php](https://produttori.net/en/manufacturers_map.php)



Firstly, the webpage of the Institute for the Protection of Italian Manufacturers<sup>3</sup> was used in order to search for Italian firms that are producing 100% in Italy and operate in fashion industry. It is the only national organization member of the CNEL (National Council for Economy and Labour) for the scope of defense, promotion and proper appreciation on made in Italy products since 2004. In order to offer a way to correctly appreciate real Italian productions, the 100% “Made in Italy” Certification has been introduced. This Certification was issued by the Istituto Tutela Produttori Italiani and adheres to the parameters set out by current Italian legislation (Law 166 comma 16 of 20 November 2009).

197 firms were identified: 83 firms that operate in clothing sector (42%), 55 firms that operate in footwear sector (28%) and 59 firms that operate in fashion accessories (30%). Most of the identified firms are located in the central-north part of Italy (see Fig.1).

A web-based survey (CAWI) was conducted to all firms followed by three sets of reminder e-mails and phone calls for the period June-July 2018.



**Fig. 1** 100% producers Made in Italy that operate in fashion industry

The objective of the survey was to gather information on the importance of co-location of R&D and production and the relationship between different strategies of location choices and co-location. In particular, information has been gathered regarding general characteristics of firms such as industry sector of operation and economic-financial information.

<sup>3</sup> See [http://it01.it/produttori\\_it.php](http://it01.it/produttori_it.php) and <https://madeinitaly.org/>

Secondly, information on strategies of location choices for production, innovation strategies, location characteristics of both R&D and production function was obtained focusing in particular information regarding the physical distance between R&D and production function (co-location).

The final sample is composed by 37 usable responses that correspond to a net response rate of 18.8%.

### 2.3.2 Sample analysis

Summary statistics of the data are presented in Table 2 while the description of variables used in the study are presented in Table A1 in the Appendix. As mentioned above, all the investigated firms operate in fashion industry, in particular in clothing (64.9%), footwear (21.6%) and fashion accessories sector (13.5%), with an average of 28 years of experience in this industry. In order to investigate why do companies produce in high-cost countries it seemed appropriate to include some variables in the database of the characteristics of firms such as the range of products, how much part of the products is externalized, the number of brands registered, if they do have R&D and marketing department. In our sample of analysis most of the firms offer finished products for the final market (91.9%) and are classified in the mid-high range of production (51.4%).

**Table 2.** Descriptive statistics of the investigated firms (N=37)

Variable	Mean	
Year of foundation	1991	
Turnover in thousand of euro (2017)	3,233	
Number of employees	18	
Number of brands registered	1.8	
% of production outsourced	37.6	
Type of production (%)	finished products for the final market	91.9
	finished products for other production companies	5.4
	semi-finished products	2.7
Ranges of production (%)	high range	24.3
	mid-high range	51.4
	medium range	21.6
	all ranges	2.7
Marketing function	.51	
Internal R&D function	.54	
R&D=Design	.65	

Collaboration with external designers (%)	no	27.0
	yes, in Italy	64.9
	yes, abroad	8.1

Most of the production process is performed by other suppliers (outsourcing) while only 24.3% of the firms are engaged on performing all the production process. About 51% of the investigated firms declare to have a marketing department and 54% an internal R&D function that in most of the cases consists on design function.

Most of the investigated firms are focused more on developing product/service type of innovation (67.6%) followed by marketing type of innovation (54.1%) such as new marketing practices, new price policies, new marketing techniques, new packaging of products, etc.

Also, another important variable included in the dataset is the number of brands registered where 91.9% of firms declare that have at least one brand registered. Knowing if firms have their own brand registered may be an important indicator in understanding the perception of customers regarding products' brand image considering the origin of the country in which these brands are produced (Han, 1989; Koubaa, 2008).

