THE STUDY OF SURVIVAL AND RESILIENCE OF THE MATURE EAST-MIDLANDS TEXTILE AND CLOTHING INDUSTRIAL CLUSTER IN UNITED KINGDOM

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Abstract

One of the aspects investigated intensively in cluster research is emergence and growth of clusters specially the successful ones. In contrast to numerous empirical research on growing and well-functioning and mostly high-tech clusters, relatively the process of cluster decline specially on a firm level has been given less attention in the literature. Considering despite the decline in clusters, some of them manage an ability to last and contribute to the regional and national economies, make the study of these clusters more important. How do firms in a declining cluster manage to survive and to be resilient toward the disruptive changes and pressure which contributes to the cluster decline? To answer this question, this study investigates the process of cluster decline and the role of firms in survival in this process based on a case study of the textile and clothing manufacturing in the East Midlands in the UK.

Key words: *Industrial cluster, cluster dynamics, cluster survival, textile and clothing cluster, East Midlands textile*

1. INTRODUCTION

Regional clusters have gained much attention by academics and policy makers during the last 20 years. Although for policy makers, study of well-functioning clusters is of great interest as the central question for policy makers and local governments is how to secure long term development of the region and assess how the cluster can maintain its status but lesson can be learnt from the study of declining clusters and what contributes to these declines and to understand how clusters can sustain their position and to survive the changes and to stablish policies for clusters' ability to overcome threats. Therefore, understanding the process of decline in depth through detailed empirical studies on this subject might help policy makers to find out whether or not there are similar patterns in how clusters decline and to find mechanisms to prevent clusters from decline.

Clusters resilience can be interpreted as an adaptive capability that allows a cluster to make changes to overcome internal and external disturbance and still function with its identity as a cluster within a particular field. To understand why and how clusters survive the decline processes, study of flexibility and resilience of the clusters is relevant; firm level dynamics explain the survival of the cluster as a whole, which means that the strategy and the actions of individual firms need to be studied to analyse the cluster resilience pattern. (Park & Østergaard, 2012)

Historically the East Midlands in the United Kingdoms was a textile and clothing manufacturing region employing thousands in large garment manufacturing plants. Originally clothing and textile manufacturing in Midlands was concentrated in Nottingham and around Lace Market and the whole area around Lace Market was dedicated to big producers of Lace and Knitting converted to commercial properties and offices. The ongoing modernization of machineries resulted in knitting firms and lace producers spread to further parts in Midland such as Leicester and Derby which land were cheaper and distribution was easier. This geographical concentration of apparel manufacturing in Nottingham changed due to mass production and the pressure of globalization.

Nottingham, during the Industrial Revolution, became the hub of the textile industry in the country and internationally became very important and well-known in knitting, textile production and lace manufacturing and during the 1870s and 1880s and after the great decline in Lancashire cotton production after 1913, as a result of rise of India in production of finished yarn and cloth, Nottingham's reputation as a textile town was formed. Lace-making was already popular in the area but the

introduction of a lace making machine in 1809 ensured that lace would make not only a reputation for the town, but also make it a fortune. Nottingham was already famous for its hosiery, and the mechanization of the textile industry saw the rapid growth of big textile and clothing manufacturers there. During the 19th Century, the boot and shoe trade flourished in Leicester, there were just over 400 boot and shoemakers in the city at the start of the 1830s. Thirty years later by the 1860s, that number had hit almost 3000. Nottingham lace went into decline with changing fashions after the First World War but Nottingham still had a strong textile industry during the Industrial Revolution but it declined during the 1950s and 60s although hosiery production helps up well until undermined by competition from the Pacific Rim in the 1980s and 1990s.

The East Midlands still has the highest concentration of clothing & textile companies in the UK. Although many operations were gradually phased out as many firms and manufacturers went offshore but the report, by Cast Intelligence, of Nottingham, says the county still has more than 800 active textile firms who produce £500 million worth of goods each year. Famous sportswear manufacturers Speedo moved to Nottingham and Nottingham is still known as the home of global fashion mogul Paul Smith. (Ash, 2003b)

The Leicestershire and Derby, Derbyshire, Nottingham and Nottinghamshire textiles manufacturing sector is the largest employing sector in the UK before Greater Manchester. However, these clusters mainly specialized in particular and niche activity such as cutting or design rather than most part of textile supply chain activities as they use to be, had been through changes and indicated a rapid decline since the late 1970s to mid-1990s (Taplin & Winterton, 2004). However, significant capability still exists in traditional sectors such as yarn spinning, knitting, weaving and making-up (Cut Make Trim/CMT), alongside growth in technical textiles, materials and composites. (Hardie & Banks, 2014)

The district is still active and contributing to the regional and national economy but has been through changes as a result of rapid changes in global competition. The TCI sector is much diminished, and much of what remains could be described as 'hollowed out'. Yet hollowed out firms are still firms, and in some cases they retain segments of the value chain which are high in value-added. (Irvine, RDavis, 2014)

This paper explores the strategies of firms in the East Midlands cluster, and also the effect of on those firms and the adequacy, or otherwise, of its activities within the cluster in order to determine how firm's competitiveness can be enhanced through the provision of effective clustering.

