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**Conference Paper**

## Internationalization of Supply Chain of Apparel Industry

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## **Internationalization of Supply Chain of Apparel Industry**

G. Pelin OLCAY (\*) (\*\*)

### **Abstract**

Post-fordist production system has raised since 1970's. Main firms have divided production process into different stages and transferred some stages of the production to either other firms in the same factory or another firms in another spaces. Not only production process but also different parts of supply chain have been moved to different geographies. Apparel industry in Turkey has lived the similar development. Big apparel producers have moved some part of their production to the different locations in both Turkey and abroad. The factors which form the geography of supply chain of apparel industry can be mainly put in 3 groups although they are intertwined in some times. These are independent factors from firm, firm-dependent factors, geography-dependent factors. One of the aim of this paper is to analyse the effects of these factors on an apparel firm making production at global level. Another aim is to search which parts of the supply chain of Turkish apparel industry have moved to different geographies and which of those have stayed where they are established. Moreover, it has been searched the location and relocation criteria of these firms. A case study has conducted for the survey in which Eroglu Giyim (EG) and its supply chain have been investigated. EG is one of the biggest apparel supplier of Turkey and it is the manufacturing firm of Eroglu Holding which is the owner of very well well-known Colin's brand. The firm has expanded its production network globally since 2003. Maps of production and supply geographies which belong to two time period, 2002 and 2012, have been prepared and compared. Semi-structured deep interviews have been made with EG, its subcontractors and its input suppliers to understand the dynamics of the development and the changes. It has been seen that there is a dramatic changes especially at production geography of the firm. On the other hand, geographical proximity still is a very important location criteria for the manufacturing firms, suppliers and customers. Istanbul presents some advantages like transportation, proximity to market, skilled labour force and face-to-face contact for the firms. Especially skilled labour force of Istanbul causes more complicated goods to be produced in this city. So, Istanbul still is an important city for the apparel firms although its disadvantages like expensive production cost.

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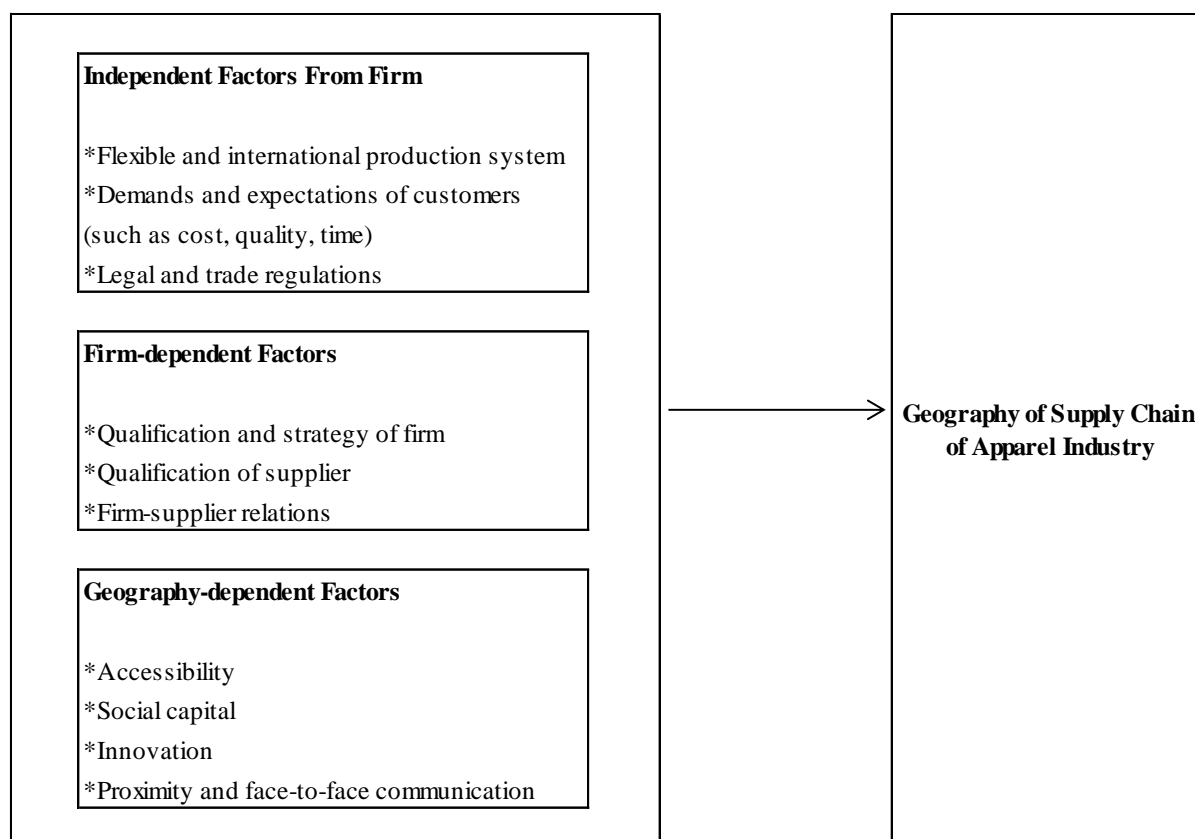
\*\* This paper is based on the PhD thesis written by the author in 2014.

## **Introduction**

Geography of production was re-organized after world economic crisis raised in 1970's. Post-fordist production system has emerged as a dominant production system in which large factories have split up and production has moved to small-scale plants since 1970's. Main firms have divided production process into different stages and transferred some stages of it to either other firms in the same factory or another firms in another spaces by outsourcing method. Parallel to these developments, globalization, the new stage of internationalization, has raised. A transformation has occurred in the international production system and international production and trade have been organized globally rather than expanding along the national boundaries. Production has been able to be arranged in many parts of the world thanks to the development of the information and communication systems. Flexible production system arranged at global scale has caused some important changes in the geography of supply chain of apparel industry. Although production had been made with traditional methods for domestic market initially, this sector has globalized for 30 years. As a result, production in this sector has taken places in different countries of the world for the customer firms in mostly upper income countries. So, many firms in many countries involve this production process. Some parts of the production activities of the sector have moved to the less developed countries while some parts of those have stayed in more developed and more expensive cities. Apparel industry in Turkey has lived the similar development. Big apparel producers have moved some part of their production to the different locations in both Turkey and abroad. One of the aim of this paper is to analyse which factors and how they effect an apparel firm making production at global level. Another aim is to search which parts of the supply chain of Turkish apparel industry have moved to different geographies and which of those have stayed where they are established. Moreover, it has been searched the location and relocation criteria of these firms.

## **Data Sources and Methods**

Numerous surveys in the literature have shown that many factors form the geography of supply chain of apparel industry. In this research they are mainly put in 3 groups; independent factors from firm, firm-dependent factors, geography-dependent factors (Olcay, 2014), (figure 1). Independent factors from firm and how they shape the geography of supply chain have been searched through literature. The other two group factors, firm-dependent factors and geography-dependent factors, as well as the developments in geography of the supply chain with the effects of these factors have been analyzed by a case study.



**Figure 1:** Conceptual Framework of the Research: Factors that Form Geography of Supply Chain of Apparel Industry

Eroglu Giyim (EG) and its supply chain have been focused as a case study. EG is one of the biggest apparel supplier of Turkey. It is the producer firm of Eroglu Holding which is the owner of very well well-known Colin's brand. EG has expanded its production network globally since 2003. Location maps of production and supply which belong to two time period, 2002 and 2012, have been prepared and compared to understand what kind of changes have been occurred at which stages. 2005 is a critical date because quota restriction on import of apparel goods put by MFA (Multifiber Agreement) was eliminated in 2005. So, this time period including before and after elimination of quota restriction is chosen for the research. Semi-structured deep interviews were made with 27 suppliers of total 35 suppliers and EG to understand the dynamics of the developments and the changes. In the case study, not only production chain but also input and customer chain have been analysed and map of those have been prepared. So, the research have contributed to the literature by focusing on production and supply relation in different geographies as well as their dynamics.

### **Post-Fordist Production System and Internationalization of Production**

During the first quarter of the 20th century, Fordism emerged as a dominant regime of capitalist accumulation. Fordism was characterized by industrial mass production and mass consumption

(Tauss, 2012). In fordist production, there was a strict separation between the organisation of production processes and standardized and formally prescribed tasks was executed. Fordism implied a long-term contractualization of the wage relationship, with rigid controls over redundancy, and a monitored increase in salaries indexed to prices and general productivity. Economic crisis in 1970's caused attention to direct to the labour-capital relation as the price increases was associated to the labour force. As a result, governments in most OECD countries put in place liberal flexibility policies. The solution of the crisis caused by fordism was a post-fordist production system which was described as flexible specialization (Lipietz, 1997).

***Post-fordist production system made production and labour flexible.*** Flexible specialisation describes an industrial production system. This system is organised in a way that small firms operates together. Production system is flexible as a whole because each production project is made by the different combination of the firms supplying specialised input. In another words, flexible specialisation is a complex form of a subcontracted manufacturing. Different stages of production can be conducted within the firm or in another space (Storper and Christopherson, 1986). For Falck and Heblich, demands of customers for more personal products require flexible and quick production system and this situation decreases advantages of mass production. In order to cope with increasing complexity of production, manufacturing process is disintegrated. This process is carried out by outsourcing process (Falck and Heblich, 2008). In outsourcing process, main firms focus on the operations that they are successful and have another firms done the other operations. Dankbaar argues that firms lose their abilities and competition power when they outsource the production. Moreover, when a firm outsources a product, this subcontractor firm improves its innovation capacity by learning by doing (Dankbaar, 2007).