### 2.3.3 Data considerations

In order to understand the relationship between different drivers of location decisions and co-location, the main motivations of producing in Italy were identified using a 5-point rating scale (1=low relevance, 5= high relevance) for then creating a dummy variable (considering points 1, 2 and 3 as low relevance equal to 0 while points 4 and 5 as high relevance equal to 1). The motivations of producing in Italy are more market-driven such as high value perception for “Made in Italy” products, the quality of the product is higher if it is produced in Italy, high product /process skills and the customer perception to Italian products design is higher if the design process take place in Italy. These motivations that emerged in this study are also highlighted by the existing literature (Fratocchi et al., 2016; Fratocchi et al., 2014; Fratocchi et al., 2014).

Independently from the fact that R&D or design function is located close to production, firms are asked to evaluate which are / could be the main motivation of co-location. This reasoning is done in order to individuate if there are differences in terms of evaluation of co-location between firms for which the two functions are close and those for which the two

functions are distant from each-other. All the motivations are evaluated initially using a 5-point scale (1=low relevance, 5= high relevance) for then creating a dummy variable for each of the motivation considering points 1, 2 and 3 as low relevance equal to 0 while points 4 and 5 as high relevance equal to 1. High level of product customization results to be the most relevant motivation for co-location (75.7%) followed by coordination difficulties between R&D and production (56.8%) and rapid change in production process technologies (54.1%).

#### *2.3.4 Methodology*

The individuation of the relationship between location choices for production and co-location with R&D activities is articulated in four steps. Firstly, firms' organization of innovation that is the basis for measuring co-location between the latter and production function (Ketokivi & Ali-Yrkkö, 2009) was investigated.

Only firms that do have an R&D/design function were included in the dataset otherwise studying the importance of co-location does not make sense if firms that are not engage in R&D/design function are included in the dataset. This reasoning does not exclude firms that even do not have and internal R&D/design may collaborate with external designers (in Italy or abroad).

For many firms that operate in fashion industry the design function represents the most relevant core competences to keep in house including products characteristics such as appearance, style, colors and variety (Chao, 1998; Roth & Romeo, 1992). If firms do not engage in R&D/design function there is a need to collaborate with external designers in order to create products that satisfy customers' requirements in terms of product quality and maintain the established brand style (Brun et al., 2008). About 31 firms were included in the final sample of analysis while the remaining 6 firms show to have no R&D/design function and no collaboration with external designers. The results of this analysis are summarized in Table 3.

**Table 3.** Organization of innovation function

		Internal R&D		Nr of firms included in the analysis
		yes	no	
Collaboration with external designers	in Italy	11	13	24
	abroad	3		3
	no	4	6	4
Total				31
Geographical location of R&D	R&D located inside the firm	48.6%		
	R&D located within the firm's region	18.9%		
	R&D located Italia and/or abroad	16.2%		

Secondly, in order to have some preliminary insights about the nature of co-location in terms of geographical proximity we introduce a variable regarding co-location that refers to the geographical distance between R&D/design function and manufacturing function. For this reason, according to what the literature suggests, we asked to identify if the R&D/design function is located inside the firm, within the firm's region, in Italy and/or abroad (Buciuni & Finotto, 2016; Gray et al., 2015; Ivarsson et al., 2016; Ketokivi & Ali-Yrkkö, 2009). Table 2 shows that about 48.6% of the investigated firms declare to have the R&D/design function located inside the firm while 18.9% of them declare to have the R&D/design function located within the firm's region. Finally, in 16.2% of the cases the R&D/design function is located in Italy and/or abroad while the other 16.2% of the firms declare to not have an R&D/design function.

Thirdly, after individuating the final sample of 31 firms we investigate if there are different strategies of interpretation of location choices and which is the relationship with the co-location. For this reason first, we conduct a factor analysis to simplify complex sets of data and used to correlations between variables; principal component analysis aims to create a number of factors that are representatives of correlated variables (Kline, 2014). Variables included in the factor analysis are those the literature suggested in order to individuate different strategies of location choices whether are market or efficiency-driven and to see which is the relationship with the co-location (see Table A1 in the Appendix). Table A2 of the Appendix shows all the descriptive statistics for variables included in the factor analysis while Table A3 reports the correlation between them. Two components were extracted from the factor analysis and the result is shown in Table 4.

