OUTSOURCING SUPPLY CHAIN ACTIVITIES

BY

MANUFACTURING FIRMS

A THESIS SUBMITTED TO

THE GRADUATE SCHOOL OF SOCIAL SCIENCES

OF

IZMIR UNIVERSITY OF ECONOMICS

BY

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IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

IN

THE GRADUATE SCHOOL OF SOCIAL SCINCES

AUGUST 2006

INTRODUCTION

Competition is increased all around the world with the globalization, privatization and technological developments. In order to firms to survive in this competitive environment *customer satisfaction* became the main compulsory factor that firms have to achieve. However, the expectations of customers are changed. Today, customers expect product customization according to their needs and wants, low price and short delivery time (Houshmand and Jamshidnezhad, 2005, p.1). Therefore, improvement performance innovations such as outsourcing can be an advantage for the manufacturing firms including SMEs and a method in order to achieve new customer expectations.

Costs are two kind which are *logistics expenditures* and *product cost*. Since organizations can not decrease their product costs in order not to attenuate their products' quality, they should decrease their logistics expenditures. They can reduce their logistics costs and increase their quality of logistics activities with outsourcing (Yıldıztekin, 2005, p.2-3). Also, they can concentrate on their core competencies and achieve product customization in their production with outsourcing (Mclvor, 2000, Boyson et al., 1999; Ge, 2004 p.6). In today's business environment, there is an increased need to concentrate on core competencies and outsource other activities (Kerepeszki, Bates, Yurt, 2004). Nowadays, as a result of especially competition and for increased market share and revenues, international trade is an important concern for the companies. However, global distribution is more complex than domestic so that companies must implement strategies such as outsourcing (Rao and Young, 1994, p.13).

SMEs play a vital role in economic growth of countries. Since, in Turkey, 99.5% of the companies in manufacturing industry are SMEs (Kasap and Candemir, p.121) and SMEs are dispersed in all of our regions, SMEs play a vital role in regional development (Efe, 1998, p.4). Moreover, the importance of SMEs' in today's economic and social development of Turkey is great since they have advantages such as flexibility and aptitude in adapting innovations which are compulsory requirements in today's economic growth (Şahin, p.53). However, SMEs have many problems such as assuming educated personnel, lack of knowledge about legislations and laws, technology insufficiency, lack of market research, lack of assets that need to be used for product development (Gücelioğlu, 1994, p.14-17). SMEs have the opportunity to solve these problems with outsourcing.

Moreover, Turkey has been in the intersection of the important transportation networks with its extant geopolitic position. It has been a bridge between Asia and Europe from past to nowadays (Aktas and Uluengin, 2005, p.317). When we look at its geopolitical position, its ports and the capacity of international trade, it is clearly seen that Turkey is in the way of being a logistics base and there is a need for using 3PLs in order to develop Turkey into a logistics base (Ulengin and Ulengin, 2003; Aktas and Uluengin, 2005, p.317).

This study includes four main chapters, as follows. The first chapter reviews driving forces of manufacturing firms behind outsourcing. It includes Turkey's current situation and characteristics of competition. Then, the second chapter describes role of logistics departments in efficient supply chain management, logistics activities and reviews relevant literature on outsourcing. Beginning from the third section, research of the thesis is presented. The methodology and the findings of

research which was conducted to 30 respondents in İzmir Atatürk Organized Industrial Zone are presented. The main purpose of this survey is to determine the perception of the outsourcing activity by the manufacturing firms and to determine how it is implemented. In order to determine how outsourcing is implemented in the companies the relationships between buyer and seller and the relationships between seller and TPL are analyzed. Also, with the survey it is endeavored to support large companies outsource their supply chain activities more than SMEs and large companies' logistics departments are more sophisticated than SMEs. The fourth section includes conclusions to research questions and other major conclusions. The last section is Appendices where the readers can find the literature survey and the tables which belong to the methodology part.

CHAPTER 1

DRIVING FORCES OF MANUFACTURING FIRMS BEHIND OUTSOURCING

1.1. CURRENT SITUATION IN TURKEY

First of all, the strategic position of Turkey will be analyzed. As Dale Foster mentioned for two thousand years, the area of the eastern Mediterranean has been a vital economic region due to its strategic location at the crossroads of Europe, Asia and North Africa. With land areas in both Europe and Asia, and at the doorstep of both North Africa and the Middle East, Turkey has historically been perceived and presented as an economic, political, and cultural bridge between East and West. Its geographic boundaries are bordered by no fewer than 10 neighboring countries: Iraq and Syria to the south; Russia, Ukraine, and Romania to the north; Iran, Georgia, and Armenia to the east; and Greece and Bulgaria on the west (Foster, 1998, p.2).

Turkey is a country which has a great potential for logistics activities among the surrounding continents because of its geographical location. As the world becomes more globally integrated and the boundaries between cultures disappear, many developing countries, including Turkey, are turning into attractive centers for international firms because of their geographical locations, low working fees and high potential for market extensions (Aktas and Uluengin, 2005, p.317). However, a previous study shows that in Turkey, outsourcing is still solely based on transportation. This research reveals that many Turkish firms understand logistics services as taking the transportation order from the manufacturer and delivering the

goods to destination points, without thinking about the warehouse design, the optimum location of the warehouse or of inventory management. Such ways of thinking are reduced logistics services to a narrow transportation perspective. While there is still a high performance of firms which have not outsourced their logistics activities, the conducted survey shows that 3PL services in Turkey have potential for further development and the vision of developing Turkey into logistics hub in the region will further enhance the use of the 3PL s in the years to come (Ulengin and Ulengin, 2003; Aktas and Uluengin, 2005, p.317).

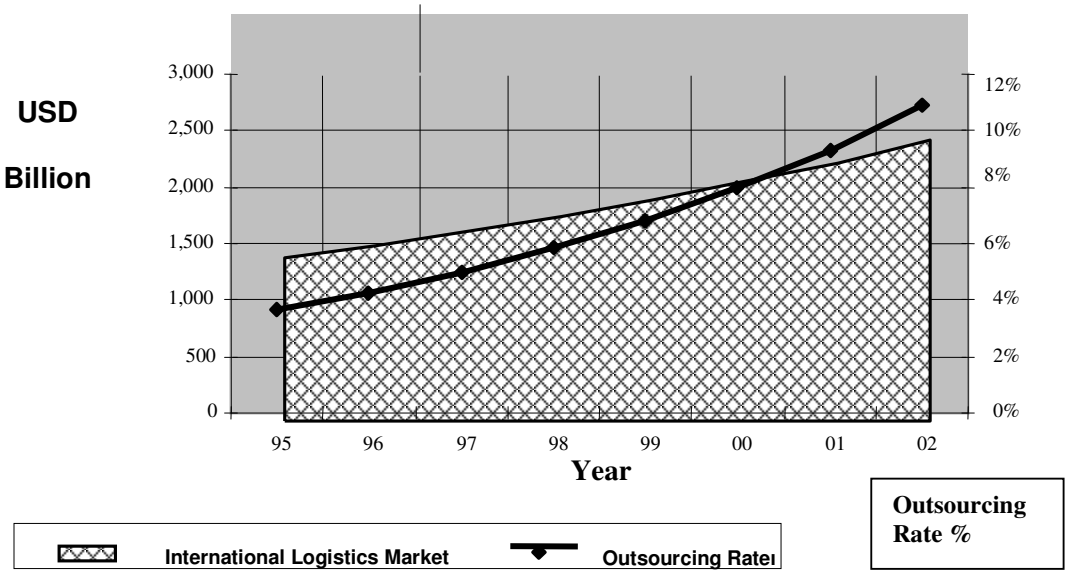

Figure 1. Permutation in global logistics market

Source: Yıldıztekin, 2005.

Also, as companies outsource the logistics market is growing and Figure 1 reveals this evidently. However, some countries benefit of this advantage more than other countries. Turkey can use this advantage because of its geographical position since Turkey can provide access and entry services to Europe, Asia, Middle East etc.

Turkey is at the epicenter of transport corridors connecting Europe to the Caucasus and Asia, as well as to the Middle East. This is important not only for Turkey's foreign trade relations and economic development but also for regional and interregional economic cooperation. In the aftermath of the cold war, Turkey has moved from the periphery of Europe to the edge of a new political and economic reality called Eurasia. This region, broadly defined as including Central Asia, the Caucasus and the Black Sea countries, attracts increasing attention not only because it constitutes one of the world's most potentially important energy producing regions, but because it is also a crucial trade and transport corridor linking East and West (Aktas, Ulengin, 2005, p.318-319). Turkey has significantly improved economic and trade relations in the region and Turkish companies have experienced phenomenal growth through their expansion into these markets. Since 1992, Turkey's trade volume with the region has reached almost $6 billion. Turkey's total volume of regional investment also exceeds $6 billion. Turkish contractors have become major players in the international construction market due to their reliability, creativity and cost effectiveness. Turkish contractors have undertaken projects in Central Asia, the Russian Federation and around the world with a total value of almost $40 billion (http://www.oib.gov.tr, 24.02.2006).

Dale Foster mentioned that with a land area of more than 300,000 square miles and a population expected to reach 70,000,000 by the end of decade, Turkey has been destined by both size and location to be a major regional player in economic and political affairs of Europe and Middle East. Turkey will play a primary role in this economic expansion because of its strategic position and an increasingly affluent population that is able and eager to purchase consumer goods and raise the standard of living (Foster, 1998, p.4).

However, according to Mehmet Öğütçü in 2001 Turkey was 46th at the international competition power classification which includes forty nine countries. The efficiency of industry, agriculture and productive power is much below the international average. At 1993, the greatness of the Turkish economy was 178 billion $ and per capita income was 3.000$. However, at 2001 Turkish economy access to only 180 billion $ and per income capita was decreased to 2.584$. In last ten years, the level of welfare is hugely decreased. Some of the reasons of this mighty decline are economic instability, absence of the standards which are accepted as internationally, absence of strategic investment, *the structure of Turkish family companies* and *adapting last technologies* in *their companies.* Turkey can not manage their resources cleverly and they can not develop their ability of generating solutions and applying these (http://www.turkishtime.org/17/26_tr.asp, 24.02.2006). Also, Turkey's level of industrialization and business development is significantly below the Western European average (Foster, 1998, p.4).

According to the forecasts, in year 2023 Turkey's GNP (Gross National Product) can be reached to 1.2 trillion and the population can be reached to 92 million. When the anticipated GNP is divided to the anticipated population income per capita is calculated as 13.000$ approximately. However, this shows us that in year 2023 Turkey's GNP may reach the income per capita of Greece in 1999. Turkey can show higher performance *if it adapts the lasts technologies and innovations in the world.* Region power imposes the usage of information technologies widely in organizations (http://www.turkishtime.org/17/26_tr.asp, 24.02.2006). Two of the most popular performance improvement innovations are EDI and outsourcing (Larson and Kulchitsky, 1999, p.88). Information technology provides lots of

benefits in order to gain a competitive advantage for firms. Since most of the manufacturing firms' core business is not developing IT systems and to develop the systems is time consuming and more expensive than outsourcing, companies are better to outsource information technology.

Moreover, the other reasons that Turkey's manufacturers should adapt last technologies and pursue the innovations around the world are liberalization and privatization because these policies increase competition. Increased competition highly brings the need of outsourcing. Today's Turkey follows a liberal policy in economy just as in its political structure. The main components of this economic reform were reducing government intervention; implementing a flexible exchange rate policy; liberalizing import regulations; increasing exports; encouraging foreign capital investment; establishing free trade zones; deregulating financial markets; privatizing State Economic Enterprises, and decentralizing government activities. (http://www.oib.gov.tr, 24.02.2006). All these components of the economic reform increase competition but the major component that increases competition is privatization.

When it comes to "Privatization in Turkey", we are talking about a comprehensive and a radical program. Fifteen years ago, it was just a controversial idea. Now, it is a national policy implemented by every government that is supported by public opinion. Total income from privatization implementations is over US $ 10 billion. Every step brings us closer to a stronger and more competitive economy. The major target of the privatization program is primarily to minimize state involvement in the industrial and commercial activities in the economy (http://www.oib.gov.tr, 24.02.2006).

Privatization and liberalization force organizations to adapt improvement performance innovations such as outsourcing in order to survive in this competitive environment.

1.2. SMALL MEDIUM SIZED ENTERPRISES' (SMEs) EFFECT IN ECONOMIC GROWTH

A supply chain involves both large companies and small medium sized enterprises. When the studies about SMEs are examined, it is conspicuous that scientists and researchers can not reach to an agreement about the SMEs definition since the definition differs according to the different countries (Budak, 1993, p.1). Even, the definitions of SMEs are changed according to the various corporations of a country (Efe, 1998, p.3). According to the European Commission, definition of SMEs is as stated at below:

[2]Table 1. European Union SMEs definition

	Employment
Micro-sized Enterprise	1-9 employees
Small-sized Enterprise	10-49 employees
Medium-sized Enterprise	50-249 employees

Source: Candemir and Kasap, 1998.

The role of small and medium sized enterprises could not be over emphasized in today's economic and social development of Turkey and in most of the countries

[2] European Commission, Activities in Favor of SME'S and the Craft Sector

in the world. In Turkey, 99.5% of the companies in manufacturing industry are SMEs (Kasap and Candemir, p.121). Moreover, SMEs play a vital role in regional development since SMEs are dispersed in all of our regions (Efe, 1998, p.4). As it is seen in the table 2, total number of SMEs in Turkey is 204 thousand and the total number of SMEs which employ 1-9 person is 192 thousand. Scilicet, the micro SMEs which employ 1-9 people constitute 94.4% of the total organizations in manufacturing industry. However, the total number of employee in SMEs is 1.7 million and the employee number in micro SMEs (1-9) is 547 thousand which constitutes 32.4% of the total employment in SMEs (Çarıkcı, p.39).

[3]Table 2. Some data about the manufacturing industry in Turkey

Worker Number	**Organization number**		**Average of Workers**	
	Number	**%**	**Number**	**%**
1-9	192.173	94.4	546.452	32.4
1-49	199.338	97.9	772.763	42.8
1-150	201.916	99.2	943.989	55.9
1-200	202.327	99.4	1.015.083	60.2
1-250	202.579	99.5	1.071.406	63.5
Total	**203.546**		**1.687.298**	

Source: DİE; Çarıkcı.

[3] DİE, General Industry and Organization Count

The importance of SMEs in economy started to be increased in industrialized countries since 1960s and it started to be increased in the developing countries since 1970s. In table 3, SMEs economic contributions in various countries are indicated. SMEs share in total organizations share varies between 89% and 99.8% in countries which are stated at the table. In Turkey, this share is 99.8% (Çarıkçı, p.38).

Table 3. The place of SMEs in the economy of Turkey and in some other countries (as %)

Countries	The share in all organizations (%)	The share in total employment (%)	The share in total investment (%)	The share in value added (%)	The share in total export (%)	The share in total credits (%)
USA	99.7	56.6	38.0	43.0	32.0	42.7
Germany	99.0	64.0	44.0	49.0	31.0	*
Japan	99.4	81.4	40.0	52.0	38.0	50.0
France	99.0	67.0	45.0	54.0	26.0	29.6
Holland	98.0	57.0	45.0	32.0	38.0	*
India	98.6	63.0	27.8	50.0	40.0	15.3
South Korea	98.8	59.0	35.0	35.0	20.0	47.0
Thailand	98.0	64.0	*	47.0	50.0	*
England	98.8	36.0	29.5	25.1	22.2	27.2
TURKEY	99.8	76.7	26.5	38.0	8.0*	4.0*

Source: Halil, 1996; Çarıkcı.

* No information or not dependable

In developed market economies SMEs have always been an important part of industrial structure. Their importance keeps on increasing since economic growth today depends on innovation, entrepreneurship and flexibility, the attributes that are largely associated with SMEs (Kerepeszki, Bates, Yurt, 2004, a).

- They can adapt to the competition terms since they are flexible
- SMEs can adopt the demand variety and diversity easily and in short time and provide sensitivity to the customer demands

(Şahin, p.53).

- They contribute to the inter-regional balanced development and growth.
- They are influenced by economic fluctuations and crisis situations lesser than large companies with their infrastructure
- Being indispensable complementary and corroborative support of large companies

(Candemir and Kasap, p.122).

However, challenges faced by SMEs are changing, and SMEs are themselves having to respond in new ways to cope with the changing business environment (http://www.chusho.meti.go.jp/sme_english/whitepaper/1999/part1.html, 05.06.2006). Small and medium sized enterprises have limited power in the supply chain and limited resources to invest in advanced systems. This is the reason why SMEs have based their business almost exclusively on the local business community, i.e. local suppliers and customers, or the companies have chosen a niche strategy as providers of special services or manufacturers of specialised products. Today, however, this makes it difficult to cope with the latest challenges such as mass customisation which puts higher demands on the companies' ability to attune its

production planning to customers' wishes and their suppliers (Kerepeszki, Bates, Yurt, 2004). According to the 1999 White paper on Small and Medium Enterprises in Japan, firms that have used mergers or acquisitions (M&As) are comparatively more enthusiastic than other firms about involvement in new business activities, such as expansion into new industries and new types of business. This gives some indication of the importance of M&As as a means of expanding into other areas of business (http://www.chusho.meti.go.jp/sme_english/whitepaper/1999/chapter4.html, 05.06.2006).

Also, the preferences of local customers are changing. The customers increasingly prefer a single source supply strategy where one or a limited number of suppliers provide them with complete solutions from one hand, i.e. a complete package of production of specific products and the services linked to these. This development is forcing SMEs to position themselves in relation to global competitors that are very often situated in countries with much lower labour rates or competitors with world-class capabilities. However, they obviously need assistance to grow up to be able to cope with the challenges because they are lack of required resources (Kerepeszki and Cselényi, 2003; Kerepeszki, Bates, Yurt, 2004)

One of the problems that they face is credit and finance (Gücelioğlu, 1994, p.1). In total credits the share of SMEs in industrialized countries varies between 29%-50%. In India the share is %15 and in South Korea the share is %47. However, the total credit share is only 4% in Turkey (Çarıkcı, p.39). In order to SMEs contribute to economic growth, first of al governments have to qualify the results of the financial help that they provide to SMEs and the regulations protecting them on the financial basis. Supporting development of small and medium sized enterprises

(SMEs) has practically been an important topic in programs and regulations of each government. However, like in the Hungary case, the effects of these rules and regulations, mainly with financial content, have never been checked none of the governments have qualified the results – everyone was satisfied, except the SMEs (Kerepeszki, Bates, Yurt, 2004). Also, in Turkey there are many governmental units that support and represent the SME; however, currently they are limited in effectiveness due to the minimal and non-readily available national banking sources to fund investment neither in the SMEs' advanced systems nor for attracting foreign investment (Kerepeszki, Bates, Yurt, 2004, a).

On the other hand, the organizations which support SMEs may not be sufficient since services of them and expectations of SMEs are not matched for each region and sector. For example, Small and Medium Industry Development Organization (SMIDO) is one of the institutions which are concerned with small and medium enterprises. It has been established in 1990 with the purpose of upgrading the effectiveness of SMEs and expanding their role in meeting the social and economic needs of Turkey. SMIDO also aims to enhance the competitive capacity of small and medium establishments and ensure industrial integration in conformity with economic developments. This public organization is linked to the Ministry of Industry and Trade. They provide development centers, quality improvement centers, consultancy centers, technology centers, marketing centers, information centers, investment guidance centers and training centers to the SMEs. However, the activities and services of SMIDO and the expectations of the SMEs are not matched from the production stage up to the marketing of products for every region and every economic sector (Gücelioğlu, 1994, p.1).

Enterprises aiming at flexible specialization tend to buy specialized production factors according to the current demand from flexible external suppliers, obviously from SMEs. SMEs are to be assisted not just because they are small, but because of their capability to be efficient, innovative and their ability to compete in different marketplaces. Considering the fact that SMEs are not strong enough from the point of view of capital background financial support is necessary but not sufficient means for their further development (Kerepeszki, Bates, Yurt, 2004).

The other challenge that SMEs face is technology insufficiency. SMEs can not develop new and expensive technologies even in the establishment phase because they have to start operations with limited capital. However, today technological developments diffuse from the national borders and the competitive power of the companies which have the ability to use the new technological developments in both domestic and international market reaches uppermost level. SMEs are too much restricted to enter international markets since they face with technology insufficiency (Gücelioğlu, 1994, p.14).

The other challenge that SMEs face is the lack of market research. SMEs can not provide sufficient market and price research in procurement of raw material and subsidiary ingredients or in selling their finished products so this decreases in a huge amount their competing possibilities (Gücelioğlu, 1994, p.15).

The other problem that SMEs have is difficulty of SMEs assuring educated personnel. SMEs can not employ sufficient technical and administrative personnel. For this reason, SMEs can not provide sufficient effect in planning, production,

quality control, marketing etc and they can not achieve adequate competitive power. (Gücelioğlu, 1994, p.16)

SMEs face with problems which occur from the lack of knowledge about laws and legislation. Generally, in Turkey, law and regulations are complicated enough that SMEs can not understand. Because of this reason, these companies are facing with some penalties in some of their payments such as tax payments (Gücelioğlu, 1994, p.17).

Export subject is very important for both developed and developing countries. Export is a crucial activity which helps the especially developing countries to maximize their foreign exchange entrance. However, SMEs have lots of problems in actualizing export. These problems are as stated below:

- Not be able to employ efficient staff who has a sufficient knowledge about export issues
- The difficulties in investigating, finding and evaluating the potential markets
- A perception of establishing export as high-cost and faulty pricing
- Absence or scarcity in contact with foreign cultures
- Faulty marketing strategies

(Budak, 1993, 8-9).

If companies outsource, these obstacles are reduced and the companies including SMEs' exports rates will be increased.

The relative competitive advantage of SMEs has been increasing due to the recent organizational changes. Industrial trends include several means that can also be utilized for the benefit of SMEs. Now, it is fact, that large enterprises are forced

by market demand to concentrate on their core activities and to externalise some of the specialized production tasks by means of subcontracting or outsourcing. Many of them form supply networks involving reliable and flexible small enterprises into their extended supply chain. The supplier evaluation mechanism traditionally based on price is integrated with other criteria: technological know-how, reliability and quality, consignment precision and, with increasing importance the ability to develop new products. Being involved in such networks, it is not only a pure business opportunity for small companies but also a possibility to improve their special or overall capabilities. In most cases improvement process is fully supported by the large companies. (Kerepeszki, Bates, Yurt, 2004a).

Moreover, SMEs are to be assisted and in order to be assisted; high-quality technical and consultative services need to be provided by support systems or infrastructure. Special attention should be given to those that improve the operating conditions and reinforce innovation ability of SMEs, among the instruments of the development strategy (Kerepeszki, Bates, Yurt, 2004).

The other solution for SMEs is choosing outsourcing. Organizations can utilize the outsourcing option as an ingredient and commitment initiative that will add value and efficiencies to their operations. On certain fronts and through new business initiatives, SME business representatives are seeking to develop themselves to be strategic partners within their own respective trade blocks. This motivation may feature such trade activities as the outsourcing of such services as transportation, customer services, information technology, handling of materials in environmentally sound ways, coordinated procurement, material storage, packing, handling, manufacturing, quality standardization and such. These moves are evolving toward

alliance building of SMEs for facilitating entry into the supply chains of others, while simultaneously improving their own supply chain networks (Kerepeszki, Bates, Yurt, 2004a).

In order for SMEs to respond to the changing business environment and maintain and improve their performance, it is important that they develop their own unique strengths. However, it is difficult for individual SMEs to possess all the necessary managerial resources to enable them to do so, and attempting to acquire all these resources could on the contrary reduce efficiency. Building networks with other firms and relevant organizations to procure the necessary managerial resources externally thus forms an important part of management strategy. By 1996, the average ratio of ordinary profit to sales had grown with outsourcing. Furthermore, outsourcing raised profit ratios more at SMEs than at large firms (http://www.chusho.meti.go.jp/sme_english/whitepaper/1999/chapter3.html, 05.06.2006).

1.3. INTERNATIONAL TRADE

Current market environment can be characterized by the growing volume of international trade and investment taking place in a context of increased competition (Kerepeszki, Bates, Yurt, 2004). Leading companies have already recognized opportunities for efficiency through global sourcing and manufacturing and for increased market share and revenues via entry into overseas markets. Global distribution, while more complex, has become a necessary logistics function for many other companies. Not surprisingly, these trends have created both issues and opportunities for logistics service providers. International logistics, having the potential for being more fragmented and diverse than domestic, will offer more

complex opportunities. Both shippers and service providers are striving for improvements via such strategies as outsourcing and formation of alliances (Rao and Young, 1994 p.11-13).

With the globalization of commerce, it is common for manufacturing companies in one country to assemble products using parts made in another country with the intention of selling such products throughout the world (Kerepeszki, Bates, Yurt, 2004). Firms seem to be subcontracting an ever expanding set of activities, ranging from product design to assembly, from research and development to marketing, distribution, and after-sales service. Vertical disintegration is especially evident in international trade. A recent annual report of the World Trade Organization (1998), details, for example, the production of a particular "American car": Thirty percent of the car's value goes to Korea for assembly, 17.5 percent to Japan for components and advanced technology, 7.5 percent to Germany for design, 4 percent to Taiwan and Singapore for minor parts, 2.5 percent to United Kingdom for advertising and marketing services, and 1.5 percent to Ireland and Barbados for data processing. This means that only 37 percent of the production value is generated in United States. Feenstra (1998), citing Tempest (1996), describes similarly the production of a Barbie doll. According to the Feenstra, Mattel procures raw materials (plastic and hair) from Taiwan and Japan, conducts assembly in Indonesia and Malaysia, buys the molds in United States, the doll clothing in China, and the paints used in the decorating dolls in the United States. Indeed, when many observers use the term globalization they have in mind a manufacturing process similar to what Feenstra and the WTO have described (Grossman and Helpman, 2002, p.1).

Successful management of related operations increasingly requires the introduction of advanced technologies that quickly, reliably and securely move physical goods and data among the many distributed facilities around the world. There is an increased need to concentrate on core competencies and outsource other activities. Also, the trend towards global organisations has highlighted the critical importance of logistics and Supply Chain Management as the keys to profitability (Kerepeszki, Bates, Yurt, 2004).

1.4. CHARACTERISTICS OF COMPETITION

Until the World War II, the concept of "competition" has never initiated a serious discussion since aggregate supply did not exceed aggregate demand in world economy. Since then, however, socio-economical changes, new forms of consumerism and emerging market conditions elevated consumer consciousness to such a higher level that all corporations sought ways to develop more innovative products at relatively reasonable prices. This harsh competition forced giant multinationals to enhance their technologies and relocate production facilities to regions where cost of labor was simply lower. All players, big or small, started to seek raw materials from cheapest sources, produce in lucrative regions of the world and sell in international markets with suitable pricing mechanisms. With such chaos to manage, companies had to follow their goods flowing across value chain, from procurement of raw materials to the client's delivery address. This complex commercial situation inevitably carried many companies into clumsy, unprofitable and dysfunctional organizational situations. Furthermore, the need to monitor the flow of goods, money and business-critical data pushed IT vendor to introduce new solutions for the enterprise (http://www.omsan.com.tr/en/outsou.asp, 02.03. 2006).

Very early in the 1990s Davidow and Malone (1992) suggested: The complex product-markets of the twenty first century will demand the ability to deliver, quickly and globally a high variety of customized products. These products will be differentiated not only by form and function, but also by the services provided with the product, including the ability for the customer to be involved in the design of the product. A manufacturing company will not be an isolated facility in production, but rather a node in the complex network of suppliers, customers, engineering and other service functions. Profound changes are expected for the company's distribution system and its internal organization as they evolve to become more customer driven and customer managed. To describe the change that was occurring and which continued to occur during the 1990s the term "market turbulence" has been popular (Davidow, Malone, 1992 ; Walters, Buchanan, 2001, p.818).

1.4.1. Globalization

Of the many factors that may act as driving forces behind outsourcing, globalization of business has been viewed by many as the most prominent. The continued growth in global markets and foreign sourcing has placed increasing demands on the logistics function (Razzaque and Sheng, 1998; Taşkın and Güneri, 2004). Consequently, it has led to more complex supply chains and has involved more transportation and distribution managers in international logistics (Bradley, 1994; Taşkın and Güneri, 2004). Lack of specific knowledge of customs and infrastructure of destination countries forces firms to acquire the expertise of third party logistics vendors (Hertz and Alfredsson, 2003; Taşkın and Güneri, 2004). Globalization encompasses an evolving pattern of strategic alliances for research and

product development, production, sourcing, marketing and distribution (Kerepeszki, Bates, Yurt, 2004).

Moreover, with the globalization competition is increased. Increased competition forces companies to adopt new approaches. Heightened challenges from global competitors during the past 2 decades have prompted many US manufacturing firms to adopt new manufacturing approaches (Hall, 1987; Meredith and McTavish, 1992 Shah and Ward, 2003, p.129). Globalization is changing the economic environment. Corporate performances are diverging, competition in the marketplace is intensifying and inter-firm relations are changing. As the business environment changes, it is becoming increasingly important that SMEs engage in business innovation in the widest sense of the term to make the most of their own unique strengths and to develop new markets (http://www.chusho.meti.go.jp/sme_english/whitepaper/1999/chapter1.html, 05.06.2006). According to an article in the Financial Times, subcontracting as many non-core activities as possible is a central element of new economy (Financial Times, 2001, p.10; Görg, Hanley, 2004, p.1). Outsourcing may provide a viable strategy if firms aim to take advantage of globalization (Feenstra and Hanson, 1999; Görg, Hanley, 2004, p.1).

1.4.2. Homogeneous Goods

Only few years ago, companies have opportunities to compete through their brands. However, with the globalization, competition and consumer expectations are increased. Companies started to compete through producing different range of quality goods. Manufacturing around the world is facing demands for increased responsiveness and greater degrees of product customization (Corbett and

Brocklesby, 2002; Houshmand and Jamshidnezhad, 2005, p.1). However, companies pursue their competitors so closely that the goods are produced identical to each other in every market which is also commonly termed “homogeneous goods.” Today, companies can get an advantage through producing quality goods at the lowest cost. If they should try to charge a different price, then buyers would immediately switch to other firm’s identical goods Firms can not lower their goods costs in order not to decrease the quality. However, they can decrease their logistics expenditures by outsourcing their logistics activities (Yıldıztekin, 2005, p.2). In the future companies will compete not by product or country, but supply chains (Christopher; Yıldıztekin, 2005, p.2). Moreover, as products are increasingly viewed as commodities with little difference in features from one to the next, distribution service has taken on greater strategic significance. Manufacturers focus on distribution service to compete on availability, delivery speed, and reliability (Candler, 1994; Kerepeszki, Bates, Yurt, 2004).

1.4.3. Customer Requirements

Today’s manufacturers are challenged as never before, as customers place increasing demand for customised products with shortened life cycle, reduced delivery time and reduced prices meaning that sellers' market has been superseded by a more sophisticated customers' market. A promising way to meet these requirements is the cooperation between organizations that has evolved during the last decades from comprehensive manufacturing process to the fragmented supply chain. In the past, original equipment manufacturers (OEMs) designed, built, tested, and serviced all of their own products. Recently, attention has shifted to the supply chain as the unit of analysis rather than the firm itself. Supply chain is the framework for

management of upstream and downstream relationships with suppliers, manufacturers, distributors and customers to achieve greater customer value added at least total cost. By means of logistics it manages the flow of information and materials from raw material procurement through manufacturing and distribution to delivery of finished goods to consumers. In this context Supply Chain Management (SCM) means a better product or service for the customer, produced or provided more efficiently and cost effective. The paradigm of supply chain is related to both small and large manufacturing companies as well as the widest range of service providers (Kerepeszki, Bates, Yurt, 2004).

