BUSINESS ACTIVITIES, COMPETITIVE ADVANTAGES, OWNERSHIP TYPES OF THE TEXTILE AND APPAREL INDUSTRIES IN CHINA

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APPROVAL PAGE

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A candidate for the degree of Textile and Apparel Masters of Science Degree, and hereby certify that, in their opinion, it is worthy of acceptance.

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To my family:

Lian Shan Chang, Gui Hui Kao, and Jia hao Chang

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CHAPTER I: INTRODUCTION

Chapter I contains the following sections: (a) background of the study, (b) purpose of the study, and (c) significance of the study.

Background of the Study

Since the industrial revolution in the late 19th century, the manufacturing operations of the textile and apparel industries have shifted from the United Kingdom and other Western European countries to the United States, to the newly industrialized countries in Asia, to China, and to developing countries in Southern Asia (Dicken, 2007; Jin 2004, Ha-Brookshire & Lee, in press). Fueled by its "open door policy", China has been one of the fastest growing countries among those countries, (Dickerson, 1999). By the mid 1990s, China became the world's largest producer and exporter of textile and apparel products thanks to its extremely low labor cost (Chen & Shih, 2004). In 2009, the Chinese textile and apparel industries exported up to USD 15 billion to the world and employed 2.7 million workers (Dicken, 2007; Taiwan Textile Federation [TTF], 2010). Outside Asia, textile and apparel production activities are prominent in Mexico, followed in the Americas by the United States and Brazil, and by Italy in Western Europe (Dicken, 2007).

From the industry life cycle perspective, China is believed to be in the growth stage or close to the mature stage. It seems that many textile and apparel firms in China have started showing the characteristics typically found in the mature phase of the industry life cycle. This transition of the Chinese textiles and apparel industries is an

important factor for today's businesses as the industry life cycle theory suggests that firms seek different competitive advantages as they operate in different phases of the industry life cycle. To date, the key aspects of the success of the textile and apparel industries in China have been examined through competitive advantages based on economies of scales and on lower-labor cost (Chen & Shih, 2004; Dickerson, 1999; Dicken, 2007; Guercini, 2004; Jin, 2004). However, considering the fact that the industries are now transitioning from the growth to mature stage of the industry life cycle, it is important to investigate the current stature of Chinese textile and apparel firms for a greater understanding of global textile and apparel industry evolution.

Purpose of the Study

As China is going through transition from the growth to mature stage, it is expected that business activities, key resources for competitive advantages, and the ownership types of textile and apparel manufacturers will change. Thus, the purpose of this study was to gain a deep and timely understanding about the state of current textile and apparel manufacturers in China whose industry is in the transitioning period from the growth to mature phase of the industry life cycle. More specifically, first, this study was designed to explore what kinds of business activities Chinese textile and apparel manufacturers are currently performing for their success. Second, the study explored what types of firm resources these manufacturers obtain to achieve competitive advantages. Third, the study examined differences in business activities and firm resources for competitive advantages among different firm ownership types.

Significance of the study

Today, China is the biggest textile and apparel products producer and exporter to the United States (TTF, 2010). As a result, China is extremely powerful and, thus, greatly impacts global textile and apparel trade. The findings of this study will be an important reference for both practitioners and academia for the following reasons.

First, for textile and apparel firms in developed countries who might be interested in investing in the textile and apparel industries in China, the study findings offer insights into the types of business activities that textile and apparel manufacturers in China are currently performing. These insights specify which business activities are already full of competition and which niche markets still can be filled.

Second, by exploring what types of firm resources these manufacturers in China obtain to achieve competitive advantages, the study findings may help firms who are interested in investing in the textile and apparel industries in China to prepare themselves with critical resources they must obtain or improve when they invest or start a new business in China.

Third, the study results can also be an important reference for textile and apparel firms in developing countries. These firms can use China's successes in textile and apparel manufacturing as a model to adjust their strategies in the future when their industry might undergoes a similar transition. A pattern of success may not be fully copied but it can still be a useful guide for firms in developing countries. More specifically, by exploring what kinds of business activities that textile and apparel manufacturers in China are currently performing and what types of firm resources these

manufacturers in China obtain to achieve competitive advantages, these firms may be able to determine which aspects they can and should place more effort to make themselves come up from behind and to be more competitive in the global marketplace.

Fourth, this study provides timely information about Chinese textile and apparel firms for U.S. textile and apparel firms who plan to continue doing business with China. This study illustrates the business activities that textile and apparel manufacturers in China are currently focusing on and the types of firm resources these manufacturers in China acquire to achieve competitive advantages. Thus, the result of this study can help U.S. buyers have a greater knowledge of textile and apparel firms in China.

Finally, the study findings may be valuable for educators and students in China. The job market is extremely comparatively in China. Thus, the study findings will be an important trend guide for educators and students in the textile and apparel related programs in China to decide which skills and knowledge should be the program focus.

CHAPTER II: LITERATURE REVIEW

This section includes (a) industry life cycle theory, (b) overview of the global textile and apparel industries, and (c) industry life cycle and firms' competitive advantages. The study's research questions are also presented.

Industry Life Cycle Theory

Industry life cycle theory suggests that the industry goes through certain stages. Klepper (1997) differentiated three evolutionary stages for an industry. In the beginning stage, also called embryonic stage, the market environment is quite uncertain, product design is primal and products are produced using unspecialized equipment. In this stage, total market volume is low. In the second stage, the growth stage, product innovation declines and becomes stable. Products are manufactured with more specialized machinery, resulting in more refined products. In this stage, the output growth is higher, while the entry of new companies is slow and shakeout of producers occurs. In stage three, the mature stage, innovations becomes more important and other business functions, such as management and marketing, advance. The mature stage often comes with a mature market, in which output growth slows, entry declines further, and market shares stabilize. Vernon (1966) addressed that shift in manufacturing production locations is likely to occur at the mature stage of an industry evolution.

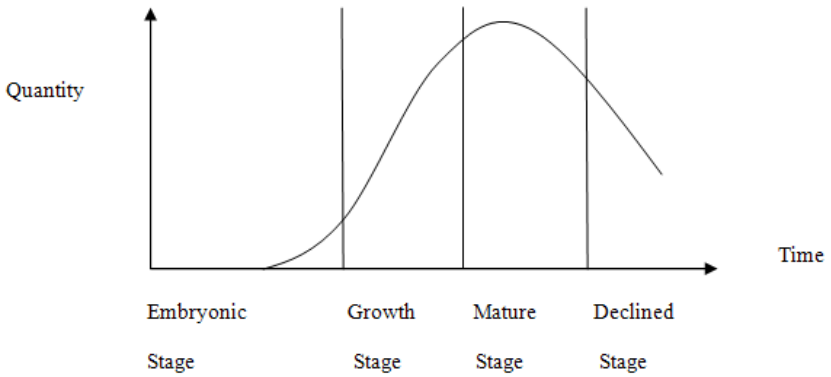
Toyne and his colleagues (1984) provided more detailed descriptions in six stages of development for the textile and apparel industries from embryonic to declining (Dickerson, 1999). In the embryonic stage, most of the products are simple fabrics and

garments from natural fibers. Most textile and apparel production is for the domestic market. In the early export of apparel stage, the labor cost is low and the manufacturer equipment is not advanced. Typically, the products are for the low-end market in developed countries. In the more advanced production of fabric and apparel stage, domestic manufacturing in the textile sector improves greatly in volume and quality. Textile products start to be exported to other countries. At the same time, apparel manufacturing is also expanded and upgraded. Overall, the technical equipment is more sophisticated, and more investment both foreign and domestic, is made into the textile and apparel industries.