**Table 4.** Factor analysis: Total variance explained

	Eigenvalue		Cumulative %
	Total	% of variance	
Component 1	3.205	40.068	40.068
Component 2	1.896	23.694	63.763

*Extraction method: principal component analysis*

Component 1 and 2 are those for which the value of eigenvalue is greater than 1 and they explain 63.7 percent of the total variance which means that all variables are retained in the analysis (Kline, 2014).

Fourthly, in order to interpret better the extracted factors, we run a rotated factors analysis where two main strategies of location choices were individuated and consists on market and efficiency-resource-driven (Table 5).

**Table 5.** Rotated matrix

	Components	
	1: Efficiency-Resource driven	2: Market driven
Made in Italy	.121	<b>.756</b>
Product quality	.094	<b>.833</b>
Product design	.004	<b>.830</b>
Low cost production	<b>.575</b>	-.262
Internal coordination	<b>.856</b>	.168
Logistics operations	<b>.936</b>	.108
Delivery times	<b>.794</b>	.244
Product/process skills	<b>.617</b>	.061

*Extraction method: principal component analysis. Rotation method: varimax*

The first component consists on efficiency-resource strategies of location choices and measure variables as low-cost production, internal coordination, logistics operations, delivery times and product/process skills as one of the motivations for producing in Italy. The second component is composed by variables that explain market strategies of location choices represented by the value of made in Italy products, product quality and product design. The two strategies of location choices that emerged in our study are highlighted in the existing literature.

## 2.4 Results

After running the factor analysis, we conduct a cluster analysis in order to create homogenous groups of firms that shows similar strategies of interpretations of location choices and the relationship with co-location. In order to create homogenous clusters where a certain firm should be as similar as possible to all the other firms located in the same cluster we conduct a Two Step cluster analysis that better fit this issue (Hermawati et al., 2018). The clusters are built according to the two variables: the strategy of location choice (efficiency-driven and market-driven) and the criteria of R&D location (co-location). 4 cluster emerged from the analysis and according to the value of “silhouette measure of cohesion and separation” that results greater than 0.5 means that the number of clusters individuated is acceptable (Votano et al., 2004). Table 6 shows the value of the components for each cluster.

**Table 6.** Mean value of the components that characterizes each cluster

Clusters	Cluster 1 (n=12)	Cluster 2 (n=8)	Cluster 3 (n=4)	Cluster 4 (n=7)
Component 1: Efficiency-Resource driven	.53	.49	-1.36	-.69
Component 2: Market driven	.77	-1.27	-.17	.22
Co-location	1.00	1.00	1.00	.00

According to Table 6 cluster 1 is represented by 12 firms that have internal competences of innovation and their strategies of location choices are determined both from reasons of market and efficiency-resource. About 8 firms are included in cluster 2 characterizing by internal competences of innovation while their strategies of location choices are more efficiency-resource oriented. Cluster 3 includes 4 firms that also have internal competences of innovation while their strategies of location choices are more market driven. Finally, in cluster 4 are grouped 7 firms that do not have internal competences of innovation and their strategies of location choices are more market oriented. Overall the first three clusters declare to have an internal R&D function that is located close to the production function.

Table 7 compares the clusters in terms of key structural characteristics and strategies. In particular it reports the mean, the percentage and the significance differences of each variables for each cluster. The columns reporting the significance of the variables show how clusters are significant different between them at the significance level 0.05.