Firm should understand the customer requirements and they should monitor the changes on the market. Customers prefer to buy from the firm that they perceive to offer the highest customer delivered value. As depicted in figure 2, customer delivered value is the difference between total customer value and total customer cost where total customer value is the bundle of benefits customers expect from a given product or service and total customer cost represents all direct and indirect costs associated with obtaining those benefits (Kotler 1994, p.38 ; Gourdin, 2001, p.10).

As mentioned above, to increase the customer delivered value, the firm must either dispense more benefits (increase total customer value) for the same cost or give the same total customer value at a lower cost; or provide some combination of the two. The difficulty for global companies is that customers in different markets define value in different ways. Management then must have a clear idea of what is important to their various customer groups so that the appropriate benefits can be delivered to each one (Gourdin, 2001, p. 10-11).

Form, possession, time and place utilities are drivers of consumer utility satisfaction (Walters, Buchanan, 2001 p. 819). A product manufactured at one point has very little value, if it cannot be moved to the prospective customers to be used. Transportation is the mean of movement. Movement across space and distance thus creates **place utility.** Time-in-transit in the transportation system and the correct arrival time is the **time utility** created by the transportation process (Ballou, 2004, p.24). Furthermore, customer expectations themselves have created new aspects of utility such as convenience, choice, information, communication and experience (Walters, Buchanan, 2001 p. 819).

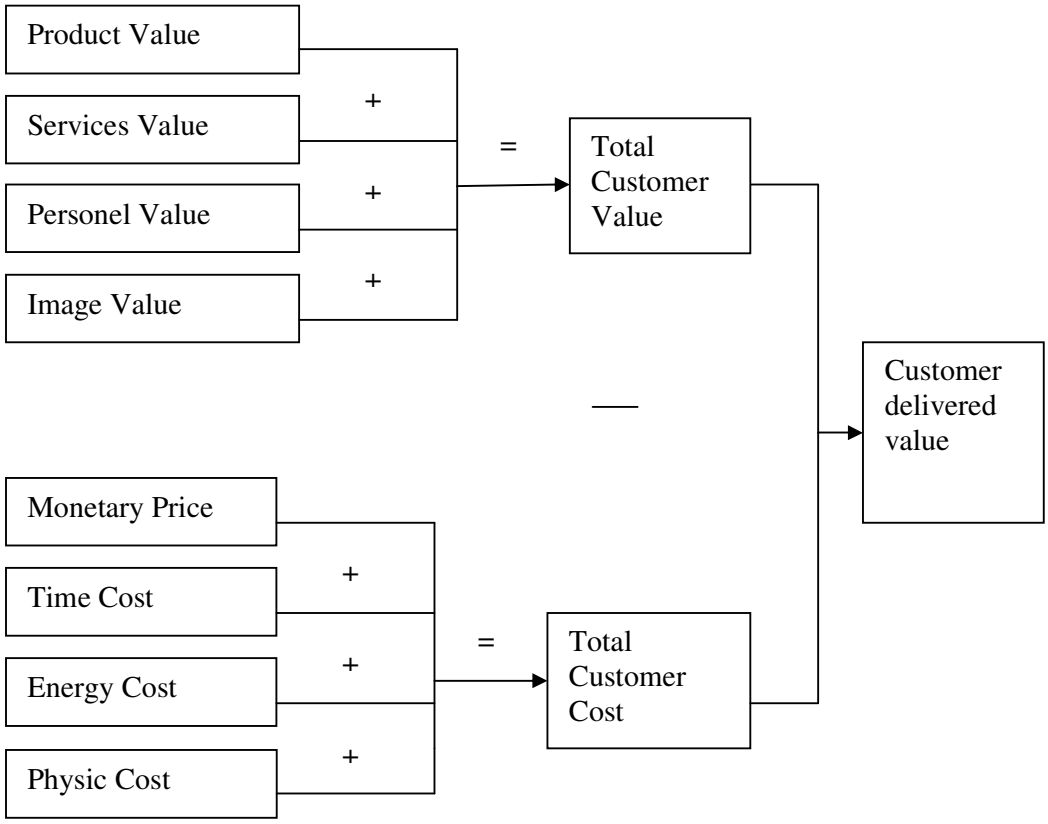

Figure 2. Determinants of customer delivered value

Source: Kotler, 1994; Gourdin 2001.

1.4.4. Quality

Product and/or service quality is necessary to compete in today's world market. Quality can be mentioned as agreed set of standards and tolerance limits between the firm and its customers. Quality is achieved through the successful creation of form, possession, time, place and quantity utilities for the firm's products. Generally, logistics quality may be defined as "anticipating and exceeding customer requirements and expectations". It has several elements which are emphasis on customer requirements and expectations, concern for the logistics process itself, continuous improvement, elimination of waste and rework, measurement and concern on variability, total organization commitment, dedication to a formal quality process. Following table shows some answers obtained from three case studies (Sohal et al., 1999).

Table 4. Percentage of respondents who identified each alternative as being one of the three most important elements that define logistics quality

	North American and European Sample 1991	American Sample 1995	Australian Sample 1996
Total support of customer needs	75	74	69
On-time delivery	73	81	62
Error free transaction	45	48	29
No out of stocks	28	26	22
No goods damaged in handling and shipping	18	22	10
Consistency of order cycle	15	15	10
Reliable suppliers	15	11	35
Accurate inventory information	13	7	31
Defined procedures and instructions	13	26	26

Source: Sohal et al., 1999.

Quality management is a logistics trend that goes hand in hand with marketing activities is since if a product becomes defective, if a service delivery can not meet required conditions or if promises are not kept, no value can be added to logistics function. Logistics costs, once expanded can not be recovered, if the product returned delivery and replacement costs add up which accumulate logistics cost (Tanyeri, Tavmerger, 2004). Due to all these reasons, Logistics Service Quality (LSQ) is another marketing application that logistics apply to increase customer satisfaction. Definition of quality for logistics covers the basics that 1) quality is defined by the customer 2) quality needs management commitment 3) quality management is a constant process which is improved and updated 4) integrated logistics quality may be used as a strong competitive advantage 5) standards and measurement levels must be developed from the customer's perspective 6) LSQ applications need team work and related training 7) detection of errors is more important than prevention (Dean and Evans, 1994, 42-45).

1.4.5. Focus on Core Competencies

Core competencies are the well spring of new business development. They should constitute the focus for strategy at the corporate level. Only if the company is conceived of as a hierarchy of core competencies, core products, and market-focused business units will it be fit to fight (Prahalad and Hamel, 1990, 91). A core competency is a function or functions that differentiate a business from its competitors (Bowman, 1994; Kerepeszki, Bates, Yurt, 2004). A core competency plays a basic role in actualizing company's vision and it defines company's knowledge, skills and capabilities which can not be imitated by its competitors (Özbay, p.10). As the drive towards globalisation continues there is an increased need to concentrate on core competencies and outsource other activities (Kerepeszki,

Bates, Yurt, 2004). If core capabilities are overlooked, the benefits will not be realized (Walters, Buchanan, 2001, p.821).

1.4.6. Technology

Technology moves too rapidly. The technology communication has accelerated the pace of change. Events in one part of the world now have implications everywhere in the world. In addition, work can now be undertaken anywhere in the world (Embleton and Wright, 1998, p. 95). Teleworking enables firms to move overseas, so that low-paid workers in India, for example, write software programs, or prepare tax returns for multinationals. In this sense, technology not only reduces the demand for labor, it also increases its supply (anon., 1995; Embleton and Wright, 1998, p.95). The development of effective information technology, easy electronic communication, the ability to perform comprehensive and complicated analyses through the use of computer technology have made it possible to manage logistics channels and other complicated processes in an integrated and coordinated fashion (Pienaar, 2004). Outsourcing requires close cooperation and intensive information sharing among supply chain participants, and this aspect the Internet can facilitate (Bruun and Mefford, 2004, p.250).

Information technology provides numerous benefits to firms engaged in distribution activities. For example, the installation of electronic point of sale (EPoS) systems and the development of direct links between the computer systems of retailers, the product suppliers and the third-party logistics firms through electronic data interchange (EDI) networks, help retailers to control their logistics operations better (Dawnson,1994 ; Bourlakis and Bourlakis, 2005, p.91). EDI also provides intra and inter-organizational information processing to support electronic interaction

and communication with other chain members and subsequently increases the transparency of the supply chain's workings (Pweel and Dent-Micallef, 1997; Bourlakis and Bourlakis, 2005, p.91).

Modern computer systems make it possible for organizations to continuously improve all their logistics activities. Organizations can now hold smaller inventories with the stock models and transport systems are effectively linked to the operations of organizations. Modern computerized warehouses and handling equipment are being used and improved procurement systems are developed to enhance the flow of materials from the raw material stage through the logistics chain to the end user (Vogt and Pienaar, 2002, p.1; Pienaar, 2004). Logistics related information technology applications include also, merchandising applications that optimize the use of retail store sales space (Institute of Grocery Distribution, 2001; Bourlakis and Bourlakis, 2005, p.91).

Today, the notion of rigid, fixed, linear supply chains is rapidly being replaced by visions of more flexible and fluid networking alliances and economic webs. And, just as the linear model was supported by physical infrastructure (plants, trucks, rail, shipping lines, and physical distribution points, including stores and warehouses), this new model will be built around new elements: people, information, and smart products. Connective technologies promise to integrate people, information, and products across traditional supply chain boundaries. Smart materials represented by actuators and sensors, tagging represented by global positioning systems (GPS) and radio frequency identification technologies (RFID) tags, and peer-to-peer decentralized processing can create a new logistics process that provides

a network supply system where anything can be an addressable part of a dynamic system (http://cscmp.org/Website/Resources/Research.asp, 02.03. 2006).

As a conclusion, these new technologies represent a major shift in the ability to gain, store, process and disseminate information and can be viewed as a source of value creation and competitive advantage (Sampler, 1998; Bourlakis and Bourlakis, 2005, p.91). Trunick suggests emerging technology and versatility of third parties as two other important drivers of outsourcing. Since it would be time consuming and expensive to develop and implement new technologies in-house, firms can easily employ those of a third-party (Trunick, 1989; Taşkın, Güneri, 2004). On the other hand, versatility of the third parties enables them to provide an improvement in control and technology (Razzaque and Sheng, 1998; Taşkın, Güneri, 2004). Outsourcing results from an economic climate where the emphasis is on cost savings and increased profit. At the same time, technology of the late 1990s has provided a new window of opportunity for the provision and the purchase of outsourcing services (Embleton and Wright, 1998, p.96).

1.4.7. Perfect Knowledge

In perfect competition, buyers are completely aware of sellers' prices, such that one firm cannot sell its good at a higher price than other firms. Each seller also has complete information about the prices charged by other sellers so they do not inadvertently charge less than the going market price. Perfect knowledge also extends to technology. All perfectly competitive firms have access to the same production techniques. No firm can produce its output faster, better, or cheaper because of special knowledge of information (http://www.amosweb.com/cgibin/awb_nav.pl?s=wpd&c=dsp&k=perfect+competition,+characteristics, 06.03. 2006).

1.4.8. Organizational Change

The structure of organizations is changing. Re-engineering, organizational change and just-in-time manufacturing are examples of processes that are transforming the way business is conducted (Bridges, 1994; Embleton and Wright, 1998, p. 95). Due to the new world economy, every business and every employer faces unprecedented pressures to be vigilant on all expenditures, including the cost of maintaining a staff. Even the small retailers, who think that global economic forces do not really affect them, are in fact, influenced as well. Large domestic companies now aggressively pursue smaller markets which they previously ignored (Sacco, 1993, p.47; Embleton and Wright, 1998 p.96).

Business environment has gone through radical changes in the course of past decades and these changes have become recently even faster and more fundamental. Companies today are concentrating their efforts on improving flows within value chains, that is, inter-enterprise logistics processes that involve both customers and suppliers. According to Harrington (2000) in the 21st century the accelerating rate of change will continue to be driven principally by the exponential growth and global availability of information, technologies and technology-based infrastructure (Kerepeszki, Bates, Yurt, 2004).

The "market" orientation proposed by Abell (1980) and subsequently reflected in the writing of Webster (1994), Day (1990, 1999) and others has influenced a shift towards a market-product strategy rather than a product-market strategy, which for many firms has brought about major change in strategy and

structure perspectives. This shift accompanied by a view that organizations need to become inter-organizational organizations if customer satisfaction is to be maximized rather than follow the traditional intra-organizational structures that have been met with increasingly less success. The end-use(s) to which customers put products is also an important change; rather than suggest to the customer they change their processes to gain maximum benefit from products and services it is the supplier who changes the product specification to meet end-user needs. Finally, "delivery technologies" are becoming important components of the value strategy. Delivery technologies can be expanded include the ordering, transaction and delivery processes that compromise the activity of managing the "physical" aspects of customer satisfaction (Abell, Webster and Day; Walters and Buchanan, 2001, p.821).

Increasingly competition, new information technologies, the rise of the knowledge economy, and extended global scope are all forcing many large companies to experiment with new forms of organizing themselves. The concepts vary- they are seeking to become networked, virtual, and horizontal or project based. But all these concepts express a need at the dawn of a new century to develop flatter, more flexible and intelligent forms of organizing (Whittington, 2000; Walters and Buchanan, 2001, p.821). In order to be able to continue their lives and in order to be successful, organizations should adapt the changes rapidly and in an effective way. This forces companies to be flexible. Outsourcing cause organizations to be flexible and cause them to gain competition advantage (Özbay, p.17). These forces have led to a period of aggressive organizational change throughout the world and alternative organizational structures with which to take full advantage of the market place opportunities should develop (Whittington, 2000; Walters and Buchanan, 2001, p.821).

1.4.9. Lean Production

In the 1990s, many manufacturing firms around the world adopted lean production as a strategy to increase their global competitiveness (Bruun and Mefford, 2004, p.247). The concept of lean production has gained widespread attention, both in literature and in practice. It is probably fair to say that it has become a dominant strategy for organizing production systems (Karlsson and Ahlström, 1996, p. 25). In today's markets, production systems must satisfy simultaneously productivity, quality, and cost requirements (Houshman and Jamshidnezhad, 2005, p.1). The research findings indicate that, even given the same organizational constraints and resources, lean suppliers gain significant competitive advantages over non-lean suppliers in production systems, distribution systems, information communications, containerization, transportation systems, customer-supplier relationships, and on-time delivery performance (Wu, Chun and Yen, 2003, p.1349).

Early adopters of lean production changed the nature of competition in repetitive manufacturing industries as a result of increased productivity, quality, and rates of learning. The impact of lean production on competitiveness was so profound that for several years after its arrival, the competitive strategy of companies not using lean production in those industries was reduced to catching up with early implementers (Adler and Cole, 1993, Hayes et al., 1988, Porter, 1996, Schonberger, 1982, Womack et al. 1990; Treville and Antonakis, 2006, p.101). Some of the benefits include **elimination of waste**, **high quality output**, **flexible operation** (Sullivan, McDonald, Aken, 2002, p.255). Lean production techniques have contributed to a **spectacular improvement** in **efficiency** and **speed of response** in

production and **competitiveness** at many industrial enterprises. Lean management has allowed these enterprises to offer a **highly diversified range of products, at the lowest cost,** with **high levels of productivity** at the **minimum stock levels** (Arbos, 2002, p.169).

The term lean production was originated by the authors and the researchers of the International Motor Vehicle Project carried out by MIT in the 1980s to distinguish the mass production approach common in the United States and Europe at the time and Toyota Production System which is common in the Japanese auto manufacturing industry (Womack, Jones, and Roots; Brunn and Mefford, 2003, p.247, Krafcik, 1988; Treville and Antonakis, 2006, p.101, Ohno, 1988; Satoğlu and Durmuşoğlu, 2003). Toyota Production System was born out of scarcity in post-World War II Japan. The buffers required maintaining a high capacity utilization given line imbalances, quality problems, workers with narrow skills and other sources of variability were too costly for Toyota. The solution for Toyota was to operate with minimum inventory buffers while attempting to maintain high capacity utilization (Fujimoto, 1999; Treville and Antonakis, 2006, p.101).

Lean thinking, which is based on Toyota Production System, is focused on performance improvements in many areas by eliminating wastes. The basis of lean production is the elimination of all non value-added operations, materials, equipment, and space, direct and indirect labor in order to increase the performance of the enterprise and produce products that meet customer expectations (Ohno, 1988; Satoğlu and Durmuşoğlu, 2003, Sullivan, McDonald, Aken, 2002, p.256, Fujimoto, 1999; Treville and Antonakis, 2006, p.101). Also, Kippenberger mentions that a continuous improvement is necessary in component quality, the control of

production, the reduction of lead times as well as lot sizes and set-up times and a shortening of product development cycles (Kippenberger, 1997, p.17).

The craft producer uses highly skilled workers and a simple but flexible tool to make exactly what the consumer asks for one item at a time. The mass-producer uses narrowly skilled professionals to design products made by unskilled or semiskilled workers tending expensive, single-purpose machines. These churn out standardized products in very high volume… The lean producer, by contrast, combines the advantages of craft and mass production, while avoiding the high cost of the former and the rigidity of the latter (Womack et al., 1991, p.13 ; Spithoven, 2001, p.730). Just as mass production is recognized as the production system of the 20th century, lean production is viewed as the production system of the 21st century (http://www.1000ventures.com/business_guide/lean_production_main.html, 06.03. 2006).

Lean production is a multi-dimensional approach that encompasses a wide variety of management practices, including just-in-time, quality systems, work team, cellular manufacturing, supplier management, Kaizen and human resources management practices under the respect for workers umbrella serving as the glue to hold the overall system together in an integrated system. The core thrust of lean production is that these practices can work synergistically to create a streamlined, high quality system that produces finished products at the pace of customer demand with little or no waste (Bruun and Mefford, 2004, p.247, Shah and Ward, 2003, p.129).

1.4.9.1 The Importance of Lean Production in Outsourcing

Companies are striving to increase their competitiveness by focusing on value-added activities and on their core processes and competencies. As a result, more peripheral functions, maintenance and manufacturing of some parts are transferred to subcontractors (outsourcing). Companies are nowadays increasingly operating in networks formed by prime contractors, subcontractors and material suppliers. This is a key principle especially in lean production models (Womack et al., 1990; Lehtinen, 2001; Ahmadjian and Lincoln, 2001; Seppala, 2003, p.16).

The increasing popularity of just-in-time (JIT) principles is another major factor promoting outsourcing (Razzaque and Sheng, 1998; Taşkın, Güneri, 2004). An outsourcing may be obtained by a change in the buyer's materials management philosophy. Adopting a just-in-time (JIT) may have the effect of outsourcing most of the inventory to suppliers. Dell is acknowledged as the world's most effective manufacturer of computers. It operates a JIT system and its factory in Ireland holds the equivalent of 4 hours' inventory. The company holds no stocks of components and some suppliers have built warehouses close to the plant so that they are better placed to meet the tight delivery schedules (Hussey and Jenster, 2003, p.9).

Moreover, company's high and increasing percentage of orders come through the company's web pages so that Dell is much closer to its customers than other PC makers and can quickly identify, and adjust to, changing customer demands. Once an order is received, Dell can transmit it directly and immediately to the appropriate manufacturing facility for assembly and also its suppliers know the current order backlog and inventories of their components at the Dell assembly plant because Dell has constructed Web pages allowing suppliers to access the Dell system. This

extranet allows the suppliers to adjust their production schedules in line with Dell's demand from customers, an effective use of the pull principle in the supply chain (Bruun and Mefford, 2004, p.252).

It is not easy to link the production schedules of the customer and the company. Companies may overcome this problem with EDI like in the Dell case. Internet is useful for the production planning as it will allow quick notification throughout the supply chain of any disruptions such as capacity or material constraints or machine breakdowns. The members of the supply chain can then quickly and collaboratively adjust their production plans. The pull principle of production planning ultimately begins with the last link in the supply chain, the final customer of the product or service. By using the Internet to transmit point-of-sale transactions and orders down the supply chain, the member firms can keep their production in line with final demand, reducing inventories through out the chain and avoiding the "bull whip effect" .These show us the need for effective Internet in order to become lean and compete with the competitors.

Also, JIT production systems call for teamwork and participation of everyone to make them effective. The Internet will facilitate this as virtual meetings. The internet provides the mechanism for such close coordination and cooperation, especially when the supply chain and the customer base are global. There are very few companies that do not have some international customers and suppliers, and they will increasingly find that they need to improve communications and coordinate planning with these global supply chain partners. Since, Information technology is not core business of manufacturing companies, they better to outsource. If appropriately applied, the Internet can help make production systems leaner, and

even more significantly, make the entire supply chain leaner (Bruun and Mefford, 2004, p.248-249).

Table 5. Internet support of lean manufacturing

Lean principles	Pull approach	Inventory reduction	Quick setups and orders	Quality at source	Supplier network	Teamwork and participation	Continuous improvement
Companies							
Dell	√	√	(√)	√	√	(√)	(√)
Cisco	√	√	(√)	√	√	√	√

Symbols: √ support and (√) partially support

Source: Bruun and Mefford, 2004.

The contributions of the Internet to lean manufacturing based on two companies which are Dell and Cisco are summarized in Table 5.

One of the strategic ways of developing competition power is establishing a lean production system and JIT philosophy. In order to do this, constituting bulky organizations is not a proper approach. There is a need for establishing flexible organizations which provide global improvements. In order to actualize this outsourcing is unavoidable (İlter, 2002, p.69). The major expectations from outsourcing logistics operations are cost reduction, productivity, visibility and a leaner process (http://www.omsan.com.tr//en/outsou.asp).

CHAPTER 2

OUTSOURCING& SUPPLY CHAIN MANAGEMENT

2.1. THE ROLE OF LOGISTICS DEPARTMENTS IN EFFICIENT SUPPLY CHAIN MANAGEMENT

Many firms are starting to focus on the effective and efficient supply chain management. Supply chain is the framework for management of upstream and downstream relationships with suppliers, manufacturers, distributors and customers to achieve greater customer value added at least total cost (Kerepeszki, Bates, Yurt, 2004). Logistics Management is that part of Supply Chain Management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers' requirements (http:www.cscmp.org/Website/AboutCSCMP/Definitions/Definitions.asp, 02.03.2006).

Logistics departments represent a strategic leverage to compete on a global scale since it can ensure the localization of production phases, higher service standards and closer enterprises' relationships with customers and suppliers (Stank, Daugherty and Ellinger, 1999, p.11). Firms that have instituted logistics departments are making an effort in upgrading their logistical systems and are more pervasive in using technology to manage logistics as compared to firms without formalized logistics departments. The factors hindering logistics development include inefficient

logistics information systems, acute transportation bottlenecks, and the lack of logistics management expertise. Finally, future logistics managers need to be competent in modern technology and possess logistics specific skills (Goh and Pinaikul, 1998, 359).

Budget allocation for logistics harbours various importances to coordinate logistics decisions such as systematically allocating the funds between transport, inventory and production (Bookbinder and Ulengin, 1991).

2.1.1. LOGISTICS ACTIVITIES

A key determinant of business performance is the role of the logistics function in ensuring the smooth flow of materials, products and information throughout the company's supply chains (Sum, Teo, Ng, p.1239, 2001). Logistics Management activities typically include inbound and outbound transportation management, fleet management, warehousing, materials handling, order fulfillment, logistics network design, inventory management, supply/demand planning, and management of third party logistics services providers. To varying degrees, the logistics function also includes sourcing and procurement, production planning and scheduling, packaging and assembly, and customer service. It is involved in all levels of planning and execution – strategic, operational and tactical. Logistics Management is an integrating function, which coordinates and optimizes all logistics activities, as well as integrates logistics activities with other functions including marketing, sales manufacturing, finance and information technology (http://www.cscmp.org/Website/AboutCSCMP/Definitions/Definitions.asp, 02.03.2006).

Many authors consider two main categories of logistics activities which are core and support. However, they do not separate the structure of core and support logistics activities by the same way. Ballou emphasizes core activities as customer service standards, transportation, inventory management, order policies and information flows. He emphasizes support activities as warehousing, materials handling, purchasing, protection, production scheduling and information acquisition and maintenance. **Customer Service Standards** includes determination of customer needs and wants for service, determination of customer response to service and setting of customer service level. **Transportation** includes mode selection, freight consolidation, carrier routing, vehicle scheduling, equipment selection, claims processing, rate auditing. **Inventory Management** includes stocking polices (raw materials and finished goods), sales forecasting, number, size and location of stocking points JIT, push and pull strategies. **Order Policies and Information Flows** includes sales order-warehousing interface, information processing for orders, ordering rules. **Warehousing** includes determination of warehouse space requirement, warehouse layout and dock design, configuration of warehouse operations and stock placement. **Materials Handling** includes equipment selection, equipment maintenance and replacement policies, order picking operations, storage systems and handling systems. **Purchasing** includes supply source selection, purchase timing and purchase quantities. **Protection** includes loss and damage protection in warehousing and handling (transportation), packaging for protection from loss and damage. **Production Scheduling** includes specification aggregate production levels, sequencing and timing in production. **Information Acquisition and Maintenance** includes collection, storage and manipulation of information, data analysis, and control and audit procedures (Ballou, 2004, p.15).

The other approach is the separation of logistics services into two categories which are value added logistics service and basic logistics service (Berglund et al., 1998; Ge, 2004 p.3). According to James R Stock and Douglas Lambert, logistics activities include customer service, demand forecasting, inventory management, logistics communications, material handling, order processing, packaging, parts and service support, plant and warehouse site selection, procurement, reverse logistics, transportation, warehousing and storage (Stock, Lambert, 2001).

According to a survey classification of international logistics functions are fall into eight categories. In this survey shippers were asked about the services offered by international logistics third parties. These eight categories are stated at below.

- Planning;
- Administrative;
- Equipment related;
- Handling;
- Pre-or post-production;
- Warehousing;
- Transportation;
- Terminal related.

Specific functions within each of the above categories are shown in Table 6. It is important to mention that not all products require this full set of logistics functions. Different industries have different logistics management systems and they

have different services to handle their supply chain management (Rao and Young, 1994, p.13).

Table 6. Classification of international logistics functions

Planning functions	**Administrative functions**
Location selection	Order management
Supplier selection	Document preparation
Supplier contracting	Customs clearance
Scheduling	Invoicing
	Inventory Management
	Performance evaluation
Equipment functions	Information services
Selection	Communications
Allocation	
Sequencing	**Warehousing functions**
Positioning	Receiving
Inventory Control	Inventory Control
Ordering	Reshipment
Repair	
Terminal functions	**Pre/post-production**
Gate checks	Sequencing
Location control	Assorting
	Packaging
	Postponement
Handling functions	Marking
Pick-up	
Consolidation	
Distribution	**Transportation functions**
Expediting	Modal coordination
Diversion	Line haul services
Loading	Tracking and tracing

Source: Rao and Young, 1994.

The logistics costs include administrative cost (%4), order cost (%6), inventory haulage cost (%24), warehousing cost (%25) and transportation cost (%39). %61 of logistics costs is other than transportation. If outsourcing is still based

on transportation activities in Turkish companies then these firms can not reduce other logistics activities' costs (Yıldıztekin, 2005).

2.2 OUTSOURCING

In today's environment, managers are searching for any edge that can provide them with success. Outsourcing is one approach that can lead to greater competitiveness (Weston, 1996, p.1). Although in recent years more organizations have made more effort to identify opportunities of outsourcing, it is by no means new. To our certain personal knowledge it has been a common since 1970, and probably long before we had personal experience of it. The only difference is that we did not call it outsourcing (Hussey and Jenster, 2003, p.11). Outsourcing is a type of make or buy decision that has gained importance in the 1990s. Organizations outsource when they decide to buy something they had been making in house. For example, a company whose employees clean the buildings may decide to hire an outside janitorial firm to provide this service (Leenders, Fearon, Flynn, 2002, p.300).

Outsourcing can be defined as the transfer of routine and repetitive tasks to an outside source (Gibson, 1996, p.19; Ge et al., 2004, p.4). Also, it can be defined as paying other firms to perform all or part of the work (Structural Cybernetics, 1996; Embleton and Wright, 1998, p.94). Outsourcing is the practice of handling over the planning, management and operation of certain functions to an independent third party (Neale, 1995; Embleton and Wright, 1998, p.94). Outsourcing is the process when an organization allows a specialist company to provide its non-core activities (Murphy and Wood, 2004; Ge et al., 2004, p.2). Outsourcing is more than a cost-saving mechanism. Outsourcing is an indispensable business tool to not only reduce cost, but to drive business value into their enterprises

(http://www.accenture.com/global/services/by_subject/outsourcing.htm, 06.03.2006). Outsourcing is one way companies are solving problems created by business reorganization. Because restructuring usually means doing more with a smaller staff, you need to prevent your company and department from loosing core competencies-capabilities that may be crucial to future competitiveness. At the same, time, you need to make your department more cost effective and contribute more value to the organization. Outsourcing is one way to accomplish these goals (Spee, 1995, p.38). Outsourcing is not a synonym for contracting out.

Logistics management consists of three core functions: transportation management, inventory management, and value added services. Third party logistics may be defined as when a third party is brought in to help manage these functions. A TPL provider is an independent economic entity that creates value for its client. A trucking company, a warehouse operator, and a contract manufacturer can all be considered third parties (Gooley et al., 2000; Aghazadeh, 2003, p. 51). The term "third-party (TPL, 3PL)" has its foundation in a triadic form of relationships covering seller, buyer and third-party provider. This triad consists of three dyadic relationships (Figure 3):

(1) The relationship between seller and TPL provider.

(2) The relationship between buyer and TPL provider.

(3) The relationship between seller and buyer in the supply chain.

There have been articles recently describing successful partnerships. These can be seen as triadic relationships, suggesting that all three members should be covered. A triadic approach is the most satisfactory starting point for matching a service/services to seller-buyer relationships in supply chains (Bask, 2001, p.473).

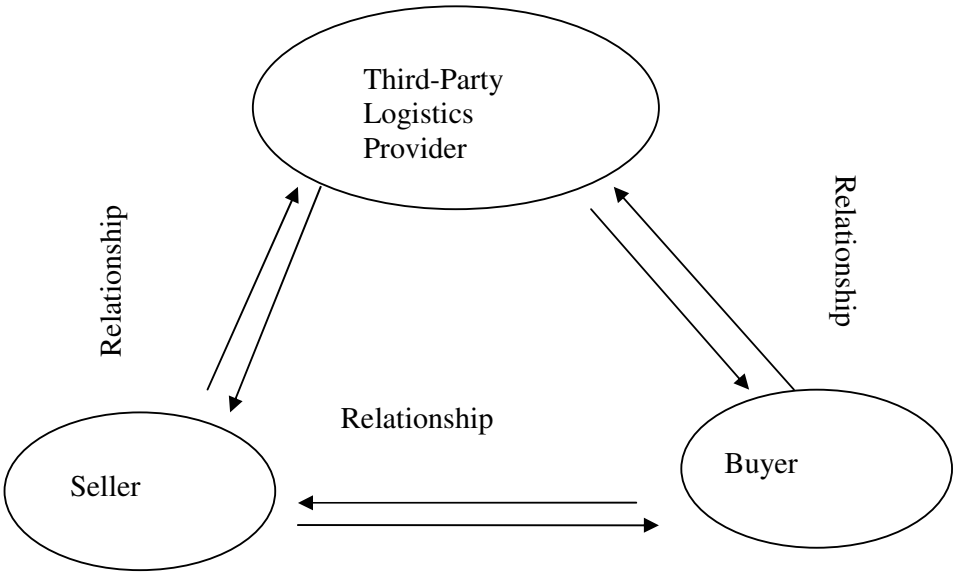

Figure 3. Three dyadic relationships among seller, buyer and third party logistics provider

Source: Bask, 2001.