***Post-fordist production system led to globalisation and organisation of production internationally (internationalization).*** Internationalization of production appeared as a basic strategy by which capitalists restructured the profit. Transformation at international production system caused international production and commerce to have been organised as a global scale instead of expanding the economic activities along the national boundaries. National economies around the world, in particular low-wage destinations in the periphery, opened up to products and financial investments from the most advanced capitalist countries while these peripheral countries also became markets for these developed countries. The internationalization of production brought about an uneven and hierarchical development and it was marked by increasing competition among regions, countries, cities, municipalities, companies, and people (Torlak, 2002; Tauss, 2012). Countries industrialised recently like four Asian countries, Hong

Kong, Singapore, Taiwan and South Korea, have an important share in the market of advanced capitalist countries for certain products such as textile and electronic. World industrial production has been reshaped (Harvey, 2006). Some of national economies like South Asia, China or Ireland have been developed, some of old industrial areas in the developed countries have been struggled to stand out and many national economies in Africa, Middle East and Middle Asia have been separated from world economy (Pike, Rodriguez-Pose, Tomaney, 2007). ***Post-fordist system changed organisation of production and this situation created a new location pattern for industry.*** Transition from just-in-case system, in which routine information and good flow is necessary between production units, to just in time system, in which more frequent and small scale operations take places, requires geographical proximity. This situation has some reasons. First, as the scale of operations gets smaller and frequency of them increases, operation cost increases as well. Second, demand for high quality product raises and it requires to follow the input suppliers more often. Third, more frequent changes in product require more frequent communications with both suppliers and customers (Storper and Christopherson, 1986).

### **Knowledge-Innovation-Learning and Space**

For Asheim, the local characteristics of knowledge, learning and innovation as well as the importance of spatial proximity in sharing knowledge form spatial organisation of post-fordist production (Asheim, 2007).

The concepts of knowledge, learning and innovation are in the center of contemporary local and regional development. Development is considered as that local space and region produce knowledge and innovation by using learning process and benefit from them (Pike, Rodriguez-Pose, Tomaney, 2007). Knowledge is expressed in two form, explicit and tacit knowledge. Tacid dimension of knowledge required for implementation of a skill can not be expressed clearly. In this situation, the best way to transfer and express the knowledge is demonstration and experience. Learning process takes place within a master-apprentice relation based on observation and practice. This approach is called as learning by doing as learning occurs in a doing process (Gertler, 2001). Nowadays, as everybody can reach the coded information easily generation of unique products depends on using and producing tacid knowledge. Tacid knowledge is the fundamental component of innovation (Gertler, 2001; Malberg and Maskell, 2005; Amin, 1999). Tacid knowledge is a know-how generated by people through

implementation. So, critical information is in the mind of people (Descrochers, 2001; Gertler, 2001).

Geography and geographical proximity are very important factors in the development approach based on knowledge, learning and innovation. Exchange of tacit knowledge in a long distance is very hard as it is not coded and explicit. Therefore, geographical proximity has a key role in generation, dispersion and sharing of tacit knowledge (Gertler, 2001; Malberg and Maskell, 2005; Descrochers, 2001). Tacit knowledge is a know-how which is embedded in geography as well as people so it can be learned by doing (Falck ve Heblich, 2008). On the contrary to the many factors which are globalised, some forms of generation and exchange of information are not globalised. They take root in cultural, institutional and social structures in some places (Malberg and Maskell, 2005). Learning also is a geographical and social process and it increases through local proximity (Pike, Rodriguez-Pose, Tomaney, 2007). For Malberg and Maskell, performance of industries is related to space and place because of localised learning. Localised learning means that co-located firms create knowledge in an advanced level as a result of performing similar and related activities. So, localised learning can help to explain why similar firms tend to cluster and locate together, some expensive location is preferred by economic activities despite of global competition, market can not be explained only by supply-demand analyses and economic development of countries can not be separated from social, cultural and institutional patterns (Malberg and Maskell, 2005).

In literature 3 types of knowledge base, analytical, synthetic and symbolic, are described. Each knowledge base includes different mixture of tacit and explicit knowledge. Differences at knowledge base can help to express qualification of regions, importance of geographical proximity for localised learning (Asheim, 2007; Kuştepelı and Gülcan, 2010). Synthetic knowledge base, for example, includes more traditional industries like textile production. It mainly bases on tacit knowledge, interaction, experience, knowledge obtaining by learning by doing and practical skills. Firms having synthetic knowledge base mostly depend on geographical proximity.

### **Apparel Industry**

Textile and apparel industry marked the industrialisation process that developed countries carried out in 18. century. Initially, production was made for domestic market by using traditional methods in apparel industry. However, this sector has been globalised for 35 years. An international geography of supply has been occurred due to globalisation and flexibilisation of production since 1970's. Economic crisis showing up at the beginning of 1970's caused to

raise subcontracting in production, especially in textile and apparel industry. Labour cost as well as flexible market demand had a role in spreading of subcontracting (Atılgan, 2006; Women Working Worldwide, 2010). For cheaper cost, production moved from north to south (Hudson, 2002), west to east (Smith, 2003) in Europe in 1970's and 1980's. Many firms started to make production in Asia due to increasing competition pressure in 1990's (Hudson, 2002). Shortly, production moved firstly to Middle and East Europe and then to Asian Countries (Dunford, 2006).

Design, input supply, production, delivery and marketing phases are organized in an integrated supply chain in apparel industry. Big apparel firms have subcontracter firms produced labour-intensive sewing phases (Nordas, 2004). Consequently, many firms in many countries are involved in production process. EU and USA are the biggest markets which have the biggest customers, brands and retailers in apparel industry. These customers decide where, when and how to make the production as well as how much profit going to be driven at each phase. As a result, these big brands and retailers in developed countries form supply chain. Production is divided into specialised phases. Each of the production phase locates in a place that is going to contribute to the value of the final product mostly. Cost, quality, delivery time, accessibility to input, transportation and operational cost play role in location decision of these phases (Nordas, 2004). Another factor effecting location decision is legal and trade regulations (Tokatlı and Kızılgün; Gereffi and Memedoviç, 2003; Smith, 2003; Din and Fattah, 2008; Madger, 2005). Proximity and face-to-face contact advantages provided by geography are also very important factors that shape geography of supply of apparel industry in which customer demands and pleasure change very often (Zhang and others, 2004). For the managers of some apparel firms, being close to market is more advantageous than cheaper labour cost. Empirical studies show that distant firms should have much more cheaper labour cost in order to be competitive (Madger, 2005).

### **Apparel Industry in Turkey**

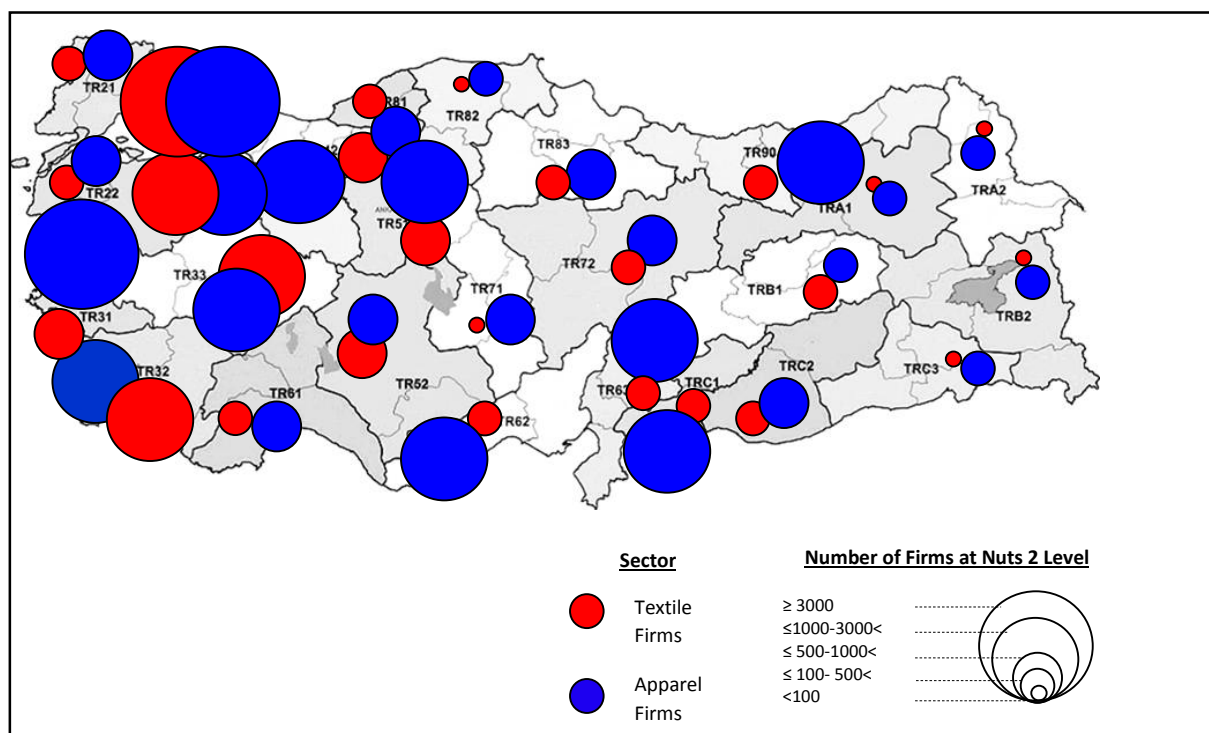
Apparel sector is one of the traditional industry of Turkey. Both textile and apparel sectors have a share of more than 10% of total GNP (T.C. Bilim, Sanayi ve Teknoloji Bakanlığı, 2012). Turkey is in the 8<sup>th</sup> rank with a share of 3,6% in the world textile export and in the 5<sup>th</sup> rank with 3,6% in the world apparel export according to the data of WTO in 2010. Generally, Turkish Apparel Industry is one of the apparel industry which has the largest production capacity in Europe even in Euro-Mediterranean and Euro-Asia regions (DPT, 2006). Apparel industry has been a key sector at development of Turkey through increasing export since 1980's. Turkey,



the biggest apparel producer among Mediterranean Countries, has been one of the biggest supplier of the region by using its advantage of geographical proximity to EU.

Apparel firms have been mostly concentrated in Istanbul for years. 31% of those in 1992, 36% of those in 2002 and 52% of those in 2009 located in this city. Production had a tendency to go away from big metropolitan cities like Istanbul at the beginning of 2000's. Some of Turkish apparel firms moved their production to East or Middle European countries in order to solve quota restriction or locate in closer places to EU market. After elimination of quota in 2005, Asian countries, especially China, became dominant in the sector by using their cheap labour force advantage. Turkey was the only country which could protect its share in EU market against China and India. On the other hand, the country could not catch the same success in USA market.

Turkey has important experiences and skilled labour force in apparel industry and it still is an important apparel supplier thanks to these advantages. It has been observed that geography of supply of the firms making production for EU market in Turkey has been internationalized recently. Which factors have been shaping the international geography of supply of these firms and how?