**Table 7.** Results for clusters characteristics

Variable		Cluster 1	Cluster 2	Cluster 3	Cluster 4	Significance differences between clusters					
		(n=12)	(n=8)	(n=4)	(n=7)	1vs2	1vs3	1vs4	2vs3	2vs4	3vs4
		Mean	Mean	Mean	Mean						
Year of foundation		1990	1983	1983	2001						
Turnover in thousand euro (2017)		4,447	3,236	5,685	1,191						x
Number of employees		23.25	17.38	32.25	6.86			x			x
Number of brands registered		1.33	1.63	1.25	2.86						
Marketing function		.58	.63	.50	.43						
% of production outsourced		33.33	29.00	35.00	68.57			x		x	
No outsourcing for production activities		41.7%	25.0%	0.0%	0.0%		x	x	x	x	x
Industry sector (%)	clothing	75.0%	50.0%	50.0%	42.9%						
	footwear	16.7%	37.5%	50.0%	14.3%			x			
	fashion accessories	8.3%	12.5%	0.0%	42.9%						
Type of production (%)	finished products for the final market	100.0%	75.0%	100.0%	100.0%						
	finished products for other production companies	0.0%	12.5%	0.0%	0.0%	x			x	x	
	semi-finished products	0.0%	12.5%	0.0%	0.0%						
Ranges of production (%)	high/mid-high range of products	83.4%	62.5%	75.0%	85.7%						
Determinants of competitive advantage (scale 1-5)	Innovation (use of new technologies)	3.67	3.75	2.75	3.71						
	Design (appearance, style, colors, variety)	4.67	4.63	4.50	4.29		x	x			
	Brand name reputation (prestige, exclusivity, status)	4.92	4.00	4.75	4.43	x					
	Production quality	5.00	4.50	4.75	4.57	x	x				



	Country effect (Made in)	4.92	3.75	3.75	4.43	x	x		
Motivations of co- location (scale 1-5)	Coordination difficulties between R&D and production	4.58	3.50	3.75	2.43			x	x
	Rapid change in production process technologies	4.58	3.25	3.50	2.29	x		x	x
	High level of product customization	4.83	4.25	4.50	3.29	x		x	
	The internal R&D intensity	4.17	3.25	3.50	2.57	x		x	x
	Conditioning of design activities related to the process/production capacity	4.00	3.00	4.00	2.43	x		x	x
	The extent to which the product and process design may be coded	4.17	3.00	3.50	2.43	x		x	

x=significant for p<0.05

#### *Cluster 1: Market and efficiency-resource-driven co-located firms*

Most of the investigated firms are grouped in this cluster (about 39% of the sample) driven both by market and efficiency-resource strategies of location choices. In particular, firms located in this cluster have an internal R&D function that in most of the cases coincides with design function and locates near their production function. This cluster is characterized by strong level of co-location in that in most of the cases (66.7%) the R&D/design function is located inside the firm close to production function while in 33.3% of cases the R&D is located within the firm's region.

The main motivations of co-location are due to high level of product customization, coordination difficulties between the two units, rapid change in production process technologies, the internal R&D intensity and to the extent to which the product and process design may be coded. The firms included in this cluster clearly differentiate from cluster 4 regarding the main motivation of co-location in that the latter do not engage

in co-location. Most of the firms located in this cluster operate in clothing sector and all of them offer finished products for the final market that in most of the cases are characterized as high and mid-high range of production.

#### *Cluster 2: Efficiency-resource-driven co-located firms*

Cluster 2 includes firms characterized by high level of experience in fashion industry. In particular they operate mostly on clothing sector (50%) following by footwear (37.5%) and fashion accessories (12.5%) Firms located in this cluster compare to those located in cluster 1 are more efficiency-resource-oriented focus more on process characteristics such as internal coordination, logistics operations and delivery times. Main determinants for competitive advantage are represented by design, production quality and brand name reputation.

Also, in this cluster firms design function is located close to production function in particular 75% of the firms declare to have the R&D function located inside the firm close to their production function while 25% declare to have it located within the firm's region. Comparing to cluster 1 the main motivation of co-location is related most to the high level of product customization. There are also differences in terms of collaboration with external designers and percentage of activities outsourced that are more relevant in this cluster comparing to cluster 1. The products offered by these firms are classified mostly as mid-high range of production in contrast with firms located in other clusters that offers also high range of production. Comparing to other clusters the firms included in cluster 2 offer all types of production in particular finished products for the final market (75%), finished products for other production companies (12.5%) and semi-finished products (12.5%).