- What strategies do surviving firms in the East Midlands Cluster adopt in order to establish sustainable competitive advantage in the face of internationalization?
- Does the common characteristics of Midland TCI cluster follow the characteristics of a hypothesized cluster advantages such as benefiting from cluster-level institutions, inter-firm relationships, and Marshallian externalities? To what extent do the surviving TCI firms in the East Midlands benefit from such cluster-level advantages?

This study will be focusing on the process of firms' interaction, meetings and collective reactions that bring in all the relevant actors such as SMEs, universities and institution, government in the strategic analysis and decision-making process to study globalization impact, employment facts, knowledge sharing, specialization, capital intensification, market in the East Midlands Cluster. For this purpose, in addition to the secondary data, this research conducted as a qualitative case study design collecting benefiting data from a range of in-depth interviews with firms' owners, CEOs, managers, etc who had a great insight in firms' strategies and activities.

This research investigates the extent to which restructuring activities of firms together with factors external to the firms have been able to generate, or maintain, self-sustaining regional in the East Midlands in UK in textile and apparel industry.

Study of the components and supply of these resources, and the interaction between them, is crucial to enable analysis of activities taking place in the value chain, and may clarify the position of the cluster in the value chain and explain the process of hollowing out. For example, looking at "raw materials" as a resource in the textile cluster and breaking it down to various resource components such as plant raw

materials (cotton fibre), raw material of animal origin (silk, wool), chemical fibres, yarn, dyes, etc leads us to the supply sources such as ginning factories and chemical and petrochemical enterprises and their location, agglomeration and position in regional and potentially global markets. Then it becomes easier to examine the level and component of the interaction to see if the interaction is taking place in the internal environment of the cluster for the production, marketing and branding process or between the cluster and external factors such as raw material suppliers and textile industry.

2. THEORETICAL FRAMEWORK IN INDUSTRIAL CLUSTERS

When in 1890 Alfred Marshall showed interest in 'the concentration of specialized industries in particular localities' and simply named it 'industrial districts', he also mentioned some positive characteristics of these local concentrations of these specialized activity as follow: the ready availability of skilled labor, the growth of supporting and supplementary trades, and the specialization of different firms in different stages and branches of production. Marshall argued that once the process of local specialized industrial concentration had got under way, it becomes cumulative and socialized in the locality: "The mysteries of the trade become no mysteries; but are as it were in the air" (Marshall 1890)

A century later and Porter's neo-Marshallian cluster concept has burst on the scene. In his comparative work on international competitiveness, Porter (1990) argued that a nation's leading export firms are not isolated success stories but belong to successful groups of rivals within related industries. He termed these groups 'clusters', sets of industries related by horizontal and vertical links of various kinds. More specifically, he suggests that a nation's most globally competitive industries are also likely to be 'geographically clustered' within that nation. Porter in "Clusters and the New Economics of Competition" which published in 1998 explains how clusters, despite the era of global competition, foster high levels of productivity and innovation; meaning locality still matters.

In other words, being located in a cluster increases the firm's competitive edge as Porter explains the clusters' impact on competition in the following way; firms can increase the productivity of businesses based in the cluster location.

Being in a cluster allows companies to operate more productively in sourcing inputs; accessing information, technology and institutions; coordinating with related companies; and measuring and motivating improvement (Porter, 1998) and all of the above lead to competitive advantage.

Barkley and Henry expand on the advantages of being in an industrial cluster into four areas (Barkley & Henry, 2001): 1-Cost savings through localized economics as a result of a greater availability of specialized input suppliers and business services. 2-Clustering facilitates industrial reorganization as a result of the impact of the bigger firms on smaller firms within the cluster. 3- Clustering encourages networking among firms as firms through networking, cooperate better and take advantage of complementary firms and businesses. 4-Clustering permits greater focusing of public resources by using region's limited economic development resources more efficiently.

But if being located in clusters are advantages why some clusters decline and firms cannot survive within clusters? To answer this question, it is important to understand the supply chain activity of a cluster to be able to study the reasons behind growth or decline of the cluster. Also, industries responses to clustering are different depending on the inputs and outputs of their value-chain activities, Porter (1998), and Padmore and Gibson (1998), Steinle and Schiele (Steinle & Schiele, 2002) and that might illustrate the importance of studying and understanding cluster value chain activities in formation, interaction, survival and dynamic of clusters. This is to understand the dynamic of clusters but prior to that, there is a need for understanding of a value chain by itself as well. Value chain activity is dynamic and changes in value chain might lead to changes in the industry and the cluster as well.