Outsourcing is not a contracting out. Contracting out refers to work assigned to an outside supplier on a job-by-job basis, usually involving a cost-plus arrangement. Outsourcing on the other hand, entails a long-term relationship between supplier and beneficiary, with a high degree of risk-sharing (Embleton and Wright, 1998. p.95).

There are three waves in outsourcing. In the 1980s or earlier, the first wave emerged as traditional logistics service providers. The second wave is, in the early 1990s, some network players like DHL, UPS and FedEx started to provide 3PL services. The third wave began in the late 1990s. The companies from other industries such as information technology and financial services entered the market and joined with the first and second wave companies (Berglund et al., 1999, p.62).

TPL originally began as a public warehousing during the 1970's. Managers of warehouses began selling space to businesses in the area that had run out of space or were in need of additional space during the busy seasons. During the 1980's TPL expanded into selling not only space but also offering throughput to physical distribution managers who wanted to improve customer service with their current customers. By the 1990's TPL saw the consolidation of both warehousing and transportation organizations to offer logistics support to logistics vice presidents who saw an opportunity to reduce costs and through value-added services provide higher levels of customer satisfaction via third party logistics (Tompkins et al., 1999 ; Aghazadeh, 2003, p. 51). There has also been another direction added to TPL in the 1990's, which is a warehouse management system. Warehouse management systems are often in the form of order entry. Now as we move into 21st century, we are seeing even more change in the service offering of TPL. Users continue to rely most heavily on third parties for warehousing management (56 percent), transportation services (49 percent), and shipment consolidation (43 percent) (Gooley et al., 2000; Aghazadeh, 2003, p. 51).

Third party logistics (TPL) has many definitions and interpretations. Berglund define TPL as: Activities carried out by a logistics service provider on behalf of a shipper and consisting of at least management and execution of transportation and warehousing (if warehousing is part of process) (Berglund et al., 1999; Halldorsson and Larsen, 2004, p. 193). In this definition management support is required in addition to the operational activities. Some of the other activities from transportation and warehousing include information services, value-added activities, call centers, including invoicing and payment services.

Bagchi and Virum distinguish between simple outsourcing of logistics activities and logistics alliances. According to their definition, a logistics alliance means: A long-term formal or informal relationship between a shipper and a logistics provider to render all or a considerable number of logistics activities for the shipper. The shipper and the logistics provider see themselves as long-term partners in these arrangements. Although these alliances may start with a narrow range of activities, there is a potential for a much broader set of value-added services, including simple fabrication, assemblies, repackaging, and a supply chain integration (Bagchi and Virum, 1996, p. 193; Halldorsson and Larsen, 2004, p. 193). In contrast to the first definition, the last definition stresses the duration of the relationship between the shipper and the logistics service provider, including the potentially wide range of logistics services in the arrangement.

3PL may be described as the same meaning as logistics alliance as logistics alliance that is a close relationship between a company and a logistics provider not only to operate the logistics tasks but to emphasize on sharing information, risks and benefits under long-period contract (Skjoett-Larsen, 2000, p. 113).

2.3. OUTSOURCING STRATEGIES

As organizations redirect valuable internal skills and capabilities to high value-added activities, the sourcing debate has moved from whether to outsource, to what and how to outsource (Venkatraman, 1997, p.60; Kakabadse and Kakabadse, 2000, p.674). An entire function may be outsourced, or some elements of an activity may be outsourced and some kept in house. For example, some of the elements of information technology may be strategic, some may be critical, and some may lend themselves to cheaper purchase and management by a third party (Lacity, Willcocks,

Feeny, 1995, p.86-87; Leenders, Fearon, Flynn, Johnson, 2002, p.301). It is important to mention that strategic and critical activities should not be outsourced and identifying function as a potential outsourcing target, and then breaking that function into its components, allow the decision makers to determine which activities are strategic or critical.

The decision to outsource or not depends on a number of financial and non-financial variables and the particular situation of the organization. In every organization, a type of outsourcing matrix may exist as follows (Leenders, p.50; Leenders, Fearon, Flynn, Johnson. 2002, p.301). (See Figure 4)

Quadrant 1 represents functions, tasks and activities that definitely should be in-house and are currently performed in-house. Quadrant 2 represents functions, tasks and activities that should be done in-house but that are currently outsourced. Quadrant 3 represents functions, tasks, or activities that should be outsourced but are currently done in-house. Quadrant 4 represents tasks, functions and activities that should be outsourced and are.

	Currently In-House	Currently Outsourced
Should be In-house	1	2
Should be outsourced	3	4

Figure 4. The outsourcing matrix

Source: Leenders et al., 2002.

Quadrants 1 and 4 are the two stable quadrants where things are the way they should be but quadrants 2 and 3 are not. Smart managers should correct these situations quickly.

Another outsourcing strategy is indicated in Figure 5. If the process technology is proprietary and complex and strategic importance of productions and logistics is low an organization can subcontract components. If the process technology is standard and strategic importance of productions and logistics is low an organization can outsource. If the process technology is proprietary and complex and strategic importance of productions and logistics is high an organization must manage and own those activities. If the process technology is standard and strategic importance of productions and logistics is high an organization must manage but need not own.

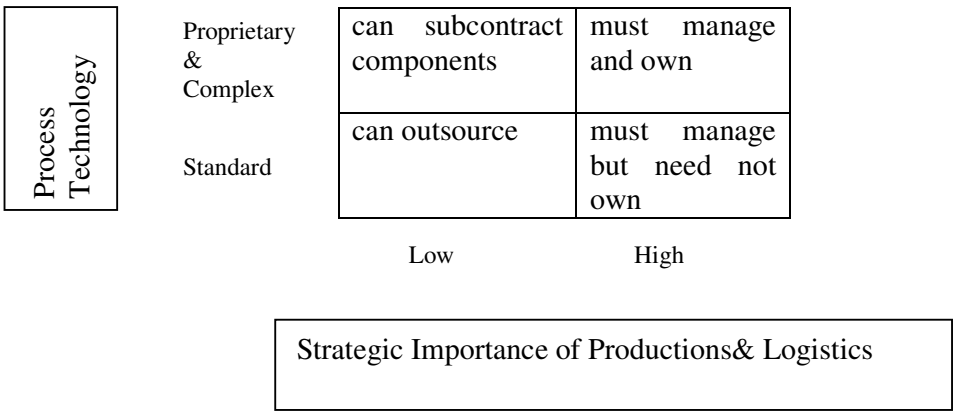

Figure 5. The outsourcing strategy

Source: Ersnt, 2005.

According to the Brian Leavy, the four outsourcing strategies are focus, scale without mass, disruptive innovation, and strategic repositioning. First of all, *focus strategy* will be analyzed. “In intensely competitive environments, many companies see outsourcing as a way to hire “best in class” companies to perform routine business functions and then focus corporate resources on key activities in their value chain where the impact will be felt the most by the customer” (Leavy, 2004, p.20). This is the strategy that has helped Nike to capture and sustain leadership in the athletic footwear and apparel industry. Nike’s business started as a company of athletes selling imported performance Japanese shoes to other athletes, and by the end of its first decade in 1972, sales had reached just $2 million. There was a slow growth at those years but the founders continued to experiment with new performance designs and prototypes, based on their intimate knowledge of the market. By the end of their first decade they had already developed the core competencies in brand building and design that were soon to become the foundation for Nike’s rapid growth. The company decided to focus primarily on these activities and outsource most of its production and much of its sales and distribution. As a consequence, by the end of its second decade Nike sales had rocketed to $700 million, with gross margins running at nearly 40 percent. (Leavy, 2004, p.21).

The second outsourcing strategy is *scaling without mass* which means that offering companies the opportunity to grow in market presence without an expansion in organizational size or bureaucracy. By this way, outsourcing allows firms to retain their entrepreneurial speed and agility as they grow in the market. For example, in early 2000, when employee numbers at Nokia were increasing at the rate of 1,000 per month, and approaching the 60,000, CEO Jorma Ollila decided to outsource a significant portion of its production in both of its network equipment and mobile

handset businesses in order to help slow down the growth in number of employees without preventing the company's momentum in the marketplace. It was a strategy that obstructing the actualization of a fear that too rapid growth would dilute the Nokia spirit and undermine organizational coherence.

The third outsourcing strategy is *disruptive innovation.* Typical examples include IKEA's entry into furniture retailing, Canon's into the photocopying market, and Ryanair's into the European airline industry. The primary aim of this strategy is to create a whole new segment at a price point well below the bottom the current market and then dominate this segment as it grows. This usually requires the development of an innovative business model capable of producing overall returns at least as good as those of the leading incumbents, but doing it at significantly lower cost through much higher asset productivity. IKEA, Canon and Ryanair were all late entrants into their respective industries, but all succeeded in building substantial market positions through such a strategy, and outsourcing was a common element in the development of a distinctive lower-cost/higher-asset-productivity formula in all three cases.

In the early 1950s which is the time of IKEA's founding, the European furniture industry was highly divided geographically. National department stores established exclusive relationships with local manufacturers to offer them distinctive product lines, reflective of local tastes and traditions. However, most young people choose to furnish their first home from second hand market or their parents' house. Ingvar Kamprad, and his company IKEA, set out to democratize this market place by bringing quality new furniture and developed a range of simple, elegant, modern designs using light-colored quality woods. This appealed to young customers of all

nations. IKEA revolutionized the European furniture industry with "production oriented retailing" business model, the competitiveness of which depended not only the careful outsourcing of production, but also an "outsourcing" final assembly and delivery to the customers themselves. In the case of Canon, outsourcing has always been a major element in the company's strategy in the copier market, with 80 percent of product assembled from purchase parts and only drums and toner manufactured in-house. Outsourcing is also prominent in the business model of Ryanair, the disruptive innovator in the European airline industry, where the company contracts out most of its aircraft handling, heavy maintenance and baggage handling as part of its strategy to avoid complexity, keep cost down and maintain productivity at levels well above industry norms.

The last outsourcing strategy is *strategic repositioning.* IBM actualized a strategic repositioning since Lou Gerstner decided services, not technology would be the major growth area going forward, particularly in the corporate computing market. As he mentioned "If customers were going to look to an integrator to help them envision, design, and build end-to-end solutions, then the companies playing that role would exert tremendous influence over the full range of technology decisions- from architecture and applications to hardware and software choices." Within the last two years the company has entered into a $5 billion outsourcing contract with Sanmina-SCI Corporation to manufacture its NetVista line of desktop computers, later expanded to include a significant portion of its low-to mid-range server and workstation lines, along with some distribution and fulfillment activities (Leavy, 2004, p. 22-23).

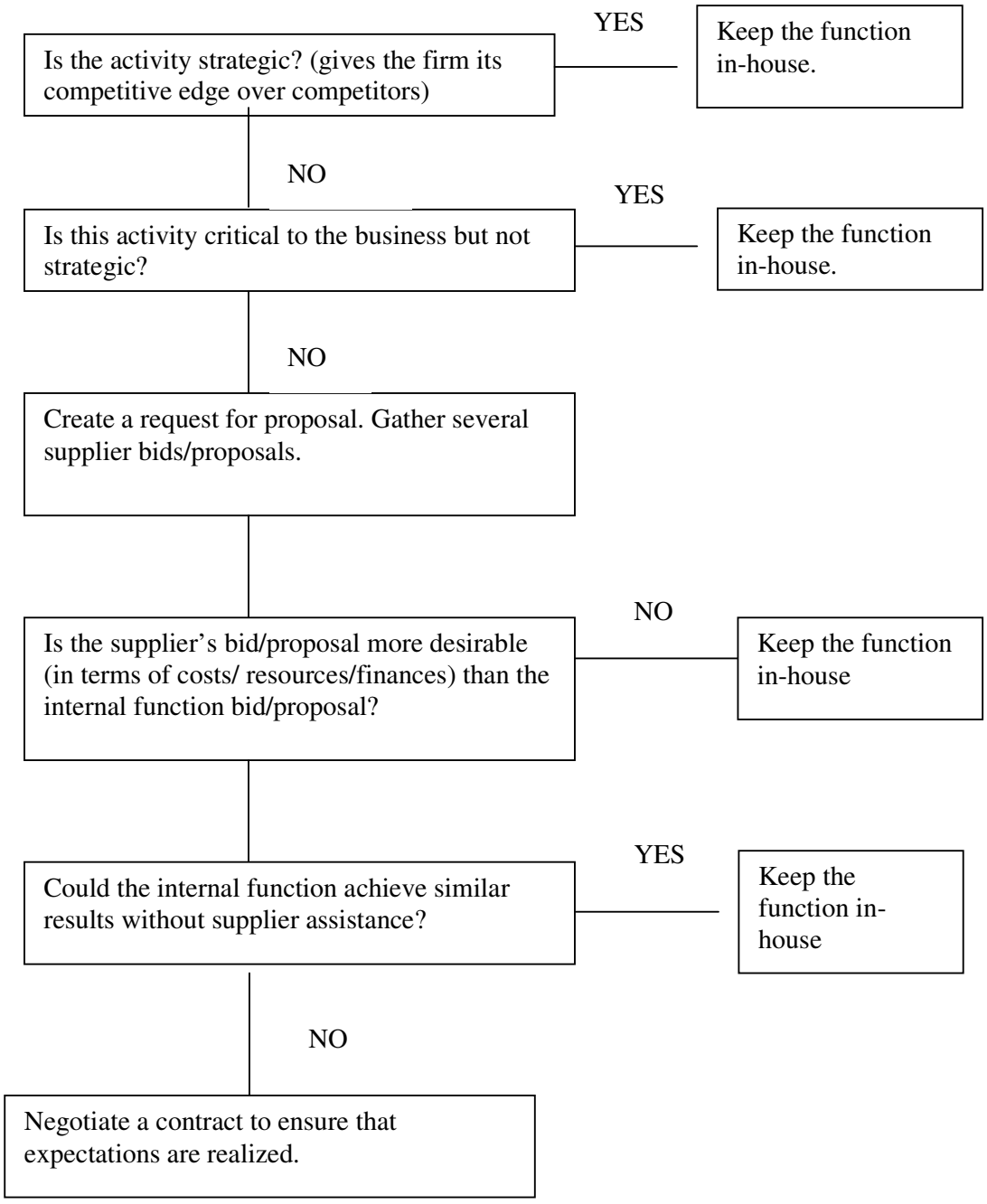

Figure 6. The outsourcing decision

Source: Leenders et al., 2002.

Another way of exposing an outsourcing decision is depicted in the flowchart of figure 6 and it reveals that, if the activity is strategic or not strategic but critical to the business companies should keep the function in-house. Also, if the supplier's proposal is not more desirable than the internal function proposal and internal function achieve similar results without supplier assistance companies should keep the function in-house.

It is important to mention that it is no longer sensible to treat all outsourcing decisions as the same for every company. For example, training courses are generally important, but many would not be critical in the sense that the organization would not suddenly collapse without them. A new supplier can be found within a reasonable period if the first one fails, and the overall aims of the training can still be met. However, it is possible to visualize situations where the training may be vital for the success of something critical to the company, and even playing a role in problem solving (Hussey, Jenster, 2003, p.10). So that according to the specific needs of the organization an activity's importance can be changed and you can not treat the same activity as the same outsourcing decision.

According to Williamson, there are two factors that effect the decision of whether long term contracting out with the 3PLs or just sourcing from the external market on the short term basis. These factors are the condition of asset *specificity* and *the frequency of transaction.*

Asset specificity examines whether assets used by the transacting firms (buyer and supplier of the asset) can be re-deployed in alternative uses and by alternative users. Williamson specifies the four distinctive forms of asset specificity,

and authors provided insightful examples from the retail chain. First, *site specificity*, where retailers opt to locate assets such as retail warehouses and retail stores proximate to each other to minimize inventory and transportation costs. Second, *physical asset specificity*, where a third-party logistics firm's asset such as a warehouse is brought into a contract to serve a retailer, and following a minor modification, this warehouse can serve other retailers. Third, *dedicated assets*, that are highly specialized assets such as logistics software packages and their use is limited within a specific contract and finally, *human asset specificity* that stems from experience on managing retail logistics assets. Transaction frequency relates to the frequency of transactions between the relevant firms.

Williamson suggests that for low asset specificity firms, sourcing from the spot market (external market) on the short term basis is favorable under both high and low uncertainty transactions. Uncertainty can be either environment-related, for example uncertainty due to pure economic reasons or transacting partner's behavior is avoiding to meet the predetermined agreement obligations. According to Williamson, as you can see from the table uncertainty does not effect the decision on whether contracting out, external market transaction or make. However, both types of uncertainty result in extra costs and therefore, uncertainty is one of the factors that increase transaction costs. On the other hand, whether high asset specificity firms should contract out or make depends on the level of transaction frequency. See Table 7 (Williamson, 1985; Bourlakis and Bourlakis, 2005, p.89).

Table 7. Asset specificity, uncertainty and frequency

		Asset specificity		
		Low	High	
Uncertainty& measurement problems	Low	Spot market transaction	Contracting out (long term)	Various Alternatives
	High	Spot market transaction	Contracting Out (long term)	Internalization (Make)
			Occasional	Recurrent
			Frequency	

Source: Williamson, 1985; Bourlakis and Bourlakis, 2005.

2.4. TYPES OF THIRD PARTY LOGISTICS RELATIONSHIPS

There are many different types of TPL relationships. According to the Cox, there are four levels at TPL relationships. They are illustrated in figure 7. At the first level, we find shippers who buy transport and logistics services. The relations between the logistics service providers and their clients are short-term. The focus is on prices. Asset specificity is low and the services offered by the logistics service providers are standard skills.

At the next level, customized logistics solutions, the logistics service provider offers a broad range of standard services from which the customer can select a "package" of modules. Asset specificity is medium, because the services can be easily be adjusted to other clients. The skills can be seen as complementary to the customers. The duration of relationship is typically limited to one year or less.
Information sharing and joint problem solutions are limited. The shipper's focus is on cost-efficiency and service improvement. There are only minor adjustments to the to the customer's specific requirements.

At the third level, joint logistics solutions, the shipper and the logistics service provider jointly develop a logistics solution that is unique for the particular TPL relationship. Both of the shipper and the TPL provider look at the collaboration as a win-win relationship. They have long-term expectations and are willing to share information and solve problems jointly. The asset specificity is medium/high- often involve human assets such as knowledge and experience information, exchange of personnel. Also, they often involve physical assets such as information technology and warehouse facilities. The TPL provider's competencies are complementary to the shipper's core competencies. Innovation capabilities and development of new competencies in the relationship are considered essential.

The fourth stage is in-house logistics solutions. Here, logistics is seen as a core skill in the company and the asset specificity is normally high such as in terms of dedicated assets or specialized know-how among the staff. It recommends keeping core competencies in-house and outsourcing non-core competencies (Cox, 1996, p.62; Halldorsson, Larsen, 2004, p. 193).

It is important to note that the framework in Figure 7 does not depict a successive progress from one stage to another. It illustrates that the various forms of logistics solutions are contingent on the nature of competence and degree of asset specificity. For example, in-house solutions should not be treated as the final stage.

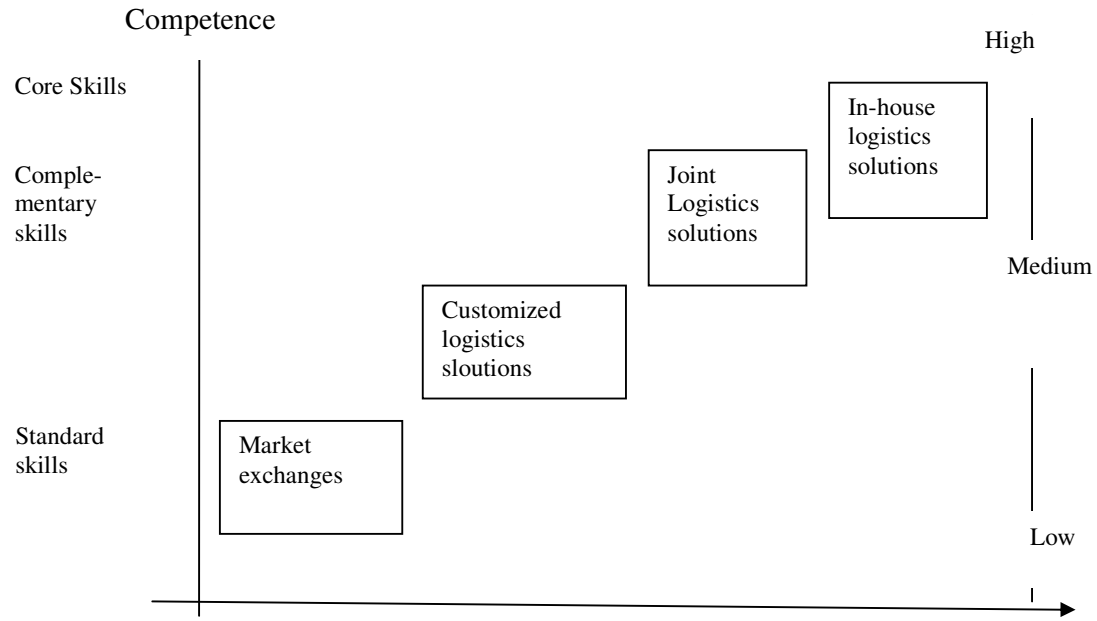

Figure 7. TPL in a competence perspective

Source: Halldorsson and Larsen, 2004.

2.5. FOURTH PARTY LOGISTICS

Fourth party logistics was born in the 1990s and it was originally created by the global management consulting and technology services firm Accenture. It was first defined as the use of a consulting firm to integrate and manage a company's logistics resources and providers, including third-party logistics providers (3PL) and transportation companies. According to Gene Marino, different journalists and logistics professionals define 4th party logistics in slightly in different ways. Gene Marino mentioned that third party logistics means using an outside company for one or more logistics service regardless of how extensive or complicated those services are. For example, companies can use third party logistics provider to supply basic warehousing services in a couple of cities. Or they can use one to coordinate and provide comprehensive supply management services throughout the world. By

contrast, fourth party logistics means using an outside company as logistics integrator for the sole purpose of helping your supply chain achieve its full strategic value. The heart of fourth-party logistics concept is the presence of that integrator and the sense of strategy involved. But that doesn't mean 3PL services can't be integrated, too (Marino, 2002, p.23). The fourth party logistics (4PL) provider integrates the logistics services provided to the shipper as part of partnership, managing and optimizing the whole supply chain (network), including both operational and strategic levels (Magill, 2000; Aktas and Ulengin, 2005, p. 318). Bade and Mueller define the 4PL firm as the Supply Chain Integrator (SCI), managing the firm's own resources, skills and knowledge, as well as its technologies, combining them with sub-suppliers for delivering the holistic supply chain customers (Bade and Mueller, 1999 ; Aktas and Uluengin, 2005, p.318).

Fourth party logistics acts as chain integrator and manages the interface and the trilateral relationship between the retailer, the third-party logistics firms and the information technology firms. The fourth party logistics network has a strong potential to emerge as the most efficient organizational mode as it can decrease transaction costs via complexity reduction. These transaction costs are the result of the new "value-added" logistics services required by the retailer and of the extra fleet needed to deal with home delivery and factory gate pricing demands. Further transaction costs incur due to various inter-organizational connections that link the retailer to numerous service providers, the traditional third-party logistics firms and the information technology firms (Bourlakis and Bourlakis, 2005, p.94).

4PL is related to and developed from 3PL by covering the broader scope including 3PL, Information Technology (IT) services, and business process management (Bade et al., 1999; Ge et al., 2004, p.3).

The next wave of outsourcing is 4PL that will manage logistics tasks, improve the service level of 3PL, and show how much 4PL improve the logistics performance. Interestingly, the successful 4PL companies develop from 3PL companies-e.g. Federal Express Supply Chain Services, TNT Logistics and UPS Supply Chain Solutions (Schwartz, 2003; Ge et al. 2004, p.11). See Figure 8.

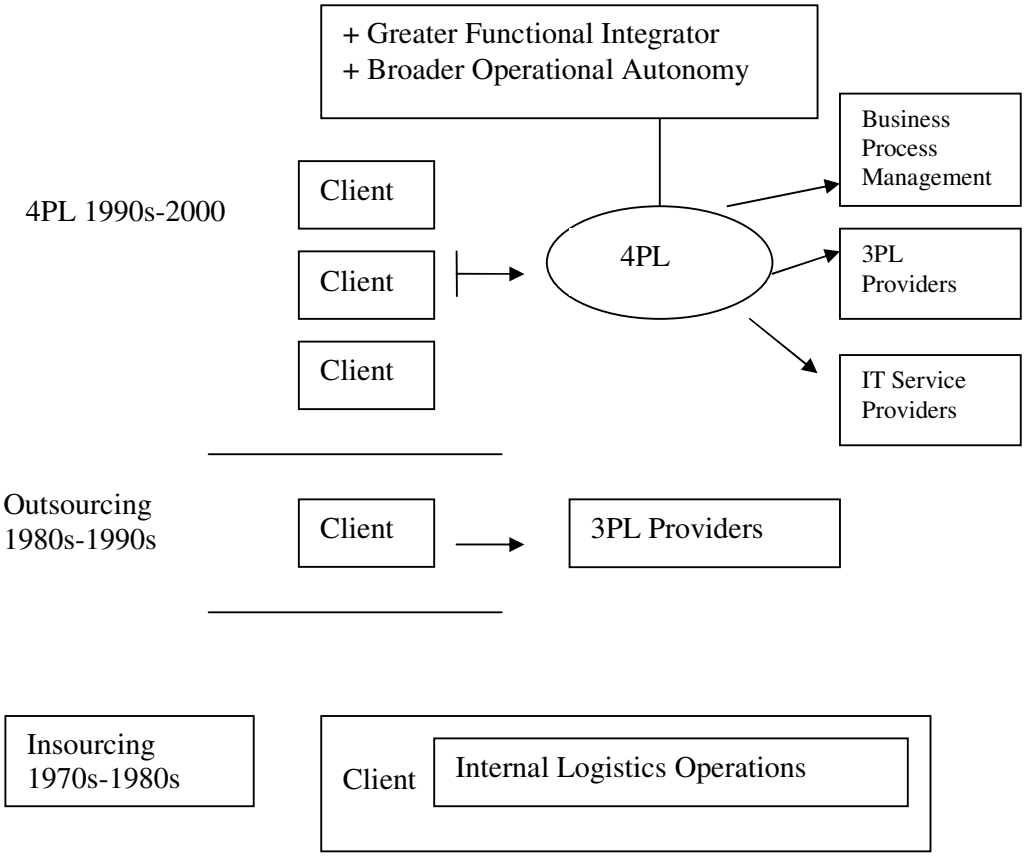

Figure 8. The next wave

Source: Bade et al. 1999 ; Ge et al. 2004 p.19.

2.6. THE USAGE OF OUTSOURCING IN TURKEY AND IN THE WORLD

Outsourcing logistics keeps increasingly growing. As for 3PL market, Aghazadeh stated that it is growing by 18-22 percent annually (Aghazadeh, 2003, p. 51). Uluengin attempted to provide a perspective for the current status of logistics activities in Turkey. In this research, the cluster analysis conducted shows that it is possible to categorize Turkish firms as "modern" or "traditional" firms; "modern" firms outsource their logistics activities more than "traditional" firms. In traditional firms, logistics comes fourth in terms of importance, after manufacturing, marketing and purchasing, while it is second for modern firms, coming just after sales (Aktas and Ulengin, 2005, p.319).

Some activities, such as janitorial, food and security service, have been outsourced for many years. Information System is one activity that has received much attention recently as a target for outsourcing. It has been estimated that worldwide outsourcing of the IS function was about $50 billion in the mid-1990s and growing rapidly. The contract logistics industry is expected to triple in size to $50 billion in annual revenue in the year 2000 (Bigness, 1995, p. A1.; Leenders, Fearon, Flynn, Johnson. 2002, p.300). Lieb's survey indicated that about one-third of large manufacturing companies in the US use third-party logistics services and over 60 percent of these firms have utilized these services for more than five years. The three most widely outsourced services were warehousing, shipment consolidation, and selected logistics information systems (Rao and Young, 1994, p.11).

Many fortune 500 companies have now outsourced transportation, warehouse, and inventory management, functions that are not part of their core

competencies. Figure 10 reveals the rate of outsourcing by the fortune 500 companies between 1994 and 2003 (Burnson et al., 2000; Aghazadeh, 2003, p. 51).

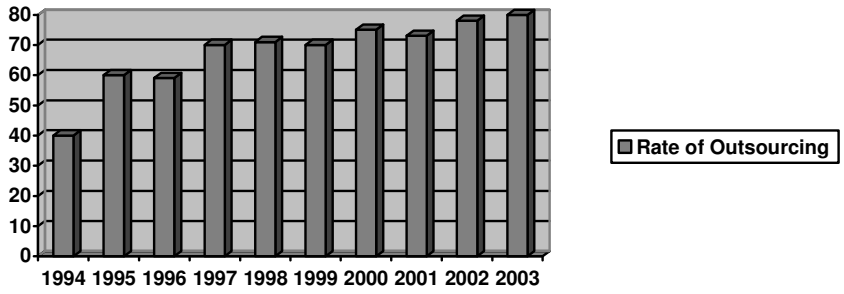

Figure 9. Rate of outsourcing that fortune 500 companies provide

Source: Yıldıztekin, 2005.

According to the U.S. Department of Commerce, the size of the **logistics** industry in the United States is $900 billion a year, which is more than 10 percent of the country's gross domestic product. Of this spend $46 billion goes to the third-party **logistics** (3PL) area, and this figure is growing at 10 to 15 percent every year. According to a research by Armstrong and Associates, 370 of this country's 500 largest manufacturers use 3PL vendors, as opposed to fewer than 185 a decade ago (Barlas, 2002). Outsourcing percentage has been developed from 65% in 2002 to %83 in 2003 (Blanchard, 2003; Ge et al., 2004, p.1). Murphy's study confirmed that nearly all large multinational companies tend to make use of third-party logistics providers. Traditionally, certain documentation (e.g. customs clearance or duty drawback) and less-than-container load (LCL) shipment consolidation functions have been outsourced by many shippers to freight forwarders and other intermediaries. However, there is growing pressure towards single-stop services. Fawcett and Birou found that shippers look favorably on carriers who have the ability to pre-customs,

provide a single, through bill of lading and handle all documentation (Rao and Young, 1994, p. 11-12).

The market of outsourcing has been growing, in that "50 percent of firms not outsourcing in 1987 were in 1991 and 86 percent of the corporations reported outsourcing some function in 1995 compared to 58 percent in 1992 (Harrison, 1994 p.38; Embleton and Wright, 1998, p.97).