#### *Cluster 3: Market-driven co-located firms*

In this cluster are located firms that operate mostly on clothing (50%) and footwear sector (50%) characterized mostly by high range of production (50%). Like cluster 1 and cluster 3 all products offered by these firms are finished products for the final market. These firms like those in cluster 2 have long experience in fashion sector and are characterized by high value of turnover and number of employees. Firms located in this cluster are driven by market strategies of location choices in terms of product design, product quality and value of made in Italy however, there is an intense collaboration with local suppliers. Firms are characterized by internal competences of innovation where the design function is located mostly inside the firm (75%) and within the firm's region (25%). Like cluster 2, the main motivation of co-

location is mostly due to high level of product customization following by conditioning of design activities related to the process/production capacity.

*Cluster 4: Younger firms no need for co-location*

Finally, firms located in cluster 4 are those driven by market strategies of location choices and do not have an internal R&D function however, they collaborate with external designers located in Italy. This is why firms located in cluster 4 do not consider the importance of co-location as much as firms located in other clusters. Also, comparing to other clusters firms are smaller in terms of turnover and number of employees and characterized by low level of experience in fashion industry. Mostly they operate in clothing (42.9%) and fashion accessories (42.9%) following by footwear sector (14.3%) while products they offer are all finished products for the final market. Finally comparing to all other clusters, the percentage of production outsourced is much higher (68.57%).

Overall clusters presented in Table 7 show important differences in terms of strategies of location choices and the relationship with co-location of R&D and production.

As mentioned in the theoretical section our study aims in investigating not only the relationship of different strategies of location choices with co-location but also to examine the effect of the latter on firms' performance.

We use the mean of turnover variation, of average EBITDA/sales (%) and of ROA (%) for the last three years 2015-2017 as the most representative indicators for measuring the firms' performance (Anderson & Reeb, 2003; Gautam & Singh, 2010; Giustiniano & Clarioni, 2013) (Table 8).

**Table 8.** Clusters' performance

Financial indicators (2017-2015)		Cluster 1 (n=12)	Cluster 2 (n=8)	Cluster 3 (n=4)	Cluster 4 (n=7)	Significance differences between clusters					
						1vs2	1vs3	1vs4	2vs3	2vs4	3vs4
Turnover variation (%)	Mean	4.29	1.95	.99	5.89						x
EBITDA/sales (%)	Mean	7.61	6.20	4.57	.56		x			x	x
ROA (%)	Mean	2.66	3.18	2.53	.06		x			x	x

According to Table 8 the turnover variation is more significant for firms included in cluster 4 followed by those included in cluster 1. While firms regrouped in cluster 2 and 3 show less significant variation of turnover. Cluster 4 is characterized by small firms in terms of turnover however it shows high variation of turnover through last three year.

Regarding EBITDA/sales the second indicator of firm performance, its value is higher for the first 3 clusters while results lower for the cluster 4 meaning that firms included in cluster 1, 2 and 3 result to be more profitable comparing to firms included in cluster 4.

Finally, ROA (%) results higher for clusters 1, 2 and 3 over years meaning that these firms are performing more efficiently in using assets to generate profit comparing to firms included in cluster 4.

Overall the effect of co-location of R&D and production on firm's performance seems to be significant in particular considering EBITDA/sales and ROA as one of the indicators of firm's performance. In fact, firms that do engage in co-location represent higher value for both indicators of firm's performance.

## 2.5 Discussion

The results show that firms focused on market strategies decide to co-locate R&D/design function with production in case when there is high level of product customization, coordination difficulties between R&D/design and production, there is a rapid change in production process technologies and when the product is complex and hardly coded (Pisano & Shih, 2012). These results are in accordance with the literature review and at the same time offer important insight of how co-location is important not only for market-driven firms but also for efficiency-resource-driven firms that have an R&D/design function. This is quite evident because if firms have complex product, difficult to code and high level of product customization then companies must be close to the R&D/design function (Pisano & Shih, 2012). The co-location in this case is needed.