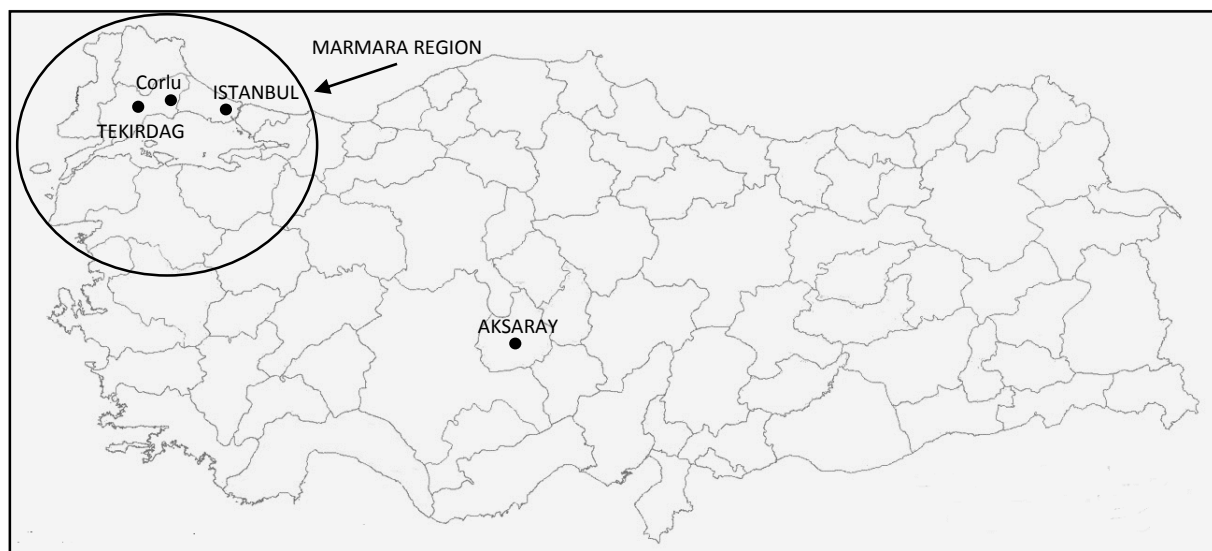


**Figure 2:** Numbers and Distributions of Apparel and Textile Firms at NUTS 2 Level (TUIK, 2009)

## Factors Shaping International Geography of Supply of Apparel Firms In Turkey: The Case Study of Eroglu Giyim

Many surveys in the literature have shown that many factors form the geography of supply chain of apparel industry. In this research they are mainly put in 3 groups. First group is independent factors from the apparel firm. These are flexible and international production system, customer demand and expectation, legal and trade regulations. Second group factor is firm-dependent factors, which are qualification of the producer firms, qualification of their supplier firms and producer-supplier relations. Third group factor is geography-dependent factors which are accessibility, social capital, innovation, geographical proximity as well as face-to face contact advantages.

Eroglu Giyim (EG) is one of the biggest manufacturer in Turkey making production for brands and retailers in apparel industry. It is also the producing company of Eroglu Holding which is the owner of Colin's, very well known denim brand both in Turkey and international market. Supply maps in 2002 and 2012 of the firm have been prepared by data gathered during the case study. Evaluating both data taken from the literature and the case study together, it has been investigated what has been changed, what has been remained same in the maps of 2002 and 2012 as well as the reasons of these situations.



**Figure 3:** Plant Location of EG

The firm was established in 1983 in Istanbul, the metropolitan city in the west of Turkey. It started to institutionalisation, make production and export for big firms in 1998. EG has produced their goods in different geography in and out of Turkey since 2003 and established plants in Corlu, a county within administrative bountries of the city of Tekirdag in the west of

Turkey, Aksaray, a middle-sized city in the center of Turkey (figure 3) as well as Egypt. According to data of 2012, firm employed 5140 labour in 4 plants.

### ***Geographies of Supply of EG***

Some operations such as R&D, marketing, pattern room are in the plant in Istanbul, the brain of all production. This plant is a logistic center also as it is close to many suppliers. All the organisation of production is made in Istanbul as well (<http://www.eroglugiyim.com.tr>).

Because of the master plan decisions, which was aiming to decentralize polluting industry such as textile from Istanbul, production had to move from Istanbul in 2003. Firms operating in polluting industries could not locate in Istanbul and current firms could not expand any more according to these decisions. EG preferred to move to Corlu as it was an industrialised city near to Istanbul (<http://www.eroglugiyim.com.tr>). Aksaray was another distance to establish a plant in 2004. Aksaray was chosen basicly for 2 reasons. First, it was a region given investment incentive certificate by government. Second, more personally, it was the home town of the owner of the firm. Customer demand and legal regulations encouraging export effected the establishment of a plant in Egypt in 2007. The other reasons were low labour and energy costs, free trade aggrements of Egypt with North America, EU and Turkey (Eroglu Haber Dergisi, 2012).

Social capital, accessibility and inovation are the most important factors effecting apparel producers to chose a geography to supply input according to the studies in literature. Geographies of supply of EG has been analysed according to these factors. Social-economic structure, social capital, accesibility and inovation in Istanbul, Tekirdag and Aksaray have been investigated to evaluate the advantages and the disadvantes of the cities for apparel industry. Any empricial study including these factors could not be reached for Egypt. But some international studies prepared for the country give some important clues related to them. Moreover, economic and trading data of Egypt and Turkey give opportunity to compare economic structure and situation of apparel industry of both countries.

Service and industry sectors have concentrated in Istanbul. Despite of the economic transformation in which service sector has been increasing, industry sector still has a very important effect in economy of the city in terms of employment opportunities. Istanbul has become a center of attraction in Turkey for industrial and commercial activities like many other activities thanks to its strategic location, increasing population and fast urbanisation (Istanbul Kalkinma Ajansı, 2010).

Agriculture and industry come to the fore in economy of Tekirdag. Most of the firms in Tekirdag operate in apparel industry as these firms access what they need such as raw material, water, energy and relatively qualified labour force (Ocal, 2006). There is a dense producer-subcontracter relation between Istanbul and Tekirdag where plants or subcontractor firms of apparel firms in Istanbul. These tendency has been still continued (Istanbul Kalkinma Ajansı, 2010). Some factors like incentive certificates given by the state, proximity to the market as well as Istanbul, underground water resources and accessibility effect location of industry in Tekirdag (Sazak, 2002; Bölen, 1982). In the other hand, master plans which were approved in different periods encouraged even forced industrial production, especially the polluting and labour-intensive ones like apparel industry, to decentralize from Istanbul (Yüzer, 2002). Consequently, in one hand industry has moved away from Istanbul but in the other hand Istanbul has still attracted industry sector due to rich labour pool and accesibility advantage (Ak, 2008). Most of the apparel firms, 31% in 1992, 36% in 2002 and 52% in 2009, located in Istanbul (<http://www.tuik.gov.tr>). Meanwhile significant number of firms do not prefer to move away from Istanbul (Ak, 2008) and the firms leaving from Istanbul continue to have a relation with the city as well. For Sazak, dependency ratio of the industry firms, which were re-located in Corlu, to Istanbul and Marmara Region in terms of input-output is about 50%. About %97 of firms in Corlu have a relation with Istanbul. For example, according to a study carried out in 2002, center of 91% of firms and some facilities of 30% of firms located in Istanbul (Sazak, 2002).

Aksaray is a less-developed and middle-sized city where agricultural activities come fore in economy and small and medium sized enterprises are settled down. The city is below the avarage of Turkey in terms of production and employment.

For the data of 2009 prepared in NUTSII level, share of apparel industry in total industrial employment is 25% in Istanbul, 18% in TR21 where Tekirdağ takes part, 6% in TR71 where Aksaray takes part (TUIK, 2009). When social and economic data are compared it is seen that Istanbul is the most developed city, Tekirdag is in the middle level and Aksaray is in the lower level in terms of social and economic development (figure 4).

Competitiveness of these cities have compared by using Competitiveness Index of City prepared by URAK for 81 cities of Turkey in 2010. According to the index, Istanbul is in the 1<sup>st</sup> rank, Tekirdag is in the 7<sup>th</sup> rank and Aksaray is in the 66<sup>th</sup> rank (figure 5). Sub indexes of this competitiveness index are social capital and quality of life, branding skill and inventiveness, commercial skill and production potential as well as accessibility.

Socio-Economic Indicators											
		Year	Turkey	Istanbul	Aksaray	Tekirdag	Year	Turkey	Istanbul	Aksaray	Tekirdag
		Demographic Indicators	Population	2000	67.803.927	10.018.735	396.084	623.591	2012	75.627.384	13.854.740
Share of Urban Population in Total Population (%)	2000		64,90	90,69	50,55	63,40	2012	0,00	0,00	0,00	0,00
Average Population Increase (‰)	2000		18,29	33,10	18,08	28,52	2012	12,01	16,78	2,88	26,69
Fertility Rate	2000		2,53	1,97	2,85	1,83	2012	2,08	1,77	2,23	1,78
Average Household Size	2000		4,5	3,9	5,3	3,8	2012	3,7	3,6	4	3,3
Immigration (‰)	1995-2000				46,1	-13,4	96,8	2011-2012		2,2	-6,22
Employment	Unemployment Rate		8,9	12,7	6,5	6,2	2010	11,9	14,3	9,2	9,6
	Share of Agricultural Employment in Total Employment (%)	2000	48,38	8,13	69,97	38,77					
	Share of Industrial Employment in Total Employment (%)	2000	13,35	32,15	5,67	26,22					
	Share of Commercial Employment in Total Employment (%)	2000	9,67	18,73	6,21	8,57					
Education	Share of Literate Population (%)	2000	87,30	93,39	86,34	93,01	2012	95,89	97,38	94,38	98,04
	Share of Literate Women Population in Total Women Popula	2000	80,62	89,49	78,90	89,30	2012	93,17	95,50	90,40	96,80
	Schooling Rate for Primary School	2000	98,1	99,01	89,48	98,15	2012-201	98,86	99,55	99,25	98,37
	Schooling Rate for Secondary School	2000	vy	vy	vy	vy	2012-201	93,09	95,35	91,49	94,52
	Schooling Rate for High School	2000	36,92	41,96	26,23	38,62	2012-201	70,06	73,72	59,66	78,76
Health	Number of doctor per 10.000 people	2000	12,7	20,58	8,76	9,53	2011	0,00	0,00	0,00	0,00
	Number of hospital bed per 10.000 people	2000	23,04	34,14	14,01	16,74	2010	25,00	23,30	19,00	17,10
	Infant Mortality Rate (‰)	2000	43	39	48	39	2011	11,6	8,6	11,6	8,5