Table 8. Most frequently used third party logistics services by large American Manufacturers, 1997-2000

Logistics function	% Citing use,1997	% Citing use, 1998	% Citing use, 1999	% Citing use, 2000
Direct transportation service	--	63	68	49
Warehouse management	40	46	44	56
Shipment consolidation	49	43	40	43
Freight forwarding	--	--	--	44
Freight payment	--	--	--	43
Customs brokerage	--	--	--	40
Logistics information systems	40	35	24	27
Carrier selection	39	32	33	29
Rate negotiation	34	26	24	29
Product Returns	27	25	16	21
Fleet management/ operations	24	25	18	21
Re-labeling/re-packaging	31	19	27	21
Contract manufacturing	--	--	--	16
Order fulfillment	19	17	16	24
Assembly/installation	19	11	11	8
Inventory replenishment	13	6	7	10
Order processing	14	5	9	5
Consulting services	--	--	37	30

Source: Embleton and Wright, 1998.

Table 8 demonstrates the most frequently used third party logistics services by large American Manufacturers between 1997 and 2000 that is obtained from a survey conducted by the Northeastern University and Andersen Consulting in 2000 survey. According to this survey, most frequently used third party logistics services by large American Manufacturers in 1997 was shipment consolidation. Between 1998 and 2000, most frequently used TPL services were direct transportation service, warehouse management and shipment consolidation. Also, in 2000, they start to use frequently freight forwarding, freight payment and customs brokerage as TPL services. The top five 3PL services used during 2000-2003 are freight payment, shipment consolidation, direct transportation service, customs brokerage and warehouse management (Shanahan, 2004, p.40).

According to a survey conducted by Dun & Bradstreet and The Outsourcing Institute in 1997, the functions most likely to be outsourced were: information technology (30 percent); human resources (16 percent); marketing/sales (14 percent); finance (11 percent); administration (9 percent); and all other functions (22 percent). (Patton, 1998, p.5; Leenders, Fearon, Flynn, Johnson., 2002, p.301) According to a survey among the 400 SMEs in Hungary that are active in manufacturing, strategic objectives of logistics outsourcing have generally been motivated by the desire to cost reduction, focus on core business and improved service levels and all respondents placed the reduction of costs on the top. Among most commonly outsourced activities we found that inward/outward customs clearance (close to 100%) and transportation (over 85%) have the greatest importance, together with warehousing (69%). Despite of expectations such logistics activities like packaging, procurement, distribution, customer service, warranty play currently a less important role as most of surveyed enterprises are supplying few buyers only and keep these

functions at their own hand. Considering major expectations of outsource it is found that low costs again on the top while reliability was the next most important issue as none of them wanted to in-source back the functions once they outsourced. On the other hand, merely 51% of the outsources were able to reach cost savings. Relative few enterprises have long term Outsourcing Contracts (over 5 years), some have fixed term ones for 1 to 3 years, but most (50 %) conclude 'open-ended' logistics outsourcing contracts (Kerepeszki, Bates, Yurt, 2004).

According to the 1999 White Paper on Small and Medium Enterprises in Japan, the majority (69%) of SMEs say they have not used and have no intention of using mergers or acquisitions (M&As) (Figure 10), and they are comparatively less enthusiastic about M&As than larger firms. Nevertheless, over 30% of SMEs are considering M&As as part of their business strategy.

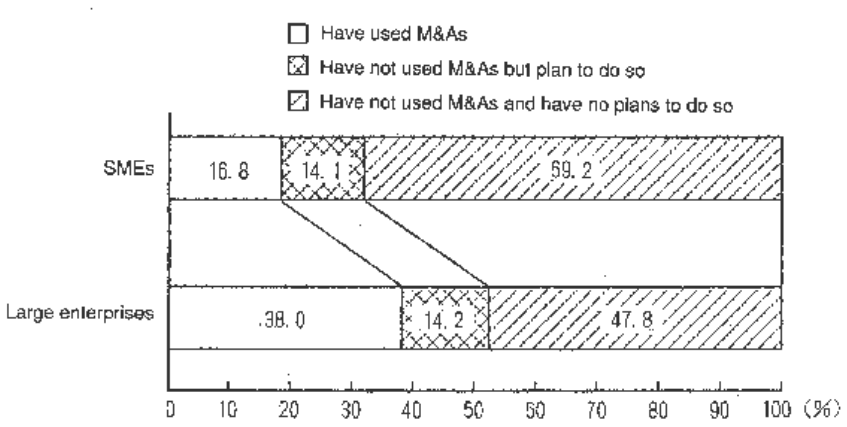

Figure 10. Mergers and acquisitions

Source: Small and Medium Enterprise Agency, Survey of Corporate Management (Corporate Organization), 1998.

Logistics outsourcing trends grow much more in international market after it has been expanded domestically for years (Morrison, 2001; Wong et al., 2000; Ge,

2004, p.11). Globally, in 2002, outsourcing grows for %43 in North America and for %51 in Western Europe and in 2005-2007, outsourcing is estimated to grow to %60 in North America and %74 in Western Europe (Hannon, 2003; GE, 2004, p.11). Not only 3PL grows up but 4PL is also likely to expand cross countries (Skjoett-Larsen, 2000, p.114). It was expected that 4PL market in Western Europe will increase from EUR 4.7 billion in 2002 to about 13 billion by 2010 (MR Communication Ltd., 2004 ; Ge, 2004, p.11). Also an interview with Kuehne&Negal's chief executive that 4PL trends to grow in logistics business during this decade (Armbruster, 2002; Ge, 2004 p.12). FPL will be next trend because it implements up-to-date computer and information technology especially visibility or real time knowledge (Schwartz, 2003; Ge, 2004 p.12).

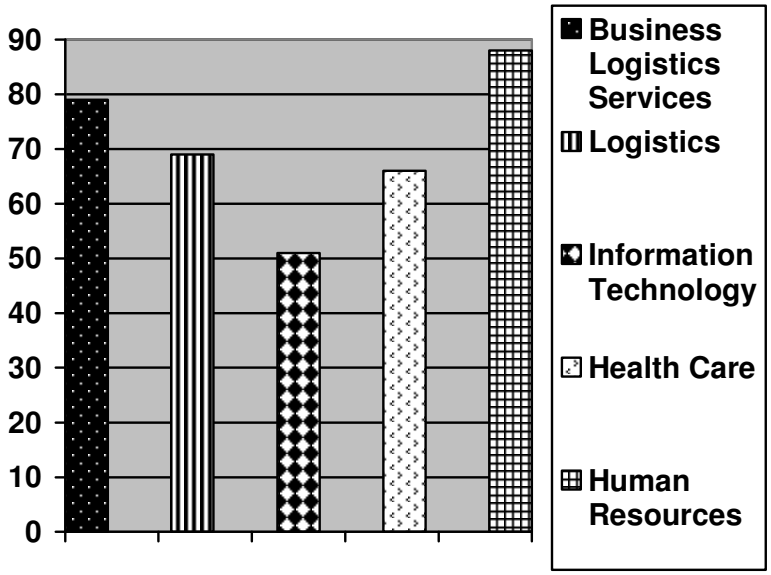

Figure 11. Five major industry sectors and the associated volume of outsourcing penetration

Source: Frsot& Suuulivan Market Intelligence, 1992; Hospital & Health Network, 1995; KPMG-Peat Marwick, 1994; Oisten Corporation, 1994; Outsourcing Institute, 1995.

Figure 11 reveals that outsourcing has a significant influence on business logistics services, logistics, information technology, health care and human resources sectors.

Transportation, warehousing, inventory and administrative expenditures in Europe as a percentage of sale prices are shown in figure 12. We categorized the industries into ten which are retail (%8.9), wholesale (%11.0), medicine (%8.8), paper (%13.4), machine (%9.3), food (%10.4), electric (%12.6), data processing (%10.3), chemical(10.2), automotive(%8.9).

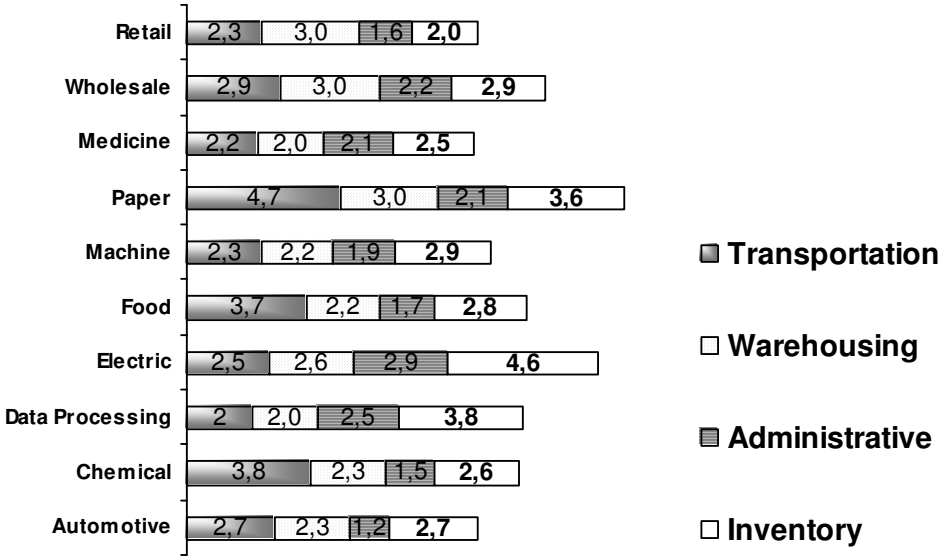

Figure 12. Logistics expenditures

Source: Yıldıztekin, 2005.

Approximately 63 percent of businesses using outsourcing services have existed for 11 years or more. The biggest users by industry are the retail trade, wholesalers and manufacturers (Embleton and Wright, 1998, p.97). Today, in the

USA, manufacturing is the industry sector most likely to outsource, with durable goods accounting for 39 percent of all activity, non durable goods accounting for 25 percent (Zhu et all, 1001; Aktas and Ulengin, 2005, p. 318). By contrast, the lowest use of outsourcing is in the mining and public utility industries. Managers in more competitive industries are forced to look at all avenues to maintain profit margins. Mining and public utilities traditionally have been protected and, thus have not been large users of outsourcing (Embleton and Wright, 1998, p.97).

Istanbul Chamber of Commerce lists and evaluates 500 firms every year, based on firm's total sales volume, profitability, and other financial performance indicators. A survey analysis was conducted by Aktas and Ulengin with 250 of the top 500 Turkish firms specified by the Istanbul Chamber of Commerce for the year 2001. According to this survey, in a majority (47 percent) of the respondents, purchasing, supply, inventory management, order fulfilling, customer services, production scheduling and negotiations with salespersons are accepted as in-house logistics activities. In a three-year time period, these firms do not consider outsourcing the logistics activities mentioned above. Similarly, warehousing activities are held by the firm itself in 76 percent of the firms. Only 24 percent outsource warehousing to the logistics firms and 23.5 percent of the respondents intend to outsource their logistics activities within a three-year time period. Nearly 93.5 percent of the respondents outsource their transportation activities. Therefore the current 3PLs, in fact, play the role of freight transporters. As it can be seen from the general perspective, transportation has a dominant role in outsourcing logistics activities. Fifty-four percent of Turkish firms choose to work with a 3PL firm in their transportation activities from supplier to manufacturer and 60 percent use a 3PL for the transportation from manufacturer to customer. From supplier to manufacturer

(88.52 percent) and from manufacturer to customer (88.57 percent), the materials and goods are mainly transported by motor vehicles. The average value of transported goods is about $100.000 (Aktas and Ulengin, 2005, p.322).

According to a survey of Turkish SMEs, only 61% of the companies indicated that they had contemplated or involved in outsourcing. 61% of these respondents reported they are satisfied with their dealings. However, no respondents made any reference about outsourcing arrangements in other countries. 92% of these respondents outsource their transportation and shipping requirements. 44% of the respondents outsource their warehousing and storage requirements. 41% of the respondents have some other company manufacture or produce the products. 41% outsource equipment calibration requirements and 41% outsource their information technology/logistics communication requirements (Kerepeszki, Bates, Yurt, 2004, a).

In developed countries, firms no longer undertake all the operations in the supply chain because they focus on their core businesses. However, the power of 3PL firms in Turkey is underestimated; outsourcing is accepted as synonymous with using a carrier for transportation. The firms that outsource their logistics activities in Turkey are 95 percent foreign capitalized. Turkish businessmen still think that they should do their business themselves and they are not aware of the benefits of outsourcing logistics activities. In fact, in selecting the transportation carrier, they consider different criteria but the general tendency is either to select the carrier that has a good reputation and/or the one which is easy to collaborate with (Aktas and Ulengin, 2005, p.327).

2.7. ADVANTAGES OF OUTSOURCING

According to Dr. Seyed Mahmoud, based on the research completed, it was determined that third party logistics are beneficial to many companies. The use of third party logistics provides a competitive advantage in today's business world. TPL provides a wide range of benefits depending on the needs of the company (Aghazadeh, 2003, p.54). It can offer great opportunities to both buyer and supplier when used wisely. When it becomes a mantra and used without thought, it can do great damage to both parties (Hussey and Jenster, 2003, p.7).

With the competition companies are forced to reduce cost in logistics activities, they may have limited investment on equipments and they are required to improve level of logistics services according to the customer expectations (Wong et al., 2000, Stank and Maltz, 1996; Ge, 2004, p.4). They can solve these problems with outsourcing. At the beginning of the outsourcing trend in the late 1980s and early 1990s, companies were using outsourcing to achieve the goal of cost reduction through dismisses of employees. In the late 1990s and early 2000, other advantages of outsourcing gain importance other than cost reduction (Leenders, Fearon, Flynn, Johnson. 2002, p.301).

According to the Brian Leavy, the earliest outsourcing strategies were largely driven by the desire to lower costs such as by moving low-skilled, labor-intensive, activities offshore to South-East Asia and other low cost locations. However, in recent years there has been a growing awareness of the potential of outsourcing to support a range of strategies beyond that of lower cost (Leavy, 2004, p.20).

The advantages include lower costs, improved expertise, market knowledge, and data access. TPL also improves operational efficiency, customer service, provides an ability to focus on core business objectives, and provides greater flexibility (Tompk ins et al., 1999; Aghazadeh, 2003, p. 51). Bendor-Samuel(1998) asserts that outsourcing provides a certain power that is not available within an organization's internal departments. This power can have many dimensions: economies of scale, process expertise, access to capital, access to expensive technology etc. (Carlson, 1989; Harrison, 1994; Aktas, Ulengin, 2005 p. 317).

2.7.1. Cost Reduction

Outsourcing helps organizations to discover the hidden costs. Many organizations have hidden costs that are not discovered until a process is outsourced (Anon., 1996; Embleton and Wright, 1998, p. 98). The buyer avoids the hidden costs of having to deal with the issues of labor turnover (temporary replacements, hiring, and training new recruits). Overall this may make it possible to reduce costs in areas such as HRM, or to redirect the time saved on work of more long-term benefit to the organization (Hussey and Jenster, 2003, p.10). Also, down-sizing results cost reduction (Leenders, Fearon, Flynn, Johnson. 2002, p.301). Since the use of an outside multiple service providers reduces the needed multiple service contacts for the firm to a single point of contact, coordination costs are also reduced (Razzaque and Sheng, 1998; Taskın and Güneri, 2004).

Also, TPL can reduce freight costs, and shorten order-cycle and delivery times for their customers. They also provide the necessary system capabilities, technical expertise and related skills to shippers. Companies using TPL can have significant reductions in its activity-based costing structure while maintaining service

performance. Third party logistics users generally agree that it costs less to use such firms than to carry out the same functions in-house. Logistics being their core business, these firms can lower costs by being more efficient than a manufacturer (Razzaque and Sheng, 1998; Taskın and Güneri, 2004). Outsourcing logistics activities can reduce the cost of operations, inventory handling, transport, order cycle time and so forth (Jennings, 2002; Hannon, 2003; Jing, 2004 p.4). For example, Laura Ashley (LA) outsourced their distribution to FedEx. For the first year, FedEx saved LA of US$3 million in logistics and reduce LA's logistics cost by 10-12% approximately (Wong et al. 2000; Ge, 2004, p.5). Recent research has shown that outsourcing logistic operations provides 20-30% cost advantage to companies. With the outsourcing, both of the companies choose win-win setting and result in an increase of 15-18% in their endorsements (http://www.omsan.com.tr//en/outsou.asp). Also, outsourcing provides cash infusion to organizations because certain assets can be sold for a cash infusion if a process is outsourced (Cassidy, 1994; Embleton and Wright, 1998, p. 98).

2.7.2. Economies of Scale and Saving on Capital Investment

One of the advantages of using 3PL results from economies of scale (merits from large truck fleets, warehouses, etc.) and economies of scope, which encourage firms to increase net value by reducing costs. The effects of these economies depend on the type of 3PL provider (e.g. IT equipped, marketing based, non-asset-based, etc.). Likewise, by outsourcing logistics activities, firms can save on capital investments (Aktas and Ulengin, 2005, p.317). According to Stank and Maltz the companies who outsource can achieve a saving on capital investment because the companies pay for the service rather than purchasing and maintaining the assets

(Stank and Maltz, 1996; Ge, 2004 p.5). Money is not spent on warehouse buildings, equipment like trucks and forklifts, and supply chain software that is used for distribution operations (Tompkins et al., 1999; Aghazadeh, 2003, p. 51).

Sometimes, urgent works may arise which labors can not be diverted to the urgent work. One of the solutions may be to increase the number of labor. However, the company may need those labors temporarily but the company has to train them and carry the higher fixed cost. Also, sometimes a company may need a unique asset for some of its tasks but to purchase that asset may be not cost advantage due to the need of the asset is not so much. Outsourcing may be a solution (Stank and Maltz, 1996; Wong et al. 2000 ; Ge, 2004 p.6). For many enterprises logistics economies of scale are not achievable due to the relatively small size of the enterprise. In some cases, a strategic decision can be made to access these economies of scale, not by expanding, but by outsourcing the logistics functions to a TPL, which is already large and efficient enough to achieve the desired economies of scale (Platan et al., p.5).

2.7.3. Focus on Core Competency

Now, outsourcing of logistics activities is considered as a strategic choice, which enables companies to focus on their core business (Bates, Kerepeszki, Yurt, 2004). As for manufacturers, retailers and distributors, their core business is to produce or sell products. Outsourcing value added activities will allow companies to focus on their core competencies (Mclvor, 2000, Boyson et al., 1999; Ge, 2004 p.6). Perhaps the strongest decision driver is enabling management to focus on higher priorities. Of course, the supplier arrangement has to be administered and monitored, but if it works well there should be few other problems. Among these are any

industrial relations issues among the outsourced staff: it is now the supplier who has to solve these (Hussey and Jenster, 2003, p.10).

2.7.4. Share and Reduce Risks

Sharing and reducing risks are also the advantage for logistics outsourcing. The outsourcing company transfers, avoids and eliminates risks because the logistics providers are specialists. They have experience to assess the uncertainty and they have sufficient equipment and facilities to run logistics and supply chain process efficiently (Zineldin and Bredenlow, 2003; Ge, 2004, p.6). Organizations that outsource reduce financial risks. Investment on logistics assets, such as physical distribution centers or information networks, usually needs large and lump sum costs, which involves financial risks. Furthermore, the 3PL provider can spread these risks by outsourcing to sub-contractors (Aktas and Ulengin, 2005, p.317). However, EKOL Logistics believes that 3PL provider takes risks proportional to the quality of services undertaken while 4PL provider does not take any direct risks. 4th Party Logistics immediately transfers the liabilities to some 3PLs, and it primarily shares and is responsible for the risk load with binding contracts by acting as an intermediary only (http:www.ekol.com/4thdimension.html, 2006, 12.04.2006).

2.7.5. Flexibility

Another possible benefit is that outsourcing provides companies with greater capacity for flexibility, especially in purchase of rapidly developing new technologies, fashion goods, or the myriad components of complex systems (Carlson, 1989; Harrison, 1994; Aktas, Ulengin, 2005 p. 317). Moreover, outsourcing reduces capital investment in facilities, equipment, information technology and manpower.

This allows the using firm greater flexibility in adapting to changes in the market and access to leading edge technology. Firms only need to contract for the necessary level of service to meet the current demand. When demand surges beyond the capability of a firm to fulfill, a third party may be called to help the firm (Richardson, 1998; Taskın and Güneri, 2004). By coordinating, production and shipping schedules, outsourcing reduces inventory and improves inventory turnover rate resulting in faster transit times, less damage, and less paper work. Third party also enables firms to respond quickly to marketing, manufacturing, and distribution changes and helps to improve on-time delivery (Richardson, 1998; Taskın and Güneri, 2004).

Strategic flexibility is a benefit that some companies overlook. Outsourcing improves and facilitates the communication between manufacturer and customers (Menon et al., 1998, p.127). In addition, logistics provider is more flexible to support uncertainty in demand (Celestino, 1999, p.55). As for 4PL, it has an interesting advantage to better customize the logistics service to suit a particular business (Minahan, 1997 p.59). For example, Donaldson, a US manufacturer who wants to expand its market in Canada, sometimes has to make a prompt decision to complete its customers' urgent requirements. The company outsources rather than maintain its own corporate logistics operations. Unicity Integrated Logistics was selected as its partner, 3PL, to solve such problems. Donaldson finally provides better delivery service and succeeds in Canadian Market (Ge, 2004, p.5; Gooley, 1998).

2.7.6. Service Improvement

Sometimes, the qualities of logistics performance is the reason to outsource because some companies can not provide proper service or can not improve the

service that they provide to their customers (Wong et al., Stank and Maltz, 1996 ; Ge, 2004 p.5). Manufacturing firms have the chance to provide wide range of services to their customers with the help of logistics service providers. Since**,** all forms of logistics service providers are expanding their range of offerings in response to market demand and competition (Rao and Young, 1994, p. 12). Especially, 4PL generates the superior management in supply chain and IT (Bade et al., 1999; Ge, 2004, p.5).

2.7.7. Solving Skill and Experience Problems

Conklin (1994) asserts that no single enterprise in a global marketplace is able to realize market opportunities in a timely and cost-effective way, mainly due to the lack of solid and reliable skills and experience bases (Bates, Kerepeszki, Yurt, 2004). Particularly with the Information Technology area, but elsewhere as well, outsourcing is a way of solving skills shortages (National Audit Office, 1999; Hussey and Jenster, 2003, p.12).

2.7.8. Technology Improvement

For high-tech areas it may be a way of keeping the organization up to date, as a specialist supplier is better equipped to do this. It is useful to look at the issues that have arisen from one such outsourcing situation by the UK Passport Agency. Also, this is a good example that outsourcing is increasing in both the private and public sectors. The Passport Agency handled all the tasks for the new passports. It was realized that the existing computer system could not cope with the expected demand for passports, and in any case the equipment was near the end of its useful life. Apart from the need to replace the old equipment, it was intended to change to a digital

passport, as it was believed that this would reduce forgeries. One key reason for outsourcing, in addition to expected lower processing costs, was the transfer of risks to the private sector. The Agency gave the responsibility for system design and implementation, maintaining service levels, responding changes in the volume of applications, and providing technological updates and project financing to their contractor which is Siemens Business Services (National Audit Office, 1999; Hussey and Jenster, 2003, p.12-13).

2.7.9. Increase Productivity

The other advantage of outsourcing is re-engineering because bringing in an outsourcing partner allows managers to re-evaluate their business processes and gain innovations. Outsourcing can be used to increase productivity and to handle problems with geographical distance. Also, it can improve quality as the provider is a specialist in a key area. Moreover, specialist skills, tools, technology and independent advice can be gained from outsourcing. Lastly, an outsourcing partner may have a corporate culture that is compatible with an organization. However, outsourcing partner can jolt a firm into accepting some changes in a positive way (OECD, 1993; Raynor, 1992; Embleton and Wright, 1998, p.99). Competent 3PL providers possess high coordination ability and to efficiently manage the inter-firm flow goods (Aktas and Ulengin, 2005, p.317).

2.7.10. Labor Peace

Outsourcing certain key areas can lead to labor peace because in-house staff can be freed up more interesting tasks instead of routine ones (Embleton and Wright, 1998, p. 99).

2.7.11. Door-to-Door Service and Consolidation

Outsourcing may have a great role in consolidation. Consolidation of services in the logistics market is confirmed by many recent trends. Several major truckload and less-than-truck load (LTL) companies have entered the third party logistics arena, specially designing and managing integrated logistics systems through either formation of new subsidiaries, strategic partnering or acquisition. Several truckload companies have formed intermodal partnerships with railroads. Some LTL companies have also formed logistics subsidiaries and created alliances with logistics companies to provide international door-to-door service for shippers (Rao and Young, 1994, p. 12).

2.8. DISADVANTAGES AND OBSTACLES IN OUTSOURCING

Some problems and risks may occur, if the decision makers don't make right outsourcing decisions such as not selecting right vendor, improperly structured contract, not understanding your firm's goals and objectives. The risks at below haven't really changed over time. However, as organizations and decision makers gained more experience in making outsourcing decisions they won't influenced by the risks of outsourcing.

2.8.1. Loss of Control over the Supply Chain

Loss of control when using third party provider(s) appears to be the most commonly cited reservation that inhibits firms from using contract logistics. Razzaque and Sheng, 1998 ; Taskın and Güneri, 2004). The smaller the level of dependency, the less the potential loss of decision-making authority (Howarth et al., 1995; Ge, 2004, p.7). The company takes the risk of dependence on the logistics

provider and loses the control over the logistics and service process when the logistics functions are outsourced to the logistics provider such as 3PL or 4PL (Platan et al., 1999, p.9). Also, companies who outsource will meet with the changing business requirements (Leenders et al., 2002, p.303).

2.8.2. A Decrease in Company Morale

Usually the outsourcing implies a reorganization of the work and may sometimes not be accepted by management and staff (Platan et al., 1999, p.9). Outsourcing obviously has an effect on company morale. "Indeed among 531 companies surveyed by the Wyatt Company in 1993, more than half reported decreased morale and commitment among downsizing survivors" (Navran Assoc., 1996, p.2; Embleton and Wright, 1998, p. 103). Employees who stay with the firm after downsizing are called survivors. The use of an outside firm may make the firm's logistics people apprehensive about their job security: they may develop a fear of being retrenched (Razzaque and Sheng, 1998; Taskın and Güneri, 2004). Severe cuts in staff can damage the morale of existing workers. Reduction in employee morale may encourage the most talented and marketable staff to seek opportunities elsewhere. Also, large employee lay-offs are not beneficial to a corporate image and the public's point of view to the organization may change in a negative way (Cassidy, 1994; OECD, 1993; Embleton and Wright, 1998, p. 100). Therefore, the company who outsources should help the employees to adjust themselves to the new environment and new methodologies.

2.8.3. Possibility of Higher Costs

According to the Williamson the costs are identified as four separate elements. First, *search costs* contain the information costs to find and asses the possible partners. Second, *contracting costs* are the agreement negotiation costs. Third, *monitoring costs* are for checking whether each partner meets specific predetermined criteria and obligations. Finally, *enforcement costs* are the sanctioning costs for a partner which is not meeting specific agreement obligations (Williamson, 1985; Bourlakis and Bourlakis, 2005, p.89). Once a process has handed over to an outsider, it will be extremely difficult and costly to bring it back in-house. The time required to manage the contract may make it more expensive. Providers have multiple clients and consequently, they may not be able to give priority to each one. Selling a strategic resource may end up costing a firm in the long run (Anon, 1996; Cassidy, 1994; OECD, 1993; Embleton and Wright, 1998, p. 100).

A survey based on 1,000 managers worldwide by the PA Consulting Group (PACG) revealed that only 5 percent of organizations gained high levels of economic benefit from outsourcing and that 39 percent of organizations admitted “mediocre” economic benefit (PA Consulting Group , 1996 ; Aktas and Ulengin, 2005, p.318). It is necessary but not easy to establish a reliable and cost effective partnership between the firm and the 3PL provider. In order to establish a reliable partnership, efforts should be made in two stages; 3PL provider selection and contract signing. First, in the stage of selecting a new partner, it is important to select the 3PL provider which has the ability to provide better services. To do this, complex selection procedures are necessary to identify their ability. However, the complex selection procedures may involve additional transaction costs. Second, it is important to establish a system to maintain their reliable partnership once the 3PL partner is selected; information

sharing and apparent risk sharing between parties is always required. This would also involve additional transaction costs. Constructing a risk sharing scheme between the firm and the 3PL provider is critical in establishing reliable partnerships (Aktas and Ulengin, 2005, p.319). Also, there are many costs associated with changing an outsourcing vendor (Embleton and Wright, 1998, p. 101). Moreover, one of the disadvantages of outsourcing is unexpected fees or "extra use" charges and difficulty in quantifying economies (Leenders et al., 2002, p.303).

2.8.4. Probability of a Decrease in Company's Performance

Failure to select or manage providers properly, unreliable promises of the providers, their inability to respond the changing requirements, their lack of understanding of the buyer's business goals and difficulty of changing providers have also been cited as potential problems by their users. (Razzaque and Sheng, 1998; Taskın and Güneri, 2004). Outsourcing may cause an exposure to supplier risks: loss of commitment to outsourcing, slow implementation, promised features not available, lack of responsiveness, poor daily quality (Leenders et al., 2002, p.303). These will decrease the company's performance.

2.9. KEYS FOR SUCCESSFUL OUTSOURCING

Effective outsourcing and supply chain management is very important in order to get the benefits. Today, it is obvious that most companies concentrate on their core competencies and outsource their non-core activities to a limited number of suppliers, who are normally regarded as strategic partners. However, only by doing this, it is not possible to achieve significant improvements in their supply chain management. As Andrew Cox stated, having undertaken over 10 years of research and consulting work in this area, it is clear that companies often fail to make

appropriate decisions when they undertake outsourcing and supply chain initiatives (Cox, 2001, p.105).

It is compulsory to be conscious that if the outsourcing management is not done in an efficient way, than this would not provide a benefit to the company. Firms can observe improvements in their supply chain management with outsourcing if they do the outsource process in a right way. Firms have to get appropriate decisions on outsourcing. First of all, they have to select the right vendors and manage the relationship both with the vendors and within the company. Otherwise, outsourcing may not achieve the benefits that firms expect.

The optimal solution for a company choosing a third party logistic provider and manage the relationship would be a *five-step process.*

2.9.1. Making the Decision

The first step is making the decision. First, the company needs to decide if they need a TPL. A team of individuals representing all departments within a company should make the decision. This means manufacturing, sales, marketing, finance, quality control and customer (Aghazadeh, 2003, p.54). There are some signs to tell the company that it should outsource. For example, late shipments cost the company and customers extra money, the linking problem occurs among many departments, and the information technology fails to track the shipment movement (Minahan, 1997, 59).

2.9.2. Strategic Analysis

According to Embleton and Wright one key to successful outsourcing is strategic analysis. The key to determining the viability of outsourcing lies in analysis of the organization.

2.9.2.1. Developing Needs and Objectives

The company needs to come up with the objectives it is trying to achieve and the criteria that the company believes the provider should meet. This can be done by discussing them with all of the different departments involved in the decision making process. Also, choosing the right TPL provider requires careful examination of what the company expects from a TPL provider. First of all, company should reveal its needs (Aghazadeh, 2003, p.54). According to the Halldorson and Larsen, first of all, it is important that management carefully considers what the objective of outsourcing. Does management mainly aim to obtain higher cost efficiency and/or immediate service improvements, or does the objective involve a strategic decision to focus on the company's own core competencies and acquire or develop complementary competencies (Laabs, 1996; Embleton and Wright, 1998, p.100)? In addition, the company needs to establish the criteria that third party providers should meet (Aghazadeh, 2003, p.54).