Another important consideration is that the co-location is much more important for firms do not have an R&D/design function since they rely on external designers rather than those that have an internal R&D/design function. The importance of co-location depends also from firms' structural characteristics such as turnover, industry sector, number of employees, range and type of production. In particular most of the firms for which the co-location is important operate in clothing sector, characterized by high value of turnover and number of employees. Their products are positioned in mid-high range of production and often consist in finished products for the final market and other production companies.

Other important consideration is the role of co-location on firm's performance (Brache & Felzensztein, 2018; Wadho & Chaudhry, 2018). In particular most of the Italian firms that co-locate R&D/design function with production function perform better comparing to other that are not involve in co-location.

It can be suggested that the co-location of R&D and production may improve the firms' performance considering the need for constant interaction between the two units. Moreover, we suggest that the co-location of R&D and production both within and external (within the firms' region and/or within the country) to the firms might be important. Furthermore, larger firms in terms of turnover have a greater preference to locate the R&D function close to the production function.

## 2.6 Conclusion

The objective of this paper is to provide firstly, evidence of the relationship between the different strategies of location choices and co-location and secondly, under which conditions do production and R&D have to be physically co-located. The fact that firms choose to stay in Italy for reasons in terms of market driven or for reasons in terms of cost-efficiency driven it is important to analyze what is the relationship with co-location and what are the main obstacles they have.

One of the main findings of the paper is to provide evidence of why do companies produce in high-cost countries and the results indicate that variables related to market driven are the most relevant motivations for producing in Italy.

High cost countries are seen as countries characterized by high level of cost production, in particular high level of labor cost. However these countries are seen as attractive locations where there is access to skills, the knowledge is widespread and there is high perception of products “made in” (Fratocchi et al., 2016; Fratocchi et al., 2013; Fratocchi et al., 2014).

Another important finding is the strong relationship that results between strategies of location choices with co-location in particular for market-driven firms.

Finally, independently if firms adopt market or efficiency-resource-driven strategies the co-location has potential effects on firms’ performance. Firms engaged in co-location perform better than those whose R&D is located distant from production function.

This paper has managerial implications because it offers some insight on decision making in organization, in particular of how important is having an internal R&D/design function rather than collaborating with external designers in order to achieve competitive advantage in terms of product quality, product design and also brand name reputation.

This paper presents some limitations in that we focus only on fashion industry without considering other sectors.

Future research can be done trying to include in the sample other sectors in order to enlarge the unit of analysis and to offer better insights on the relationship between different strategies of location choices and co-location.

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## APPENDIX

**Table A1:** Description of variables used in the study

<b>Variable</b>	<b>Description</b>	<b>Type</b>
Year of foundation	Year of foundation	Continuous
Turnover in thousand of euro	Turnover in thousands of euro	Continuous
Turnover variation (%)	Turnover variation (percentage)	Continuous
EBITDA /sales (%)	Earnings Before Interest, Taxes, Depreciation and Amortization /sales (percentage)	Continuous
ROA (%)	Return On Assets (percentage)	Continuous
Number of employee	Total number of employee (2017)	Continuous
Number of brands registered	Total number of brands registered	Continuous
% of production activities	Percentage of production activities	Continuous
Activities outsourced	Activities outsourced by the firms  - all activities are outsourced - only some activities are outsourced - all production activities are carried out within the enterprise	Dichotomous Dichotomous Dichotomous
Industry sector	Industry sector  - clothing - footwear - fashion accessories	Dichotomous Dichotomous Dichotomous
Type of production	Type of production performed by the firm  - finished products for the final market - finished products for other production companies - semi-finished products	Dichotomous Dichotomous Dichotomous