**Figure 4:** Socio-Economic Indicators of Istanbul, Tekirdag, Aksaray  
(<http://www.tuik.gov.tr>; DPT, 2003)

	Istanbul		Tekirdag		Aksaray	
	Index Value	Index Rank	Index Value	Index Rank	Index Value	Index Rank
Sub Index of Social Capital and Quality of Life	15,46	2	5,35	35	3,84	63
Sub Index of Branding Skill and Inventiveness	25	1	0,22	20	0,02	59
Sub Index of Commercial Skill and Production Potential	21,91	1	5,19	10	4,73	17
Sub Index of Accessibility	23,64	1	18,95	3	2,64	73
<b>Competitiveness Index of City</b>	<b>86,01</b>	<b>1</b>	<b>29,71</b>	<b>7</b>	<b>11,23</b>	<b>66</b>

**Figure 5:** Competitiveness Index of Istanbul, Tekirdag and Aksaray, (URAK, 2010)

Apparel industry is the leading sector providing development and growth in Egypt. Generally basic goods are produced for middle and lower segment of the market (Gherzi, 2006). Its geography contributes seriously to competition of the country in apparel industry. The biggest market that Egypt export goods is EU countries (<http://www.wto.org>). Proximity of Egypt to market in EU does not only decrease transportation cost but also shorten transportation time. The country has an advantage to access to key markets thanks to many preferential trade contracts leading global trade (Gherzi, 2006). When apparel export of Egypt between 2000-2011 is investigated it is seen that it has raised nearly 5.5 times since elimination of quota restriction in 2005. Labour cost is the most important advantage of the country. For a study made by Gherzi in 2006, labour cost in Egypt was 2 to 9 times cheaper than Turkey (Gherzi, 2006). In spite of these advantages the country faces many structural problems in apparel industry. It is difficult for foreign investors to establish and carry out a work in Egypt due to several procedures. Exporters have some disadvantages related to transportation cost and logistic facilities (Madger, 2005). Inadequate human resources is the most significant obstacle

for apparel industry to grow. Only a few textile engineers are graduated from university every year (Gherzi, 2006). Egypt has been living such a big political transformation since 2011. Economy has faced some problems related to growth, market and trust. Political and institutional uncertainty as well as perception about increasing unreliability has been effecting economy negatively. Moreover, economic slowdown has been raising unemployment (<http://www.worldbank.org>). As a result, Egypt has very important disadvantages in the field of social capital and accessibility contrary to Turkey. A study made by Din and Fattah in some Mediterranean countries, Egypt, Tunisia, Morocco, Syria and Turkey, supports these findings. In 2008, Turkey was the biggest supplier producing 58% of total apparel and textile products in the region while Egypt was the second biggest supplier among these countries (Din and Fattah, 2008).

Economic Figures of Turkey And Egypt					
	Year		Egypt		Turkey
Population	2011	*	82.536.770	*	73.640.000
Area (km <sup>2</sup> )			1.001.450	***	769.604
GDP (\$)	2011	*	229.530.568.259	*	774.983.000.000
GDP per capita (\$)	2011		2.781	****	10.609
Unemployment rate (%)	2012	**	10,27	***	10,40
Inflation rate (%)	2012	**	8,90	***	6,20
Import (\$)	2011	*	58.903.000.000	*	240.842.000.000
Ranking in world imports	2011	*	49	*	20
Export (\$)	2011	*	30.528.000.000	*	134.907.000.000
Ranking in world exports	2011	*	64	*	32
Share in world exports (%)	2011	*	0,17	*	0,74
Share of manufacturing in export (%)	2011	*	42	*	77
Apparel export (\$)	2011	*	1.380.372.663	*	13.947.693.562
Share in world apparel export (%)	2011	*	0,33	*	3,38
Ranking in world apparel export	2011	*	41	*	8
Textile export (\$)	2011	*	1.485.231.885	*	10.772.416.458
Share in world textile export (%)	2011	*	0,51	*	3,67
Ranking in world textile export	2011	*	30	*	10

\*World Trade Organisation

\*\*Trading Economics

\*\*\*TUIK

\*\*\*\*Ministry of Economy of Turkey

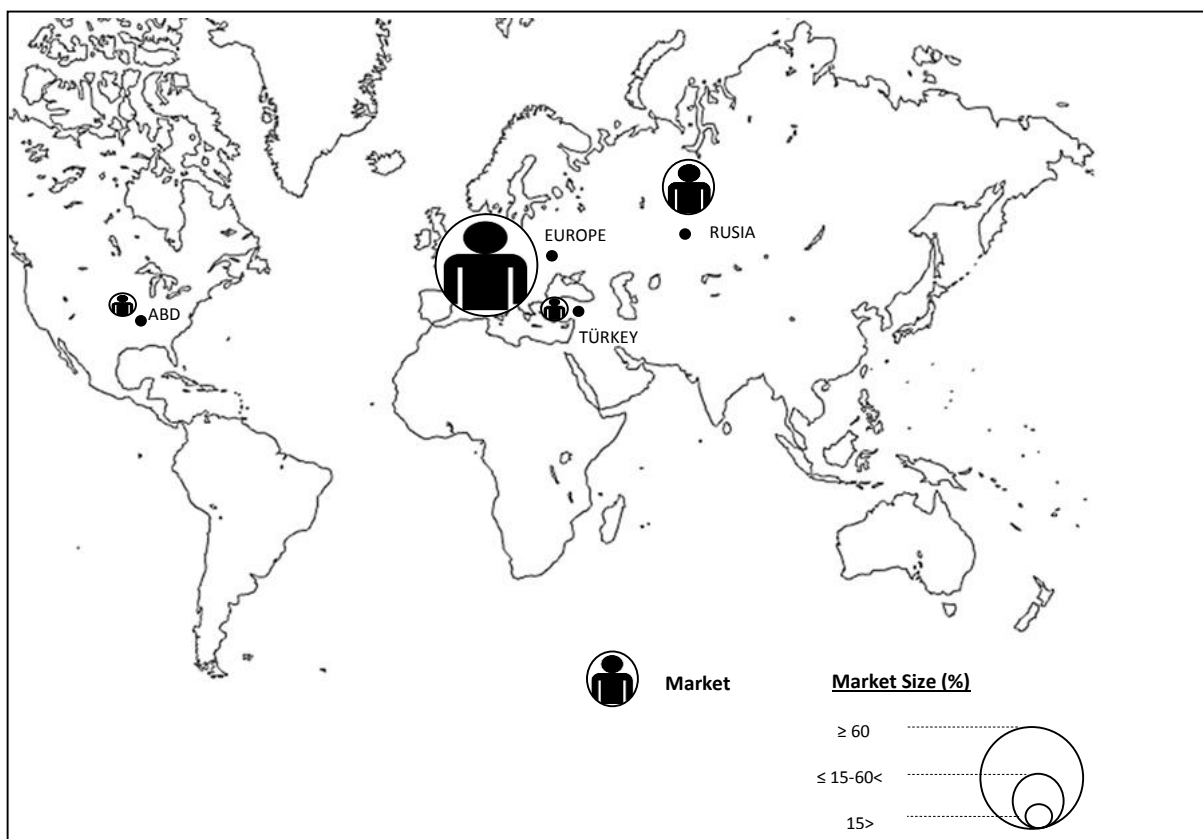
**Figure 6:** Economic Figures of Turkey And Egypt

Figure 6 shows some economic and trade figures of Turkey and Egypt. According to data of WTO in 2011, Turkey's export is 4 times, import is 6 times higher than those of Egypt. Turkey's apparel export is 10 times higher than those of Egypt (<http://www.wto.org>).

### *Supply Chain, Suppliers and Supply Strategies of EG*

Basis supply chain of EG consists of customers and suppliers. Main suppliers of EG are fabric, accessory, chemical suppliers as well as subcontractors. The biggest market of the firm is EU where 60% of total production has been making since 2002 (figure 7).

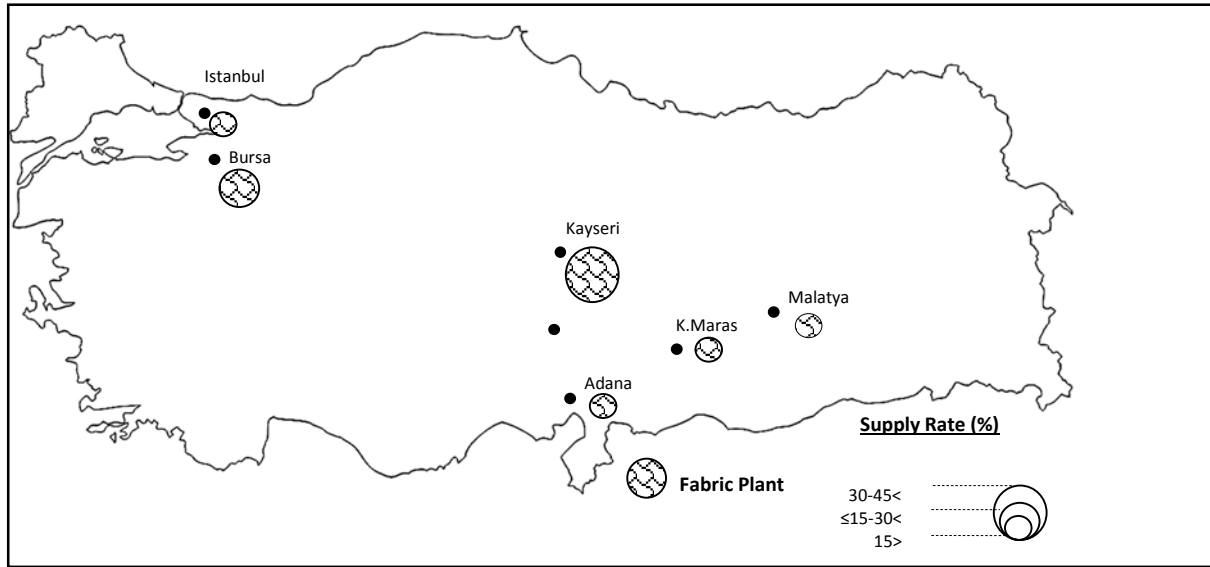
The firm has been supplying all fabric from Turkish suppliers with the effect of legal regulations encouraging to buy fabrics within Turkey since 2011 although a small part of total fabric, only 10% , was bought from Pakistan in 2002.