In the golden-age stage, manufacturing technology becomes more advanced, and the volume of textile and apparel output increases. Textile and apparel products are more diversified and become a dominant force in the international market. Furthermore, textile and apparel firms in this stage invest overseas. In the full maturity stage, although total output may increase, employment starts to drop as manufacturing technology advances. In this stage, manufacturing is more capital-intensive than labor-intensive. The whole industry might become more concentrated, too. In the declining stage, the number of firms and labor decrease significantly, and a country faces large trade deficits (Dickerson, 1999).

Figure 1 shows that when industry is in the embryonic stage, the amount of production is very low. The product volume keeps increasing in the growth stage and peaks in the mature stage. Finally, the amount of production decreases tremendously in the declined stage.

Figure 1. Industry life cycle curve[1]

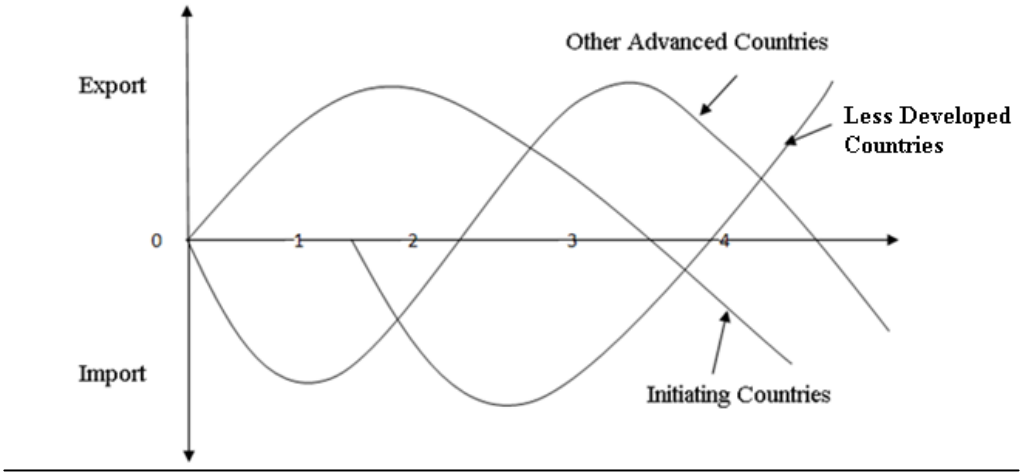


[1]Adapted from "The exploring research of the international product life cycle," by Chou, C.D., 2002, Unpublished master's thesis, National Cheng Kung University, Tainan City, Taiwan.

The industry life cycle at different countries can vary greatly. As Figure 2 shows, when the initiating countries are in the embryonic stage, the amount of exports from those countries is high. Meanwhile, other advanced countries import products from those initiating countries (Chou, 2002). While transitioning to the mature stage, initiating countries are still the leading countries in the global marketplace. However, the amount of exports may start to decrease. At the same time, other advanced countries start to import less from these intiating countries. Meanwhile, the technology of the industry in the initiating countries is becoming advanced and the whole industry transitions towards the mature stage (Chou, 2002). At the same time, the industry in the other advanced countries start to grow. When initiating countries are in the declined stage, less developed

countries begin to establish the industry and import less than before because of much lower cost (Chou, 2002).

Figure 2. International industry life cycle curves[2]



[2]Adapted from "The exploring research of the international product life cycle," by Chou, C.D., 2002, Unpublished master's thesis, National Cheng Kung University, Tainan City, Taiwan.

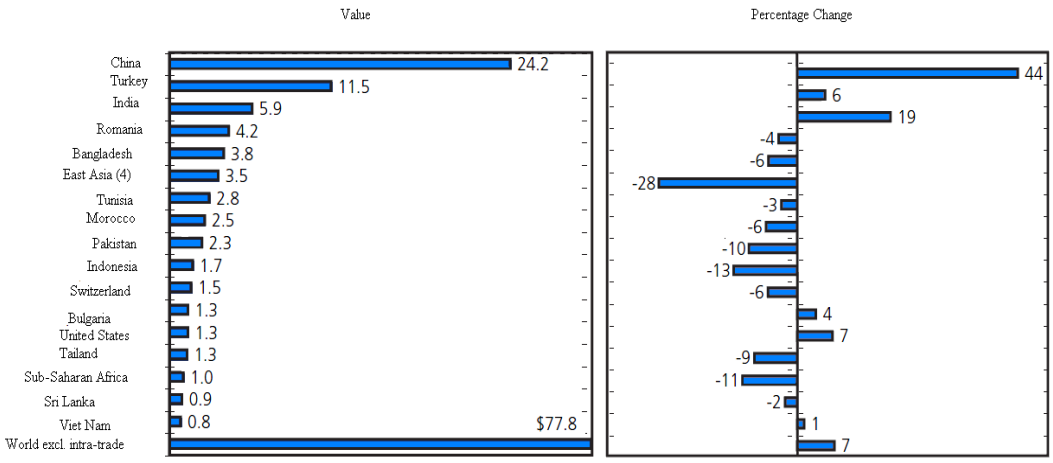
Overview of the Global Textile and Apparel Industries

Since the industrial revolution in the late 19th century, the manufacturing operations of the global textile and apparel industries have shifted from the United Kingdom and other Western European countries, to the United States, to the newly industrialized countries in Asia, to China, and to developing countries in Southern Asia (Dicken, 2003; Jin 2004, Ha-Brookshire & Lee, in press). Each country or region seems to follow the similar pattern of industry life cycle when the manufacturing sites of the global textile and apparel industries shift.

In 2005, China was the largest textile and apparel exporter to the EU (25) [the European Union composed of 25 countries] with a 44% increase of exports from the

previous year. Turkey and India were the second and the third largest textile and apparel exporters to the EU (25) and each country had the growth rate of 6% and 19%, respectively. Meanwhile, Hong Kong, Republic of Korea (Korea, hereinafter), Macao, and Taiwan had a decrease of 28% in their exports to the European Union [EU] (25) from 2004 to 2005. These data suggest the sharp rise in textile and apparel imports by the EU (25) from China reflects a shift in the textile and apparel global supply chain (World Trade Report, 2006). Figure 1 illustrates EU (25) imports of textile and apparel by country and region from January to October 2005.

Figure 3. European Union (25) imports of textile and apparel by country and region, January-October 2005 [3]

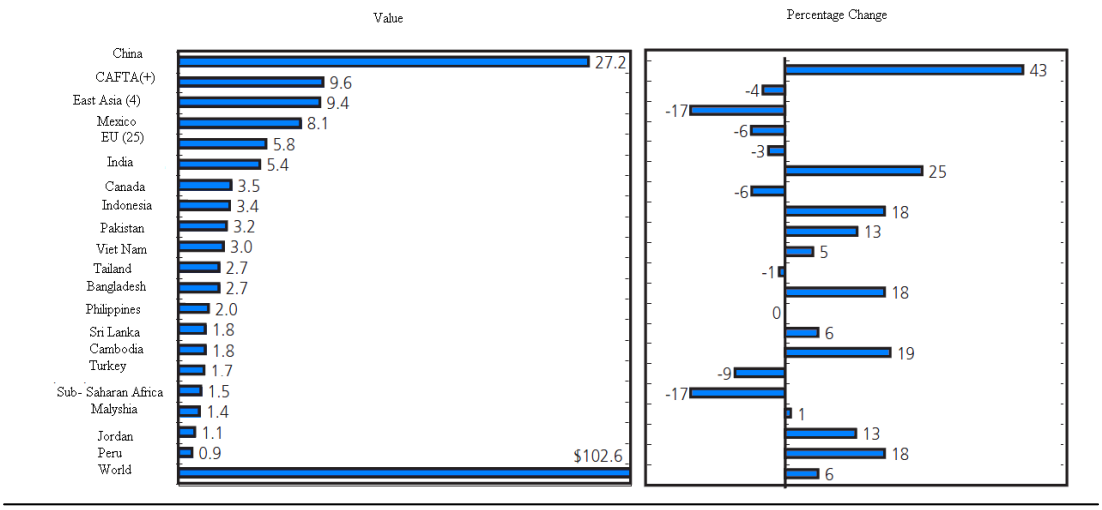


[3] Adapted from World Trade Report 2006: Exploring the links between subsidies, and the WTO.