Cluster firms are seen to be increasingly incorporated in national and global value chains rather than having only relations at regional level. (Ash 2003f). Many of these put the emphasis on the study of the cluster and value chain is to find a lead to upgrade the value chain which is believed to result in a better performance which leads to being more competitive. (Ash 2003f; Humphrey & Schmitz 2002)

The concept of upgrading refers to three approaches which firms or a group of firms might undertake: (Humphrey & Schmitz, 2002)

- Process upgrading: firms can upgrade processes-transforming inputs into outputs more efficiently by re-organizing the production system or introducing superior technology.
- Product upgrading: firms can upgrade by moving into more sophisticated product lines
- Functional upgrading: firms can acquire new functions in the chain such as design or marketing.

While the first type of upgrading involves doing the same things more efficiently, the second two types can lead to repositioning of the cluster in global markets which cluster begins to produce different products for different types of customers.

These upgrading strategies are critical to how to improve the position of firm in value chains as the range of strategies that can be adopted by the firms and development practitioner are different. What why firms tend to upgrade in supply chain? What are the underlying reasons behind cluster upgrading? Does failure to upgrade in supply chain lead towards the cluster decline? To answer these questions, this section categorizes the potential reasons into five categories and review the literature in each category and also look into some empirical data of secondary sources. These five categories are as follow:

2.1. Internationalization

Internationalization of competition in manufacturing and its effects on the dynamic patterns of industrial districts are under strict attention in the field of policy-making studies. The impacts may result in growing specialization of within supply chains by firms and by countries; and the movement of clusters from a model in which there are many stages of production so the firms are specialized and the cluster not, to one in which clusters manifest national specializations within global supply chains; industrial relocation, knowledge relocation and restructuring of the global value chain have occurred especially in mass products and between developed and developing countries. (Biggiero, 2006)

A striking question is how firms in such mature industries survive these rapid and major changes and remain competitive. Some interaction between firms within an agglomeration is expected; there are two ways of studying the impact of one on the other one; if we consider firms are at the center of this study, one way of studying this relationship would be an outward looking to examine and explore the district effects on the firm to answer this question; as far as many of these firms in mature industries are within the industrial clusters, what is the role of [if any] district effects in this survival?

The second way of studying this relationship would be an inward looking study which study the characteristics of firm and the strategies taken by firms to survive and compete and examining how these strategies might have an impact on cluster as a whole. So, unlike the first method which looks at a cluster as a single embedded unit of analysis but looking at firms as an individual units of analysis, in this approach cluster is a multiple case design with each firm has its own story and character.

Puig and Marques in their study analyzed a sample of 10,490 Spanish textile firms in the period 2001–2006; their choice of sector (textile industry) and time period reflected a context of rapid change following the end of the World Trade Organization's system of quotas in this industry. In this study, a positive district effects on firms' performances was stablished and suggested going through the changes and challenges is easier for textile firms as a result of district effects which are the establishment of a relationship between localization and proximity and their effect on firm performance. (Puig & Marques, 2011). One of the most influential contributions in the study of the proximity effect is the research by Signorini (1994a, 1994b), based on a sample of 500 textile firms, of which two-thirds were located in the Prato and the Biella areas. Using data from the Italian firm registry, Signorini investigated the level of specialization, size, profitability and pro- ductivity of district firms and concluded that geographical concentration had a positive impact on those variables.

Also, other studies have generalized the findings of Signorini about the returns to geographical proximity and have established that, within a particular industrial sector, the firms located in an industrial district have more competitive advantages than those located outside.

There are supporting views to the above studies which argue that the districts will find their way to cope and continue their activities and opposite views of those who think that the districts are now incapable to compete in the new global context (Paniccia, 2007; Rabellotti et al., 2009) as local factors lose ground to global factors (Marques, 2005); there are studies which support this idea; globalization weakens the formal and informal networks implicit in the district, such that, as firms become increasingly open to foreign markets, the level of integration and collaboration within the territory is reduced.(Belussi & Sedita, 2012)

Additionally, although it is suggested that industrial clusters create innovative environments that reduce the intense global competition generated by deregulation, sometimes the links to firms located outside the territory are necessary to increase the probability of survival (Steinle & Schiele, 2002; Cooke & Leydesdorff, 2006).

2.2. Modernization and capital intensification

Globalization and advancement in technology have had profound impacts on employment, modernization and adoption of capital-intensive technology in the manufacturing industry. It has been a common mistake to judge a survival and prosperity of an industry based on the changes in number of factories or number of employees in the industry but these two are not representative of the industry situation. For example, the reasons for the loss of employment in the textile and clothing manufacturing sector in the UK and many other developed countries, has been a debate as several studies have revealed that surprisingly growth and efficiency in labor productivity was the reason for decline in employment rather than causes such as increase in importation (Keesing & Wolf, 1981)

Increasing investment in technology by textile mills, and the resulting increase in labor productivity plays an important role for the projected decline in employment in the textile mills sector. Wider looms, robotics, new methods for making textiles that do not require spinning or weaving, and the application of computers to various processes result in fewer workers being needed to produce the same amount of textile products. Companies are also continuing to open new, more modern plants, which use fewer workers, while closing older, less efficient ones. As this happens, overall demand for textile machine operators and material handlers will continue to decline, but demand for those who have the skills to operate the more advanced machines will grow. Textile mill products and the apparel industries steadily lost jobs to foreign competition and technological advances throughout the 1990s.