2.9.2.2. Determine Outsourcing Activities

Which areas within the organization are not core? Where will the company get the best return on investment in outsourcing? There are five criteria that help determine whether or not a function can be outsourced which are whether they are routine, whether they can be measured and managed at arms length, whether they can

be readily provided by established vendors, whether they are well delineated and whether they are offered in a competitive environment.

2.9.2.3. Determine the Cost of Providing the Service

It is imperative to have a clear understanding of the type and the amount of all costs associated with the function to be outsourced.

2.9.2.4. Determine the Quality Level of Service

Develop a clear understanding and quantification of the type and the level of service that is being given by the company or with the current provider, and then come to a clear understanding of the type and the level of service that will be acceptable in the future.

2.9.2.5. Determine the Impact on Corporate Culture

Can outsourcing a service produces a negative cultural impact? If the outsourced component is an integral part of the organization, then the negative impact may progress from insidious to overwhelming.

2.9.2.6. Quantify Outsourcing Goals

Without measurable goals, it is impossible to quantify current results, or define the level of service required in the future.

2.9.2.7. Look at Long and Short Term

Costs and other factors vary in importance, depending on the time period involved. Start-up costs, flexibility, reversibility, and termination fees will vary greatly, according to the terms of the contract (Laabs, 1996; Embleton and Wright, 1998, p.100-101).

2.9.3 Selecting the Type of Third Party Logistics

Management should choose the type of TPL arrangement that is most appropriate for the objective of the outsourcing. If the outsourcing company primarily is looking for cost savings and/or service improvements, a customized logistics solution will probably satisfy the objective. However, if the company wants to develop a new competence configuration in the TPL relationship, a joint logistics solution might be preferable (Halldorsson, Larsen, 2004, p. 193). The researcher have mentioned about customized logistics and joint logistics in the types of third party logistics relationships part at pages 57 and 58.

2.9.4. Selection Process of 3rd/4th Party Logistics

In today's highly competitive and interrelated manufacturing environment, the effective selection of suppliers is very important to the success of a manufacturing firm (Liu, Ding and Lall, 2000, p.143). After the decision to outsource has been reached, it is essential that the right vendor is chosen. Typically, outsourcing is a long-term relationship, which requires the supplier and the purchaser to work closely together. Often additional services are required and in the case of agreement being terminated, the organization will require the supplier's co-operation until the outsourced service is settled. Also, there are many costs associated with changing an outsourcing vendor (Embleton and Wright, 1998, p. 101). Performance of the supplier becomes a key element in a company's success or failure. Companies in order to attain the goals of low cost, consistent high quality, flexibility and quick response have increasingly considered better supplier selection approaches (Vonderembse and Tracey 1999; Bhutta, Huq, 2002, 126). It is worthwhile,

therefore, to spend the time and the money to choose the correct supplier at the first time (Embleton and Wright, 1998, p. 101).

2.9.4.1. Determine the Supplier Profile

Research the market to identify a pool of suppliers who may be able to meet the company's needs. Similarities in corporate culture are important, for example, it is beneficial if both companies are moving in the same strategic direction (Embleton and Wright, 1998, p. 101).

2.9.4.2. Make a "Top 10 List" of TPL

Company should make a "Top 10 List" of TPL that most closely fit the company (Aghazadeh, 2003, p.54).

2.9.4.3. Conduct Request for Information

Circulating a request for information will determine the level of interest, capabilities, corporate culture and strategy among potential suppliers (Foster, 1996; Embleton and Wright 1998, p.101-102). After the company has made a list of possible TPLs, company's letters of interest should be sent to each one. The letter should show that the company is exploring a possible relationship with them, and it should include information about the company and the specifics of the needs. Also, the letter should ask the TPL companies for a company profile and its capabilities (Aghazadeh, 2003, p.54).

2.9.4.4. Phone Call

The TPL companies should respond within a month. If there is no response within a month, the company should follow up with a phone call. Based on the

response the company should be able to narrow the list down to a "Top 2 List" or "Top 3 List" (Aghazadeh, 2003, p.54).

2.9.4.5. Conduct request for proposal

The company should prepare a request for proposal (RFP) to be sent to the "Top 2 List" or "Top 3 List". The RFP is the most time consuming of all the steps. Some companies hire consulting firms to assist them in completing the RFP. However, most companies complete the process themselves. The RFP should include: a company profile, an organizational chart, customer requirements, project description, square foot-age, product flow, transactional information, and computer systems information. Other things that may be included are: company goals, priorities, order lead time, number of SKUs, handling specifications, peak shipping periods, and any information that will familiarize the third party with the company (Aghazadeh, 2003, p.54). Also, the request for proposal should describe in detail, the outsourcing requirements. This document provides general information about the purchasing organization and the scope and the objectives of outsourcing (Foster, 1996; Embleton and Wright, 1998, p.101-102). Ensure that the supplying partner understands the buyer's organization and its business. This has to be an in-depth understanding. Clarify the expectations of both parties. For example, how far is the supplier expected to interface with various parts of the buyer organization (Hussey and Jenster, 2003, p.17).

2.9.4.6. Conduct Site Visits

After receiving a reply from potential outsourcing providers, the company has to conduct site visits. The on-site visit is to make sure that an organization that looks

good on paper is also equally good in reality. The focus is on people, cultural fit and corporate processes (Foster, 1996; Embleton and Wright, 1998, p.101-102).

Members of the decision-making team should go together to the "site-visits". Some questions that should be asked are: What are their customer service policies? Are they organized? Is the facility in good condition? To help make the relationship with the TPL successful here are several key areas:

- The TPL has similar value/objectives as the company
- The TPL has information technology systems that are up-to-date
- The TPL key management is trustworthy/not difficult to work with
- The company and the TPL have a mutual respect for one another
- Both have shared willingness to make the relationship work

(Aghazadeh, 2003, p.54).

2.9.4.7. Negotiate a Mutually Beneficial Deal

Both management teams must have an agreement with which they are comfortable. Do not be hasty in dismissing finalists before an agreement is signed. Treat all finalists professionally, as it is possible that they may be needed in the future (Foster, 1996; Embleton and Wright, 1998, p.101-102). It is important that to leave with a positive perception of the company because the company may need the TPL in the future (Aghazadeh, 2003, p.54).

2.9.5. Beginning the New Partnership

After, they collected details, asked questions, communicated on a regular basis and ensured that both companies meet their satisfaction; the new partnership begins (Aghazadeh, 2003, p.54).

2.9.6. Managing the Relationship

Communicate on a regular basis, which includes internal, external, and customer communication (Aghazadeh, 2003, p.55).

2.9.6.1. Management Structure

Regardless of how the task or process is being handled currently, outsourcing must be managed differently, often requiring new management skills (Embleton and Wright, 1998, p.102).

2.9.6.1.1. Considering the Power Matrix

The most common reason for the failure in outsourcing arises because practitioners fail to understand the twin problems of *adverse selection* and *moral hazard.*

Adverse selection refers to a process by which practitioners fail to understand their pre-contractual power situation. They make inappropriate sourcing decisions and select the wrong suppliers. Moral hazard refers to a process by which practitioners fail to create effective contractual safeguards pre-contractually, so that they become highly dependent on opportunistic suppliers post-contractually at the first tier of supply and then throughout the multitude of tiers in the supply chain. These problems normally occur because of an inability by firms to understand the attributes of power that provide opportunities for buyers or sellers to have effective leverage over others in business relationships. The objective situations that buyers and sellers always find themselves in are outlines in the power matrix.

It is clear from this matrix that, whenever practitioners operate within any buyer/supplier relationship, an objective situation of power must exist between the

two parties to the exchange. The three questions must always be asked by any practitioners are as follows:

- What is the objective power circumstance that we are experiencing in any business relationship?
- Under this objective circumstance, what is the most appropriate way to manage this current power relationship?
- To what extent is it possible to shift this current balance of power from where it currently stands to one that is more favorable to our interests in the future?

It is very important to know where the buyer/supplier has a place on the matrix. According to this information, they have to shift the balance of power from where it currently stands to one that is more favorable to both of buyer and supplier's interests in the future. Firms should have necessary tools and techniques to enable them fully understand where they are located within the power matrix and how to make appropriate relationship management that provides them their position within the power matrix according to both of their benefits. The firms which can not find out this, they experience adverse selection and moral hazard (Cox, 2001, p.106).

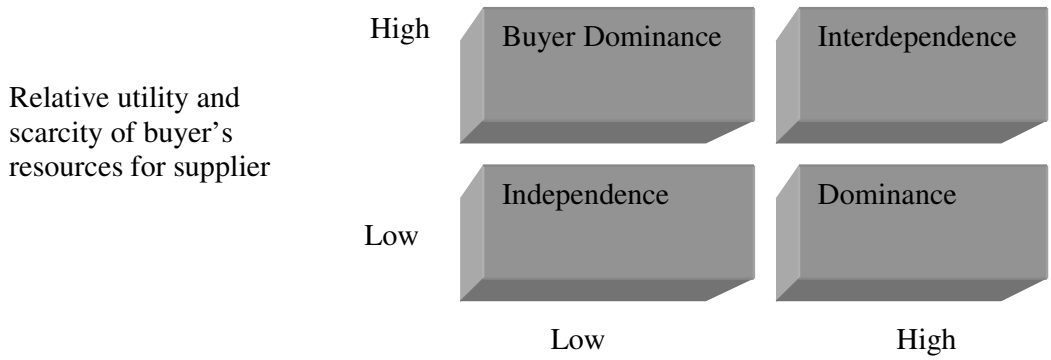

Figure 13. The power of matrix

Source: Cox, 2001.

2.9.6.1.2. Top Management Support

Top management can help the staff to overcome the reluctant situation by showing the concrete goal and support. Lack of support from top management will discourage deciding on suitable decisions in management, sharing information and communication (Whipple and Frankel, 2000; Murphy and Poist, 2000; Ge, 2004, p.10). Let's give an example for the importance of top management support in outsourcing management. Yamaha Motor Group has outsourced APL logistics as its 3PL to manage warehousing and transport for ten years. The secret of long term relationship is understanding and support from top management and evaluating performance on the regular basis (Trunick, 2004; Ge, 2004, p.11).

2.9.6.1.3. Providing Communication through Outsourcing Process

2.9.6.1.3.1. Communication with the Company's Own Employees

Managers should tell the meaning of outsourcing and advantages of it to the employees before they start to outsource. By this way, employees would not be panic from the downsizing and their morale would not be reduced. Also, they would not to start to look jobs at outside and their performance would not be reduced.

Most employees do not understand what outsourcing means, they view the process as synonymous with loosing jobs (Ransom, 1996; Embleton and Wright, 1998, p.102). With attitudes like this, it is obvious that management's job is not complete once the outsourcing contract is signed. Businesses with a high morale factor have a competitive edge over other businesses. It is not a superior product or service offering; it is an intangible feeling transmitted from each employee to every other employee and to the customer (Noer, 1996, p.16; Embleton and Wright, 1998,

p. 103). Developing a policy on how you communicate an outsourcing move is a key to a successful transition. According to the Yankee Group, 80 percent of employees will initially view outsourcing extremely negatively. Their acceptance level will improve, however, if management communicates its rationale constantly about the deal, and possible career paths. By the time the deal is finalized, 50 percent should be accepting of the situation with a further 30 percent acclimatizing to the deal within six months after it is signed (Navran Assoc., 1996, p.2; Embleton and Wright, 1998, p. 103). These statistics describe a "best case" scenario that can only be achieved when communication channels remain open. All employees must believe that management is being fair.

2.9.6.1.3.2. Providing Communication with the 3rd or 4th party

Communication leverages the efficiency and effectiveness in outsourcing because both partners know what they want and they provide the relevant information. Lack of information and communication can fail the outsourcing especially in 4PL (Murphy and Poist, 2000; Whippleand Frankel, 2000; Ge, 2004, p.10).

2.9.6.1.4. Providing Trust

Trust is the beginning and one of the most significant factors succeed in outsourcing because the companies have to share information, benefits, and risks to each other (Tate, 1996 ; Ge, 2004, p.10). After trust is settled, the human issues should be less troublesome. Because of trust, the company gains a chance to improve its service level and develops the relationship for long period especially in 4PL (Schwartz, 2003; Murphy and Poist, 2000; Ge, 2004, p.10).

2.9.6.1.5. Setting Clear Goal, Vision and Roles

Goal, vision and roles are required to protect confusion among the staff and between the organizations (Whipple and Frankel, 2000; Murphy and Poist 2000; Ge, 2004, p.10). Thus, the goals, roles and vision should be clarified at the early stage and updated from time to time to prevent the risks that the partners may work in the different directions (http:www.transportstudier.dk/udgivelser/pdf/3.part sum.pdf; Ge, 2004, p.10).

2.9.6.2. Monitor and Evaluate

A procedure must be implemented to enable management to monitor and to evaluate adherence to the outsourcing contract (Embleton and Wright, 1998, p.102). Performance measurement is one of the major factors to measure the success and maintain the achievement after outsourcing starts. The companies outsource to improve their operations and service or reduce cost. If the performance is not satisfied, the outsourcing can be ceased or failed because the objective of outsourcing is not achieved. To maintain the alliance and succeed in the long term, it is necessary to measure or evaluate the performance regularly (Johnson and Zineldin, 2003; Whipple and Frankel; 2000; Murphy and Poist; 2000; van Laarhoven et al., 2000; Ge, 2004, p.10).

Companies may establish information systems which allow all aspects of the contract to be monitored, and which enable problems to be identified early, and preferably avoided (Hussey and Jenster, 2003, p.17). Information technology can act as a safeguard mechanism. It can facilitate the monitoring of third party logistics firms' opportunistic behaviors. With the sufficient information technology systems, the monitoring of the performance of third party logistics firms increases and the

possibility for these firms to behave opportunistically decreases (Quarmby, 1990; Bourlakis and Bourlakis, 2005, p.92). Also, information technology can largely assist the benchmarking process by contrasting the performance between a retailer and a third-party contractor. So by this way, they can evaluate both of their performances (Bourlakis and Bourlakis, 2005, p.94).

Moreover, several approaches exist to objectively select and evaluate suppliers, including analytic hierarchy process, total cost of ownership and data envelopment analysis. Supplier selection is generally a lengthy evaluation process. Suppliers are evaluated on several criteria such as pricing structure, delivery (timeliness and costs), product quality, and service (personnel facilities, research and development, capability etc.). Frequently these evaluation criteria involves trade-offs. For example, one supplier may offer inexpensive parts of slightly below average quality, while another supplier may offer high quality parts, with uncertain delivery, thus setting up trade-offs. In addition, the importance of each criterion varies from one purchase to the next as is complicated by further by the fact that some criteria are quantitative (price, quality etc.), while others are qualitative (service, flexibility, etc.). Thus, a technique is needed that can adjust for the decision maker's attitude toward the importance of the each criterion and incorporates both qualitative and quantitative factors (Buhutta and Huq, 2002, p.127).

Data envelopment analysis (DEA) has been widely applied to address various decision analysis problems due to its usefulness in evaluating multi-criterion systems and providing improvement targets for such systems. A supplier selection problem is inherently a multi-criterion decision problem, and DEA has been applied to evaluate the suppliers (Ding and Lall, 2000, p.143). Analytic hierarchy process (AHP), is an

excellent approach that can be used in a multifactor decision-making environment. AHP can help evaluate and compare suppliers on different evaluation criteria, and if the cost data is included, AHP can enable managers to make selections based on both qualitative and quantitative criteria. Total cost of ownership (TCO) is a methodology and philosophy, which look beyond just the price of a purchase to better understand and manage cost in selecting and maintaining relationships with suppliers (Buhutta and Huq, 2002, p.127-131).

The steps at above are technically suitable for 3PL. In order to choose 4PL provider, the company might also apply those stages. However, selection process may take longer time to process because 4PL needs closer relationship to design and manage all the process of supply chain activities. Also, 3PL relationship may begin at the first place, afterwards 4PL can be chosen since 4PL is related to and developed from 3PL by covering the broader scope including 3PL (Bade et al., 1999 ; Ge et al., 2004, p.10). If the selection process is done in a right way, TPL and FPL providers can provide lots of benefits to their customers (Aghazadeh, 2003, p.54).

CHAPTER 3

THE RESEARCH METHODOLOGY& FINDINGS

The research methodology basically consists of two sections. The first section is the literature review. The second section is the field study which is complementary to the literature work (Ernst and Young, 2002, p.1). The previous chapters brought up an overview of literature connected to research questions. In this chapter, the methodology of the thesis research will be presented. The chapter contains the objectives of the research, type of research, sampling procedure, survey instrument and data collection procedure, methods of analysis, limitations of the study, hypothesis and main findings of the survey. The field study of the thesis is performed with the aim of comprehending the outsourcing process in manufacturing companies of Turkey.

3.1. THE DESIGN OF THE STUDY

3.1.1. Purpose of the Study

The main purpose of this research is to determine the perception of the outsourcing activity by the manufacturing firms and to determine how it is implemented in the Turkish companies. Since the literature review reveals that outsourcing in Turkey is mainly based on transportation activities, with the research survey, the researcher's aim is to expose which activities are outsourced frequently in Turkish companies.

Since the literature review supports that outsourcing depends in the triadic approach which constitutes the relationships between seller and TPL provider, the relationships between seller and buyer and the relationships between buyer and TPL provider, and this approach demonstrates the success of outsourcing, the researcher aims to analyze these relationships. However, since the answers of the questions that measure the relationship between buyer-TPL provider can be achieved in the most correct way only from buyers, these questions were not included in the questionnaire because in this study, the questionnaires are conducted to sellers. Only one question that can be answered by the sellers is included in the questionnaire in order to offer ideas for further researches about the relationship between buyer-TPL provider.

The third purpose of the research is to reveal that large companies outsource their supply chain activities more than SMEs since the literature review supports this comprehending.

Logistics departments represent a strategic leverage to compete on a global scale since it can ensure the delocalization of production phases, higher service standards and closer enterprises' relationships with customers and suppliers (Stank, Daugherty and Ellinger, 1999, p.11). Since logistics departments role in efficient supply chain management is important, the last purpose of this research is to determine the sophistication of both SMEs' and large companies' logistics departments and to reveal that large companies' logistics departments are more sophisticated than SMEs' logistics departments.

Consequently, the research questions are identified as follows:

- How outsourcing is implemented by the manufacturing companies and which activities are outsourced more frequently?
- Are large companies outsourcing supply chain activities more than small medium size enterprises (SMEs)?
- Are logistics departments of large companies more sophisticated than SMEs?
- What is the relationship between seller and TPL providers in manufacturing firms?
- What is the relationship between buyer and sellers in manufacturing firms?

3.1.2. Type of the Study

Studies can be either exploratory in nature, or descriptive, or casual. An exploratory study is undertaken when not much is known about the situation at hand, or when no information is available on how similar problems or research issues have been solved in the past (Sekeran, 2003, p.123). An exploratory research is initial research conducted to clarify and define the nature of the problem. A descriptive research is designed to describe characteristics of a population or phenomenon. Casual research conducted to identify cause-and-effect relationships among variables (Zıkmund, 1999, p.42). This study is a descriptive study. Descriptive studies that present the data in a meaningful form thus help to (1) understand the characteristics of a group in a given situation, (2) think systematically about aspects in a given situation, (3) offer ideas for further probe and research, and/or (4) help make certain simple decisions (Sekeran, p.126, 2003). Descriptive research seeks to determine the answers to who, what, when, where and how questions (Zıkmund, 1999, p.42). This is a descriptive study since the researcher's main aim is to understand how

outsourcing is implemented in the sample which will communicate some simple decisions and offer ideas for further research.

3.2. METHODOLOGY

3.2.1. Sampling Procedure

There are two major types of sampling designs: probability and non probability sampling. In probability sampling, the elements in the population have some known chance or probability of being selected as sample subjects. In non probability sampling, the elements do not have a known or predetermined chance of being selected as subjects. This means that the findings from the sample can not be confidently generalized to the population (Sekeran, 2004, p.277). The sampling of the field study is a non probability sampling since the sample size is only 30 and sample size does not allow making generalization. There are two categories of non probability sampling which are convenience and purposive sampling. Sample of this research fits into convenience sampling since the researcher collect information from the logistics managers, purchasing chiefs or export, import supervisors of the companies who are conveniently available to provide the answers of the questionnaire. Convenience sampling involves collecting information from members of the population who are conveniently available to provide it (Sekeran, 2003, p.277).

Since İzmir Atatürk Organized Industrial Zone is an important export and employment center the sample is chosen from the manufacturing firms in IAOIZ. Given below is the distribution of the questionnaires according to the different sectors.

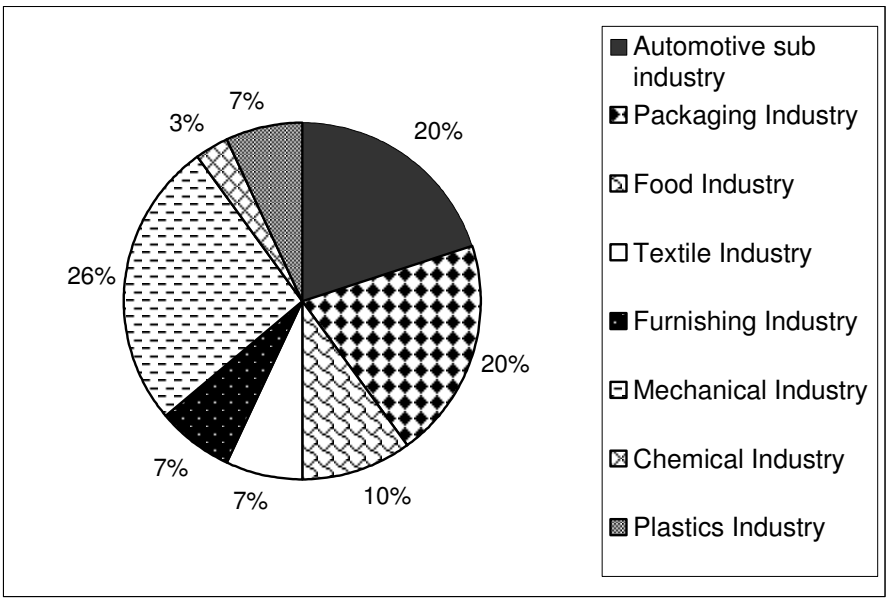

Figure 14. Respondents according to the different sectors

The sample units includes eight sectors which are mechanical industry (%26), automotive sub industry (%20), packaging industry (%20), food industry (10%), textile industry (%7), furnishing industry (%7), plastics industry (%7), and chemical industry (%3).

3.2.1.1. Izmir Atatürk Organized Industrial Zone (IAOZ)

The İzmir Atatürk Organized Industrial Zone is a very good example of the effort given by Turkish entrepreneurs in adapting to the 21st century. It is established in north-west of İzmir on area of 7.000.000 m2 area. The groundwork of the zone was constructed on September 9, 1982 and the celebration was on May 27, 1990. Buying lands and infrastructure works were initialized and completed by means of governmental loans and contribution of industrialists. It is 20 km. away from the seaport of Izmir, 40 km. from the airport of İzmir and 8 km. away from the TIR customs.

In total there are 595 facilities. From these facilities 318 of them are big industrial lands varying between 5.000 and 90.000 m^2 and 277 of them are small industrial lands varying between 350 and 750 m^2. There are 200 lands in the south of the zone which are varying between 1200 and 25000 m^2. These facilities are allocated to industrialists according to the bidding. Today, there are 350 outstanding companies. A staff of 25 thousand is currently employed in the facilities of the zone. And, it is supposed that a staff of 40-50 thousand shall be employed with a full capacity. The products produced are exported to all over the world and there are 2 billion exports.

IAOZ is in total 6.384.000 m2. This area is apportioned according to this plan.

4.000.0000 m2 of the zone is for industry facilities,

113.000 m2 of the zone is for social and administrative institutions,

150.000 m2 of the zone is for sports areas,

206.000 m2 of the zone is for waste treatment facilities,

1.795.000 m2 of the zone is includes roads, parking lots, open- space areas (IAOZ, p.A3-A6 and based on the interview with IAOZ management).

3.2.1.1.1. Advantages of the Zone

There are lots of advantages in the Zone. **Ataer Energy** central was established in October 1998 for providing cheap energy to regional plants. This energy central provides electricity energy to regional companies 24 hours a day. **Natural gas** is reached to all regional plants. Natural gas systems are very important for economical costs in the regional area. IAOZ management gives extreme

importance to **economical and environmental production** in regional plants. All wastewater goes to wastewater treatment plant of the zone. No waste is released goes to İzmir Bay. Solid wastes are collected in storage areas regularly. If one plant causes air pollution in the zone, this plant can not take place in the zone again**. A drainage system** of 75 km has been constructed in the zone so that zone will not be damaged due to bad whether conditions. The drainage works in control of Water Resources Management of Dokuz Eylül and Research and Application Center for the Control of Natural Disasters. In order to avoid negative acts the staff of the **Security Organization** of the zone is working 24 hours a day. Other than the security Organization a **private security team** controls the entrances and exits of the zone with the help of the barriers placed by the Management of the zone. By these ways zone is protected against unwanted events. There is a **Healthcare Center**, equipped with the latest technology which serves the member companies staff who work night shifts as well. The center works 24 hours a day including weekends and national holidays. **AB Business center** was established in the zone for giving information to small and medium sized enterprises (SMEs) about new project production and exportation. The Turkish Republic Ministry of Commerce Business Administration Presidency (**KOSGEB**) was established in the zone. KOSGEB supports all educational activities, seminars and investigations. KOSGEB serves all regional plants in the zone. The zone has a **rescue team** which has theoretical and educational information about all disasters It consists of specialists and gives services full time by doctors and nurses and it has Nibra Certificate from Holland Disaster Protection Institute. There is a **professional training center** in the zone which serves in order to provide unqualified labor with a profession and a job in the zone. At the end of a 3 year period of training in this Center the student get jobs in the zone. The center has

trained 1500 apprentice workmen and masters so far. There is a **laboratory of environmental standards** in the zone. The aim of the laboratory is serving test and analysis with reference to providing ecological textile production in İzmir. **An area of social facilities** has been assigned to meet the social needs. It consists 12 banks, a post office, a police station, a mosque, a cafeteria, a local headquarter, a shop and a petrol station. The zone has a human resources unit. By this way regional firms may minimize their advertising costs because the human resource unit provides them the source that they need. The zone has a **garbage collection system.** The garbage of the zone is collected by municipal garbage trucks. Also, street scrapers, street brushes and street washing machines clean all the regional roads everyday. Lastly, there are **disinfection services** (IAOZ, A6-A17).

3.2.2. Survey Instrument& Data Collection Procedure

Data can be collected in the natural environment of the workplace. Data may also be collected in experimental lab settings where variables are controlled and manipulated, or gathered in homes of the respondents, on the street, in malls or in a setting where a LAN (Local Area Network) system is available (Sekeran, 2004, p.221). The data of this study was collected in the workplaces of the respondents in Atatürk Organized Industrial Zone. The 30 respondents' companies were visited.

Data can be collected in a variety of ways, in different settings, and from different sources. Data collection methods include interviews- face-to-face interviews, telephone interviews, computer assisted interviews, and through the electronic media; questionnaires that are either personally administered, sent through the mail, or electronically administered ; observation of individuals and events with or without videotaping or audio recording; and a variety of other motivational

techniques such as projective tests. The main advantage of personally administered questionnaire is that the researcher can collect all the completed responses within a short period of time. Other ways of getting the questionnaires completed and returned after a few days may have to be found. In such cases, employees may be given blank questionnaires (Sekeran, 2003, p.221-234). The data of this study was collected by questionnaires that were personally administered. Although, the researcher administered the questionnaires personally it was observed that some of the questions were not answered. Every questionnaire was reviewed after the completion of the interviews in order to be able to obtain an answer for each question and answers were asked for the blank questions. The respondents asked the answers of these questions to the staff who could answer.

There are two reasons for blank questions which are either the respondent do not know the answer of the question or these questions are escaped notice. If the respondent did not know the answer of the question effort was expanded in identifying a person who could answer the question during the interview. The other advantages of personally administered questionnaires were any doubts that the respondents might have regarding any question could be clarified on the spot. The researcher also has the opportunity to introduce the research topic and motivate the respondents to give frank answers (Sekeran, 2003, p.234). Making the field study by face-to-face with all of the 30 companies rather than sending questionnaires by e-mail is preferred. The main reasons for this the lack of possibility to correct misunderstandings and the loss of the opportunity to obtain information that can only be achieved during an interview with mailing the questionnaires. Even the questions are fairly clear; during the interview most of the respondents asked an explanation about some of the questions. The questions were answered and by this way it is

discouraged to cause misunderstandings. Also, before starting to fill the questionnaires the aim and the topic of the questionnaires were introduced orally. Also, the other reason making the field study by face to face is the low rates of return for studies performed via mail. “In a similar study performed in the USA (The Use of 3PL Services By Large American Manufacturers, The 2001 Survey, Accenture& Northeastern University) 500 companies were sent questionnaires via mail and only 66 of them were returned, resulting in a return rate of only 14%. The return rates in other similar studies varied between %14 and %22” (Ernst and Young, 2002, p.2).

Most questions can be classified into two groups: closed or open-ended. A closed question involves offering respondents a number of defined response choices. Respondents are asked to mark their response using a tick, cross, or circle etc. The choices may be a simple Yes/No, Male/Female; or may involve a range of different choices. Sometimes a combination of both closed and open-ended questions works best. This involves providing respondents with a number of defined responses and also an additional category (other) that they can tick if the response they wish to give is not listed. A line or two is provided so that they can write the response they wish to give (Oppenheim, 1992; Pallant, 2003, p.7-8). The questionnaire of this study consists one combination of both closed and open-ended question. The rest of the questions are closed. Question C is a nominal scale question, the last question is a likert scale and the rest of the questions are semi-interval questions.

First of all, a visit arranged to IAOIZ Board of Directors and an IAOIZ information catalogue was taken from them in order to obtain the contact information of the firms at the zone. First of all, 20 companies are phoned and communicated with logistics managers, purchasing chiefs or export, import supervisors. The

purpose of the survey is explained in detail, their e-mail addresses are taken and the questionnaires were sent to the contact people. However, a reply could not be provided from none of the companies. Then, a hundred companies are phoned in order to get an appointment from the logistics managers, purchasing chiefs or export, import supervisors and only from the 43 of them an acceptance is obtained. However, when a visit is actualized to their companies only 30 of them answered the questionnaire. Those 13 companies stated that they would fill the questionnaire later but none of them filled the questionnaires later. An average of three companies was interviewed face-to-face daily.

The reasons for the decisions of companies which stated that they could not respond to the questionnaire are the respective person being too busy, the respective person being at annual leave, corporate policy being not suitable for responding questionnaires.

3.2.3. Methods of Analysis

SPSS (Statistical Package for Social Sciences) software, Version 11.00 was used in the analysis and in the evaluation. Independent samples t-test, frequencies, mean and cross-tabs analysis are conducted. Independent samples t-test is used when the researchers want to compare the mean scores of two different groups of people or conditions (Pallant, 2003, p.179). Frequencies will tell the readers and researchers that how many people gave each response and provide us general idea. Mean provide the researchers and readers to observe the central tendency of variables. Cross-tabs produce tables showing the joint distribution of two or more variables (Pallant, 2003, p.51-63).