Furthermore, China was also the leading textile and apparel exporter to the United States. China gained a considerable export growth at the rate of 43% to the United States from 2004 to 2005. For the U.S. market, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras and Nicaragua were the second largest textile and apparel

exporting network due to the Central America Free Trade Agreement (CAFTA). Hong Kong, Korea, Macao, and Taiwan was the third largest regional network from which the United States imported textile and apparel. However, all of these countries faced a substantial decrease in textile and apparel exports to the United States from the previous year. Textile and apparel exported from the six countries of CAFTA decreased by 6%. Hong Kong, Korea, Macao, and Taiwan recorded a drop of 17% in their textile and apparel exports to the United States. Figure 4 illustrates the latest detailed breakdown of US imports of textile and apparel products by country and region as of 2005.

Figure 4. United States imports of textile and apparel by country and region, 2005[4]



[4]Adapted from World Trade Report 2006: Exploring the links between subsidies, and the WTO.

In 2008, the world's largest textile exporter was the EU (27) [the European Union composed of 27 countries], followed by China, the United States, Hong Kong, Korea, India, Turkey, Taiwan, Japan, and Pakistan. In the apparel sector, China was the world's leading exporter in 2008, followed by the EU (27), Hong Kong, Turkey, Bangladesh, India, Vietnam, Indonesia, Mexico and the United States (Trends in World Textile and Clothing Trade, 2010).

Although the EU (27) was the second largest textile exporter, the EU (27) was also the largest importing network of textile and apparel products in the global economy in 2008 (Trends in World Textile and Clothing Trade, 2010). The United States was the largest textile and apparel importing country in 2008 (Trends in World Textile and Clothing Trade, 2010).

Compared to the previous year, textile exports from Asian countries to African countries increased by 20% in 2009 (Trends in World Textile and Clothing Trade, 2010). Similarly, textile exports from Asian countries to the Middle Eastern countries rose by 18% (Trends in World Textile and Clothing Trade, 2010). However, textile trades within North American countries fell by 8%, and those within European countries decreased by 3% (Trends in World Textile and Clothing Trade, 2010).

In the apparel manufacturing sector, apparel exports from Asian countries to European countries rose by 17%, and those from Asian countries to Commonwealth of Independent States (CIS) countries, former Soviet Republics, increased by 14 % (Trends in World Textile and Clothing Trade, 2010). These trade statistics suggest that Asian countries are still the major textile exporters while countries in the Africa and Middle East regions are importing those textiles to make apparel products. These statistics also imply that European and CIS countries are now importing more apparel products from Asian countries than before. Meanwhile, this trend decreased intra-trades within the North America and European regions.

The shift in textile and apparel imports and exports in the global economy may be seen as the result of economic developments in each country. As an economy grows, labor costs rise. Thus, textile and apparel manufacturing that typically requires relatively

low-cost labor move to developing economies. This shifting pattern helps explain industry life cycle theory. The next section provides a broad review of the textiles and apparel industry in Western Europe, the United States, newly industrialized countries in Asia, and China. Each country shows distinctive characteristics of different phases in the industry life cycle.

Textile and Apparel Industries in Western European Countries

The United Kingdom is the birthplace for the development of the global textile and apparel industry. At the turn of the 20th century, the United Kingdom (UK) accounted for 70% of the world's textile trade (Dickerson, 1999). However, since then, the textile and apparel industries in Western European countries, led by the UK, have declined and manufacturing operations have been shifted to low-wage countries due to the increasing wages in Western European countries. The Western Europeans denote this process as outward processing trade (OPT). OPT was more popular in the apparel manufacturing sector than the textile manufacturing sector due to the wage costs being a higher proportion of total cost. Western European countries have established many OPT partners with Central and Eastern European countries, Mediterranean countries, and some selected countries in North Africa. For Western European countries, the OPT partnerships provided significant advantages over apparel manufacturing in Asian countries because of geographic proximity that would help quickly respond to domestic market demands. The OPT arrangement between Western European countries and their neighboring countries accelerated domestic job losses. For instance, EU lost 450,000 jobs from 1988 to 1993 and Germany lost 135,000 jobs alone in 1996 (Dickerson, 1999; Baumann, 1997).

Despite the decline in textile and apparel manufacturing, countries in Western Europe have been focusing on other value-added activities, such as logistics, innovative or advanced textile products, and educating skilled employees. Today, they are still recognized as fashion trend-setters, high quality producers, and the privileged users of certain industrial technology in world trade. The four countries that are currently dominating the European textile and apparel industries are Germany, United Kingdom, Italy, and France (Dickerson, 1999).

Germany

The German textile and apparel industry has been challenged by cost competition in the global supply chain in the past 15 years (Taplin & Winteron, 2004). At the end of the 1980s, production costs per manufacturing minute in Germany were about €0.30, while the average for comparable work in low-wage countries was about €0.10. In 2004, the same costs were about €0.40 per production minute in Germany, about €0.25 in the industrialized countries in Europe and Americas, about €0.15 in newly industrialized countries in Asia, and about €0.1 in low-wage countries (Adler, 2004). Because of this, the German apparel industry has made the OPT arrangements with its neighboring countries, resulting in a significant decline in apparel manufacturing.

The German textile industry, however, chose to upgrade and invest in manufacturing technology further. Germany is now a place for the production of "technical" and "intelligent textiles" (Dickerson, 1999; Adler, 2004). Large German textile firms specialize in the production of non-woven yarns and fabrics. In recent years, technical textiles gained approximately 40% of the production value in the domestic textile sector (Adler, 2004).

In today's German consumer market, the need for simple clothing, for instance undergarments, shirts, t-shirts, sportswear, and clothing accessories, is now met by imported products from developing countries (Adler, 2004). High quality products, designer brand products, and functional apparel are served by German apparel firms (Dickerson, 1999; Adler, 2004). These firms are a new type of clothing firm that has arisen in order to deal with the low wages in other producing countries. The majority of German apparel firms now see themselves more as agents than manufacturers, and as know-how processors including creative designers. A small portion of German apparel manufacturing firms still remain in Germany to handle the last-minute and special tasks, stock helping and logistics as well as for support of foreign production and for sales (Adler, 2004).

United Kingdom

The textile and apparel industries in the United Kingdom (UK) provided over 1 million jobs in 1971, accounting for 12.5% of total manufacturing employment (Balasubramanyam & Salisu, 1993). However, employment in the textile and apparel manufacturing sector in the UK has declined significantly since the 1970s. In 1980, the number of employment in both industries had declined to 467,000 from over 1 million in 1971 (Balasubramanyam & Salisu, 1993).

During the 1980s and 1990s, the UK exported textiles and apparel products mainly to France, Germany, and the Netherlands. More than 80% of textiles were imported from developed Western European countries. In the UK apparel sector, half of the total imports were from developed countries and the other half were from developing countries (Balasubramanyam & Salisu, 1993).

Table 1 shows that, in 1980, the UK imported textile products more than it exported by approximately 10%. In 1990, the UK imported approximately 80% more textile products than it exported. Similarly, in the apparel sector, the UK imported 38.6% more than it exported in 1980. However, by 1990, the UK imported apparel 122% more than it exported.

Table 1. International Trade of the UK Textile and Apparel Sector 1980 and 1990 (£ million constant 1985 price)

	Textiles sector		Apparel sector	
	1980	1990	1980	1990
Exports	1735.0	2320.6	686.0	1275.7
Imports	1916.9	4185.4	951.4	2833.2
Trade balance	-181.9	-1864.8	-265.4	-1557.5
	(-10.2%)	(-80 %)	(-38.6%)	(-122%)

Adapted from "International trade and employment in the UK textiles and clothing sector", by Balasubramanyam, V. N., & Salisu M. A., 1993, *Applied Economics. 25,* 1477-1482.