Improved technology reduced production time and the number of workers required to manufacture fabrics in the textile industry. Apparel and other textile products, influenced less by technological innovations than by imports, lost a third of its workforce during the decade. This industry was especially harmed in the latter half of the decade, when most Asian countries devalued their currencies, making their products much less costly in the United.(Hatch & Clinton, 2000)

New technology will increase the apparel manufacturing sector's productivity, although it is likely to remain labor-intensive. The variability of cloth and the intricacy of the cuts and seams of the assembly process have been difficult to automate. Machine operators, therefore, will continue to perform most sewing tasks, and automated sewing will be limited to simple functions. In some cases, however, computerized sewing machines will increase the productivity of operators and reduce required training time.

2.3. Specialization

Economic theory defines specialization as the production of one or just a few goods and services. In other words, it refers to how an individual, organization, state or country focuses available resources. Instead of attempting to produce and sell many different products, entities use overstock to trade for

what they may lack. Adopting and following new and specialized technology, the growing and training variety of skilled labor, the increase in scales of production and product selection, the standardization of parts and products, flexibility, sharing knowledge, networking and change in the professional division of labor can lead to specialization.

Labor specialization is one of the key features of modern economic systems, enabling factories and other business operations to produce goods on a global scale and to increase productivity. Labor specialization, also known as division of labor, was first recognized by Adam Smith (1776) in his classic economics text Wealth of Nations and it refers to the practice of splitting a job into discrete tasks and assigning each task to a specific worker. Having workers perform specialized labor tasks is one of the factors that can lead to increased productivity.

Firm might benefit from specialized suppliers and subcontractors, smaller, more specialized firms producing technology to be sold into other firms such as specialized machinery production and high-tech instruments. Specialization might happen trough specialized suppliers

The famous example of the Third Italy used many times to explain the concept of specialization when subcontracting model was adopted by Italian entrepreneurs contracting out their operations to other firms and basically functioning as "weavers without looms" instead of the traditional vertically integrated way, whereby mills buy their own raw wool from suppliers, spin their own yarn, weave and finish their fabrics. Skilled, trained, secured and retained employees can play a very important rule in specialization of an industry as it did in the Third Italy as artisans in Italy were well-paid and as textile and clothing was an important industry with a promising future and career prospect, they stuck to the industry and the skills passed through generations and family run business with family investment emerged through that.

One of the criticism toward British manufacturing is lack of specialization as a result of absence of collaboration, networking and knowledge spillover; Lazerson presented an effective and strong network structure mainly based on the social structure of artisan firms in the Modena knitwear industrial cluster in Italy, surprisingly these collaborative artisans increasingly compete as well. Easier communications result in easier collaboration both vertically and horizontally and to plan and ploy rivals across the world.

Specialization model invest in training, knowing that those who are trained probably won't leave and the family run businesses are more likely to share more knowledge and train their own members, confident that they will remain in the business.

Another criticism to the UK manufacturing is lack of horizontal specialization, inflexibility and being vertically specialized. Lazonick has suggested that vertical specialization prevented firms from investing in newer more efficient throughput technology. (Mass et al, 1990), in northern Italy clusters, most of the machinery are customized machines, rather than the off-the-shelf models.

2.4. Industry life cycle

The study of resilience and survival of firms is directly relevant to their position in relation to industry life cycle and specialization might depend on the life cycle stage that the cluster or industry is in it as different industries might benefit from their local environment through the later stages of the industry life cycle.

This suggested by a few academics in the quantitative study of a diverse Swedish manufacturing cluster that moving from young industry which usually lacks skilled workforce, efficient production processes, experienced managers, and established sales channels and market share even in their own domestic markets to intermediate and then mature industries, which has passed both the emerging and the growth phases of industry growth. Earnings and sales grow slower in mature industries than in growth and emerging industries. The benefits derived from local specialization steadily increases the relative stability of mature industries would allow them to take advantage of more specialized environments and make them more vulnerable to a lack of local focus that is more common in diversified cities. (Neffke et al. 2011)

Klepper (1992) emphasizes, there have been various renditions of what actually constitutes the industry life cycle. For example, these studies typically find that the entry of new firms is the greatest during the formation stage of a new industry, and then levels off and begins to decline, even before the industry has attained the mature phase. What Klepper and Miller (1995) term as the shakeout phase, where the greatest number of exits from the industry occurs, typically takes place well after the number of new entrants into the industry has declined. The combination of the drop in the number of new entrants along with the high number of exiting firms during the shakeout phase leads to a decline in the total number of firms during the mature and declining stage of the life cycle. Klepper (1992) also emphasizes that an analogous evolution with respect to innovative activity occurs over the course of the industry life cycle.(Klepper, 1996). This seems to be the case in the East Midlands textile cluster, this study looks into the strategies employed by the firms which have survived the shake out stage.