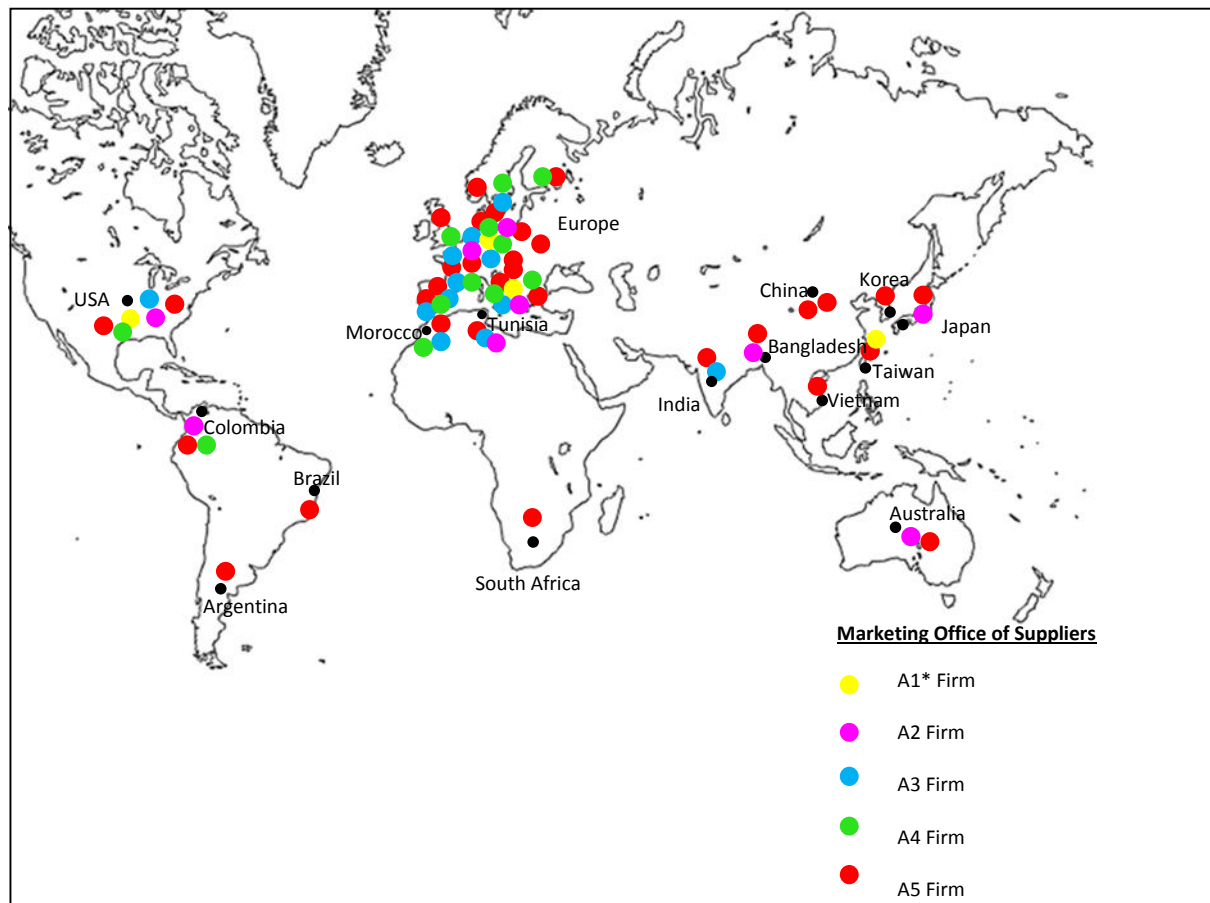
**Figure 7:** Market and Market Size for 2002 and 2012

All fabric suppliers make production in different places in Anatolia in both periods (figure 8). Although the quantity of fabric supplied from different locations in different period between 2002 and 2012 has changed, it has remained the same that almost all the fabrics are bought from the same geography, Anatolia. Nearly all fabric suppliers have had a marketing office in Istanbul for years. However, it has been observed that some important changes have been occurred in both products and spatial organizations of Turkish fabric suppliers for more than a decade. Some Turkish suppliers started to make production in cheaper countries such as India and Bahrain in 2000's. Moreover, they have started to have an office in abroad, especially in

their biggest market EU and USA since middle of 2000's. These offices are concentrated on Italy, German, Belgium (figure 9).



**Figure 8:** Plant Location and Supply Rate of Turkish Fabric Suppliers in 2012



**Figure 9:** Marketing Office Location of Turkish Fabric Suppliers in 2012

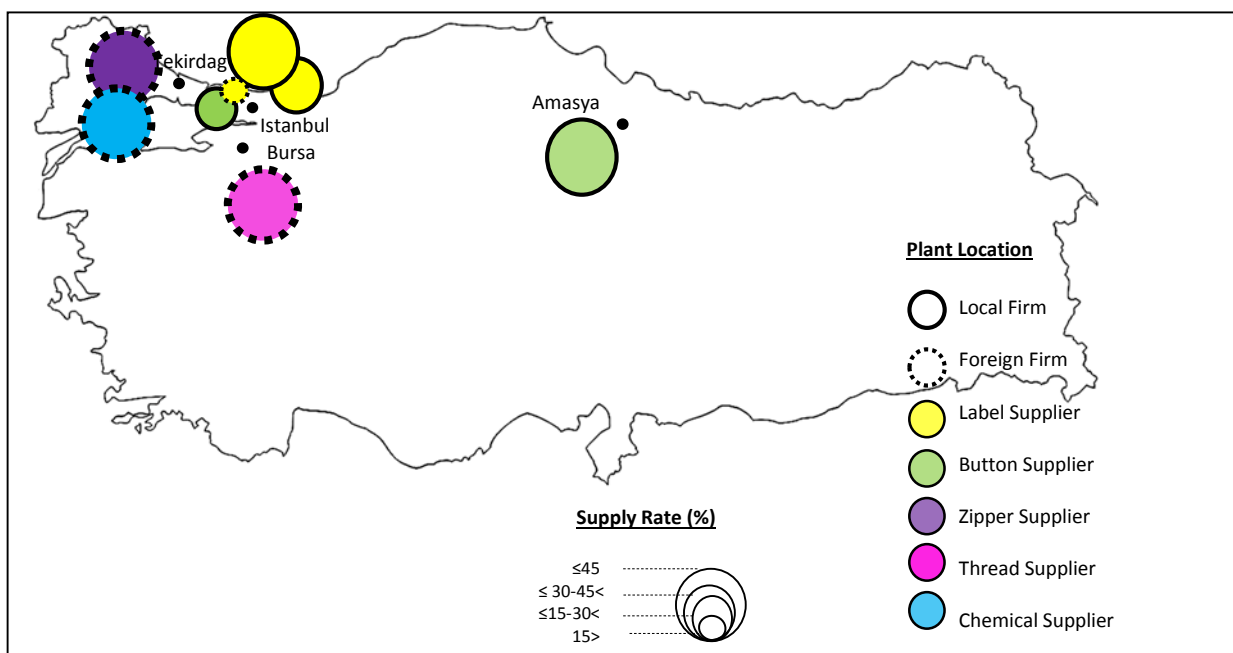
\* Fabric supplier is shown by A letter and each firm is shown by a number



Face-to-face contact is very important for fabric suppliers. Both fabric suppliers and apparel firms get in touch with different parts of society and share their customer demands and needs. In addition, fabric suppliers have tended to produce more complex, innovative and high value-added fabrics, in other words high performance, comfortable and long-life fabrics that middleeast countries make hardly rather than basic fabrics for 10 years.

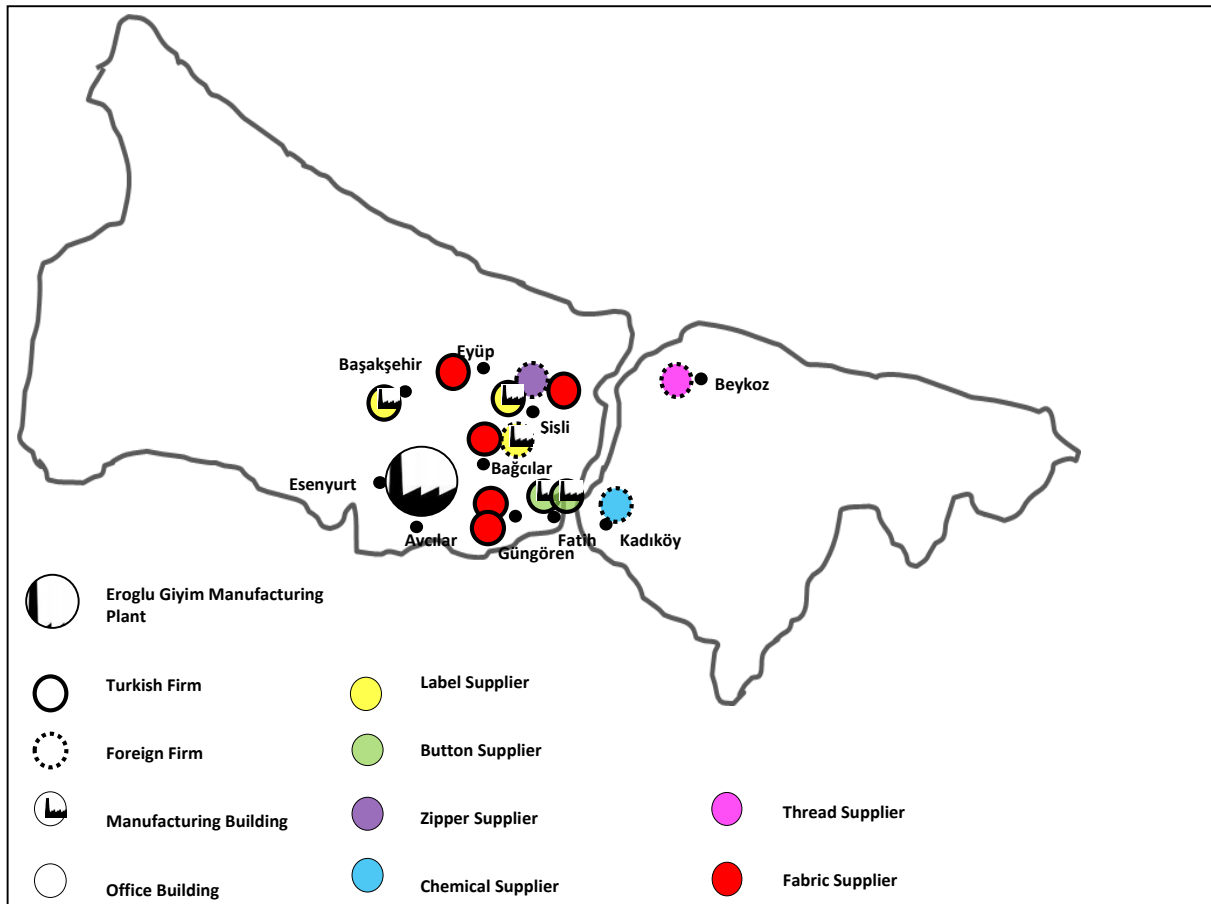
Consequently, fabric suppliers produce and marketing their products at global level. Markets of fabric suppliers have changed and moved to Europe and Mediterranean basin depending on their quality and price. As customers, wholesalers and retailers, prefer to have production made in geographies where they sell them, fabric suppliers locate in these geographies. This finding is parallel to that 90% of customers of EG is in close location, in Russia and Europe. In fact, proximity to customer and market are very important for fabric and apparel firms as apparel industry has a very short production periods.