From 1980 to 1989, the UK imported more textile products from developed countries than it did from developing countries. On the other hand, in the same period, the UK imported more apparel products from developing countries than it did from developed countries. Table 2 shows import penetration ratios for the UK textile and apparel industries from 1980 to 1989.

Table 2. Import Penetration Ratios for UK Textile and Apparel Industries

	Apparel(%)			Textile (%)		
	1980	1985	1989	1980	1985	1989
Developed countries	-0.8	1.4	4.3	1.7	17.6	13.9
Developing countries	10.8	13.9	21.3	1.7	1.2	2.6
Total	10.0	15.3	25.6	3.4	18.8	16.5

Adapted from "International trade and employment in the UK textiles and clothing sector", by Balasubramanyam, V. N., & Salisu M. A., 1993, *Applied Economics. 25,* 1477-1482.

Today, the textile and apparel industries in the UK are still suffering from the effects of low-cost imports for a quality of textile products, Italy produce woolen and worsted fabric at a lower cost than the UK producers (Owen & Jones, 2003). Owen and Jones (2003) also pointed out that the textile and apparel industries in the UK are historically known for high quality. However, the UK manufacturers, especially textile manufacturers, should put more emphasis on promoting their brands and developing value-added products.

Italy

Italy used to be considered the premier European manufacturer. Today, Italy is still known for trendy fashion and quality. And it is proud of quality workmanship associated with "made in Italy" labels (Dickerson, 1999).

Guercini (2004) pointed out that textile and apparel industries in Italy have two characteristics which are very different from other European countries. First, Italy is poor in both natural fiber and man-made fiber production. Second, the structure of the

textile and apparel industry in Italy is concentrated and rooted in local manufacturing systems. These local manufacturing systems are either known for specialized textile manufacturing or apparel manufacturing, or both.

Before 2002, Italy was doing well in both the textiles and the apparel sector (Guercini, 2004). The export rate over the past ten years showed a positive trend. However, there has been a declining negative export rate since 2002 in both the textile and the apparel sectors. Italy has found it is necessary to relocate manufacturing operations to lower wage countries in order to increase profits and survive in the global trade environment (Dickerson, 1999; Guercini, 2004).

Now, the Italian apparel manufacturing industry has adapted new core values and enforces it own competitive advantages (Guercini, 2004; Taplin & Winteron, 2004). Italy has implicated a vertical integration strategy to compete with the massive low-cost labors in China (Guercini, 2004). Seven top Italian clothing companies, such as Benetton, Marzotto, Fila Holding and Prada, are now putting more focus more on distribution and other value-added activities (Guercini, 2004). Meanwhile, the Italian textile industry is focusing on innovating within the manufacturing processes of yarns, fabrics, and machines that would provide new design more frequently.

France

France is home to some of the most high-end brands in the world, such as Louis Vuitton, Yves Saint Lauren, and Chanel. The capital of France, Paris is considered the fashion center in the world. Furthermore, the French high-tech textile industry stands number four in the market share worldwide (TTF, 2009).

In the past, the French textile and apparel industries were manufacturing-oriented and less integrated (TTF, 2009). Since 1980, France started relocating manufacturing to other countries, such as East European countries and China. Today, the French textile and apparel industries are focusing on brands and distribution activities (TTF, 2009).

More recently, 2003 to 2008, apparel imports and exports grew slowly but steadily (TTF, 2009). During this period, the French apparel industry has been dedicated to innovation, creativity, and design. The industry had also focused on protecting and developing specific skills, strengthening the image of the sector to attract more investments, and exploring new markets to create core competitive advantages (TTF, 2009).

Meanwhile, textile exports have decreased heavily in the same time period. To respond to industry decline, the French textile industry developed textile research institutes, associations, and schools to support innovative and creative textiles. Even the French government created new regulations and tax policies for textile companies to promote new or functional textile innovation (TTF, 2009). Despite the efforts, the textile industry has steadily decreased, including exports.

Textile and Apparel Industries in the United States

Similar to Western European countries, the United States has undergone industry decline. Low-price imported textile and apparel products eliminated weaker textile and apparel manufacturers (Sen, 2007). In 1997, approximately 364 out of 26,838 (or 1.3%) textile and apparel manufacturing firms closed their businesses. A total of 364 businesses that failed in 1997 had approximately US$1 billion liabilities (The Dun & Bradstreet

Corp., 1999). Similarly, the total number of employees in apparel manufacturing dropped from 892,900 in 1997 to 316,900 in 2003 (US Department of Labor, 2003).

In textile sector, the US imports have grown from US$2.4 billion in 1979 to US$16.3 billion in 2003 at annual growth rate of approximately 8%. Also, the exports have increased from US$3.2 billion in 1978 to US$10.5 billion in 2003 (Kilduff, 2005). As for the apparel sector, US imports have grown from US$6.3 billion in 1979 to US$61.2 billion in 2003, an annual growth rate of approximately 9.7% (Kilduff, 2005). However, the exports have declined from US$8.2 billion in 2000 to US$5.2 billion in 2003 (Kilduff, 2005).

Low-price apparel imports are heavily reliant on basic styles and fabrics with unskilled labor requirement which little design changes are required from season to season (Sen, 2007). For instance, the market share of low-price imported apparel is especially high for men's and boys' clothing, knit-wear, and women's coats and jackets (Sen, 2007.).

In order to compete with foreign manufacturers, the US textile and apparel industries have been in a transition from manufacturing-oriented to value-added activities over the last 20 years (Sen, 2007). US textile and apparel firms have internationalized their operation and upgraded their technological and human resources capabilities to gain product differentiation via creativity and improved service (Kilduff, 2005). They have focused on product innovation, product variety, and improving the speed and flexibility of supply while lowering product cost to remain product competitive (Kilduff, 2005). For instance, Computer Aided Design (CAD) and/or Computer Aided Manufacturing (CAM) equipment were developed to reduce the cycle from design to production (Sen,

2007). They also strengthened their brand portfolios and invested heavily in design (Kilduff, 2005).

Overall, today, the U.S. textile and apparel industries are heavily focusing on value-added activities, such as logistics and quick response. Instead of manufacturing domestically, the US textile and apparel firms keep developing international brands and out-sourcing countries with lower labor costs. Approximately 58.2 % textiles products manufacturers and 65.5% apparel products manufactures consider themselves to be product providers, service providers, and distributors rather than manufacturers (Ha-Brookshire & Lee, in press).

Textile and Apparel Industries in ASIAN Newly Industrialized Countries

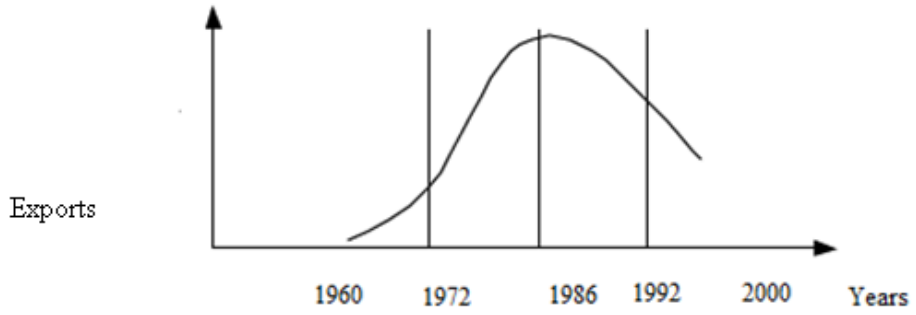
The textile and apparel industries in the East Asian newly industrialized countries (NICs) of Taiwan, Korea, and Hong Kong show a similar pattern of industry evolution as Western European countries and the United States. The industries of these countries started with the OEM (original equipment manufacturing) production from the 1950s and 1960s, then internationalized by offshore sourcing (Jin, 2004). Apparel manufacturing was booming in Hong Kong, Korea and Taiwan because of low labor costs in the 1950s and 1960s. However, with reduced trade regulation under preferential trade agreements (such as North American Free Trade Agreement and Caribbean Basin Trade Partnership Act) and the elimination of quotas as required under the World Trade Organization (WTO) Agreement on textile and apparel, traditional importers such as, Taiwan, Hong Kong and Korea, have been losing their market share in the US market since the beginning of the 1990s.