2.5. Industrial Cluster and Policies

Although firms' strategy plays a very important role in survival and continuity of a declining cluster but so do policies. Cluster policies, if any, vary from region to region and it comprised a variety of different forms such as grants, economic development packages, land releases, pro-active planning policies, and infrastructure improvements and it was up to regional policymakers to tailor different approaches to individual regional circumstances.(Ash, 2003a), therefore, the focus of the most of these policy is concerned only with the region in questions and its relationship to the national and international economy rather than the economy of the nation as a whole.(Lambert, 2003) and one of the most interesting findings of the UK's biggest research program on 1992 and the Single European Market (Begg & Mayes, 2000) is that the future of industrial policy lies at regional rather than national government level.

How institutions are part of what makes a cluster works? Clusters might have been induced by government through deliberate policy actions such as the establishment of industrial parks and export processing zones to attract certain industries to specific locations. In these cases, clusters such as those in industrial parks and export processing zones often attract large and vertically integrated firms, which don't relay much on the output of other firms. Traditional regional development policies introduced to assist regions suffering from a declining industry have often been guided by a development model which promoted large investments in infrastructure or in social assistance. Another relatively common regional development policy has been to attract firms from other regions or countries to establish themselves in the disadvantaged region by offering subsidies of various kinds. More recently, entrepreneurial policies have been introduced which concentrate on improving the labor pool and intermediate inputs. For example, training policies have been introduced in several countries to encourage employee training, many of them targeted at small firms. Recognizing that much of the training undertaken is informal, the Australian government has sought to encourage more training by creating an accreditation scheme for skills obtained on-the-job. (Colardyn, 1996)

An example of government and institutional policy to protect a cluster is the case of Catalan Textile Clusters in Spain. In the early 1990s, the Catalan Government recognized that in order for the region's textile industry to remain competitive, an initiative needed to be implemented to link all the players in the supply chain (from yarn, through design, to final product). Between 1993 and 1997, three textile clusters were set up in order to prevent the fragmentation of the sector by harnessing traditional industry with a channel control strategy. Within two years, the 'Programa de Marques de Canal' enabled over fifty companies from related sectors to internationalize their products by facilitating strategic reflection including market intelligence, total branding, design, retailing, supply chain management and logistics in order to secure high margins, speed up time to market and integrate customer-centric business thinking. Although manufacturing has been outsourced abroad, the region has retained the higher value-added activities such as design, research, marketing, retail, distribution and logistics. From this initiative has emerged the second largest textile exporter from Spain, Mango, which has opened 900 stores in 72 countries. The region's textile industry has transformed from being production driven to being market driven, as the cluster companies have been able to share information in order to react to consumer demands, market fluctuations and evolving distribution channels. (Design Wales 2011).

Policies have also tried to improve the supply of information and advice sought by smaller firms. For example, the US government has created a nation-wide network of locally managed manufacturing extension centers dedicated to helping smaller manufacturers improve their competitiveness by adopting modern technologies. (Shapira, et al, 1995) Also, Evidence is emerging that the formulation and delivery of policies to promote the start-up and growth of small businesses can be most effectively delivered with the input of local authorities who are more aware of and sensitive to local conditions and needs. (Brusco et al, 1989)

Universities and research institutions also might have an impact on cluster life-spam, prosperity and survival as they are often the hubs for new ideas and basic research in the growing clusters and this should transform a cluster to a center for innovation with supporting R&D activities. Varga (1998) found expenditures of R&D and university research in the neighborhood promote innovation in the region concerned. Audretsch and Feldman also found that the existence of R&D function, university research, and skilled labor in the neighborhood promote innovation through knowledge externalities.(Audretsch & Feldman, 1996)

On an empirical level, Arita, Fujita and KameyamaIn in their study of approximately 600 small and medium-sized firms in three industrial clusters in Japan (2006) recognized that currently Japanese industries need to build new horizontal inter-firm networks to foster innovation, and that the conventional vertical inter-firm transactions would no longer be very effective; through investigation of regional cooperation, they found out horizontal cooperation such as alliances with universities and cross-industry exchange organizations in Tama has positive significant effects on firm's growth at some stages. (Arita, Sciences, Fujita& Kameyama, 2005)This study might also be a useful study to found out whether there is any horizontal cooperation such as alliances with universities and cross-industry exchange organizations and the SMEs. In the UK, in 2008, in each region and country in the UK, no more than 0.2 per cent of enterprises are large (250 or more employees), and at least 99.1 per cent of enterprises are small (0 to 49 employees). This number has improved to 99.3% of all private sector businesses at the start of 2015 and 99.9% were small or medium-sized (SMEs). These SMEs are socially and economically important - they represent 99% of an estimated 23 million enterprises in the EU and provide around 75 million jobs representing two-thirds of all employment. SMEs contribute up to 80% of employment in some industrial sectors, such as textiles, construction or furniture.