3.2.4. Limitations of the Study

Firms provided insufficient cooperation in filing the questionnaires. First of all, the researcher tried to collect the data via mail and sent the questionnaires to the 20 firms. Although, firms were called and a contact person was found before sending the questionnaires via mail none of the firms returned. Then, the researcher decided to make the field study by face-to face and an appointment could be taken from only 43 firms from a hundred. However, when a visit was actualized to their companies only 30 of them answered the questionnaire.

Since firms provided insufficient cooperation in filling the questionnaires and currently outstanding companies in IAOIZ were mostly SMEs, the researcher went through the hoops in conducting the questionnaires to large companies.

The other limitation of the study was the sample size. Since the sample size was 30 in order to make accurate and healthy analyses only cross-tab, frequency, mean and independent-samples t-test were conducted. The other analyses such as chi-square, correlations, regression etc. were not able to conduct. This limitation restricted the analysis of the research and did not allow making generalization.

3.3. FINDINGS OF THE SURVEY

3.3.1. Demographics

Companies' employee number was asked to the respondents. European Union definition for SMEs is taken into consideration in forming the question. According to the survey of Organization for Economic Cooperation and Development (OECD), European Union had defined micro sized enterprises, small-sized enterprises, medium-sized enterprises and large sized enterprises as stated at below:

Micro-sized Enterprise: 1-9 employees

Small-sized Enterprise: 10-49 employees

Medium-sized Enterprise: 50-249 employees

Large-sized Enterprise: 250 and above employees (OECD, p.28).

According to this definition, the companies who have below 250 employees are considered as SMEs and the companies who have above 250 employees are considered as large companies.

Table 9. Type of the company

employeeno

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	23	76,7	76,7	76,7
	2,00	7	23,3	23,3	100,0
	Total	30	100,0	100,0	

1,00 represents the SMEs and 2,00 represents the large companies. It is found that twenty three of the respondents (76.7%) are SMEs and seven of the respondents (23.3%) are large sized enterprises.

3.3.2. Hypotheses

The researcher analyzed 27 hypotheses in this study. In order to test the hypotheses, independent-samples t-test is used. In this study, groups of SMEs and large companies are analyzed.

The first section of the *Independent Samples Test* output box gives the results of *Levene's test* for equality of variances. If the significance value is larger than 0.05, the first line in the table should be used, which refers *to Equal variances*

assumed. If the significance level of the Independent Samples Test is p=0.05 or less, the second line of the t-test should be used. If the value in the *Significance (2-tailed) column* is equal or less than 0.05 then there is a significant difference in the mean scores on the dependent variable for each of the two groups. If the value is above 0.05 there is no significant difference between the groups (Pallant, 2003, p.179). If there is a significant difference in the mean scores on the dependent variable for each of the two groups, examine the mean scores of the two groups.

3.3.2.1. The Hypotheses Concerning Outsourcing Rates

The researcher aims to reveal that large companies outsource their supply chain activities more than SMEs. In order to support this comprehending, the questions at part D are used. These questions consist of companies' outsourcing rates on different supply chain activities and these questions were conveyed to 16 hypotheses. Since the researcher aims to reveal that large companies outsource their supply chain activities more than SMEs, first of all, a significant difference is trying to be proved between outsourcing rates of SMEs and large companies on different activities. This concept is stated in the following 15 alternative hypotheses except one alternative hypothesis. Since literature review supports that there is no significant difference between large companies' and SMEs' outsourcing rates of transportation activities, the second alternative hypothesis ($H_{A2)}$ is developed as there is no significant difference between large companies' and SMEs' outsourcing rates of transportation activities. Kerepeszki, Bates and Yurt (2004) indicated that according to a survey of Turkish SMEs, 92% of these respondents outsource their transportation activities. A survey analysis was conducted with 250 of the top 500 Turkish firms specified by the Istanbul Chamber of Commerce, nearly 93.5 percent

of the respondents outsource their transportation activities (Aktas and Ulengin, 2005, p.322).

See Appendix C for the results of the independent sample t-test. If the results show that there is a significant difference between the outsourcing rates of SMEs and large companies on different supply chain activities, the mean of the scores will be analyzed in order to understand whether large companies outsource that activity more or the SMEs. Also, means of the responses for all of the sixteen questions that are given by SMEs and large companies are shown at appendix C. At the left of the table, employee no represents the company size and 1,00 is used for SMEs and 2,00 is used for large sized enterprises. Mean of the responses are interpreted according to the following procedure. 1,00 is used for "never", 2,00 is used for "sometimes" and 3,00 is used for "always".

Table 10. Independent and dependent variables concerning the outsourcing rate hypotheses

Dependent variables	**Independent variable**
1. Outsourcing rates 2. Transportation activity 3. Information Technology 4. Book-keeping, accounting 5. Market Research 6. Distribution 7. Warehouse activities 8. Procurement 9. Product development 10.Handling/packaging 11.Turning to account the return products& the products which are passed the sell-by- date 12. Technical support 13. HR management 14. Advocacy 15. Import/Export consultancy 16. Security	1. Company size

Table 10 demonstrates the independent and dependent variables concerning the outsourcing rate hypotheses.

Table 11. Hypotheses concerning outsourcing rates

Hypothesis	Sig(2-tailed value)	Result
H_{O1}: There is no significant difference between large companies' and SMEs' outsourcing rates. H_{A1}: There is a significant difference between large companies' and SMEs' outsourcing rates.	**p=0,710>0,05**	**H_{A1} is rejected.**
$H_{O2:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of transportation activities. $H_{A2:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of transportation activities.	***p=0,858>0,05***	***H_{A2} is accepted.***
$H_{O3:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of Information Technology activities. $H_{A3:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of Information Technology activities.	**p=0,227>0,05**	**H_{A3} is rejected.**
$H_{O4:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of book keeping, accounting activities. $H_{A4:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of book keeping, accounting activities.	**p=0,394>0,05**	**H_{A4} is rejected.**
$H_{O5:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of market research activities. $H_{A5:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of market research activities.	**p=0,703>0,05**	**H_{A5} is rejected.**

$H_{O6:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of distribution activities. $H_{A6:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of distribution activities.	**p=0,308>0,05**	**H_{A6} is rejected.**
$H_{O7:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of warehouse activities. $H_{A7:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of warehouse activities.	**p=0,596>0,05**	**H_{A7} is rejected.**
$H_{O8:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of procurement activities. $H_{A8:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of procurement activities.	**p=0,868>0,05**	**H_{A8} is rejected.**
$H_{O9:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of product development activities. $H_{A9:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of product development activities.	**p=0,204>0,05**	**H_{A9} is rejected.**
$H_{O10:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of handling/packaging activities. $H_{A10:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of handling/packaging activities.	**p=0,282>0.05**	**H_{A10} is rejected.**
$H_{O11:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of turning to account the return products& the products which are passed the sell-by date activities. $H_{A11:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of turning to account the return products& the products which are passed the sell-by date activities.	**p=0,874>0,05**	**H_{A11} is rejected.**
$H_{O12:}$ There is no significant difference between large companies' and SMEs'		

outsourcing rates of technical support activities. $H_{A12:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of technical support activities.	**p=0,440>0,05**	**H_{A12} is rejected.**
$H_{O13:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of HR management activities. H_{A13}There is a significant difference between large companies' and SMEs' outsourcing rates of HR management activities.	**p=0,159>0,05**	**H_{A13} is rejected.**
H_{O14}There is no significant difference between large companies' and SMEs' outsourcing rates of advocacy activities. $H_{A14:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of advocacy activities.	**p=0,385>0,05**	**H_{A14} is rejected.**
$H_{O15:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of Import/ Export consultancy activities. $H_{A15:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of Import/ Export consultancy activities.	**p=0,590>0,05**	**H_{A15} is rejected.**
$H_{O16:}$ There is no significant difference between large companies' and SMEs' outsourcing rates of security activities. $H_{A16:}$ There is a significant difference between large companies' and SMEs' outsourcing rates of security activities.	**p=0,613>0,05**	**H_{A16} is rejected.**

Table 11 indicates that all of the alternative hypotheses concerning outsourcing rates are rejected except H_{A2} and this demonstrates that there is no significant difference between large companies' and SMEs' outsourcing rates of different supply chain activities.

3.3.2.2. The Hypotheses Concerning Logistics Department Sophistication

The researcher aims to reveal that logistics departments of large companies are more sophisticated than SMEs. In order to support this comprehending, the questions at part A are used and these questions were conveyed to 11 hypotheses.

Table 12. Independent and dependent variables concerning the logistics department sophistication

Dependent variables	**Independent variable**
1. Availability of a logistics manager 2. The ways of keeping the records of logistics costs 3. Having written rules for supplier selection 4. The ways of evaluating suppliers' performance 5. The ways of maintaining contact with suppliers 6. Including logistics in a corporate strategy 7. The ways of controlling inventory level 8. The ways of controlling lead time at order fulfillment 9. The ways of controlling lead time in different production phases 10. Companies' awareness of their positions on procurement market 11. The ways of revising the production schedules	1. Company size

Table 12 demonstrates the independent and dependent variables concerning the logistics sophistication hypotheses.

Since the researcher aims to reveal that logistics departments of large companies are more sophisticated than SMEs, first of all, a significant difference is trying to be proved between the SMEs and large companies' departments in the way of sophistication. This concept is stated in the following 11 alternative hypotheses. See Appendix D for the results of the independent sample t-test. If the alternative hypotheses are accepted, the mean of the scores will be analyzed in order to understand whether large companies' logistics departments are more sophisticated or

SMEs' logistics departments. Also, means of the responses for all of the eleven questions that are given by SMEs and large companies are shown at appendix D. At the left of the table, employee no represents the company size and 1,00 is used for SMEs and 2,00 is used for large sized enterprises. Mean of the responses are interpreted according to the following procedure. 1,00 is used for "yes", 2,00 is used for "partly" and 3,00 is used for "no".

Table 13. Hypotheses Concerning Logistics Department Sophistication

Hypothesis	Sig(2-tailed value)	Result
$H_{O1:}$ There is no significant difference in the availability of a logistics manager between SMEs and large companies. $H_{A1:}$ There is a significant difference in the availability of a logistics manager between SMEs and large companies.	**p=0,633>0,005**	**H_{A1} is rejected.**
$H_{O2:}$ There is no significant difference in the ways that large companies and SMEs keep their records of logistics costs. $H_{A2:}$ There is a significant difference in the ways that large companies and SMEs keep their records of logistics costs.	**p=*0,033<0,05*** ***Mean for SMEs=1.65*** ***Mean for large companies=1.14***	***H_{A2} is accepted.***
$H_{O3:}$ There is no significant difference between SMEs and large companies in terms of having written rules for supplier selection. H_{A3}: There is a significant difference between SMEs and large companies in terms of having written rules for supplier selection.	**p=0,662>0,05**	**H_{A3} is rejected.**
$H_{O4:}$ There is no significant difference between SMEs and large companies in evaluating		

suppliers' performance. H_{A4}: There is a significant difference between SMEs and large companies in evaluating suppliers' performance.	**p=0,463>0,05**	**H_{A4} is rejected.**
$H_{O5:}$ There is no significant difference between SMEs and large companies in maintaining contact with their suppliers. H_{A5}: There is a significant difference between SMEs and large companies in maintaining contact with their suppliers.	**p=0,356>0,05**	**H_{A5} is rejected.**
$H_{O6:}$ There is no significant difference in the corporate strategy of SMEs and large companies in terms of logistics. H_{A6}: There is a significant difference in the corporate strategy of SMEs and large companies in terms of logistics.	**p=0,521>0,05**	**H_{A6} is rejected.**
$H_{O7:}$ There is no significant difference between SMEs and large companies in controlling their inventory levels. H_{A7}: There is a significant difference between SMEs and large companies in controlling their inventory levels.	**p=0,590>0,05**	**H_{A7} is rejected.**
$H_{O8:}$ There is no significant difference between SMEs and large companies in controlling lead time at order fulfillment. H_{A8}: There is a significant difference between SMEs and large companies in controlling lead time at order fulfillment.	**p=0,373>0,05**	**H_{A8} is rejected.**
H_{O9}: There is no significant difference between SMEs and large companies in controlling lead time at different production phases H_{A9}: There is a significant difference between SMEs and large companies in controlling lead time at different production phases	**p=0,352>0,05**	**H_{A9} is rejected.**
$H_{O10:}$There is no significant difference in large companies and SMEs' awareness of their		

positions on procurement market $H_{A10:}$ There is a significant difference in large companies and SMEs' awareness of their positions on procurement market	**p=0,853>0,05**	**H_{A10} is rejected.**
$H_{O11:}$ There is no significant difference between SMEs and large companies in revising the production schedules. $H_{A11:}$ There is a significant difference between SMEs and large companies in revising the production schedules.	**p=0,982>0,05**	**H_{A11} is rejected.**

Table 13 demonstrates that from the hypotheses concerning logistics department sophistication only one of the alternative hypotheses ($H_{A2)}$ is accepted. According to this finding, there is a significant difference in the ways that large companies and SMEs keep their records of logistics costs. Since the mean of the responses of large companies (1.14) is more close to "yes" from the mean of the responses of SMEs(1.65), large companies keep their records of logistics costs more separately when compared to SMEs. However, since all of the other alternative hypotheses are rejected it is observed that there is no significant difference between SMEs' and the large companies' logistics departments in the way of sophistication.

3.3.3. Outsource Findings

3.3.3.1. Outsourcing Rates of the Manufacturing Firms

The researcher aims to reveal how outsourcing process is implemented by the manufacturing firms and which activities are outsourced more frequently. First of all, in order to understand what percentage of the companies outsource and how frequently they outsource, frequency and mean analysis are conducted to the responses of the question whether the companies apply outsourcing methods. The

findings are interpreted according to the following procedure. 1,00 is used for "never", 2,00 is used for "sometimes" and 3,00 is used for "always".

Table 14. Mean of the Outsourcing Rate

Statistics

outrate

N	Valid	30
	Missing	0
Mean		2,3667

The table 14 indicates that companies have a tendency to outsource their activities as partly, since the mean of the responses is 2, 37.

Table 15. Percentages of Outsourcing Rate

outrate

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2,00	19	63,3	63,3	63,3
	3,00	11	36,7	36,7	100,0
	Total	30	100,0	100,0	

The table 15 indicates that %36.7 of the respondents always outsource their activities and %63.3 of the respondents sometimes outsource their activities. However, none of the firms responded as "never" to this question. Also, the literature reveals that manufacturing industry is one of the biggest users of outsourcing.

3.3.3.2. Most Frequently Outsourced Activities by the Manufacturing Firms

In order to reveal the most frequently outsourced activities by the manufacturing firms, frequency analysis is conducted to the responses of the questions in part D since these questions about the outsourcing rate on different supply chain activities (See Appendix E). The numbers at the left of the table are

interpreted according to the following procedure. 1,00 represents “never”, 2,00 represents “sometimes” and 3,00 represents “always”.

Table 16. The four most widely outsourced activities

	Transportation	**Distribution**	**Advocacy**	**IT**
Never	6.7	10.7	13.3	16.7
Sometimes	40.0	57.1	23.3	53.3
Always	53.3	32.1	63.3	30.0
Sometimes+Always	**93.3**	**89.2**	**86.6**	**83.3**

According to the table 16, the findings indicates that the sample mostly outsource transportation (93.3%), distribution (89.2%), advocacy (86.6%) and information technology (83.3%) activities. Also, the literature reveals that transportation has a dominant role in outsourcing by Turkish companies. However, according to Uluengin and Uluengin a previous study shows that in Turkey, outsourcing is still solely based on transportation (Aktas and Uluengin, 2005, p.317). The findings of the research contradict this comprehending. Also, the literature supports that IT is one of the most widely used outsourcing activities. Rao and Young indicated that IT is one of the three most widely used outsourcing activities (Rao and Young, 1994, p.11). According to a survey conducted by Dun & Bradstreet and The Outsourcing Institute, IT is a function most likely to be outsourced (Patton, 1998, p.5; Leenders, Fearon, Flynn, Johnson., 2002, p.301).

3.3.3.3. Outsourcing Rates of SMEs and Large Companies separately on Different Supply Chain Activities

The researcher aims to reveal that large companies outsource more than SMEs. The questions in parts C and D of the questionnaire are included in order to analyze this comprehending. In order to support this, independent-samples t-test was conducted to these questions and the findings were represented at the 3.3.2.1 section. However, according to the results, it is found that there is no significant difference between outsourcing rates of different supply chain activities of large companies and SMEs. In order to analyze the sample's outsourcing process more deeply, Crosstab analysis is conducted to the responses of these questions and the percentage of outsourcing the sixteen activities by SMEs and large companies is found. (See Appendix F) In Appendix F, employee no represents the company size which is at the left of the crosstab table, and 1 is used for SMEs, 2 is used for large sized enterprises. At the right of the crosstab table, outsourcing percentages of different supply chain activities are shown and 1 is used for never, 2 is used for sometimes and 3 is used for always. Also, mean of the responses for each activity are presented in the tables below in order to observe the whole picture of the outsourcing rates of SMEs and large companies.

Table 17. Outsourcing Rate

		SMEs (%)	Large (%)
My company apply outsourcing methods	Never	0	0
	Sometimes	65.2	57.1
	Always	34,8	42,9
	Mean	**2,35**	**2,43**

Table 17 indicates that there is no significant difference between the SMEs' and large companies' outsourcing rates. Both SMEs and large companies apply outsourcing methods and none of the companies respondent as "never" to this statement. In the sample of this research study, although both of the large companies and SMEs have a tendency to sometimes outsource their activities, 100% of the companies indicated that they were involved in outsourcing. However, literature reveals that SMEs have a comparatively smaller role in outsourcing. Kerepeszki, Bates and Yurt (2004) indicated that according to a survey of Turkish SMEs, only 61% of the companies were involved in outsourcing.

Table 18. Transportation outsourcing rate

		SMEs (%)	Large (%)
Transportation activities	Never	8,7	0
	Sometimes	34,8	57.1
	Always	56,5	42,9
	Mean	**2,48**	**2,43**

Table 18 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of transportation activities, large companies seem to outsource their transportation activities more frequently than SMEs. However, the findings indicate that both of the large companies and SMEs outsource their transportation activities in a high amount. Also, the literature supports these findings. According to a survey of Turkish SMEs, %92 of the respondents outsource their transportation activities (Kerepeszki, Bates, Yurt, 2004). According

to a survey which is conducted to 250 of the 500 Turkish firms that are specified by Istanbul Chamber of Commerce, nearly 93.5 percent of the respondents outsource their transportation activities (Aktas and Uluengin, 2005, p.322).

Table 19. Information technology outsourcing rate

		SMEs (%)	Large (%)
Information Technology activities	Never	13.0	28.6
	Sometimes	52.2	57.1
	Always	34.8	14.3
	Mean	**2,22**	**1,86**

Table 19 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of IT activities, SMEs outsource Information Technology more than large companies. Since the literature supports that one of the challenge of SMEs face is developing Information Technology systems, it is not surprising to observe that SMEs outsource their IT activities frequently.

Table 20. Accounting outsourcing rate

		SMEs (%)	Large (%)
Accounting activities	Never	56.5	71.4
	Sometimes	34.8	28.6
	Always	8.7	0
	Mean	**1,52**	**1,29**

Table 20 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of accounting activities, SMEs outsource their accounting activities slightly more frequently than large companies. However, both of the SMEs and large companies outsource accounting in a less amount.

Table 21. Market research outsourcing rate

		SMEs (%)	Large (%)
Market Research activities	Never	63.6	57.1
	Sometimes	27.3	28.6
	Always	9.1	14.3
	Mean	**1,45**	**1,57**

Table 21 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of market research activities, large companies outsource market research activities more than SMEs. However, both of the SMEs and large companies outsource market research in a less amount.

Table 22. Distribution outsourcing rate

		SMEs (%)	Large (%)
Distribution activities	Never	14,3	0
	Sometimes	57,1	57,1
	Always	28,6	42,9
	Mean	**2,14**	**2,43**

Table 22 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of distribution activities, large companies outsource their distribution activities more than SMEs. However, both of the companies outsource this activity in a huge amount. Keresepezski, Bates and Yurt (2004) indicated that according to a survey in Hungary, despite of expectations distribution played a less role in outsourcing. However, according to the findings of this study, distribution is one of the most frequently outsourcing activity.

Table 23. Warehouse outsourcing rate

		SMEs (%)	Large (%)
Warehouse activities	Never	78.3	85.7
	Sometimes	17.4	14.3
	Always	4.3	0
	Mean	**1,26**	**1,14**

Table 23 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of warehouse activities, SMEs outsource warehouse activity more than large companies. However, both of the SMEs and large companies outsource warehouse activity in a less amount. The literature review supports that outsourcing warehouse activities by Turkish companies is relatively low. According to Aktaş and Uluengin (2005), a survey which is conducted to 250 of the 500 top Turkish companies reveals that warehousing activities are held by the firm itself in 76 percent of the firms. Only 24 percent outsource warehousing to the logistics firms. Kerepeszki, Bates and Yurt

(2004) indicates that according to a survey of Turkish SMEs, only 44% of the respondents outsource their warehousing activities.

Table 24. Procurement outsourcing rate

		SMEs (%)	Large (%)
Procurement activities	Never	56.5	57.1
	Sometimes	21.7	14.3
	Always	21.7	28.6
	Mean	**1,65**	**1,71**

Table 24 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of procurement activities, large companies outsource procurement activities more than SMEs. Kerepeszki, Bates and Yurt (2004) indicates that according to a survey of Hungary SMEs, procurement outsourcing is less desirable from warehouse and transportation outsourcing. However, according to the findings, research sample outsource procurement activities more than warehouse activities but less than transportation activities.

Table 25. Product development outsourcing rate

		SMEs (%)	Large (%)
Product development activities	Never	65.2	85.7
	Sometimes	30.4	14.3
	Always	4.3	0
	Mean	**1,39**	**1,14**

Table 25 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of product development activities, SMEs outsource product development activities more than large companies.

Table 26. Handling/ Packaging outsourcing rate

		SMEs (%)	Large (%)
Handling/Packaging activities	Never	87	71.4
	Sometimes	13	0
	Always	0	28.6
	Mean	**1,13**	**1,57**

Table 26 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of handling/packaging activities, large companies outsource handling/packaging activities slightly more frequently than SMEs. Kerepeszki, Bates and Yurt (2004) indicates that according to a survey of Hungary SMEs, handling/ packaging outsourcing is less desirable from warehouse and transportation outsourcing. However, large companies of this research sample outsource their handling/packaging activities more than warehouse activities.

Table 27. Turning to account the return products& the products which are passed the sell-by-date outsourcing rate

		SMEs (%)	Large (%)
Turning to account the return products& the products which are passed the sell-by-date activities	Never	71.4	66.7
	Sometimes	19	33.3
	Always	9.5	0
	Mean	**1,38**	**1,33**

Table 27 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of turning to account the return products& the products which are passed the sell-by-date activities, large companies outsource this activity more than SMEs. Three of the respondents did not answer this question because they mentioned that they did not have neither return products nor the products which are passed the sell-by date.

Table 28. Technical support outsourcing rate

		SMEs (%)	Large (%)
Technical support activities	Never	43.5	14.3
	Sometimes	43.5	85.7
	Always	13	0
	Mean	**1,70**	**1,86**

Table 28 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of technical support activities, large companies outsource their technical support activities more than SMEs.

Table 29. HR management outsourcing rate

		SMEs (%)	Large (%)
HR management activities	Never	65.2	85.7
	Sometimes	26.1	14.3
	Always	8.7	0
	Mean	**1,43**	**1,14**

Table 29 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of HR management activities, SMEs outsource HR management activities more than large companies.

Table 30. Advocacy outsourcing rate

		SMEs (%)	Large (%)
Advocacy activities	Never	8.7	28.6
	Sometimes	26.1	14.3
	Always	65.2	57.1
	Mean	**2,57**	**2,29**

Table 30 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of advocacy activities SMEs outsource their advocacy activities more than large companies. However, advocacy

is one of the most frequently outsourcing activities for both of SMEs and large companies.

Table 31. Import/ Export consultancy outsourcing rate

		SMEs (%)	Large (%)
Import/ Export consultancy activities	Never	56.5	66.7
	Sometimes	39.1	33.3
	Always	4.3	0
	Mean	**1,48**	**1,33**

Table 31 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of Import/Export consultancy, SMEs outsource this activity more than large companies.

Table 32. Security outsourcing rate

		SMEs (%)	Large (%)
Security activities	Never	56.5	71.4
	Sometimes	8.7	0
	Always	34.8	28.6
	Mean	**1,78**	**1,57**

Table 32 indicates that although there is no significant difference between large companies' and SMEs' outsourcing rates of security activities, SMEs outsource security activities relatively more than large companies.

According to the mean and crosstab analysis, it is concluded that although warehouse management is one of the most widely used outsourcing activities in the world, both of the large companies and SMEs outsource their warehouse management activities in a relatively less amount. Also, the literature supports that outsourcing warehouse activities by Turkish companies is relatively low. Although, one of the challenges that SMEs face is the lack of market research, it is concluded that SMEs outsource their market research activities in a relatively less amount.

Moreover, SMEs face with the difficulties in not being able to employ efficient staff who has a sufficient knowledge about export issues. Also, they face with the difficulties in investigating, finding and evaluating the potential markets and they may pursue faulty marketing strategies in export issue (Budak, 1993, 8-9). Although, SMEs face with these challenges findings reveal that SMEs outsource Import/Export consultancy in a relatively less amount.

3.3.3.4. Findings about the Relationship between Seller and TPL provider

The researcher aims to analyze the relationship between seller (manufacturing company) and TPL provider. In order to analyze the relationship between seller and TPL provider, the questions in E group are included except the last question. The last question of the E group is included in order to offer ideas for further researches about the relationship between buyer and TPL provider. The questions in E group consists five scale questions which 1 indicates “strongly disagree”, 2 indicates “disagree”, 3 indicates “neutral”, 4 indicates “agree” and 5 indicates “strongly agree”.

First of all, a mean analysis conducted to the last question of the E group. The last question is whether companies direct their customers (buyers) to their suppliers

(TPLs). However, the mean of the responses is 3.00 which shows that companies seem to be neutral about directing their customers to their suppliers. This finding indicates that the researchers may not able to find sufficient information in order to analyze the buyer-TPL relationship for further researches.

A mean analysis is conducted to the responses of the questions in E group in order to observe the general relationship between seller and TPL provider.

Table 33. The mean of seller-TPL provider relationships

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
sellerTPL	30	2,89	4,89	3,8898	,51934
Valid N (listwise)	30				

The mean of the E group is analyzed as 3.89. According to this finding, sellers (manufacturing companies) have a more tendency to agree that they are satisfied with their suppliers. In order to analyze their relationships in deeply, mean analysis is conducted to the responses of the questions in E group separately. (See Appendix G)

The respondents were asked whether their supplier(s) whom they outsource keep its promises or not. The mean of the responses to this question is 4.03 which shows companies have a tendency to agree that supplier(s) keeps its promises. This finding indicates that firms' suppliers seem to be loyal and according to Helper's study, Japanese automakers showed that a skilled and loyal supplier base could be a key source of competitive advantage (Wu, Yen Chun, p.1351, 2003).

The respondents were asked whether firms can trust on the accuracy of the information that supplier(s) provides them or not. The mean of the responses to this question is 3.97 which shows that companies have a tendency to trust on the accuracy of the information that supplier(s) provides them.

The respondents were asked if their supplier(s) is genuinely concerned that their business will succeed. The mean of the responses to this question is 3.67. According to this finding, respondents have a more tendency to agree that their supplier(s) is genuinely concerned about the success of their business. The respondents were asked when making important decisions, if their supplier(s) considers their welfare as well as their own. The mean of the responses is 3.47 which shows that companies have more tendency in being neutral about whether their supplier(s) considers their welfare as well as their own when making important decisions.

The respondents were asked whether they are satisfied with their overall relationship with their supplier(s) or not. The mean of the responses is 3.93 which shows that companies seem to be satisfied with their overall relationship with their supplier(s).

The respondents were asked if their supplier(s) is flexible in response to requests they make. The mean of the responses is 4.00 which shows that companies have a definite tendency to be agree that their supplier(s) is flexible in response to requests they make. The respondents were asked if their supplier(s) is open to change. The mean of the responses is 3.87. According to this finding, companies seem to be agreed that their supplier(s) is open to change. The respondents are asked

whether their supplier(s) can easily provide their own emergency needs or not. The mean of the responses is 3.83. According to this finding, companies seem to be agreed that their supplier(s) can easily provide their own emergency needs.

Lastly, the respondents were asked if their relationship with their supplier(s) is long. The mean is 4.23 which shows that companies' relationships with their suppliers seem to be long.

According to the results, respondents have a more tendency to agree that they are satisfied with their suppliers. This finding indicates that there is a reliable coordination and collaboration between sellers and TPL providers. It points out that there is a synergistic relationship going on between the parties.

3.3.3.5. Findings about the Relationship between Seller and Buyer

Since all the questions in part B expose the relationship between seller (manufacturing company) and buyer, a mean analysis is conducted to the responses of the questions in that group. B group consists of three scale questions which 1,00 indicates "yes", 2,00 indicates "partly" and 3,00 indicates "no". Two of the respondents mentioned that they distribute their products to their retailers and preferred not to answer the questions in this part.

Table 34. The mean of buyer-seller relationships

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
buyerseller	28	1,00	3,00	1,9375	,52097
Valid N (listwise)	28				

The mean of the responses to the questions in B group is analyzed as 1.94. According to this finding, sellers (manufacturing companies) have a tendency to agree that they take partly support from their buyers.

In order to analyze the relationship between buyer and seller in deeply, a frequency and a mean analysis are conducted to the responses of the questions in B group separately. (See Appendix H)

Table 35. Percentage of obtaining technical assistance from buyers

		N	%
Do you obtain technical assistance from a buyer?	Yes	10	35.7
	Partly	11	39.3
	No	7	25.0
	Mean	**1.89**	

Table 35 indicates that only 25% of the respondents answered this question negatively. However, respondents have a more tendency to obtain partly technical assistance from their buyers.

Table 36. Percentage of conducting development projects with buyers

		N	%
Do you have joint development projects with your buyer?	Yes	9	32.1
	Partly	8	28.6
	No	11	39.3
	Mean	**2.07**	

Table 36 demonstrates that respondents have a more tendency to conduct joint development projects with their buyers as partly.

Table 37. Providing logistics assistance from buyers

		N	%
Do you obtain logistics assistance from your buyer?	Yes	4	14.3
	Partly	14	50
	No	10	35.7
	Mean	**2,21**	

Table 37 indicates that respondents have a more tendency to obtain partly logistics assistance from their buyers.

Table 38. Providing information support from buyers

		N	%
Do you obtain any information support from your buyer?	Yes	10	46.4
	Partly	11	50
	No	7	3.6
	Mean	**1.57**	

Table 38 demonstrates that only 3.6% of the respondents answered this question negatively. However, respondents have a more tendency to obtain partly information support from their buyers.

According to the results, respondents have a more tendency to agree that they take partly support from their buyers. This finding shows the researchers and the

readers that there is a moderate level of success and a moderate level of satisfaction between the parties.