Today, these three countries are facing decreasing exports and a great pressure from China, India, and Bangladesh, as the US companies are seeking even lower-cost production (Sen, 2007). In response, textile and apparel firms from these three countries have gradually shifted their production offshore. Also, they have developed different competitive competencies to conquer the difficulties they are facing. Overall, NIC industries retained skill-intensive activities and only relocated labor-intensive activities (Jin, 2004).

Taiwan

Taiwan started to develop a textile and apparel industry in 1940. From 1940 to 1950 Taiwan manufacturers emphasized cotton spinning. From 1960 to 1970, the industry focused on man-made fibers. From 1970 to 1980, the focus shifted to the apparel manufacturing. By 1987, Taiwan was the biggest textile exporter in the world, accounting for 52% in global trade (Dickerson, 1999). However, since the late 1980s, Taiwan has started to lose its competitive advantages in basic textile production and apparel manufacturing and faced the declining market share in global trade (Chou, 2002). Figure 5 shows the patterns of textile and apparel exports since 1960 (Chou, 2002). This pattern clearly shows the life cycle of the Taiwanese textile and apparel industries, including embryonic, growth, maturity, and decline.

Figure 5. The industry life cycle of textile and apparel industries in Taiwan[5]



[5]Adapted from "The exploring research of the international product life cycle," by Chou, C.D., 2002, Unpublished master's thesis, National Cheng Kung University, Tainan City, Taiwan.

Today, the Taiwanese textile and apparel industries are facing rising wages and labor shortages. Because of the rising wages and labor shortages, Taiwan has developed and invested more in the technical textile and chemical textile manufacturing sectors (Chou, 2002; Dickerson, 1999). Meanwhile, Taiwan has started to allow hiring of foreign workers and relocated manufacturing operations to low- labor cost countries (Dickerson, 1999).

Korea

The textile and apparel industry has played a significant role in the development and economic success of Korea. In 1970, textile and apparel accounted for 41% of its total exports and about 30% in 1980 (Dickerson, 1999; Porter, 1998). In 2002, Korea represented the fifth largest exporter of textile and apparel merchandise in the global trade (Korea Federation of Textile Industries, 2002).

The apparel industry in Korea has faced the same problems of rising labor cost and labor shortage that Taiwan has. For instance, Jin and Moon (2006) showed that, in

2000, the hourly wage in textile and apparel industry in Korea was US$5.73, while it was US$0.41 in China. Therefore, the Korean apparel industry chose to invest in less-developed countries to cope with the higher labor cost in Korea (Jin, 2004). Besides investing in lower wage countries, Korea has been dedicated to developing its own local brands (Jin& Moon, 2006). During 2000, there were about 150 domestic brands launched. Approximately 1638 domestic brands and 565 foreign brands competed with each other for the US$11 billion Korean apparel fashion market (Fashion View, 2001; Jin & Moon, 2006). Furthermore, Korean apparel firms have started to internationalize their own local brands to some Asia countries, such as Vietnam, China, and Taiwan (Jin& Moon, 2006).

At the same time, in the textile sector, not only the chemical fiber industry in Korea has been growing well in both quantity and quality, but also the apparel industry produces high quality clothing and has been leading the fashion trends in Asia (Dickerson, 1999). Now, in response to the Korean textile and apparel industries which are in the mature or decline phase of the industry life cycle, the domestic textile and apparel manufacturing groups in Korea are considering close business partnerships, government awards, and specialization to be key resources to gain competitive advantages (Ha-Brookshire & Lee, in press). The foreign manufacturing group in Korea considers quick response and technology to be critical for their competitive advantages (Ha-Brookshire & Lee, in press).

Hong Kong

Hong Kong has also faced the increasing labor cost and the high price of real estate (Dickerson, 1999). Unlike Taiwan, Hong Kong's apparel industry has gained a great reputation for high fashion and high quality by its major customers, the United States and West Europe. Furthermore, Hong Kong has become a center of logistics (Dickerson, 1999; Jin, 2004).

Nearly all of Hong Kong's current apparel re-exports are from China (Jin, 2004). Also, because of the high fashion reputation and the geographic location, apparel firms in Hong Kong are transforming into firms providing more value-added activities in the global textile and apparel supply chain (Jin, 2004; Tan, Chan, Chu, Lai & Wang, 2005). For example, Li & Fung, the first and the largest buying office in Hong Kong, provides integrated service, including assistance in the product design (the higher value-added front-end task), materials out-sourcing for their manufacturing, and dealing with logistic for its customers (Jin, 2004). This company does not manufacture products but is a business networking center for apparel manufacturing.

In the past, Hong Kong textile and apparel industries focused on European and American markets but now they emphasize the Chinese market (Chan, Chu, Lai & Wang, 2005). Furthermore, some large textile and apparel manufacturers in Hong Kong have established vertical operations in China because of the geographic advantage (Chan, Chu, Lai & Wang, 2005). Moreover, the textile and apparel manufacturers in Hong Kong not only focus on value-added activity, but also specialize in building network with overseas

suppliers, response flexibility, and reliably fulfilling buyers' orders (Chan, Chu, Lai & Wang, 2005).

Textile and Apparel Industries in China

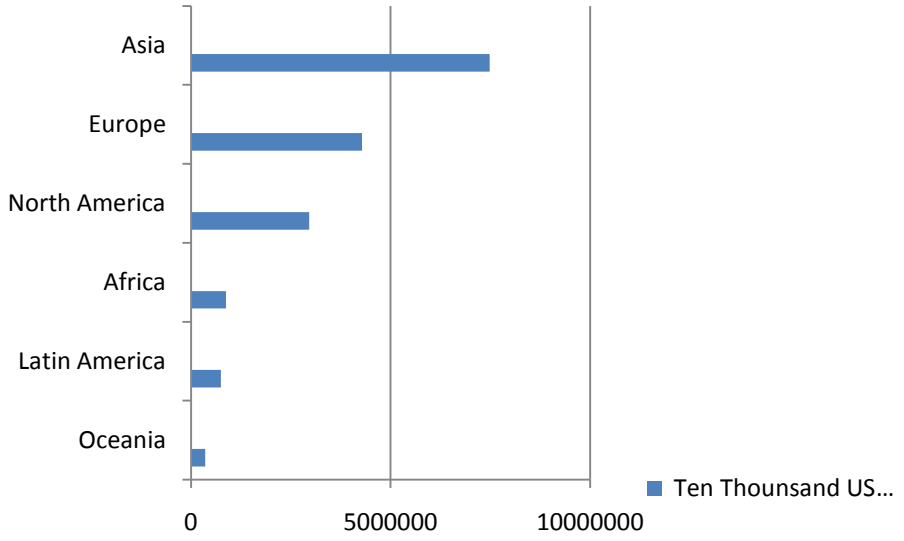
Industry evolution in the Chinese textile and apparel industry has sparked since China's "open door policy" in the 1979. Before the "open door policy", textile and apparel industries manufactured only for domestic market. Since the reform, China has put emphasis on labor-intensive manufactures to increase exports (Dickerson, 1999). In the early 1990s, labor costs in China were very low, ranging from US$ 40 to 80 per month (Dickerson, 1999). At the same time, low labor cost also attracted foreign investors to establish factories in China (Dickerson, 1999). By the mid 1990s, China became the world's largest producer and exporter of textile and apparel (Chen & Shih, 2004). In 2003, there were approximately 9,463 textiles and apparel firms in China (Chen & Shih, 2004). Most of these companies were concentrated in Guangdong, Zhejiang, Jiangsu, Shanghai, Fujian and Shandong, these regions accounted for 81.77 % of all textile and apparel manufacturers in China. A large number of regional industry clusters have taken shape. Their high efficiency and low costs have enabled them to gain an increasingly large quantity of orders from domestic and overseas customers (Chen & Shih, 2004).