Not always policy makers are in favor of creation and support of industrial clusters and in fact from some policy makers' perspective, cluster initiative are prone to failure because they are poorly conceptualized and developed. (Held, 1996: Waits; 2000). What is relevant to this study is the presence or the absence of these institutional support and policies in T&C cluster in the East Midlands and therefore, empirical data has been collected in this respect.

3. METHODOLOGY

The present study aims to understand the reason behind the survival of the mature textile and clothing industrial cluster in the East-Midlands on a firm level. The textile and clothing cluster in the East Midlands is not a typical cluster in the UK; this cluster is a mature cluster in a developed country and unlike most financial, service, high-tech, aerospace and car clusters in the UK, this cluster is functioning almost independent from institutional and governmental interference and it contains of many small and medium size family-run businesses and traditionally this cluster was formed by many immigrants from India, Bangladesh and Pakistan. Although this cluster faced fierce international competition and a great decline in employment and skilled workers but it is still functioning and it contributes positively in the UK economies and these characteristics make this industry very interesting.

3.1. Data Collection

Data for case studies can come from many sources of evidence or what is called 'methodological triangulation'. In this respect, in this study, several methods in different combinations have been used in order to gain the most detailed picture of participants firms such as documentation, archival records,

direct observation, participant-observation, and physical artifacts, websites, Linkdin, company profiles, etc. but data collection mainly focused on interviews.

Unstructured interview employed in this study, when allocated time to the interview was limited in interviewing the higher managerial level of the larger firms and when interviewees expected to present a good level of knowledge about the industry and global competition. That resulted in great insights in firm's activities.

To collect the data, 95 active firms in the cluster was contacted via email, by phone, Linkdin or by person and 30 of them agreed to be interviewed. For gaining a better insight of firms' dynamic and activities and their responses to the changes in T&C East Midlands cluster, I also interviewed 6 folded firms by recommendation of the active firms. The semi-structured and in-depth interviews were conducted based on two questionnaires for active firms and folded firms.

Interviews took between 38 minutes to two hours and mostly took on average slightly more than an hour, some of them enhanced by a tour of the factory. Through my interviews, if it was possible, sought to select interviewees who were the main strategic decision makers of their firms or they had a great insight about how these decisions were taken and therefore, most interviewees were the founder and/or the owner of the firms.

In-depth and open-ended interviews allowed many variables to emerge which led to a rich understanding of the strategies and actions that firms adopt and take and overall, the interviews provided a rich stream of data on contexts, dynamic and mechanisms of firms in the selected cluster.

3.2. Data analysis

The patterns identified in response to my questionnaire and themes within coding after reviewing the transcription and that transformed the bulk of data into categories through coding. Each code was given a label, a definition or description to guide how to apply the code, and an example of the texts. The following categories emerged from the coding process:

- Subcontracting
- Purchase location of input
- Purchase location of output
- Changes in method/location of production
- Knowledge sharing and collaboration
- Trade/institutional/governmental support
- Joint product/marketing development
- Specialization
- Capital intensification
- Globalization impact
- Employment skills and availability
- Quality control
- Importance of vicinity
- Marketing
- Planning and strategic decision
- Succession

4. DISCUSSION

4.1. Skill

Production of lace in Nottingham and weaving and knitting activities used to need craftsmanship skills and relied on skilled artisans and workers. The textile manufacturing industry in East Midlands cluster still possesses a highly skills but ultimately ageing workforce, whose skills will be lost when retirement occurs. Most interviewees identified an ageing workforce or in a few cases lack of skilled workforces in this sector. Additionally, lack of proper staff training in educational, technical and infrastructural relating to the broad range of skills required by textile manufacturing was also identified.

"We don't have any skilled labor left in this industry" emerged from majority of interviews, one the interviewees mentioned as long as there is not a professional training going on for this sector to teach skills, the only way skills can survive is through encouraging the low skilled workers to stay in the sector and gain experience, but that needs decades of patience and if when they start they only get minimum wages and it is very tempting not to work for other sectors such as retail as working in these sectors sound more appealing to the younger generation rather than working in a textile factory.