3.3.4. Other Findings

The researcher aims to reveal that logistics departments of large companies are more sophisticated than SMEs. The questions in parts A and C of the questionnaire are included in order to analyze this comprehending. In order to support this, independent-samples t-test was conducted to these questions and the findings were represented at the 3.3.2.2 section. However, according to the results, it is found that there is no significant difference between SMEs' logistics departments and large companies' logistics departments. In order to analyze the logistics departments of both SMEs and large companies more deeply, Crosstab analysis is conducted to the responses of these questions and the percentage of the responses that are given to each question are analyzed separately. (See Appendix I) In Appendix I, employee no represents the company size which is at the left of the crosstab table, and 1,00 is used for SMEs, 2,00 is used for large sized enterprises. At the right of the crosstab table, the questions are shown which indicate the sophistication of companies' logistics departments and 1,00 is used for "yes", 2,00 is used for "partly" and 3,00 is used for "no". Also, mean of the responses for each question are presented in the tables.

Table 39. Percentages of availability of logistics managers

		SMEs (%)	Large (%)
Is there a logistics manager at your company? (a1)	Yes	47,8	57,1
	Partly	30,4	28,6
	No	21,7	14,3
	Mean	**1,74**	**1,57**

Table 39 indicates that although there is no significant difference between large companies' and SMEs' availability of logistics managers at their company, large companies seem to have logistics managers more than SMEs. However, the findings explore that both of the SMEs and large companies do not consist logistics managers immensely.

Table 40. Percentages of keeping logistics costs separately

		SMEs (%)	Large (%)
Do you keep the records of logistics costs separately in your accounting records? (a2)	Yes	47,8	57,1
	Partly	30,4	28,6
	No	21,7	14,3
	Mean	**1,65**	**1,14**

Table 40 indicates that large companies keep their records of logistics costs relatively more separately when compared to SMEs. This finding constitutes a view that large companies have an advantage to focus on their logistics expenditures and make decisions on their outsourcing process more accurately than SMEs.

Table 41. Percentages of having written rules for supplier selection

		SMEs (%)	Large (%)
Does your company have written rules for supplier selection? (a3)	Yes	73,9	85,7
	Partly	8,7	0
	No	17,4	14,3
	Mean	**1.43**	**1.26**

Table 41 indicates that although there is no significant difference between SMEs and large companies in terms of having written rules for supplier selection, large companies seem to have more stable supplier selection criteria because they have written rules for supplier selection slightly more than SMEs. This finding may indicate that large companies aware of importance of supplier selection process in outsourcing slightly more than SMEs.

Table 42. Percentages of regularly evaluating supplier's performance

		SMEs (%)	Large (%)
Does your company regularly evaluate suppliers' performance? (a4)	Yes	91.3	100
	Partly	4.3	0
	No	4.3	0
	Mean	**1.13**	**1.00**

Table 42 indicates that although there is no significant difference between SMEs and large companies in evaluating suppliers' performance, it is consequential to accentuate that all of the SMEs (100%) respondent that they entirely evaluate their

suppliers' performance. The literature review reveals the importance of evaluating suppliers' performance on outsourcing process. Both of the SMEs and large companies seem to be aware of this comprehending.

Table 43. Percentages of maintaining regular contact with suppliers

		SMEs (%)	Large (%)
Does your company maintain regular contact with suppliers? (a5)	Yes	100	85.7
	Partly	0	14.3
	No	0	0
	Mean	**1.00**	**1.14**

Table 43 indicates that there is no significant difference between SMEs and large companies in maintaining contact with their suppliers. Although both of the large companies and SMEs maintain regular contact with their suppliers, it is consequential to emphasize that all of the SMEs (100%) respondent that they entirely maintain contact with their suppliers.

Table 44. Percentages of including logistics in a corporate strategy

		SMEs (%)	Large (%)
Is logistics included in your corporate strategy? (a6)	Yes	60,9	85,7
	Partly	30,4	0
	No	8,7	14,3
	Mean	**1,48**	**1,26**

Table 44 demonstrates that although there is no significant difference in the corporate strategy of SMEs and large companies in terms of logistics, large companies include logistics in their corporate strategy slightly more than SMEs.

Table 45. Percentages of regularly controlling inventory level

		SMEs (%)	Large (%)
Does your company regularly control inventory level? (a7)	Yes	95,7	100
	Partly	4,3	0
	No	0	0
	Mean	**1,04**	**1,00**

Table 45 indicates that there is no significant difference between SMEs and large companies in controlling their inventory levels. Although, both of the large companies and SMEs regularly control their inventory levels, it is consequential to emphasize that all of the large companies (100%) respondent that they entirely control their inventory levels regularly.

Table 46. Percentages of regularly controlling lead time at order fulfillment

		SMEs (%)	Large (%)
Does your company regularly control lead time at order fulfillment? (a8)	Yes	95,7	85,7
	Partly	4,3	14,3
	No	0	0
	Mean	**1,04**	**1,14**

Table 46 indicates that although there is no significant difference between SMEs and large companies in controlling lead time at order fulfillment, SMEs more regularly control lead time at order fulfillment when compared to large companies.

Table 47. Percentages of regularly controlling lead time at different production phases

		SMEs (%)	Large (%)
Does your company regularly control lead time in different production phases? (a9)	Yes	87,0	71,4
	Partly	13,0	28,6
	No	0	0
	Mean	**1,13**	**1,29**

Table 47 indicates that although there is no significant difference between SMEs and large companies in controlling lead time in different production phases, SMEs more regularly control lead time at different production phases when compared to large companies. However, the findings may conclude a comprehending that both of large companies and SMEs aware of distribution at the right time is relatively depends on the correct order fulfillment and a lead time control in different production phases.

Table 48. Percentages of the awareness of companies' positions on procurement market

		SMEs (%)	Large (%)
Does your company know its position on procurement market? (a10)	Yes	82,6	85,7
	Partly	17,4	14,3
	No	0	0
	Mean	**1,17**	**1,14**

Table 48 demonstrates that although there is no significant difference in large companies and SMEs' awareness of their positions on procurement market, the awareness of companies' positions on procurement market is slightly more in large companies when compared to SMEs.

Table 49. Percentages of revising the production schedules regularly

		SMEs (%)	Large (%)
Are the production schedules regularly revised? (a11)	Yes	60,9	71,4
	Partly	34,8	14,3
	No	4,3	14,3
	Mean	**1,43**	**1,43**

Table 49 indicates that there is no significant difference between SMEs and large companies in revising the production schedules.

Both of the independent sample t-test and crosstab analysis concluded that a significant difference between SMEs and large companies is occurred only in one

question (a2) which is whether companies keep their records of logistics costs separately in their accounting records. According to the findings, large companies keep their records of logistics costs relatively more separately when compared to SMEs. However, since no significant difference is determined in any other questions in part A, the findings reach a conclusion that there is no significant difference between SMEs' and large companies' logistics departments in the way of logistics sophistication. Also, crosstab and mean analysis revealed that both SMEs' and large companies' logistics departments are sophisticated since all of them respondent most of the questions positively.

CHAPTER 4

CONCLUSIONS, RECOMMENDATIONS, IMPLICATIONS AND LIMITATIONS

4.1. Conclusions and Recommendations

In today's environment, managers are searching for any approach that can provide them success since with the globalization and technological improvements, competition is increased and customer expectations are changed. Today, customers demand for customized products with shortened life cycle, reduced delivery time and reduced prices. Also, international trade became a vital role in achieving competitiveness and it constitutes a need of implementing innovative strategies because of its complexity. The usage of outsourcing is increasing rapidly in manufacturing industry since outsourcing has many advantages such as cost reduction, solving skills and experience problems, flexibility, technology improvements, share and reduce risks and it generates an opportunity for focusing on core competencies. However, firms can observe improvements in their supply chain management with outsourcing if they do the outsource process in a right way. The key to successful outsourcing is a quality relationship built on open communication, team work and mutual commitment to a common goal.

In this research, the researcher aimed to reveal how outsourcing process is perceived and implemented by Turkish manufacturing SMEs and large companies

and it is determined that outsourcing process is widely used by the research sample. The four most widely used outsourced activities are discovered as transportation (93.3%), distribution (89.2%), Advocacy (86.6%) and Information Technology (83.3%). The findings reach a conclusion that transportation has a dominant role in outsourcing by Turkish companies but outsourcing in Turkey is not solely based on transportation. This conclusion is contrary to the expectations since the literature supports that outsourcing in Turkey is still solely based on transportation. Since there is a high need of developing IT systems in order to firms achieve competitive advantage and it would be time consuming and expensive to develop and implement new technologies in-house it is good to discover IT as one of the most widely used outsourced activities by the research sample. Also, this conclusion is contrary to the expectations since the literature supports that Information Technology activities are not immensely outsourced by Turkish companies. On the other hand, although warehouse activities are frequently outsourced in the world, the findings of the research constitutes that both SMEs and large companies of the research sample outsource their warehouse activities relatively low. Also, the literature supports that Turkish manufacturing companies preferred not to outsource their warehouse activities. Other in-house activities of the research sample are determined as product development, handling/packaging, turning to account the return products& the products which are passed the sell-by-date and HR management.

SMEs have a consequential role in the economic growth of Turkey but they face with insufficiencies in some of the areas which need to be developed such as lack of export consultancy and inability to provide adequate and sufficient market research. However, it is concluded that SMEs of the research sample outsource export consultancy and market research activities in a relatively less amount. Since

SMEs face with insufficiencies in these areas, they should outsource these activities more frequently.

The researcher aimed to reveal that large companies outsource their supply chain activities more than SMEs since the literature supports that SMEs are comparatively less enthusiastic about outsourcing than larger firms. However, no significant difference found between SMEs' and large companies' outsourcing rates. Moreover, since logistics departments have a consequential role in the efficient supply chain management the researcher aimed to analyze the logistics departments of both SMEs and large companies. Also, the researcher aimed to reveal that logistics departments of large sized enterprises are more sophisticated than SMEs. However, no significant difference found between SMEs' and large companies' logistics departments in terms of sophistication except only their ways of keeping the logistics costs in their accounting records. Although, the results demonstrated that both SMEs' and large companies' logistics departments are sophisticated, large companies keep their records of logistics costs relatively more separately when compared to SMEs. This finding constitutes a view that large companies have an advantage to focus on their logistics expenditures and make decisions on their outsourcing process more accurately than SMEs. However, it is found that both of the SMEs and large companies do not consist logistics managers immensely. The main reason for this finding might be the managers which are responsible from all of the logistics activities have still different job titles such as a transportation manager instead of a logistics manager in most of the Turkish firms.

The other research objectives of the study are to reveal the relationship between buyer and seller (manufacturing company) and the relationship between

seller and TPL providers since the literature reveals that these relationships has a great impact on the success of outsourcing. It is concluded that there is a moderate level of success and a moderate level of satisfaction between buyers and sellers. Companies need to improve the relationships with their customers since a synergetic relationship between the parties has a consequential role in the success of outsourcing. On the other hand, there is a reliable coordination and collaboration between sellers and TPL providers since TPL providers are flexible, open to change and easily provide their own emergency needs, they keep their promises and manufacturing companies can trust on the accuracy of the information that their suppliers provide them. These findings conclude that the research sample of the study seem to satisfy with their outsourcing processes.

4.2. Implications and Limitations

In this study, the researcher aimed to reveal how outsourcing process is implemented by Turkish companies. However, sample size of the research did not permit the researcher to make generalization since the sample size is 30 and it is not sufficient for making generalization. Since the findings are interpreted only for the sample, this study constitutes a base for further researches with larger sample sizes.

Since İzmir Atatürk Organized Zone is an important export center of İzmir, the researcher decided to conduct the questionnaires to the enterprises located at IAOIZ. The other free trade zones may be chosen for further researches in order to have an opportunity to analyze the implementation of outsourcing process by the manufacturing firms at various free trade zones.

In this research, relationship between seller (manufacturing company) and buyer (customer) and relationship between seller and TPL provider are analyzed. Since outsourcing process depends on triadic approach which also constitutes the relationship between buyer and TPL provider, this relationship may be analyzed in further researches. Moreover, the factors other than company size which affect the outsourcing decisions of manufacturing companies may be analyzed in future researches.

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APPENDICES

APPENDIX A

Outsourcing Questionnaire

Purpose: To determine the perception of the outsourcing concept in business environment and to determine how it is implemented in the Turkish companies.

The information that you provide will be entirely kept private and the questionnaire that you fill will only be read by Olcay Öztaş who is a master student of logistics management at İzmir University of Economics. The results will be used only in the abstract format in my thesis statement and some of the conferences. At no time, your organization will be identified and your responses will be combined with several other participants.

Also, if you want the results of the questionnaires I can communicate the results by e-mail.

Olcay Öztaş
E-mail: olcay.oztas@gmail.com

Thank you so much for filling in the questionnaires.

COMPANY NAME:
PHONE NUMBER:
WEB ADDRESS:

The person who fill in the questionnaire:

DUTY/POSITION:
DEPARTMENT:

A. Answer the questions below by putting a cross(X) to the "yes, partly, no" buttons.

	Yes	Partly	No
Is there a responsible logistics manager at your company?			
Do you keep the records of logistics costs separately in your accounting records?			
Does your company have written rules for supplier selection?			
Does your company regularly evaluate suppliers' performance?			
Does your company maintain regular contact with suppliers?			
Is logistics included in your corporate strategy?			
Does your company regularly control inventory level?			
Does your company regularly control lead time at order fulfillment?			
Does your company regularly control lead time in different production phases?			
Does your company know its position on procurement market?			
Are the production schedules regularly revised?			

[4]B. Answer the questions below, if your company is a supplier.

	Yes	Partly	No
Do you obtain technical assistance from a buyer?			
Do you have joint development projects with your buyer?			
Do you obtain logistics assistance from your buyer?			
Do you obtain information support from your buyer?			

[4] Kerepeszki, I., J. Cselenyi, B. Illes. "Development of Virtual Logistics Networks-Improving supplier positions of Hungarian SMEs", Proceedings of 13th IPSERA Conference, 2004, Catania-Italy, 2004, pp. C52-C63
Note: The questions of A and B belong to this reference.

C. Which category fits to your company's employee number?

0-249	
250 and above	

D. Which of the following functions has your firm outsourced to an outside supplier? Please give the frequencies using the scale which 1 meaning "never", 2 meaning "sometimes", 3 meaning "always".

	1(never)	2(sometimes)	3(always)
My company apply outsourcing methods			
Transportation activities			
Information technology			
Book-keeping, accounting			
Market research			
Distribution			
Warehouse activities			
Procurement			
Product development			
Handling/Packaging			
Turning to account the return products& the products which are passed the sell-by date			
Technical support			
HR management			
Advocacy			
Import/Export consultancy			
Security			
Anything else (please specify) .... …… ……...			

[5]E. If you outsource some of your activities please answer the questions by using the negative, neutral, positive scale. The supplier which is used at the below is for the supplier whom you outsource. If you have more than one supplier, answer the questions for the general situation.

	1(Strongly disagree)	2	3(Neutral)	4	5(Strongly Agree)
Our supplier(s) whom we outsource, keeps promises it makes to our firm.					
We can trust on the accuracy of the information that our supplier(s) provides us.					
Our supplier(s) is genuinely concerned that our business will succeed.					
When making important decisions, our supplier(s) considers our welfare as well of that of its own.					
Generally, we are very satisfied with our overall relationship with our supplier(s).					
Our supplier(s) is flexible in response to requests we make.					
Our supplier(s) is open to change.					
Our supplier(s) can easily provide our own emergency needs.					
Generally, our relationship with our supplier(s) is long.					
We direct our customers to our suppliers to deal.					

[5] Yurt, Öznur. 2004. "Lojistik Dış Kaynak Kullanımında Güven Faktörü: Türkiye Uygulaması", Thesis, Ankara University, School of Socail Sciences, İzmir

APPENDIX B

Dış Kaynak Kullanımı(Outsourcing) Anket Formu

Amaç: İş çevresinde dış kaynak kullanımının nasıl algılandığını ve şirketlerde ne şekilde kullanıldığını belirlemek amaçlanmaktadır.

Verdiğiniz bilgiler tamamen gizli tutulacak ve doldurduğunuz anket sadece İzmir Ekonomi Üniversitesi Lojistik Yüksek Lisans öğrencisi Olcay Öztaş tarafından okunacaktır. Sonuçlar sadece, özet hale getirilmiş formda yüksek lisans tezimde ve düzenlenen bazı konferanslarda kullanılacaktır. Hiç bir zaman, firmanızın ismi sunumlarda ve tezimde belirtilmeyecek anket cevaplarınız anketi sunacağım diğer firmaların cevapları ile birlikte birleştirilecektir.

Ayrıca, sonuçlar hakkındaki dileğinizi bana e-mail yolu ile iletmeniz halinde, sizlere memnuniyetle cevap vereceğim.

İrtibat için:

Olcay Öztaş
e-mail:olcay.oztas@gmail.com

Yardımlarınız ve ilginiz için şimdiden çok teşekkür ederim.

FİRMANIN ADI:
TELEFON NUMARASI:
WEB ADRESİ:

Anketi dolduranın:

GÖREV/POZİSYON:
BÖLÜM/DEPARTMAN:

A. Aşağıdaki soruları evet, kısmen ya da hayır butonlarına (X) işareti koyarak doldurunuz.

	Evet	Kısmen	Hayır
Şirketinizde lojistik yöneticisi var mı?			
Muhasebe kayıtlarınızda lojistik maliyetlerinizi ayrı bir şekilde tutuyor musunuz?			
Şirketinizin tedarikçi seçimi için yazılı kuralları var mı?			
Şirketiniz düzenli olarak tedarikçilerinizin performansını değerlendiriyor mu?			
Şirketiniz düzenli olarak tedarikçilerinizle temasını sürdürüyor mu?			
Lojistik, şirket stratejinizde yer alıyor mu?			
Şirketiniz, düzenli olarak stok seviyesini kontrol ediyor mu?			
Şirketiniz, sipariş alımı tamamlanmasında teslimat süresini kontrol ediyor mu?			
Şirketiniz,değişik üretim aşamalarında teslimat süresini kontrol ediyor mu?			
Şirketiniz tedarik piyasasında yerini biliyor mu?			
Şirketinizde, tedarik zaman çizelgeleri düzenli olarak yenileniyor mu?			

B. [6] Aşağıdaki soruları, eğer şirketiniz tedarikçi ise cevaplayınız.

	Evet	Kısmen	Hayır
Alıcınızdan teknik destek alıyor musunuz?			
Alıcınızla ortak gelişim projeleri hazırlıyor musunuz?			
Alıcınızdan lojistik destek alıyor musunuz?			
Alıcınızdan herhangi bir konuda bilgi desteği alıyor musunuz?			

[6] Kerepeszki, I., J. Cselenyi, B. Illes. "Development of Virtual Logistics Networks-Improving supplier positions of Hungarian SMEs", Proceedings of 13th IPSERA Conference, 2004, Catania-Italy, 2004, pp. C52-C63
Not: A ve B grubundaki sorular bu referansa aittir.

C. Şirketinizdeki çalışan sayısı hangi kategoriye girmektedir?

0-249	
250 ve üzeri	

D. Aşağıdaki hangi aktiviteleri dış kaynak kullanımı yapıyorsunuz? Lütfen 1 (asla), 2 (bazen), 3 (her zaman) ölçeğini kullanarak cevaplayınız.

	1(asla)	2(bazen)	3(her zaman)
Şirketim dış kaynak kullanımı metotlarını uyguluyor			
Taşımacılık/nakliye			
Bilgi teknolojisi			
Muhasebe			
Piyasa araştırması			
Dağıtım			
Depolama			
Tedarik/satın alma			
Ürün geliştirme			
Elleçleme/paketleme			
İade edilmiş ve kullanım tarihi geçmiş ürünlerin değerlendirilmesi			
Teknik destek			
İnsan Kaynakları Yönetimi			
Avukatlık			
İthalat/ihracat danışmanlığı			
Güvenlik			
Diğer…… …… …… …… ……			

E.[7] Eğer bazı aktivitelerinizi dış kaynak kullanımı yapıyorsanız aşağıdaki soruları lütfen 1(Kesinlikle katılmıyorum), 2(Katılmıyorum), 3(Nötr), 4(Katılıyorum), 5(Kesinlikle katılıyorum) ölçeğini kullanarak cevaplayınız.Aşağıda belirtilen tedarikçi kavramı outsource ettiğiniz tedarikçiniz için kullanılmıştır. Eğer birden fazla tedarikçiniz varsa hepsi için genel olarak yanıt veriniz.

	1(Kesinlikle katılmıyorum)	2	3(Nötr)	4	5(Kesinlikle katılıyorum)
Dış kaynak kullanımı yaptığımız tedarikçi(leri)miz, şirketimize verdiği sözleri yerine getirir.					
Tedarikçi(leri)mizin bize sağladığı bilgilerin doğruluğuna güvenebiliriz.					
Tedarikç(leri)imiz, şirketimizin başarısı ile içten ilgilenir ve kaygılanır.					
Önemli kararlar alırken, tedarikçi(leri)miz kendi menfaatlerini düşündüğü kadar şirketimiz için de düşünür.					
Genel olarak, tedarikçi(leri)mizle olan ilişkimizden çok menmunuz.					
Tedarikçi(leri)miz, isteklerimize göre esnek davranabiliyor.					
Tedarikçi(leri)miz değişime açık.					
Tedarikçi(leri)miz, acil gereksinlerimizi kolayca karşılayabiliyor.					
Tedarikçi(leri)mizle olan ilişkimiz uzun dönemlidir.					
Müşterilerimizi, tedarikçi(ler)imizle anlaşmaları için yönlendiririz.					

[7] Yurt, Öznur. 2004. "Lojistik Dış Kaynak Kullanımında Güven Faktörü: Türkiye Uygulaması", Thesis, Ankara University, School of Socail Sciences, İzmir

APPENDIX C

INDEPENDENT SAMPLES T-TEST FOR OUTSOURCING RATES

Group Statistics

	employeeno	N	Mean	Std. Deviation	Std. Error Mean
outrate	1,00	23	2,3478	,48698	,10154
	2,00	7	2,4286	,53452	,20203
Transportation	1,00	23	2,4783	,66535	,13873
	2,00	7	2,4286	,53452	,20203
IT	1,00	23	2,2174	,67126	,13997
	2,00	7	1,8571	,69007	,26082
Accounting	1,00	23	1,5217	,66535	,13873
	2,00	7	1,2857	,48795	,18443
Marketresearch	1,00	22	1,4545	,67098	,14305
	2,00	7	1,5714	,78680	,29738
Distribution	1,00	21	2,1429	,65465	,14286
	2,00	7	2,4286	,53452	,20203
Warehouse	1,00	23	1,2609	,54082	,11277
	2,00	7	1,1429	,37796	,14286
Procurement	1,00	23	1,6522	,83168	,17342
	2,00	7	1,7143	,95119	,35952
Productdevelopment	1,00	23	1,3913	,58303	,12157
	2,00	7	1,1429	,37796	,14286
Handlingpackaging	1,00	23	1,1304	,34435	,07180
	2,00	7	1,5714	,97590	,36886
Turningtoaccount	1,00	21	1,3810	,66904	,14600
	2,00	6	1,3333	,51640	,21082
Technicalsupport	1,00	23	1,6957	,70290	,14657
	2,00	7	1,8571	,37796	,14286
HRmanagement	1,00	23	1,4348	,66237	,13811
	2,00	7	1,1429	,37796	,14286
Advocacy	1,00	23	2,5652	,66237	,13811
	2,00	7	2,2857	,95119	,35952
Importexportconsultancy	1,00	23	1,4783	,59311	,12367
	2,00	6	1,3333	,51640	,21082
Security	1,00	23	1,7826	,95139	,19838
	2,00	7	1,5714	,97590	,36886

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
outrate	Equal variances assumed	, 378	, 544
	Equal variances not assumed		
Transportation	Equal variances assumed	, 847	, 365
	Equal variances not assumed		
IT	Equal variances assumed	, 105	, 748
	Equal variances not assumed		
Accounting	Equal variances assumed	2, 478	, 127
	Equal variances not assumed		
Marketresearch	Equal variances assumed	, 283	, 599
	Equal variances not assumed		
Distribution	Equal variances assumed	, 000	1,000
	Equal variances not assumed		
Warehouse	Equal variances assumed	1,321	, 260
	Equal variances not assumed		
Procurement	Equal variances assumed	, 270	, 607
	Equal variances not assumed		

Independent Samples Test

		Levene's Test for Equality of Variances	
		F	Sig.
Productdevelopment	Equal variances assumed	5,505	, 026
	Equal variances not assumed		
Handlingpackaging	Equal variances assumed	21,100	,000
	Equal variances not assumed		
Turningtoaccount	Equal variances assumed	, 403	, 531
	Equal variances not assumed		
Technicalsupport	Equal variances assumed	6,738	,015
	Equal variances not assumed		
HRmanagement	Equal variances assumed	5,794	,023
	Equal variances not assumed		
Advocacy	Equal variances assumed	3,091	,090
	Equal variances not assumed		
Importexportconsultancy	Equal variances assumed	1,021	,321
	Equal variances not assumed		
Security	Equal variances assumed	, 237	, 630
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
outrate	Equal variances assumed	-,376	28	,710	-,08075
	Equal variances not assumed	-,357	9,253	,729	-,080075
Transportation	Equal variances assumed	,180	28	,858	,04969
	Equal variances not assumed	,203	12,250	,843	,04969
IT	Equal variances assumed	1,236	28	,227	,36025
	Equal variances not assumed	1,217	9,733	,252	,36025
Accounting	Equal variances assumed	,866	28	,394	,23602
	Equal variances not assumed	1,023	13,530	,324	,23602
Marketresearch	Equal variances assumed	-,386	27	,703	-,11688
	Equal variances not assumed	-,354	8,961	,731	-,11688
Distribution	Equal variances assumed	-1,041	26	,308	-,28571
	Equal variances not assumed	-1, 155	12,558	,270	-,28571
Warehouse	Equal variances assumed	,536	28	,868	-,06211
	Equal variances not assumed	,648	8,984	,880	-,06211
Procurement	Equal variances assumed	-,168	28	,868	-,06211
	Equal variances not assumed	-,156	8,984	,880	-,06211

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
Productdevelopment	Equal variances assumed	1,055	28	,300	,24845
	Equal variances not assumed	1,324	15,605	,204	,24845
Handlingpackaging	Equal variances assumed	-1,874	28	,071	-,44099
	Equal variances not assumed	-1,174	6,461	,282	-,44099
Turningtoaccount	Equal variances assumed	,160	25	,874	,04762
	Equal variances not assumed	-186	10,351	,856	,04762
Technicalsupport	Equal variances assumed	-,578	28	,568	-,16149
	Equal variances not assumed	-,789	19,413	,440	-16149
HRmanagement	Equal variances assumed	1,104	28	,279	,29193
	Equal variances not assumed	1,469	18,137	,159	,29193
Advocacy	Equal variances assumed	,882	28	,385	,27950
	Equal variances not assumed	,726	7,855	,489	,27950
Importexport consultancy	Equal variances assumed	,545	27	,590	,14493
	Equal variances not assumed	,593	8,797	,568	,14493
Security	Equal variances assumed	,511	28	,613	,21118
	Equal variances not assumed	,504	9,751	,625	,21118

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
outrate	Equal variances assumed	,21478	-,52070	,35921
	Equal variances not assumed	,22611	-,59012	,42863
Transportation	Equal variances assumed	,27608	-,51584	,61522
	Equal variances not assumed	,24508	-,48309	,58246
IT	Equal variances assumed	,29152	-,23690	,95740
	Equal variances not assumed	,29600	-,30175	1,02224
Accounting	Equal variances assumed	,27262	-,32240	,79445
	Equal variances not assumed	,23078	-,26057	,73262
Marketresearch	Equal variances assumed	,30306	-,73871	,50495
	Equal variances not assumed	,33000	-,86389	-63012
Distribution	Equal variances assumed	,27451	-84997	,27854
	Equal variances not assumed	,24744	-,82219	,25076
Warehouse	Equal variances assumed	,22029	-,33323	,56925
	Equal variances not assumed	,18200	-27159	,50762
Procurement	Equal variances assumed	,37067	-,82139	,69717
	Equal variances not assumed	,39916	-,96531	,84108

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
Productdevelopment	Equal variances assumed	,23552	-,23400	,73089
	Equal variances not assumed	,18758	-,15003	,64693
Handlingpackaging	Equal variances assumed	,23535	-,92308	,04109
	Equal variances not assumed	,37578	-1,34483	,46284
Turningtoaccount	Equal variances assumed	,29692	-,56391	,65914
	Equal variances not assumed	,25644	-,52114	,61638
Technicalsupport	Equal variances assumed	,27936	-,73372	,41074
	Equal variances not assumed	,20467	-,58925	,26627
HRmanagement	Equal variances assumed	,26446	-,24979	,83364
	Equal variances not assumed	,19870	-,12531	,70916
Advocacy	Equal variances assumed	,31680	-,36942	,92843
	Equal variances not assumed	,38513	-,61148	1,17048
Importexportconsultancy	Equal variances assumed	,26573	-,40030	,69016
	Equal variances not assumed	,24442	-,40993	,69979
Security	Equal variances assumed	,41297	-,63475	1,05711
	Equal variances not assumed	,41882	-,72525	1,14761

APPENDIX D

INDEPENDENT SAMPLES T-TEST FOR LOGISTICS SOPHISTICATION

Group Statistics

	employeeno	N	Mean	Std. Deviation	Std. Error Mean
a1	1,00	23	1,7391	,81002	,16890
	2,00	7	1,5714	,78680	,29738
a2	1,00	23	1,6522	,83168	,17342
	2,00	7	1,1429	,37796	,14286
a3	1,00	23	1,4348	,78775	,16426
	2,00	7	1,2857	,75593	,28571
a4	1,00	23	1,1304	,45770	,09544
	2,00	7	1,0000	,00000	,00000
a5	1,00	23	1,000	,0000	,0000
	2,00	7	1,143	,3780	,1429
a6	1,00	23	1,4783	,66535	,13873
	2,00	7	1,2857	,75593	,28571
a7	1,00	23	1,0435	,20851	,04348
	2,00	7	1,0000	,00000	,00000
a8	1,00	23	1,0435	,20851	,04348
	2,00	7	1,1429	,37796	,14286
a9	1,00	23	1,1304	,34435	,07180
	2,00	7	1,2857	,48795	,18443
a10	1,00	23	1,1739	,38755	,08081
	2,00	7	1,1429	,37796	,14286
a11	1,00	23	1,4348	,58977	,12298
	2,00	7	1,4286	,78680	,29738

Independent Samples Test

		Levene's Test for Equality	of Variances
		F	Sig.
a1	Equal variances assumed	,119	,732
	Equal variances not assumed		
a2	Equal variances assumed	11,550	,002
	Equal variances not assumed		
a3	Equal variances assumed	,596	,447
	Equal variances not assumed		
a4	Equal variances assumed	2,580	,119
	Equal variances not assumed		
a5	Equal variances assumed	20,608	,000
	Equal variances not assumed		
a6	Equal variances assumed	,348	,560
	Equal variances not assumed		
a7	Equal variances assumed	1,304	,263
	Equal variances not assumed		
a8	Equal variances assumed	3,183	,085
	Equal variances not assumed		

Independent Samples Test

		Levene's Test for Equality	of Variances
		F	Sig.
a9	Equal variances assumed	2,927	,098
	Equal variances not assumed		
a10	Equal variances assumed	,147	,704
	Equal variances not assumed		
a11	Equal variances assumed	,450	,508
	Equal variances not assumed		