These regional industry clusters also have advantages such as convenient access to information, world-class production equipment, and government support (Chen & Shih, 2004). These clusters were the first choice for Japanese and Hong Kong apparel manufacturers that sought production facilities in China (Chen & Shih, 2004). Moreover,

the whole textile and apparel manufacturing sector are well-known for their low labor cost in the global trade (Chen& Shih, 2004; Dicken, 2007).

In 2009, textile products exported from China accounted for US$ 5.4 billion and exported apparel products accounted for US$ 9.6 billion to the world, making China the biggest textile and apparel exporter in the world (TTF, 2010). The United States is the biggest buyer of Chinese textile and apparel, followed by Japan, Hong Kong, Germany, the United Kingdom, Italy, and France (TTF, 2010).

Figure 6. China exports of textile and apparel by continent, 2009[6]



[6] Adapted from "2009 China Exports and Imports of Textile and Apparel products by continent and Countries," by Taiwan Textile Federation, 2010.

According to China National Garment Association ([CNGA], 2008), today, the Chinese textile and apparel manufacturers are shifting from original equipment manufacturing (OEM) to original design manufacturing (ODM). This means that more and more textile and apparel manufacturing firms are engaged in designing, providing more value added services than OEM. In addition, Chinese factories are moving their manufacturing facilities into other countries, seeking low-cost labor. For example, approximately 1,000 textile and apparel manufacturers have already invested in and relocated their firms to Vietnam and Cambodia in the past few years (CNGA, 2008). The government of China not only encourages textile and apparel manufacturers to invest in other countries to gain comparative advantages but also encourages firms to develop the distribution centers and build international brands.

Today, China is believed to be in the growth stage and close to the mature stage of the industry life cycle. This means that many firms have started working towards the next phase of the industry life cycle. In the past, the literature suggested that firms in China have focused on low-cost activities based on economies of scales. However, it is a common knowledge now that these firms no longer compete based on low labor cost. Then, the question becomes what do these firms in today's economy do to compete while facing a transition from the growth to mature stage of the industry life cycle? Given that the trend of the textile and apparel manufacturing firms in China is a hand-in-hand issue for textile and apparel manufacturers and retailers in other countries, including the United States, there is no doubt that it is critical to understand what business activities Chinese textile and apparel manufacturers are currently performing. Therefore, this study proposed:

> Research question 1: What do textile and apparel manufacturers in China do (or what kinds of business activities do these firms perform) while facing transition from the growth to mature stage of the industry life cycle?

Industry Life Cycle and Firms' Competitive Advantages

As the industry develops, the bases of a firm's competitive advantages change or must change (Porter, 1990). Nadeau and Casselman (2008) argued that it is the competitive advantage that shapes the industry life cycle curve and, in fact, different competitive advantages are required at different stages in the industry life cycle. For instance, in the embryonic stage, it is less likely for any firm to have competitive advantages on economies of scale and vertical integration. However, competitive advantages on these two bases increase in the growth stage. In addition, it is more likely for firms to have competitive advantages on economies of scale and vertical integration in both mature and declined stages. Although Nadeau and Casselman (2008) made an interesting integration between industry life cycle and firms' competitive advantages, their research was limited to only the embryo and growth stages of the industry life cycle, thus, solely focusing on economies of scales and vertical integration. Much more examination is needed to deepen our understating of competitive advantages that firms seek in different stages of the industry life cycle.

A firm is said to have competitive advantages when it is implementing a value-creating strategy when other potential competitors do not or cannot (Barney, 1991). Barney (1991) argued that there are three main resources controlled by a firm that enable it to implement strategies to achieve competitive advantages and provide more criteria to examine firms' competitive advantage resources: physical capital resources, human capital resources, and organizational capital resources (Barney, 1991). Physical capital resources include the physical asset used in a firm, its plant and equipment, its geographic location, and its access to raw materials (Barney, 1991). Human capital resources include

training, experience, relationships, and the insights of managers and workers in a firm (Barney, 1991). Organizational capital resources include a firm's formal structure, its formal and informal planning, and controlling and coordinating systems (Barney, 1991).

Enz (2008) provided five detailed firms' resources categories for firms to gain competitive advantages based on Barney's theory and also applied these five resource categories to analyze Outback steakhouse's success in Korea: (1) financial resources, including all monetary resources from which firms can draw; (2) physical resources, including land building, equipment, locations, and access to raw materials; (3) human resources, such as skills, background, training of managers and employees, and also the way they are organized; (4) organizational knowledge and learning resources; (5) general organizational resources, including the firms' reputation, brand names, patents, contracts, and relationship with external stakeholders.

Ha-Brookshire and Lee (in press) also examined the current phase of industry life cycle in which the Korean textile and apparel industry and described business activities and competitive advantages sought by Korean apparel firms based on Barney's (1991) resource-based theory of the firm. The majority of Korean apparel manufacturing firms was found to have unique brand and superior customer service (that is, general organizational resources), and high quality (that is, organizational knowledge and learning resources).

In this light, the study aims to examine unique firm resources that today's textile and apparel firms in China use, seeking to gain competitive advantages while facing transition from the growth to the mature stage of the industry life cycle. The study findings will differ from Ha-Brookshire and Lee (in press) which investigated the Korean

textile and apparel industries currently going through the mature or decline phase of the industry life cycle. Therefore, using Barney's perspectives on competitive advantages, this study proposed:

> Research question 2: What key resources do textile and apparel firms in China, whose industry is currently going through transition from the growth to the mature stage, claim to have in order to achieve competitive advantages in today's global market environment?

According to the literature, more investments are made from both domestic and foreign countries when an industry is in the growth stage of the industry life cycle (Dickerson, 1999). In the mature stage, investment from both domestic and foreign countries starts to transfer overseas (Vernon, 1966). As known, China is in a transition period from the growth to the mature stage and, thus, the ownership types of textile and apparel firms are expected to become diverse and the proportion of foreign ownership may change. These changes in ownership are expected to impact key resources that these firms seek to obtain for competitive advantages. However, little is known about different firm resources that these firms may have depending on different ownership types in the Chinese textile and apparel industry. Therefore, the study proposed:

> Research question 3: What is the status of ownership types in today's textile and apparel industries in China?

Research question 4: Do textile and apparel firms with different ownerships perform different business activities?

Research question 5: Do textile and apparel firms with different ownerships have different key resources to obtain competitive advantages in today's global marketplace?

CHAPTER III: RESEARCH METHODOLOGY

This section discusses: (a) Research technique: content analysis, (b) data collection and sample, and (c) data analysis.

Research Technique: Content Analysis

For the exploratory and immediate nature of the study questions, content analysis of the text-based data available on the Web site of Chinese textile and apparel manufacturing firms was performed. The results of the content analysis were further analyzed using frequency distribution and multivariate analysis of variance.

Data Collection and Sample

Content analysis

Content analysis, a research methodology that examines words or phrases within a wide range of texts, is defined as the systematic, objective, and quantitative analysis of message characteristics (Neuendorf, 2002). In content analysis, text data are coded, or broken down, into manageable categories on a variety of levels, such as word, word sense, phrase, sentence, or theme (Neuendorf, 2002).