4.2. Globalization

Globalization and global competition emerged from every interviews, mostly as a challenge and nightmare and occasionally as an opportunity. Although, offshoring for bigger firms never seems to have been a problem as they mentioned they liked having a bigger range of suppliers and as a result products and cheaper cost of labor, production and taxation but small firms feel they cannot compete with foreign firms. But also, the bigger firms showed some concerns regarding the increasing cost of labor in developing countries specially China and some showed a level of concern about changes in: rules and regulation, production, taxation, fluctuation in cost of transportation and wages of employees in developing countries and therefore they felt off shoring might lead to some problem such as lower profit margin and problem in inventory management. Larger firms, not as great as small and medium firms, also showed some hopes for on-shoring; of course SMEs believed on shoring of the bigger firms can bring back the prosperity and hope to textile and clothing sector in the Midlands as they can have a better chance of competing and being subcontracted for bigger firms. The smaller the firms, they showed a greater concern about globalization and hoped for on-shoring.

Interviewing medium size textile and clothing firms indicated they felt more unsure and complicated about globalization; they certainly enjoyed a cheaper access to the raw material and machinery but certainly did not enjoy being in a global competition and they believed they share their customers with other firms in the same level of value chain but not necessary they get more customers locally or globally. This love and hate relationship was not easy to be concluded; their strategies to compete and survive mostly suggested they buy the raw materials from developing countries but mostly tried to be subcontracted nationally or sell to local or national buyers.

Some larger textile firms those would consider offshoring some part of the production such as knitting, dying and the production of yarn and offshoring typically needs more geographical coordination and virtual control and therefore have need of more services such as efficient computer services and IT, a better understanding of corporate and business law, various taxation policies and they should benefit from a faster and a more reliable transportation and distribution service. To cut these cost, they also did not show any objection against on-shoring if it was possible instead of buying in bulk from oversees or producing in bulk and bringing the products in which it might lead to a high cost of transportation and require a great coordination, they might consider buying from UK manufacturers to save money and time for all required services for off shoring and importation. Therefore, some firms considered nationalization instead of globalization by sourcing their raw material locally or nationally and by subcontracting UK firms instead of internationally. Jack Wills, M&S, Top Shop and River Island are already exercising this practice.

4.3. Sign of return

Interviews suggest that the result is that the economic balance seems to be increasingly favoring a return to manufacturing in Britain as a result of quick and reliable delivery of fabric, textile and apparel goods and better quality control of them and it indicates retailers begin to re-engage with UK manufacturing and the sentiment of 'made in the UK' production. Also, increasing wages in developing countries alongside with higher demand of factory workers in those factories leads to an increase in cost of production and obviously the finishing goods. Although the restructuring for bigger firms seem like a solution to bring back manufacturing or at least some part of it to Midland textile and clothing cluster but many small and medium size firms which don't have the ability to upgrade their production or relocation struggle as a results of high taxation, lack of protection by government, rising costs of labor and raw materials, lack of access to institutional help and knowledge, shortage of skilled labor, rise in production costs and intense competition which leads to lower profit margins.

4.4. Support

The interviewed firms mentioned the lack of support by government or any other effective communication from universities, organizations or institutions to support the industry. In fact, question about this subject had be paraphrased and still many firms had no clear idea of what support by government or institution meant. If the answer wasn't no right away after this question, usually was still no later. Some firms provided some examples of intended support by a few institutions such as Emtex or Midlands Textile such as a few formal meetings and talks but they never felt these were any help to them. Mostly what firms thought as support was reduce in taxation, putting them in contact with other suppliers and particularly buyers and nurturing skills and as they couldn't find satisfactions in any of these intended supports, they stopped attending meetings and speeches.

The most useful support that an industry might hope to receive from its government is vocational training. A good example of such training, provided in technical secondary schools in Italy at the heart of the thriving textile and clothing clusters in Prato's region (Tuscany). This alone provided more school leavers qualified to enter the industry each year than the total number of apprenticeship/vocational qualifications (NVQs Level 2 and 3) awarded in the UK.

Within interviews some of the interviewees asked for the definition of support by government and institutions and what they envisaged and expected from government wasn't there for them. Mostly they expected a direct support from government such as any governmental scheme such as employers bid to access funds for capital investment for job creation or promotion of Apprenticeships as the key mechanism for vocational skills training or tax relief or such. Although, some interviewees mentioned there has been some program on television which promotes 'made in the UK' textile and clothing and the existence of fashion shows which emphasis on creativity and innovation of UK design and production as a result of promotion and investment in creative industry, but none of the interviewees sees that as a support and promotion policy by the British government. Fashion and textile design has been recognized as an integral part of the Creative Industries, being embedded and promoted at government level. Also, high-end designer fashion has recently been recognized as a high value sector in recent reporting by the British Fashion Council. The integration between fashion sector and creative industry with the production of textile and clothing is undeniable and if governmental support for fashion and creative industries should in fact has a positive impact on textile industry as well, thus, no one viewed this support relevant to textile industry in the East Midlands.

5. CONCLUSION

This study, highlights the capability of a cluster in the analysis of decline by emphasizing in firms' adaptability and flexibility to survive; this utilizes the concept of resilience, which proved to be quite useful in analyzing an adaptive capability of a cluster in the time of crises. Resilience can benefit the research on evolution of clusters as this should be understood as a result of the interaction between different internal and external factors.