When accessory and chemical suppliers in 2002 and 2012 are examined it is find out that EG have worked with almost the same local and foreign suppliers for a long time. Plants of these suppliers concentrate on Marmara Region because of the proximity to the market (figure 10).

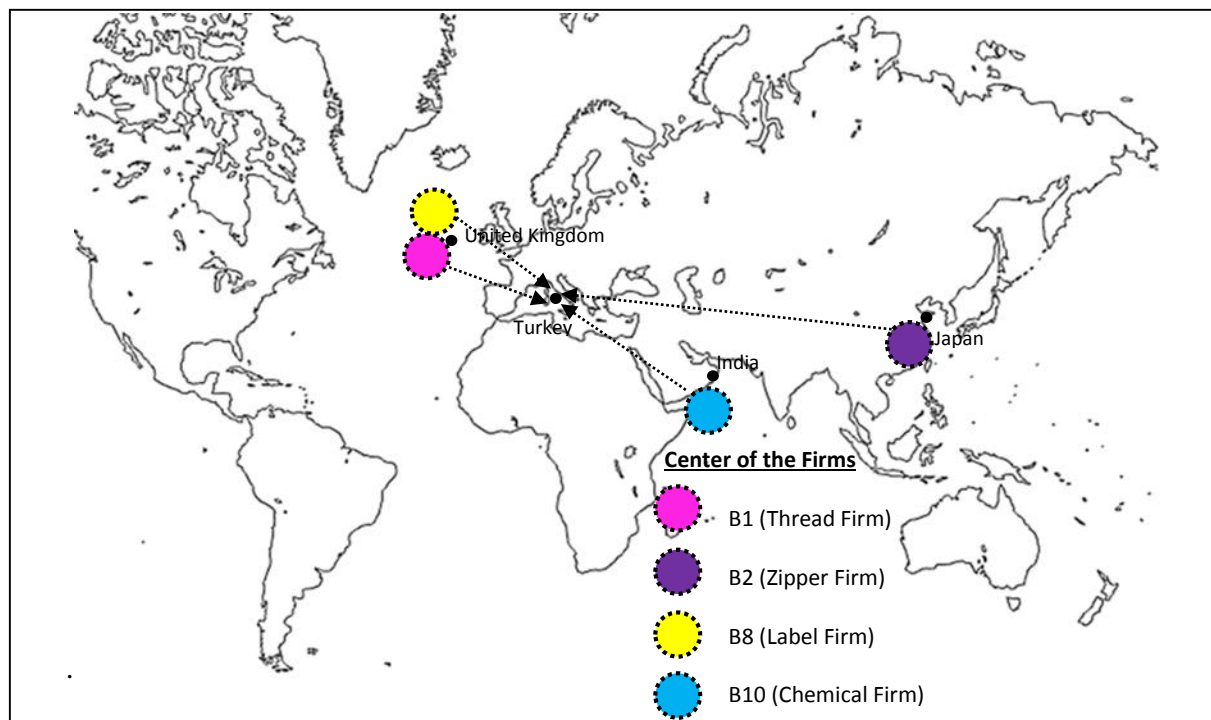


**Figure 10:** Plant Location and Supply Rate of Accessory and Chemical Suppliers in 2012

On the other hand these suppliers have a sales and marketing office in Istanbul according to data in both 2002 and 2012 (figure 11). Each of zipper, thread and chemical inputs are bought from an international big supplier which has a head office in abroad (figure 12).



**Figure 11:** Manufacturing and Office Buildings of Suppliers in Istanbul in 2012



**Figure 12:** Center of the International Suppliers which have a Plant in Turkey

\*Accessory and chemical suppliers are shown by B letter, each of supplier is shown by a number

There are various reasons such as price, quality or technological advantages why inputs are bought from these foreign suppliers. However, EG prefers local suppliers located in Istanbul for some inputs, such as label, in order to work one-to-one and to make design together. EG has exported very small part of its raw material. In 2002 it exported button from Hong Kong and fabric from Pakistan while it continued to export only button in 2012.

As far as production chain is concerned, the firm makes 56% of total production in its plants, 45% in Corlu, 11% in Egypt, while it has subcontractors done 44% of the production according to data in 2012. Some of the goods produced in Corlu is sewn in Aksaray (figure 13).

Quantity of In-house Production			Quantity of Outsource Production	
Corlu	Aksaray	Egypt	Istanbul	Egypt
650.000 (45%)	200.000* (15%)*	150.000 (11%)	300.000 (22%)	300.000 (22%)
800.000 Pieces (56%)			600.000 Pieces (44%)	
1.400.000 Pieces				

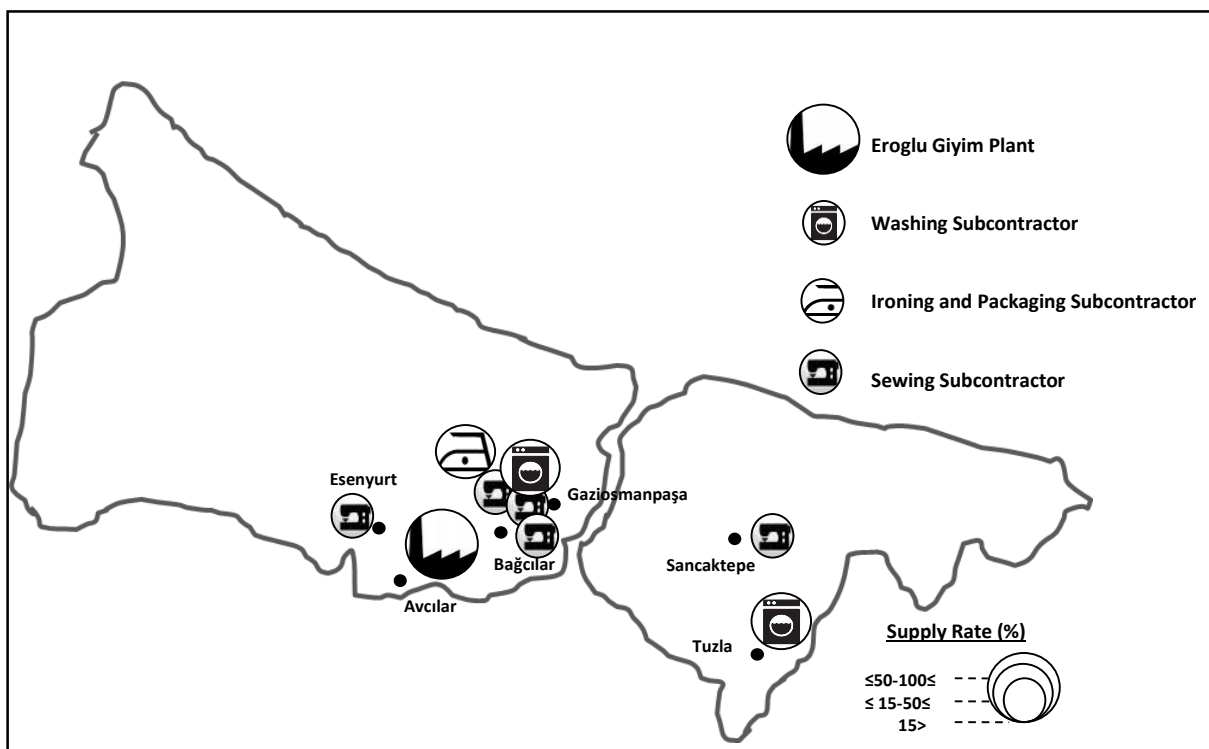
\* 200.000 Pieces goods of 650.000 pieces goods produced in Corlu are sewn in Aksaray

**Figure 13:** Quantity of In-house and Oursource Production in 2012

The firm has mostly produced the goods in its plants after it has established them. When the data of 2002 and 2012 is compared it is seen that in-house process has increased for sewing from 40% to 56%, for washing process from 0% to 56%. Half of the subcontracting is made in Istanbul and the rest is made in Egypt. The most important reason of location of subcontractors in Istanbul is skilled labor force. For these firms proximity to the customer is substantial. As the firm follow production made by subcontractors daily, subcontractor firms are maximum 150 km far from plants in Corlu and Egypt. Moreover, as washing subcontractors support research and development activities of the firm and develop some devices when necessary the firm prefers to work with the washing subcontractors in Istanbul. The subcontractors in Egypt make full package production and delivers finished goods to EG.

The most important difference has occurred at production chain. It has been internationalized and enlarged as seen at figure 14 and 15. However it is another significant point that although the enlargement and diversification of the production geography, subcontracting process in Turkey is still made in Istanbul, (Olcay, 2013). The managers of the firm explain this situation with proximity to the firm and the existence of numerous subcontractor alternatives in Istanbul in terms of quality and quantity. During the face to face interviews the subcontractors emphasized that production quality, especially in labour intensive process like sewing, differs from in different geography even within the different part of Istanbul. According to them, it is not possible to catch the same quality of goods produced in Istanbul during the production in Corlu and Aksaray.