Content analysis deemed suitable for this study for three reasons. First, the study data could be quantified and then the meanings and the relationships of words and concepts can be analyzed. Researchers were then being able to make inferences about the messages within the texts (Neuendorf, 2002). Second, content analysis also can be applied to examine any piece of writing, such as, books, essays, interviews, discussions, newspaper headlines and articles, historical documents, speeches, or any occurrence of

communicative language. Third, the majority of content analyses have been conducted by academics for scholarly purposes ranging from marketing and media studies, to literature and rhetoric studies (Neuendorf, 2002).

Sample firms in this study were selected from the section of textile and apparel manufacturers in the directory published by the Chinese International Trade Department. This directory provides detailed information about approximately 7,000 firms, including their contact information, Web site addresses, and various contents of business performances. This sector includes several business types such as textile manufacturing, women's, men's, and children's wear manufacturing, dress suit manufacturing, and other miscellaneous apparel manufacturing.

First, the raw data was filtered and the cases without the firm's Web site addresses were removed from the study. Second, for the remaining cases, each firm's Web site was visited and if it provides no self-description information, the cases were removed from the study. The cases with any missing information on organizational performance variables were removed. This sampling process was repeated until a total of 200 firms were obtained for the study sample. It is expected that data from 200 firms would yield repeating themes and information saturation (Ha-Brookshire & Lee, in press).

Third, though the directory provided 7000 firms' information list, approximately 210 firms published their Web- site addresses in this directory. Out of 210 firms, approximately 10 of them listed inactive addresses. Therefore, a total number of 200 firms were collected for this study.

The study samples were from variety of locations and provided different production types. 49% were from Guangdong province and the rest of them were from five different provinces and 3 different areas. 48% of them produced Women's and men's, wear and dress suit. 20% of them produced textiles and the rest of them produced other 5 types of production. Table 3 shows a complete list of the study sample characteristics. The list was not exclusive to each type of production.

Table 3. Sample Characteristics

	Description	Chinese description	Frequency	Percentage
Location	Guangdong Province	广东省	98	49%
	Fujian Province	福建省	28	14%
	Shanghai City	上海市	23	11.5%
	Zhejiang Province	浙江省	22	11.%
	Beijing City	北京市	8	4%
	Shandong Province	山东省	6	3%
	Hong Kong	香港	5	2.5%
	Henan Province	河南省	5	2.5%
	Jiangsu Province	江苏省	3	1.5%
	Liaoning Province	辽宁省	2	1%
Production type	Women's and men's, wear and dress suit	女装 /男装/ 西服(Nu zhong/ Nan zhong/ Shi fu)	109	48%
	Textiles	纺织布料 (Funzhe bu liao)	47	20%
	Children's wear	童装(Tung zhong)	31	13.6%
	Sportswear	运动服 (Yundong fu)	17	7.4%
	Underwear/pants	内衣/裤 (Neyi/ku)	16	7%
	Uniform	制服(Zhi fu)	5	2.2%
	Accessories	服装配件 (Fuzhong peijian)	2	<1%

Data Analysis

Content analysis

To profile textile and apparel manufacturers' business activities and competitive advantage resources in China as described by firms themselves, a content analysis of Web-based communication data was conducted. Firms' Web sites are considered important tools to examine firms' communication and image management (Ha-Brookshire& Lee, in press). Firms represent themselves through their Web sites and firms use the content of their Web sites as a key way to communicate and deliver their positive image (Bélanger, et al., 2006, Ha-Brookshire& Lee, in press).

The text messages under "About Us" or "Company Information" available on each firm Web site was collected and used for coding. The coding system was developed for the business activity profiles, ownership categories, and competitive advantage resources categories based on Barney's perspective. There are five competitive advantage resources categories base on Barney's resource-based theory of the firm: (1) financial resources, (2) physical resources, (3) human resources, (4) organizational knowledge and learning resources, and (5) general organizational resources.

The principle of the coding system was to collect all terms used to describe business activities and firms' competitive advantages resources and to classify them fit into these five categories. Throughout the coding process, each time a new business activity is introduced, a new business activity profile was established. A dummy code "1" was given for each business activity described by the firm. For other business activities that are not mentioned in firm's Web site, a dummy code "0" was given.

When a firm uses Chinese words “生产(Shenxen),” the firm was considered engaging in apparel manufacturing activity. When both “销售(Shiosho)” and ”连锁(Liensuo)” were shown in the message, the firm was classified into the domestic retailing activity category. When a firm mentioned “设计(Sheji),” the firm was considered involving in designing activity. If both “物流(Wuliuo) and ”销售(Shiosho)” are shown in the text message, the firm was consider performing wholesaling activity. If “销售总代理(Shiosho zondaili) and “特许加盟(Teshujiamon)” are described under “About US” by the firm, it was considered engaging in licensing activity. If Chinese words “出口(Xuko)” is shown in the message, the firm was considered performing exporting activity. If a firm mentions commercial, public relation or endorsement activity, the firm was considered involvingin marketing activity. In Chinese, the key words are “广告(Guangao)” ”宣传(Shuanxuan)” or “品牌代言人(Pinpai diayenren)”. When “售後服務(Shohofuwu)” is shown in the message, the firm was consider providing customer service. “产品研究开发(xenpin yenjiokaifa)” represented product research and development. “加工(giagon)” represented OEM. “进口(jinko)” meant importing activity, and 原材料采购(yuan xialiuo xiago)” represented that the firm is performing a sourcing activity.

For the Barney’s five firms’ resources profile, a dummy code “1” was given for each competitive advantage resource used by the firm. For other competitive advantages resources that were not mentioned in the firm’s Web site, a dummy code “0” was given.

All monetary related resources were coded under the financial resource category. For example, when a firm describes it has strong monetary support or has a huge amount

of investment, the study classified this firm has financial resource. In Chinese the key words are “资金(zijing)” or ”资本雄厚(ziban shonho)”.

Land and building, equipment, location, size, and access to raw materials were coded under the physical resource category. A firm which mentioned owning more than one factory, owing employees’ damnatory or owning lands is considering to be having land and building resource. The key words are”厂房(chungfong)”, “员工宿舍(yunggun sushe)”, or”占地面积(jendi mienji)” in Chinese. A firm that described that it has advanced equipment for production was considered having equipment resource. The key words are ”先进生产设备(shenjins henxun shebei)” in Chinese. If a firm described itself that it is located in a geographically convenient place or a cluster area where historically famous for some certain products, this study classified the firm has location resource to achieve competitive advantage. In Chinese the key words are” 座落于(zuoluoyu)” or ”经营位置(jinying weizi)”. If a firm describes itself has many production lines, equipment or being able to produce huge amount of production, the firm is classified into size category. The key words are”大规模(daguamo)”, “大型实业(dashin xiyei)” in Chinese. When the firm has materials with lower price, the study classified it with easy access to raw materials. The Chinese key words are”材料采购(xialiuo xiago)”.

Human resource category contains skillful human resource, experienced human resource, and training programs, according to Barney. When a firm mentions there are skillful employees in the firm, it was categorized under skillful human resource. The key words in Chinese are”技术(jishoo)” or “专业人才(juanye renxia)”. When a firm mentions it owns employees with experience, the firm is categorized to have experienced

human resource. The Chinese key words are”经验(jinyen)”. When a firm describes it provides well training program for employees, the firm is under training programs category. The Chinese key words are”培训(peishun)”.