Ranges of production	Ranges of production in terms of price/quality - high range - mid-high range - medium range - all ranges	Dichotomous Dichotomous Dichotomous Dichotomous
Marketing function	1 if firm has a marketing function, 0 otherwise	Dichotomous
Internal R&D function	1 if firm has an R&D function, 0 otherwise	Dichotomous
R&D=Design	1 if R&D function coincide with design function, 0 otherwise	Dichotomous
Collaborate with external designers	Collaboration with external designers - no collaboration - collaboration with designers in Italy - collaboration with designers abroad	Dichotomous Dichotomous Dichotomous
Motivation for producing in Italy	Motivation for performing production process in Italy (scale 1-5) - made in Italy - product quality - product design - low cost production - internal coordination - logistics operations - delivery times - product/process skills	Continuous Continuous Continuous Continuous Continuous Continuous Continuous Continuous
Determinants of competitive advantage	Determinants of firm's competitive advantage (scale 1-5) Innovation (use of new technologies) Design (appearance, style, colors, variety) Brand name reputation (prestige, exclusivity, status) Production quality Country effect (Made in)	Continuous Continuous Continuous Continuous Continuous

Co-location	1 if R&D is located close to production, 0 otherwise	Dichotomous
Geographical location of R&D	Geographical location of R&D - R&D located inside the firm - R&D located within the firm's region - R&D located Italia and/or abroad	Dichotomous Dichotomous Dichotomous
Motivations of co-location	Motivations of co-location of R&D and production (scale 1-5) - coordination difficulties between R&D and production - rapid change in production process technologies - high level of product customization - the internal R&D intensity - conditioning of design activities related to the process/production capacity - the extent to which the product and process design may be coded	Continuous Continuous Continuous Continuous Continuous Continuous

**Table A2.** Descriptive statistics for variables included in the factor analysis

	N	Min	Max	Mean	Std. Dev.
Made in Italy	31	3	5	4.61	.558
Product quality	31	3	5	4.61	.558
Product design	31	3	5	4.58	.564
Low cost production	31	1	5	2.19	1.447
Internal coordination	31	2	5	4.10	.978
Logistics operations	31	1	5	3.84	1.267
Delivery times	31	2	5	4.06	1.031
Product/process skills	31	1	5	4.58	.848
Co-location	31	0	1	.77	.425

**Table A3.** Correlation between variables included in the factor analysis

	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Made in Italy	1								
2. Product quality	.466*	1							
3. Product design	.420*	.631**	1						
4. Low cost production	-.152	-.028	-.061	1					
5. Internal coordination	.254	.193	.076	.316	1				
6. Logistics operations	.191	.191	.042	.399*	.766**	1			
7. Delivery times	.276	.161	.220	.282	.721**	.774**	1		
8. Product/process skills	.068	.139	.108	.259	.412*	.587**	.223	1	
9. Co-location	-.100	.041	-.130	.290	.295	.301	.187	.376*	1

\*\*p<0.01, \*p<0.05

## CONCLUSIONS

This thesis analyzes the relationship between different manufacturing strategies of location choices and firms' competitive advantage in high-cost countries. It is structured in two main chapters that are strongly linked to each other. However different methodology is used in order to provide important evidence of how firms choose different strategies of location choices in order to gain competitive advantage. In Chapter 1 the country of origin is used in order to investigate different strategies of location choices while in Chapter 2 co-location of R&D and production is chosen. Multiple case studies are used in Chapter 1 while cluster analysis is used in Chapter 2 in order to reach the purpose of the thesis.

This study suggests a move away from efficiency strategy to market strategy. Indeed, the geographical location of manufacturing activities is driven mostly to value creation operations (Yang et al., 2013). In particular in high-cost countries firms may need to adopt an open business innovation and knowledge acquisition (Roos, 2016).