One of the most significant difference observed in 2002 and 2012 in production organisation is decreasing at subcontracting rate. One of the reason of this situation is that quality of product produced inhouse is higher than the one produced by subcontractors. Another reason is that as subcontractor firms did not want to make investment in less developed regions like Aksaray, which had price advantage due to incentive certificate given by the state, the firm had to make investments to this city for cheaper production and produced the goods in its plant. The most important disadvantage of inhouse production is high production costs.



**Figure 14:** Plant and Subcontractor Location in 2002

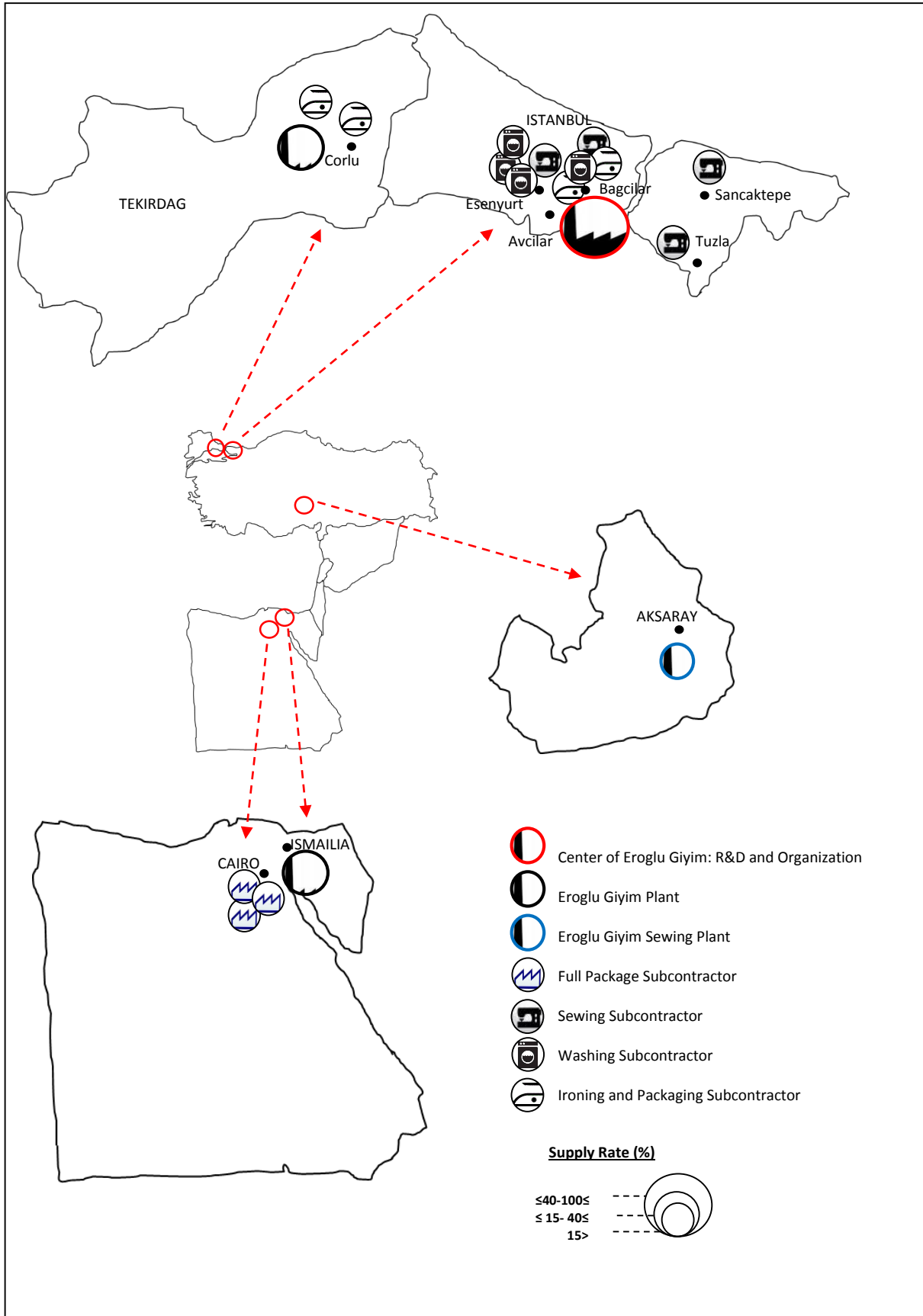


Figure 15 : Plant and Subcontractor Location in 2012, (Olca, 2013)

Firms which have created their own brand prefer to give up production process in many case all over the world. In opposite to these cases, EG has increased its production volume. In this situation Egypt has a significant effect as incentive certificates given by Egypt state meet labour cost and decrease the risk. Hence, demand for production in Egypt by the customers has increased due to price advantages recently.

As a consequences, EG works with some international suppliers due to price, quality and technical advantages while prefers some local suppliers to work together during the designing process. The firm supplies the fabric, the key input, from Turkish suppliers as they are very good at both technical and designing dimensions as well as legal regulations encouraging to supply local fabric. On the other hand, as subcontracting process requires daily follow up the subcontractors are chosen in a place accessed from the plant in a day. Skilled labour force is the most important factors effecting chosing subcontractors in Turkey although price is the dominant factor for chosing subcontractors in Egypt.

### **Conclusion**

In this survey, factors forming the geography of supply chain of apparel industry have been investigated in mainly 3 groups although they are intertwined in some cases. These are factors independent from firm, firm-dependent factors as well as geography-dependent factors. In the paper, it has been evaluated how these factors have shaped the supply chain of EG, an apparel firm making production at global level.

It has been observed that geography of the supply chain of EG has internationalized since 2002. Change at production geography of the firm is remarkable. It has expanded within Turkey and out of the country. However, input geography has remained nearly the same. EG has supplied some of the input from big international firms for years. The most significant change at input geography is the supply geography of Turkish fabric suppliers. These suppliers started to produce and market their goods at global level since middle of 2000's. So, they have been internationalized as well. Dynamics of these developments have been evaluated by above 3 groups factor.

Parallel to the post-fordist production system, some processes internationalized and moved to the cheaper countries. These processes were supported by *international legal and trade regulations*. Related to these developments, Turkey has followed a development policy based on export since 1980's. Consequently most of the firms operating in apparel industry started to

make production for EU market. Most of the customers of EG, nearly 60%, also take place in EU market.

Initially, EG made production in Istanbul. But *legal regulations* such as incentive certificates and master plans effected to establish a plant in Corlu and Aksaray. Internationalization process has been forming not only market of EG but also production geography of the firm. Coming to the forefront of Egypt in the industry is a result of global factors, such as international agreements and elimination of quotas. EG started to make production in Egypt as a result of increasing cheaper price pressure occurring due to elimination of quotas, *legal regulations* such as free trade agreements with North America, EU and Turkey, free zone implementations providing custom and tax advantages. Location decisions were also effected by *geography-dependent factors*. Production geographies of EG, Istanbul, Aksaray and Tekirdag, have been compared according to the *geography-dependent factors*, accessibility, human capital and innovation, by using competitiveness index. Istanbul has an important superiority to other locations for these factors. Tekirdag has the second and Aksaray has the third rank for this comparison. Tekirdag has transportation and logistics advantages. Although it has a social capital disadvantages it benefits from accessibility to skilled labor thanks to its proximity to Istanbul. Aksaray has a relatively cheaper labor cost advantage derived from incentive certificates given by the state. In Egypt, human resources is the biggest obstacle in growing the apparel industry. Innovation efforts are not sufficient as well. So, apparel firms in Egypt produce cheap basic goods for generally lower and medium segment in the market. *Customer demands and expectations*, such as price, quality, fashion and time, are another important factors shaping production geography of EG. As a result, the firm has got a price advantage by making investment in different geographies. In one hand it produces basic and cheap goods in Egypt, on the other hand it produces difficult, detailed, complex and expensive goods required better workmanship in Turkey, especially in Istanbul.

EG has nearly half of its production done through subcontracting system within Turkey and in Egypt. Thus, *flexible production system* is one of the *production strategies* of the firm. Due to the *production strategies* effected by global conditions and customer demands, the firm has oriented to more value-added and innovative products. The firm has raised its quality standards as well. These situations have effected selection of suppliers. For example, EG has worked with washing subcontractors in a close location to cooperate with them and make innovation in process. Labor skill and experience are the important factors to choose sewing subcontractors

as sewing is a labor-intensive process. Moreover, subcontractors are chosen in a close location to the plants in order to follow the production daily.

Beside outsource production, in-house production is one of the important *production strategy* of EG as well. The firm produce 56% of the goods in its plants within Turkey and out of the country. 75% of complex goods are produced in-house. In-house production has 2 important results. First, production is a resource of competition power of EG. Second, the firm protects its learning by doing advantages. It parallels to the strategy of Zara. This brand had produced complex goods in their plants and basic goods through subcontracting system for a long time. Erak, owner of Mavijeans Brand, had made complex goods for their customers, become a fashion-oriented producer and used these experiences for its brand.

The firm has supplied fabric from Turkish firms, which have been the most important suppliers of EU due to their fabric quality and innovative products. These suppliers have organized their production mostly locally and sales and marketing activities globally. On the other hand the firm supplies some inputs, i.e. thread, zipper and chemical, from big international suppliers because of price, innovation and quality advantages. It is remarkable that all of them have a sales and marketing office in Istanbul. The local small firms in Istanbul present co-designing advantage to EG due to their spatial proximity. *Spatial proximity* is an important factor which is shaping both production and supply geography of EG. All the local and international suppliers of EG have an office in Istanbul. Fabric suppliers, for example, produce their goods in Anatolia while they contact with their customers in their Istanbul office as it is very important for these suppliers and EG to have daily *face-to-face contact*. In these communications they do not only watch the production but also they discuss needs and demands of their final customers and direct their collections accordingly. International firms making production in Marmara Region and having an office in Istanbul benefit from *face-to-face contact* advantage as well. So, EG provides *face-to-face contact* with its suppliers.