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
a1	Equal variances assumed	,483	28	,633	,16770
	Equal variances not assumed	,490	10,206	,634	,16770
a2	Equal variances assumed	1,557	28	,131	,50932
	Equal variances not assumed	2,267	23,057	,033	,50932
a3	Equal variances assumed	,442	28	,662	,14907
	Equal variances not assumed	,452	10,314	,660	,14907
a4	Equal variances assumed	,745	28	,463	,13043
	Equal variances not assumed	1,367	22,000	,186	,13043
a5	Equal variances assumed	-1,892	28	,069	-,1429
	Equal variances not assumed	-1,000	6,000	,356	-,1429
a6	Equal variances assumed	,650	28	,521	,19255
	Equal variances not assumed	,606	9,026	,559	,19255
a7	Equal variances assumed	,545	28	,590	,04348
	Equal variances not assumed	1,000	22,000	,328	,04348
a8	Equal variances assumed	-,905	28	,373	-09938
	Equal variances not assumed	-,666	7,146	,527	-,09938

Independent Samples Test

		t-test for Equality of Means			
		t	df	Sig. (2-tailed)	Mean Difference
a9	Equal variances assumed	-,947	28	,352	-,15528
	Equal variances not assumed	-,785	7,907	,456	-,15528
a10	Equal variances assumed	,187	28	,853	,03106
	Equal variances not assumed	,189	10,170	,854	,03106
a11	Equal variances assumed	,023	28	,982	,00621
	Equal variances not assumed	,019	8,162	,985	,00621

Independent Samples Test

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
a1	Equal variances assumed	,34753	-,54419	,87959
	Equal variances not assumed	,34200	-,59224	,92764
a2	Equal variances assumed	,32707	-,16065	1,17928
	Equal variances not assumed	,22468	,04459	,97404
a3	Equal variances assumed	,33715	-,54155	,83969
	Equal variances not assumed	,32957	-,58223	,88036
a4	Equal variances assumed	,17513	-,22830	,48917
	Equal variances not assumed	,09544	-,06749	,32836
a5	Equal variances assumed	,0755	-,2976	,0119
	Equal variances not assumed	,1429	-,4924	,2067
a6	Equal variances assumed	,29602	-,41383	,79892
	Equal variances not assumed	,31762	-,52563	,91073
a7	Equal variances assumed	,07978	-,11995	,20691
	Equal variances not assumed	,04348	-,04669	,13365
a8	Equal variances assumed	,10986	-,32442	,12566
	Equal variances not assumed	,14933	-,45102	,25226

		t-test for Equality of Means		
		Std. Error Difference	95% Confidence Interval of the Difference	
			Lower	Upper
a9	Equal variances assumed	,16391	-,49104	,18048
	Equal variances not assumed	,19791	-,61260	,30204
a10	Equal variances assumed	,16642	-,30983	,37194
	Equal variances not assumed	,16413	-,33382	,39593
a11	Equal variances assumed	,27503	-,55716	,56959
	Equal variances not assumed	,32180	-,73331	,74573

APPENDIX E

FREQUENCY ANALYSIS (% OF COMPANIES OUTSOURCING RATES ON DIFFERENT ACTIVITIES)

Statistics

		Transportation	IT	Accounting	Marketresearch	Distribution	Warehouse
N	Valid	30	30	30	29	28	30
	Missing	0	0	0	1	2	0
Mean		2,4667	2,1333	1,4667	1,4828	2,2143	1,2333

Statistics

		Procurement	Productdevelopment	Handlingpackaging	Turningtoaccount	Technical support
N	Valid	30	30	30	27	30
	Missing	0	0	0	3	0
Mean		1,6667	1,3333	1,2333	1,3704	1,7333

Statistics

		HRmanagement	Advocacy	Importexportconsultancy	Security
N	Valid	30	30	29	30
	Missing	0	0	1	0
Mean		1,3667	2,5000	1,4483	1,7333

Frequency Table

Transportation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	2	6,7	6,7	6,7
	2,00	12	40,0	40,0	46,7
	3,00	16	53,3	53,3	100,0
	Total	30	100,0	100,0	

IT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	5	16,7	16,7	16,7
	2,00	16	53,3	53,3	70,0
	3,00	9	30,0	30,0	100,0
	Total	30	100,0	100,0	

Accounting

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	18	60,0	60,0	60,0
	2,00	10	33,3	33,3	93,3
	3,00	2	6,7	6,7	100,0
	Total	30	100,0	100,0	

Marketresearch

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	18	60,0	62,1	62,1
	2,00	8	26,7	27,6	89,7
	3,00	3	10,0	10,3	100,0
	Total	29	96,7	100,0	
Missing	System	1	3,3		
Total		30	100,0		

Distribution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	3	10,0	10,7	10,7
	2,00	16	53,3	57,1	67,9
	3,00	9	30,0	32,1	100,0
	Total	28	93,3	100,0	
Missing	System	2	6,7		
Total		30	100,0		

Warehouse

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	24	80,0	80,0	80,0
	2,00	5	16,7	16,7	96,7
	3,00	1	3,3	3,3	100,0
	Total	30	100,0	100,0	

Procurement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	17	56,7	56,7	56,7
	2,00	6	20,0	20,0	76,7
	3,00	7	23,3	23,3	100,0
	Total	30	100,0	100,0	

Productdevelopment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	21	70,0	70,0	70,0
	2,00	8	26,7	26,7	96,7
	3,00	1	3,3	3,3	100,0
	Total	30	100,0	100,0	

Handlingpackaging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	25	83,3	83,3	83,3
	2,00	3	10,0	10,0	93,3
	3,00	2	6,7	6,7	100,0
	Total	30	100,0	100,0	

Turningtoaccount

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	19	63,3	70,4	70,4
	2,00	6	20,0	22,2	92,6
	3,00	2	6,7	7,4	100,0
	Total	27	90,0	100,0	
Missing	System	3	10,0		
Total		30	100,0		

Technicalsupport

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	11	36,7	36,7	36,7
	2,00	16	53,3	53,3	90,0
	3,00	3	10,0	10,0	100,0
	Total	30	100,0	100,0	

HRmanagement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	21	70,0	70,0	70,0
	2,00	7	23,3	23,3	93,3
	3,00	2	6,7	6,7	100,0
	Total	30	100,0	100,0	

Advocacy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	4	13,3	13,3	13,3
	2,00	7	23,3	23,3	36,7
	3,00	19	63,3	63,3	100,0
	Total	30	100,0	100,0	

Importexportconsultancy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	17	56,7	58,6	58,6
	2,00	11	36,7	37,9	96,6
	3,00	1	3,3	3,4	100,0
	Total	29	96,7	100,0	
Missing	System	1	3,3		
Total		30	100,0		

Security

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	18	60,0	60,0	60,0
	2,00	2	6,7	6,7	66,7
	3,00	10	33,3	33,3	100,0
	Total	30	100,0	100,0	

APPENDIX F

CROSSTAB ANALYSIS (OUTSOURCING RATES OF SMES AND LARGE COMPANIES)

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
employeeno * outrate	30	100,0%	0	,0%	30	100,0%

employeeno * outrate Crosstabulation

			outrate		
			2,00	3,00	Total
employeeno	1,00	Count	15	8	23
		% within employeeno	65,2%	34,8%	100,0%
		% within outrate	78,9%	72,7%	76,7%
		% of Total	50,0%	26,7%	76,7%
	2,00	Count	4	3	7
		% within employeeno	57,1%	42,9%	100,0%
		% within outrate	21,1%	27,3%	23,3%
		% of Total	13,3%	10,0%	23,3%
Total		Count	19	11	30
		% within employeeno	63,3%	36,7%	100,0%
		% within outrate	100,0%	100,0%	100,0%
		% of Total	63,3%	36,7%	100,0%

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
employeeno * Transportation	30	100,0%	0	,0%	30	100,0%
employeeno * IT	30	100,0%	0	,0%	30	100,0%
employeeno * Accounting	30	100,0%	0	,0%	30	100,0%
employeeno * Marketresearch	29	96,7%	1	3,3%	30	100,0%
employeeno * Distribution	28	93,3%	2	6,7%	30	100,0%
employeeno * Warehouse	30	100,0%	0	,0%	30	100,0%
employeeno * Procurement	30	100,0%	0	,0%	30	100,0%
employeeno * Productdevelopment	30	100,0%	0	,0%	30	100,0%
employeeno * Handlingpackaging	30	100,0%	0	,0%	30	100,0%
employeeno * Turningtoaccount	27	90,0%	3	10,0%	30	100,0%
employeeno * Technicalsupport	30	100,0%	0	,0%	30	100,0%
employeeno * HRmanagement	30	100,0%	0	,0%	30	100,0%
employeeno * Advocacy	30	100,0%	0	,0%	30	100,0%
employeeno * Importexportconsultancy	29	96,7%	1	3,3%	30	100,0%
employeeno * Security	30	100,0%	0	,0%	30	100,0%

employeeno * Transportation Crosstabulation

			Transportation			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	2	8	13	23
		% within employeeno	8,7%	34,8%	56,5%	100,0%
		% within Transportation	100,0%	66,7%	81,3%	76,7%
		% of Total	6,7%	26,7%	43,3%	76,7%
	2,00	Count	0	4	3	7
		% within employeeno	,0%	57,1%	42,9%	100,0%
		% within Transportation	,0%	33,3%	18,8%	23,3%
		% of Total	,0%	13,3%	10,0%	23,3%
Total		Count	2	12	16	30
		% within employeeno	6,7%	40,0%	53,3%	100,0%
		% within Transportation	100,0%	100,0%	100,0%	100,0%
		% of Total	6,7%	40,0%	53,3%	100,0%

employeeno * IT Crosstabulation

			IT			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	3	12	8	23
		% within employeeno	13,0%	52,2%	34,8%	100,0%
		% within IT	60,0%	75,0%	88,9%	76,7%
		% of Total	10,0%	40,0%	26,7%	76,7%
	2,00	Count	2	4	1	7
		% within employeeno	28,6%	57,1%	14,3%	100,0%
		% within IT	40,0%	25,0%	11,1%	23,3%
		% of Total	6,7%	13,3%	3,3%	23,3%
Total		Count	5	16	9	30
		% within employeeno	16,7%	53,3%	30,0%	100,0%
		% within IT	100,0%	100,0%	100,0%	100,0%
		% of Total	16,7%	53,3%	30,0%	100,0%

employeeno * Accounting Crosstabulation

			Accounting			Total
			1,00	2,00	3,00	
employeeno	1,00	Count	13	8	2	23
		% within employeeno	56,5%	34,8%	8,7%	100,0%
		% within Accounting	72,2%	80,0%	100,0%	76,7%
		% of Total	43,3%	26,7%	6,7%	76,7%
	2,00	Count	5	2	0	7
		% within employeeno	71,4%	28,6%	,0%	100,0%
		% within Accounting	27,8%	20,0%	,0%	23,3%
		% of Total	16,7%	6,7%	,0%	23,3%
Total		Count	18	10	2	30
		% within employeeno	60,0%	33,3%	6,7%	100,0%
		% within Accounting	100,0%	100,0%	100,0%	100,0%
		% of Total	60,0%	33,3%	6,7%	100,0%

employeeno * Marketresearch Crosstabulation

			Marketresearch			Total
			1,00	2,00	3,00	
employeeno	1,00	Count	14	6	2	22
		% within employeeno	63,6%	27,3%	9,1%	100,0%
		% within Marketresearch	77,8%	75,0%	66,7%	75,9%
		% of Total	48,3%	20,7%	6,9%	75,9%
	2,00	Count	4	2	1	7
		% within employeeno	57,1%	28,6%	14,3%	100,0%
		% within Marketresearch	22,2%	25,0%	33,3%	24,1%
		% of Total	13,8%	6,9%	3,4%	24,1%
Total		Count	18	8	3	29
		% within employeeno	62,1%	27,6%	10,3%	100,0%
		% within Marketresearch	100,0%	100,0%	100,0%	100,0%
		% of Total	62,1%	27,6%	10,3%	100,0%

employeeno * Distribution Crosstabulation

			Distribution			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	3	12	6	21
		% within employeeno	14,3%	57,1%	28,6%	100,0%
		% within Distribution	100,0%	75,0%	66,7%	75,0%
		% of Total	10,7%	42,9%	21,4%	75,0%
	2,00	Count	0	4	3	7
		% within employeeno	,0%	57,1%	42,9%	100,0%
		% within Distribution	,0%	25,0%	33,3%	25,0%
		% of Total	,0%	14,3%	10,7%	25,0%
Total		Count	3	16	9	28
		% within employeeno	10,7%	57,1%	32,1%	100,0%
		% within Distribution	100,0%	100,0%	100,0%	100,0%
		% of Total	10,7%	57,1%	32,1%	100,0%

employeeno * Warehouse Crosstabulation

			Warehouse			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	18	4	1	23
		% within employeeno	78,3%	17,4%	4,3%	100,0%
		% within Warehouse	75,0%	80,0%	100,0%	76,7%
		% of Total	60,0%	13,3%	3,3%	76,7%
	2,00	Count	6	1	0	7
		% within employeeno	85,7%	14,3%	,0%	100,0%
		% within Warehouse	25,0%	20,0%	,0%	23,3%
		% of Total	20,0%	3,3%	,0%	23,3%
Total		Count	24	5	1	30
		% within employeeno	80,0%	16,7%	3,3%	100,0%
		% within Warehouse	100,0%	100,0%	100,0%	100,0%
		% of Total	80,0%	16,7%	3,3%	100,0%

employeeno * Procurement Crosstabulation

			Procurement			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	13	5	5	23
		% within employeeno	56,5%	21,7%	21,7%	100,0%
		% within Procurement	76,5%	83,3%	71,4%	76,7%
		% of Total	43,3%	16,7%	16,7%	76,7%
	2,00	Count	4	1	2	7
		% within employeeno	57,1%	14,3%	28,6%	100,0%
		% within Procurement	23,5%	16,7%	28,6%	23,3%
		% of Total	13,3%	3,3%	6,7%	23,3%
Total		Count	17	6	7	30
		% within employeeno	56,7%	20,0%	23,3%	100,0%
		% within Procurement	100,0%	100,0%	100,0%	100,0%
		% of Total	56,7%	20,0%	23,3%	100,0%

employeeno * Productdevelopment Crosstabulation

			Productdevelopment			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	15	7	1	23
		% within employeeno	65,2%	30,4%	4,3%	100,0%
		% within Productdevelopment	71,4%	87,5%	100,0%	76,7%
		% of Total	50,0%	23,3%	3,3%	76,7%
	2,00	Count	6	1	0	7
		% within employeeno	85,7%	14,3%	,0%	100,0%
		% within Productdevelopment	28,6%	12,5%	,0%	23,3%
		% of Total	20,0%	3,3%	,0%	23,3%
Total		Count	21	8	1	30
		% within employeeno	70,0%	26,7%	3,3%	100,0%
		% within Productdevelopment	100,0%	100,0%	100,0%	100,0%
		% of Total	70,0%	26,7%	3,3%	100,0%

employeeno * Handlingpackaging Crosstabulation

			Handlingpackaging			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	20	3	0	23
		% within employeeno	87,0%	13,0%	,0%	100,0%
		% within Handlingpackaging	80,0%	100,0%	,0%	76,7%
		% of Total	66,7%	10,0%	,0%	76,7%
	2,00	Count	5	0	2	7
		% within employeeno	71,4%	,0%	28,6%	100,0%
		% within Handlingpackaging	20,0%	,0%	100,0%	23,3%
		% of Total	16,7%	,0%	6,7%	23,3%
Total		Count	25	3	2	30
		% within employeeno	83,3%	10,0%	6,7%	100,0%
		% within Handlingpackaging	100,0%	100,0%	100,0%	100,0%
		% of Total	83,3%	10,0%	6,7%	100,0%

employeeno * Turningtoaccount Crosstabulation

			Turningtoaccount			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	15	4	2	21
		% within employeeno	71,4%	19,0%	9,5%	100,0%
		% within Turningtoaccount	78,9%	66,7%	100,0%	77,8%
		% of Total	55,6%	14,8%	7,4%	77,8%
	2,00	Count	4	2	0	6
		% within employeeno	66,7%	33,3%	,0%	100,0%
		% within Turningtoaccount	21,1%	33,3%	,0%	22,2%
		% of Total	14,8%	7,4%	,0%	22,2%
Total		Count	19	6	2	27
		% within employeeno	70,4%	22,2%	7,4%	100,0%
		% within Turningtoaccount	100,0%	100,0%	100,0%	100,0%
		% of Total	70,4%	22,2%	7,4%	100,0%

employeeno * Technicalsupport Crosstabulation

			Technicalsupport			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	10	10	3	23
		% within employeeno	43,5%	43,5%	13,0%	100,0%
		% within Technicalsupport	90,9%	62,5%	100,0%	76,7%
		% of Total	33,3%	33,3%	10,0%	76,7%
	2,00	Count	1	6	0	7
		% within employeeno	14,3%	85,7%	,0%	100,0%
		% within Technicalsupport	9,1%	37,5%	,0%	23,3%
		% of Total	3,3%	20,0%	,0%	23,3%
Total		Count	11	16	3	30
		% within employeeno	36,7%	53,3%	10,0%	100,0%
		% within Technicalsupport	100,0%	100,0%	100,0%	100,0%
		% of Total	36,7%	53,3%	10,0%	100,0%

employeeno * HRmanagement Crosstabulation

			HRmanagement			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	15	6	2	23
		% within employeeno	65,2%	26,1%	8,7%	100,0%
		% within HRmanagement	71,4%	85,7%	100,0%	76,7%
		% of Total	50,0%	20,0%	6,7%	76,7%
	2,00	Count	6	1	0	7
		% within employeeno	85,7%	14,3%	,0%	100,0%
		% within HRmanagement	28,6%	14,3%	,0%	23,3%
		% of Total	20,0%	3,3%	,0%	23,3%
Total		Count	21	7	2	30
		% within employeeno	70,0%	23,3%	6,7%	100,0%
		% within HRmanagement	100,0%	100,0%	100,0%	100,0%
		% of Total	70,0%	23,3%	6,7%	100,0%

employeeno * Advocacy Crosstabulation

			Advocacy			Total
			1,00	2,00	3,00	
employeeno	1,00	Count	2	6	15	23
		% within employeeno	8,7%	26,1%	65,2%	100,0%
		% within Advocacy	50,0%	85,7%	78,9%	76,7%
		% of Total	6,7%	20,0%	50,0%	76,7%
	2,00	Count	2	1	4	7
		% within employeeno	28,6%	14,3%	57,1%	100,0%
		% within Advocacy	50,0%	14,3%	21,1%	23,3%
		% of Total	6,7%	3,3%	13,3%	23,3%
Total		Count	4	7	19	30
		% within employeeno	13,3%	23,3%	63,3%	100,0%
		% within Advocacy	100,0%	100,0%	100,0%	100,0%
		% of Total	13,3%	23,3%	63,3%	100,0%

employeeno * Importexportconsultancy Crosstabulation

			Importexportconsultancy			Total
			1,00	2,00	3,00	
employeeno	1,00	Count	13	9	1	23
		% within employeeno	56,5%	39,1%	4,3%	100,0%
		% within Importexportconsultancy	76,5%	81,8%	100,0%	79,3%
		% of Total	44,8%	31,0%	3,4%	79,3%
	2,00	Count	4	2	0	6
		% within employeeno	66,7%	33,3%	,0%	100,0%
		% within Importexportconsultancy	23,5%	18,2%	,0%	20,7%
		% of Total	13,8%	6,9%	,0%	20,7%
Total		Count	17	11	1	29
		% within employeeno	58,6%	37,9%	3,4%	100,0%
		% within Importexportconsultancy	100,0%	100,0%	100,0%	100,0%
		% of Total	58,6%	37,9%	3,4%	100,0%

employeeno * Security Crosstabulation

			Security			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	13	2	8	23
		% within employeeno	56,5%	8,7%	34,8%	100,0%
		% within Security	72,2%	100,0%	80,0%	76,7%
		% of Total	43,3%	6,7%	26,7%	76,7%
	2,00	Count	5	0	2	7
		% within employeeno	71,4%	,0%	28,6%	100,0%
		% within Security	27,8%	,0%	20,0%	23,3%
		% of Total	16,7%	,0%	6,7%	23,3%
Total		Count	18	2	10	30
		% within employeeno	60,0%	6,7%	33,3%	100,0%
		% within Security	100,0%	100,0%	100,0%	100,0%
		% of Total	60,0%	6,7%	33,3%	100,0%

APPENDIX G

MEAN ANALYSIS (RELATIONSHIP BETWEEN SELLER AND TPL PROVIDER)

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
f1	30	3,00	5,00	4,0333	,66868
f2	29	2,00	5,00	3,9655	,90565
f3	30	2,00	5,00	3,6667	,84418
f4	30	2,00	5,00	3,4667	,81931
f5	30	3,00	5,00	3,9333	,52083
f6	30	3,00	5,00	4,0000	,64327
f7	30	2,00	5,00	3,8667	,77608
f8	30	2,00	5,00	3,8333	,74664
f9	30	3,00	5,00	4,2333	,62606
f10	29	1,00	5,00	3,0000	1,28174
Valid N (listwise)	28				

APPENDIX H

MEAN AND FREQUENCY ANALYSIS (RELATIONSHIP BETWEEN BUYER AND SELLER)

Descriptives

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
buyer1	28	1,00	3,00	1,8929	,78595
buyer2	28	1,00	3,00	2,0714	,85758
buyer3	28	1,00	3,00	2,2143	,68622
buyer4	28	1,00	3,00	1,5714	,57275
Valid N (listwise)	28				

Frequencies

Statistics

		buyer1	buyer2	buyer3	buyer4
N	Valid	28	28	28	28
	Missing	2	2	2	2

Frequency Table

buyer1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	10	33,3	35,7	35,7
	2,00	11	36,7	39,3	75,0
	3,00	7	23,3	25,0	100,0
	Total	28	93,3	100,0	
Missing	System	2	6,7		
Total		30	100,0		

buyer2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	9	30,0	32,1	32,1
	2,00	8	26,7	28,6	60,7
	3,00	11	36,7	39,3	100,0
	Total	28	93,3	100,0	
Missing	System	2	6,7		
Total		30	100,0		

buyer3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	4	13,3	14,3	14,3
	2,00	14	46,7	50,0	64,3
	3,00	10	33,3	35,7	100,0
	Total	28	93,3	100,0	
Missing	System	2	6,7		
Total		30	100,0		

buyer4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1,00	13	43,3	46,4	46,4
	2,00	14	46,7	50,0	96,4
	3,00	1	3,3	3,6	100,0
	Total	28	93,3	100,0	
Missing	System	2	6,7		
Total		30	100,0		

APPENDIX I

CROSSTAB ANALYSIS (LOGISTICS DEPARTMENT SOPHISTICATION OF SMES AND LARGE COMPANIES)

Crosstabs

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
employeeno * a1	30	100,0%	0	,0%	30	100,0%
employeeno * a2	30	100,0%	0	,0%	30	100,0%
employeeno * a3	30	100,0%	0	,0%	30	100,0%
employeeno * a4	30	100,0%	0	,0%	30	100,0%
employeeno * a5	30	100,0%	0	,0%	30	100,0%
employeeno * a6	30	100,0%	0	,0%	30	100,0%
employeeno * a7	30	100,0%	0	,0%	30	100,0%
employeeno * a8	30	100,0%	0	,0%	30	100,0%
employeeno * a9	30	100,0%	0	,0%	30	100,0%
employeeno * a10	30	100,0%	0	,0%	30	100,0%
employeeno * a11	30	100,0%	0	,0%	30	100,0%

employeeno * a1 Crosstabulation

			a1			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	11	7	5	23
		% within employeeno	47,8%	30,4%	21,7%	100,0%
		% within a1	73,3%	77,8%	83,3%	76,7%
		% of Total	36,7%	23,3%	16,7%	76,7%
	2,00	Count	4	2	1	7
		% within employeeno	57,1%	28,6%	14,3%	100,0%
		% within a1	26,7%	22,2%	16,7%	23,3%
		% of Total	13,3%	6,7%	3,3%	23,3%
Total		Count	15	9	6	30
		% within employeeno	50,0%	30,0%	20,0%	100,0%
		% within a1	100,0%	100,0%	100,0%	100,0%
		% of Total	50,0%	30,0%	20,0%	100,0%

employeeno * a2 Crosstabulation

			a2			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	13	5	5	23
		% within employeeno	56,5%	21,7%	21,7%	100,0%
		% within a2	68,4%	83,3%	100,0%	76,7%
		% of Total	43,3%	16,7%	16,7%	76,7%
	2,00	Count	6	1	0	7
		% within employeeno	85,7%	14,3%	,0%	100,0%
		% within a2	31,6%	16,7%	,0%	23,3%
		% of Total	20,0%	3,3%	,0%	23,3%
Total		Count	19	6	5	30
		% within employeeno	63,3%	20,0%	16,7%	100,0%
		% within a2	100,0%	100,0%	100,0%	100,0%
		% of Total	63,3%	20,0%	16,7%	100,0%

employeeno * a3 Crosstabulation

			a3			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	17	2	4	23
		% within employeeno	73,9%	8,7%	17,4%	100,0%
		% within a3	73,9%	100,0%	80,0%	76,7%
		% of Total	56,7%	6,7%	13,3%	76,7%
	2,00	Count	6	0	1	7
		% within employeeno	85,7%	,0%	14,3%	100,0%
		% within a3	26,1%	,0%	20,0%	23,3%
		% of Total	20,0%	,0%	3,3%	23,3%
Total		Count	23	2	5	30
		% within employeeno	76,7%	6,7%	16,7%	100,0%
		% within a3	100,0%	100,0%	100,0%	100,0%
		% of Total	76,7%	6,7%	16,7%	100,0%

employeeno * a4 Crosstabulation

			a4			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	21	1	1	23
		% within employeeno	91,3%	4,3%	4,3%	100,0%
		% within a4	75,0%	100,0%	100,0%	76,7%
		% of Total	70,0%	3,3%	3,3%	76,7%
	2,00	Count	7	0	0	7
		% within employeeno	100,0%	,0%	,0%	100,0%
		% within a4	25,0%	,0%	,0%	23,3%
		% of Total	23,3%	,0%	,0%	23,3%
Total		Count	28	1	1	30
		% within employeeno	93,3%	3,3%	3,3%	100,0%
		% within a4	100,0%	100,0%	100,0%	100,0%
		% of Total	93,3%	3,3%	3,3%	100,0%

employeeno * a5 Crosstabulation

			a5		
			1,0	2,0	Total
employeeno	1,00	Count	23	0	23
		% within employeeno	100,0%	,0%	100,0%
		% within a5	79,3%	,0%	76,7%
		% of Total	76,7%	,0%	76,7%
	2,00	Count	6	1	7
		% within employeeno	85,7%	14,3%	100,0%
		% within a5	20,7%	100,0%	23,3%
		% of Total	20,0%	3,3%	23,3%
Total		Count	29	1	30
		% within employeeno	96,7%	3,3%	100,0%
		% within a5	100,0%	100,0%	100,0%
		% of Total	96,7%	3,3%	100,0%

employeeno * a6 Crosstabulation

			a6			Total
			1,00	2,00	3,00	
employeeno	1,00	Count	14	7	2	23
		% within employeeno	60,9%	30,4%	8,7%	100,0%
		% within a6	70,0%	100,0%	66,7%	76,7%
		% of Total	46,7%	23,3%	6,7%	76,7%
	2,00	Count	6	0	1	7
		% within employeeno	85,7%	,0%	14,3%	100,0%
		% within a6	30,0%	,0%	33,3%	23,3%
		% of Total	20,0%	,0%	3,3%	23,3%
Total		Count	20	7	3	30
		% within employeeno	66,7%	23,3%	10,0%	100,0%
		% within a6	100,0%	100,0%	100,0%	100,0%
		% of Total	66,7%	23,3%	10,0%	100,0%

employeeno * a7 Crosstabulation

			a7		Total
			1,00	2,00	
employeeno	1,00	Count	22	1	23
		% within employeeno	95,7%	4,3%	100,0%
		% within a7	75,9%	100,0%	76,7%
		% of Total	73,3%	3,3%	76,7%
	2,00	Count	7	0	7
		% within employeeno	100,0%	,0%	100,0%
		% within a7	24,1%	,0%	23,3%
		% of Total	23,3%	,0%	23,3%
Total		Count	29	1	30
		% within employeeno	96,7%	3,3%	100,0%
		% within a7	100,0%	100,0%	100,0%
		% of Total	96,7%	3,3%	100,0%

employeeno * a8 Crosstabulation

			a8		
			1,00	2,00	Total
employeeno	1,00	Count	22	1	23
		% within employeeno	95,7%	4,3%	100,0%
		% within a8	78,6%	50,0%	76,7%
		% of Total	73,3%	3,3%	76,7%
	2,00	Count	6	1	7
		% within employeeno	85,7%	14,3%	100,0%
		% within a8	21,4%	50,0%	23,3%
		% of Total	20,0%	3,3%	23,3%
Total		Count	28	2	30
		% within employeeno	93,3%	6,7%	100,0%
		% within a8	100,0%	100,0%	100,0%
		% of Total	93,3%	6,7%	100,0%

employeeno * a9 Crosstabulation

			a9		
			1,00	2,00	Total
employeeno	1,00	Count	20	3	23
		% within employeeno	87,0%	13,0%	100,0%
		% within a9	80,0%	60,0%	76,7%
		% of Total	66,7%	10,0%	76,7%
	2,00	Count	5	2	7
		% within employeeno	71,4%	28,6%	100,0%
		% within a9	20,0%	40,0%	23,3%
		% of Total	16,7%	6,7%	23,3%
Total		Count	25	5	30
		% within employeeno	83,3%	16,7%	100,0%
		% within a9	100,0%	100,0%	100,0%
		% of Total	83,3%	16,7%	100,0%

employeeno * a10 Crosstabulation

			a10		
			1,00	2,00	Total
employeeno	1,00	Count	19	4	23
		% within employeeno	82,6%	17,4%	100,0%
		% within a10	76,0%	80,0%	76,7%
		% of Total	63,3%	13,3%	76,7%
	2,00	Count	6	1	7
		% within employeeno	85,7%	14,3%	100,0%
		% within a10	24,0%	20,0%	23,3%
		% of Total	20,0%	3,3%	23,3%
Total		Count	25	5	30
		% within employeeno	83,3%	16,7%	100,0%
		% within a10	100,0%	100,0%	100,0%
		% of Total	83,3%	16,7%	100,0%

employeeno * a11 Crosstabulation

			a11			
			1,00	2,00	3,00	Total
employeeno	1,00	Count	14	8	1	23
		% within employeeno	60,9%	34,8%	4,3%	100,0%
		% within a11	73,7%	88,9%	50,0%	76,7%
		% of Total	46,7%	26,7%	3,3%	76,7%
	2,00	Count	5	1	1	7
		% within employeeno	71,4%	14,3%	14,3%	100,0%
		% within a11	26,3%	11,1%	50,0%	23,3%
		% of Total	16,7%	3,3%	3,3%	23,3%
Total		Count	19	9	2	30
		% within employeeno	63,3%	30,0%	6,7%	100,0%
		% within a11	100,0%	100,0%	100,0%	100,0%
		% of Total	63,3%	30,0%	6,7%	100,0%