Recent studies on international business acknowledge the role of COO in influencing firms location decision on where to manufacture and where to design a certain product (Albertoni et al., 2015; Alessandro et al., 2015; Di Mauro et al., 2017; Fratocchi et al., 2016). Indeed, COM and COD as two dimensions of COO result to enable companies offshoring and reshoring decision in order to gain competitive advantage' (Hamzaoui & Merunka, 2007; Hamzaoui et al., 2011; Hamzaoui & Merunka, 2006). In particular, COM results to have more impact on firms when it comes into reshoring decision rather than COD.

A suggestion is that firms that decide to reshore their activities in the home country may be driven to the benefits that these firms profit from producing in Italy. The main motivations of reshoring decision are related mostly to the added value of Made in Italy due to the higher value perceived by consumers to the made in Italy products thinking that the quality of products is higher if the manufacturing process takes place in Italy. For instance high-cost countries such as Italy are seen as attractive locations in particular for firms that are market-oriented (Zhai et al., 2016b). Moreover, locating the production in these countries leads firms to a close proximity with their R&D function (Buciuni & Finotto, 2016). For instance the interdependencies of manufacturing and R&D activities in high-cost countries become relevant (Ketokivi et al., 2017).

The importance of investigating more in detail of why producing in high-cost countries is important and whether it is important to maintain the design function close to the production function considering different strategies of location choices is acknowledged.

We seek to analyze the relationship between different strategies of location choices and co-location of design and production. Focusing only on Italian firms that operate in fashion industry it conceptualizes the need for co-location considering whether the innovation function is located inside the firm, within the firm's region and/or within Italy.

Firstly, this study focuses on analyzing the main motivation of producing in Italy and, secondly the importance of geographical proximity between production and design function. We find that the motivations of producing in Italy are more market-oriented such as high value perception to the Made in Italy products, high product/process skills in Italy and high perception of product quality.

Moreover, the importance of co-location of design and production function is related mostly to the high level of product customization, to the coordination difficulties between design and production function, to the rapid change in production process technologies and when the product is complex.

The need for co-location is determined not only from the different strategies of firms' location choices (that in our cases both market and efficiency-resource strategies seemed to be important for the need to co-location) but also from whether firms have internal competences of innovation or collaborate with external designer.

The need for co-location is more important for firms that rely on external designers rather than those that have an internal design function. Firms that are more innovative-oriented are more propensity to be engaged in co-location in high-cost countries as the latter are seen as attractive location for research activities (Roos, 2016). The co-location seems to be important in all the cases whether the design function is located inside the firm close to the production function, within the firm's region and/or within Italy.

We suggest that the co-location within a high-cost country does matter independently from the geographical distance between the R&D and production function within the same country. Finally, the co-location has some effects on firms' performance in particular the results indicate that firms that engage in co-location are those that perform better.

The major contribution of this thesis is to leverage the role of COO in particular of "Made in Italy" as drivers of manufacturing firms' location decisions in order to gain competitive advantage. Another contribution is enlarging the international business literature with the role of COO in high-cost countries in order for firms to gain competitive advantage that usually is explored within the international marketing literature. Production in high-cost countries is not



disappearing, rather it depends from the different strategies of firms location decisions (Ketokivi et al., 2017).

This study has some managerial implications offering some insights on decision making in organization. Managers should be aware of changes of trends in manufacturing location decision. In particular, the information gathered from this study about the motivation of producing in Italy can help managers better understand first, which are the effects of COD and COM on product evaluation and, second the importance of having internal competences of innovation rather than collaborating with external designers in order to achieve competitive advantage. Also, considering that both market and efficiency strategies of location choices resulted to be important in determining the need for co-location, managers should increase the managerial control between the R&D and production units in order to enable value and firm competitiveness. Bringing close the production to the R&D function may led managers to the reconfiguration of the manufacturing operation that previously was internalized within the home country and of the whole manufacturing supply chains.

Finally, this study presents some limitation in that it focuses only on Italian firms that operate in fashion industry without considering other sectors and/or countries. For this reason, future research must be done in order to enlarge the sample of analysis and to have better insight about the relationship that exists between different strategies of location choices and co-location in high-cost countries.

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