Geographical *proximity* still is a very important location principle for the manufacturing firms, suppliers and customers. Istanbul presents some advantages like transportation, proximity to market, skilled labor force and face-to-face contact for the firms. Especially skilled labor force of Istanbul causes more complicated goods to be produced in this city. So, Istanbul still is an important city for the apparel firms in spite of its disadvantages like expensive production cost.



## References

- Ak, B. (2008).** *Deindustrialization Under The Impact Of Globalization: The Case of Istanbul* (Master's thesis). Middle East Technical University, The Graduate School Of Natural And Applied Sciences, Ankara.
- Amin, A. (1999).** An Institutional Perspective on Regional Economic Development. *International Journal of Urban and Regional Research*, Vol 23, Issue 2, pp 365-378.
- Asheim, B. (2007).** Learning and Innovation in a Globalising Economy: The Role of Learning Regions. In B. Gustavsen, B. Nyhan, R. Ennals (Eds), *Learning Together For Local Innovation: Promoting Learning Regions*, (CEDEFOP Reference Series 68, 218-234). Luxembourg: Office for Official Publications of the European Communities.
- Atılğan, T. (2006).** Tekstil ve Hazır Giyim Sektöründe Değer Zinciri ve Ekonomik Etkileri. *Tekstil ve Konfeksiyon Dergisi*, 2006/1.
- Bölen, F. (1982).** *Türkiye 'de Sanayi Yer Seçiminin Yerleşme Sistemine Etkileri Marmara Bölgesi 'nde İki Yöntem Denemesi* (Doçentlik tezi). İstanbul Teknik Üniversitesi, Maçka Mimarlık Fakültesi, İstanbul.
- Dankbaar, B. (2007).** Global Sourcing and Innovation: The Consequences of Losing Both Organizational and Geographical Proximity. *European Planning Studies*, Vol.15, No 2, February 2007. 56th European Regional Science Association Congress, Vienna 23-26 August 2016
- Desrochers, P. (2001).** Geographical Proximity and the Transmission of Tacit Knowledge. *The Review of Austrian Economics*, 14:1, 25-46.
- Din, H. and Fattah, M. M. (2008).** Textile and Clothing In The Mediterranean Region: Opportunities and Challenge of Returning Textiles and Clothing to Gatt Disciplines, Working Paper. Retrieved April 21, 2012, from <http://www.econturk.org/Turkisheconomy/erf4.pdf>
- DPT. (2003).** *İllerin ve Bölgelerin Sosyo-Ekonomik Gelişmişlik Sıralaması Araştırması*, (Yayın No DPT 2671). Ankara: DPT.
- DPT. (2006).** Dokuzuncu Kalkınma Planı (2007-2013), Tekstil, Deri ve Giyim Sanayi Özel İhtisas Komisyonu Tekstil, Hazırgiyim ve Konfeksiyon Alt Komisyonu Raporu. Erişim: 12 Ekim, 2011, <http://www.dpt.gov.tr>

- Dunford, M. (2006).** Industrial Districts, Magic Circles and the Restructuring of the Italian Textiles and Clothing Chain. *Economic Geography*, 82(1), 27-59.
- Erođlu Haber Dergisi. (2012).** Sayı 01, Şubat. İstanbul: Erođlu Holding A.Ş.
- Falck, O. and Heblich, S. (2008).** Modern Location Factors in Dynamic Regions. *European Planning Studies*, Vol.16, No.10.
- Gereffi, G. and Memedoviç, O. (2003).** The Global Apparel Value Chain: What Prospects for Upgrading by Developing Countries. Viena: United Nations Industrial Development Organization.
- Gertler, M. (2001).** Tacit Knowledge and the Economic Geography of Context or The Undefinable Tacitness of Being (There), *DRUID Summer Conference*, Aalborg, Denmark: 12-15 June.
- Gherzi. (2006).** Strategy and Action Plan Project For The Egyptian Textile and Clothing Industry, Industrial Modernisation Centre, July 2006. Retrieved October 28, 2012, from [http://www.imc-egypt.org/studies/FullReport/Textile%20Development%20Strategy%20Vision%202020\\_Part%202\\_EN.pdf](http://www.imc-egypt.org/studies/FullReport/Textile%20Development%20Strategy%20Vision%202020_Part%202_EN.pdf)
- Harvey, D. (2006).** *Postmodernliđin Durumu*. İstanbul: Metis Yayınları.
- Hudson, R. (2002).** Changing Industrial Production Systems and Regional Development in the New Europe. *Transactions of the Institute of British Geographers*, Vol 27, Issue 3, 262-281.
- İstanbul Kalkınma Ajansı. (2010).** İstanbul Bölge Planı 2010-2013. Erişim: 17 Kasım, 2012, <http://www.iska.gov.tr>
- Kuştepli, Y. and Gülcan, Y. (2010).** Türk Tekstil Kümelerindeki Bilgi Tabanı Farklılıklarının Ölçümü ve Yenilikçilik. *Gazi Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 12/1, 57-76.
- Lipietz, A. (1997).** The Post-Fordist World: Labour Relations, International Hierarchy and Global Ecology. *Review of International Political Economy*, 4:1 Spring 1997: 1-41.
- Malmberg, A. and Maskell, P. (2005).** Localized Learning Revisited, DURID Working Paper No.05-19. Retrieved December 12, 2011, from <http://www3.druid.dk/wp/20050019.pdf>

- Madger, D. (2005).** Egypt After the Multi-Fiber Arrangement: Global Apparel and Textile Supply Chains as a Route for Industrial Upgrading, Institute For International Economis, Working Paper Series, WP 05-8. Retrieved April 23, 2012, from <http://www.piie.com/publications/wp/wp05-8.pdf>
- Nordas, H. K. (2004).** The Global Textile and Clothing Industry Post The Agreement on Textiles and Clothing, WTO Discussion Paper No 5. Retrieved October 13, 2011, from [http://www.wto.org/english/res\\_e/booksp\\_e/discussion\\_papers5\\_e.pdf](http://www.wto.org/english/res_e/booksp_e/discussion_papers5_e.pdf)
- Olçay, G. P. (2013).** Hazır Giyim Sektörünün Uluslararası Üretim Coğrafyasının Biçimlenme Dinamikleri ve Bu Dinamiklerin İstanbul'a Etkileri. *Planlama Dergisi*, 23 (1): 26-34.
- Olçay, G.P. (2014).** *Hazır Giyim Sektöründe Uluslararası Tedarik Zincirinin Coğrafyasında Yaşanan Gelişmeler ve Etkileri* (Doktora tezi). İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul
- Ocal, G. P. (2006).** *Trakya Bölgesi'nin Sanayileşme Dinamikleri ve Çorlu Sanayi Kümeleri* (Yüksek lisans tezi). İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.
- Pike, A., Rodriguez-Pose, A. and Tomaney, J. (2007).** What Kind Of Local and Regional Development and for Whom? *Regional Studies*, Vol 41.9, December.
- Sazak, S. (2002).** *Metropoliten Kentin Etki Alanında Kalan Kentlerin Çeperindeki Arsaların Dönüşüm Süreci-Çorlu/Büyükkarıştıran Örneği*. Edirne: Trakya Üniversitesi Rektörlüğü Yayınları.
- Smith, A. (2003).** Power Relations, Industrial Clusters, and Regional Transformations: Pan-European Integration and Outward Processing in the Slovak Clothing Industry. *Economic Geography*, 79(1), 17-40:
- Storper, M. and Christopherson, S. (1986).** Flexible Specialization and Regional Industrial Agglomerations The Case Of a U.S. Motion Picture Industry, Working Paper Series-106. Retrieved 18 May, 2012, from <http://cdn.calisphere.org/data/28722/2r/bk0003t9g2r/files/bk0003t9g2r-FID1.pdf>.
- Tauss, A. (2012).** Contextualizing the Current Crisis: Post-fordism, Neoliberal Restructuring and Financialization. *Colombia International* 76, 51-79.
- T.C. Bilim, Sanayi ve Teknoloji Bakanlığı. (2012).** Tekstil, Hazırgiyim, Deri ve Deri Ürünleri Sektörleri Raporu (2012/1), Sanayi Genel Müdürlüğü, Sektörel Raporlar ve Analizler Serisi. Erişim: 12 Mayıs, 2013, <http://www.sanayi.gov.tr>

**Tokath, N. and Kızılgün, Ö. (2004).** Upgrading in the Global Clothing Industry: Mavi jeans and the Transformation of a Turkish Firm from Full-package to Brand-Name Manufacturing and Retailing. *Economic Geography*, 80(3), 221-240.

**Torlak, G. (2002).** Understanding the Nature of Transition of Organizational Forms in the Contemporary World. *Journal of Economic and Social Research* 4 (2), 27-51.

**TUIK. (2009).** Yıllık Sanayi ve Hizmet İstatistikleri 2009. Erişim, 22 Şubat, 2013  
<http://www.tuik.gov.tr>

**URAK. (2010).** İllerarası Rekabetçilik Endeksi, 2009-2010. Erişim, 11 Nisan, 2013,  
<http://urak.org> 56th European Regional Science Association Congress, Vienna 23-26 August 2016

**Women Working Worldwide. (2005).** Garment Industry Supply Chains. Retrieved March 30, 2010, from [http://www.women-ww.org/pdfs/www\\_education\\_pack.pdf](http://www.women-ww.org/pdfs/www_education_pack.pdf).

**Yüzer, A. S. (2002).** *Yerleşmelerde Sanayi Alanları Yer Seçimi Eğilimi-Alan Tahsisleri ve Yeni Düzenleme Stratejileri- İstanbul Örneği* (Doktora tezi). İstanbul Teknik Üniversitesi, Fen Bilimleri Enstitüsü, İstanbul.

**Zhang, Z., Chester, T. and Ning, C. (2004).** How Do Industry Clusters Success: A Case Study in China's Textile and Apparel Industries. *Journal of Textile and Apparel Technology and Management*, Vol.4:

Url-1 <<http://www.ekonomi.gov.tr>>, date retrieved 28.12.2012.

Url-2 <<http://www.eroglugiyim.com>>, date retrieved 25.12.2012.

Url-3 <<http://www.tradingeconomics.org>>, date retrieved 28.12.2012.

Url-4 <<http://www.tuik.gov.tr>>, date retrieved 12.04.2013.

Url-5 <<http://www.worldbank.org>>, date retrieved 1.06.2013.

Url-6 <<http://www.wto.org>>, date retrieved 05.06.2013.