The East Midland cluster mostly contains of small and medium firms and common characteristics of Midland TCI cluster follow the characteristics of Pure Agglomeration of McCann (McCann, Arita, & Gordon, 2002). The collaboration between the firms within this cluster, if any, is purely business interaction based and hardly suggest any knowledge sharing and even social interaction. All in all, the TCI cluster in East Midlands is different from many successful Italian and German textile cluster which they mostly present the characteristics of what Markusen calls them Marshallian clusters.

Most textile and apparel firms in the East Midlands cluster are vertically integrated, and share the labor force, and suppliers of machinery, fabrics and textile accessories. Internationalization changed the interaction between firms; competition became wider and global and supply chain relationship doesn't limit to regional relationship. Textile and apparel manufacturing in the East Midlands has changed from regional horizontal and vertical supply chain cooperation to mostly vertical collaboration through buying and selling without much information sharing. Manufacturing of textile has been shifted abroad while marketing, design and R&D (if any) stayed in the cluster.

Although, firms have historical, cultural and to some degree ethnical ties in common, however these common background does not lead to a social interaction and horizontal information and knowledge sharing. The relationship between textile firms in East Midlands cluster dictated by considerable secrecy and formulated relationship within well-define group as a result of design theft and stilling customers and contractors.

The combination of internal characteristics of this cluster and a state of industrial decline demonstrated by a decline in the domestic production caused by increased imports and intense global competition, contributed in hollowing out of the textile industry in this cluster. There has been changes in the structure of competitive advantage of firms which firms continued their activities but only with a certain function while other functions typically production and employment moved elsewhere. It is interesting that although, the East Midland textile cluster constitutes the hollow shell, but still exist and some small and medium-sized enterprises did not hollow out in the age of economic globalization and maintained growing to facilitate the development of the region and they are still contributing to the UK's economy.

Most SMEs in the cluster from a full package production which included fabric purchasing, cutting, sewing, trimming, packaging, and distribution shifted their activities to Original Equipment Manufacturing (OEM) which the contractors source and finance the fabric and subcontractor manufacture according to contractor specifications and design. Bigger multinational firms, are more involve in the CMT in which garment sewing plants are provided with imported inputs for assembly, most commonly in export processing zones.

The advantages of clustering such as strong local demand, particularly that deriving from sophisticated users and related industries (Malerba, 2002) and also access to skilled labors and specialized suppliers doesn't exist in the East Midlands textile cluster. That contributed in restructuring; some firms relocated themselves from Lace Market area in Nottingham to the vicinity of Nottingham and nearby town and villages due to the expensiveness of the Lace Market area and lack of any incentives for being there. Bigger firms located their sale and design office in London. Surviving firms through institutional changes such as specialization and spatial restructuring, changing the market scope, capital intensification, technology upgrading and industrial diversification managed to remain competitive.

The lack of cooperation between firms and lack of institutional and government support contributes to the industry downsizing. Pressure for further cooperation between firms is just a myth and never actively enforced or encouraged such as in Italian textile clusters. Most institutional efforts have met with very limited, are viewed with skepticism by most firms in the cluster. Surviving firms in the district have dealt with increasing international competition not by cooperation with the other firms within the cluster but by internalizing the design, and by specialization in production or upgrading in quality and design.

Through the interviews and reviewing the secondary data of government promises, some firms are optimistic that manufacturing of textile and clothing will be back to the district as they can see sign of in-shoring. Production in China and other developing countries are more expensive practices now and distance make the quality control, transportation and distribution less flexible, therefore, manufacturing in the UK gets more attractive. Through the presence of agglomeration economies, increasing returns,

and clusters, countries can identify areas of potential growth poles and use policy tools and public investment to trigger these processes. Special policy instruments such as export-processing zones and special tax promotion schemes have helped developing countries to establish clusters in textiles and apparel, electronics, consumer appliances, software, and automotive components, to name just a few industries where active industrial policy has played a hand. (Eatwell, 2008). That can be exercise in the textile cluster in the East Midlands.

One of the possibilities for the future research can be the consideration of culture which in this study, the impact of culture in the dynamic of the East Midlands industrial cluster hasn't been considered. And also, this case study is not a direct comparison with any other national or international textile industrial clusters. In the UK, the study of textile cluster in the Scottish Borders could investigate the governmental support, dynamic, strategic planning, knowledge sharing and many aspect of the cluster to have a better understanding of British textile clusters. Also, internationally, this cluster can be compared with mature textile cluster such as Baden Baden in Germany or Prato in the Italy to highlight the weaknesses of the East Midlands industrial cluster or even can be examined against textile clusters in developing countries to compare the cluster initiative promotion policies [if any] with theirs. All of these considerations can be taken into account for future studies.

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