Knowledge of high quality, knowledge of customer satisfaction, ability of wide selection of products, ability of quick delivery, knowledge of fashion trend, and managerial knowledge were coded under the organizational knowledge and learning resource category. If a company describes itself providing high quality products, this study classified the firm has the knowledge to produce or maintain the high quality merchandise. Therefore the firm is considering to be categorized into organizational knowledge and learning resource category. The Chinese key words are “高品質(gaopinje)”. When a firm mentions that it is popular in the domain market or it has many loyal customers, this research considered the firm owns knowledge to satisfy customers or being popular in the marketplace. The Chinese key words are”市场占有率(shechun jenyolu)”. If a firm mentions it provides wide range of product selection for customers in the content of message, this study classified it has the ability of producing wide range of merchandise. The Chinese key words are”款式(kuanshe)”, “款色(kuanse)”. If a firm mentions it delivers merchandise on time or delivers with flexibility, it is qualified to have the ability of quick delivery in this research. The Chinese key words are”效率(shiolu)”. When the content of the message describes the firm providing fashionable products, updated style timely, or updating the fashion trend from Europe, USA, Korea, or Japan, it was classified under the category of knowledge of fashion trend. The Chinese key words are “时尚(sheshung)”, “潮流(chaolio)”, or”流行(lioshing)”. When a firm describes that it has good management system for the

production, human resource management, or good management team, this research considered it has the managerial knowledge. The Chinese terms are”管理系统(gunfli shitung)” ,”全面质量管理(TQM)”. Human resource management system was included in the organizational knowledge and learning resource category because these firms were strongly emphasizing that they know how to manage or obtain suitable system to manage, instead of the quality of human resources.

Finally, reputation, brand, certificates, awards, and good relationships were considered to be under general organizational resources. When a firm describes itself is well known for high quality, fashion, or honesty, it is said to have reputation as a general organizational resources. The Chinese key words are”口碑(kobei)” or “知名度(jemingdu)”. When a firm mentions it has own apparel brand, this study consider it has the resource of brand. The Chinese key terms is”品牌(pingpai)”. When a firm describes itself obtain certificate(s) from Chinese government or from international organizations to manage the firm or to guarantee the high quality, for instance ISO9001 and ISO14001, it is said to have resource of certificates as general organizational resources. The Chinese key words are”认证(renjan)”. The resource of awards means the firm receives awards from government, apparel associations or public media for quality, market share, or fashion. The Chinese key words are”荣誉(ronyu)”, “十大品牌/企业(sheda pinpai/chiye)”. The resource of good relationships contains maintaining good relationships with licensees, licensors, suppliers, government or academics. More specifically, a firm describes itself has good cooperate experience with those external stakeholders. The Chinese key words are ”合作关系(hezuo guanshi)”.

Finally, for the ownership profile, a dummy code “1” was given for domestic ownership and “2” for non-domestic ownership. Non-domestic ownership includes co-ownership. The key term for domestic ownership is ”民营企业 (minying chiye)” and the key term for non-domestic ownership are ”中外合资 (zhongwai hezi)”, “外商投资 (waishung taozi)”, “外商独资 (waishung duzi)”.

Frequency Distribution

The frequency distribution is a record of the number of cases observed at each score value that falls within each response category and is particularly useful for categorical data (Allen, Titsworth, & Hunt, 2009; McCall, 1994). A relative frequency distribution is a distribution that indicates the proportion of the total number of cases observed at each score value (McCall, 1994).

Frequency distribution was suitable for this study because it is commonly used to analyze categorical variables and to analyze continuous variables. It is often valuable to determine how frequently each value is represented among a range of values (Allen, Titsworth, & Hunt, 2009). Research questions 1, 2, and 3 were answered with frequency distribution. By calculating frequency distributions, the researcher was able to understand which business activities do the textile and apparel manufacturers in China focus on, which competitive advantages they most emphasize. In addition, by using the relative frequency distribution, the researcher was able to understand the percentages of each competitive advantage that the sample firms described on their Web sites. This study used the SPSS program for frequency distribution.

The Mann-Whitney U Test and the Two Way Chi-Square Test

The independent t-test was not suitable for this study because the study's dependent variables did not show the normal distribution which violated t-test assumptions. In addition, over half of the dependent variables were the nominal measurement level instead of the scale measurement level, which also violated t-test assumptions. Therefore, two nonparametric tests, the Mann-Whitney U test and Chi-square tests were performed by using SPSS in this study.

The Mann-Whitney U test is the alternative test to the independent t-test. It is a non-parametric test which used to compare two population means that come from the same population (Tests for Two Independent Samples, 2008; Mann-Whitney U Test, 2009). Mann-Whitney U test is also used to test whether two population means are equal or not. It is used for equal sample sizes (Tests for Two Independent Samples, 2008; Mann-Whitney U Test, 2009). In this study, the Mann- Whitney U test was performed for answering if there are statistically significant differences in means of the dependent variables between domestic ownership and non-domestic ownership firms.

The two way chi-square test is used to determine the significance of differences between the frequencies of occurrence in two or more categories along with two or more groups (Chi-Square Significance Tests, 2009; The Chi Square Test, 2009). For example, the two way chi square test can be used to determine the interest of people of different ages in relation to two different television series. In this study, a two way chi-square test was performed for answering if textile and apparel firms with different ownerships perform different business activities and if there are statistically significant difference in financial resource.

CHAPTER IV: RESULTS

This chapter includes (a) results of analysis for question 1, (b) results of analysis for question 2, (c) results of analysis for question 3, (d) results of analysis for question 4, and (e) results of analysis for question 5.

The Results of Analysis for Question 1

As the results of content analysis and frequency distribution, twelve business activities performed by Chinese textile and apparel manufacturers in the study data (See Table 4). They were (a) manufacturing [183 out of 200 or 91.5%], (b) domestic retailing [118 out of 200 or 59.0%], (c) design [105 out of 200 or 52.5%], (d) wholesaling [60 out of 200 or 30%], (e) licensing [47 out of 200 or 24%], (f) exporting [39 out of 200 or 19.5%], (g) marketing [35 out of 200 or 17.5%], (h) customer service [33 out of 200 or 16.5%], (i) product development [31 out of 200 or 15.5%], (j) OEM/ODM [10 out of 200 or 5%], (k) importing [4 out of 200 or 2%], and (l) sourcing [3 out of 200 or 1.5%]. These lists were not exclusive to each business activity. The average number of descriptors used by each firm was 3.3 words, suggesting multiple business activities conducted by one firm. The results were not exclusive to each business activity in this study.

The study result showed that 91.5% the textile and apparel manufacturers in China are still focusing on manufacturing and 59% of them are selling apparel products directly to the domestic market. 52.5% of them claimed they are involving in designing activity. 30% are doing wholesaling and 24% having license agreement with licensors or licensees in domestic or foreign market. Approximately one fifth of the study data only

claimed that they are engaged in exporting activity (19.5%). Instead, 17.5% are engaging in marketing activity, such as commercial, public relation, and endorsement. Out of 200 firms, 16.5% were providing customer service and 15.5% are engraining in research and development activity. Only 5% textile and apparel manufacturers are still doing OEM or ODM. Only, 2% of them are importing materials or products from foreign firms and only very few apparel manufacturers (1.5%) are sourcing productions from foreign countries. Although these results shows some evidence of in the transition from the growing to the mature stage of the industry life cycle, such as a strong involvement in design and retailing activities yet a small portion of exporting and OEM/ODM activities, overall, the results suggested that the textile and apparel industry in China is not yet to be in the full maturity phase.

Table 4. Business Activity Profile of Textile and Apparel Manufacturers in China

Business activity	**Description**	**Other descriptors used**	**Frequency (%)**
Manufacturing	Manufacturing	生产(Shenxun)	183 (91.5%)
Domestic Retailing (DRET)	Selling products to domestic consumers directly	销售(Shiosho)	118 (59.0%)
Design	Designing new textile or apparel products	设计(Sheji))	105 (52.5%)
Wholesaling (WHL)	Linking between the manufacturers and buyers as middlemen	销售(Shiosho) and 物流 (Wuliuo)	60 (30.0%)
Licensing	Having license agreement with licensors or licensees	总代理 (zondaili), 特许加盟连(Teshujiamon)	47 (24.0%)
Exporting	Selling products to foreign distributors, buyers, or consumers	出口(Xuko)	39 (19.5%)
Marketing	Commercial; Public Relation; Endorsement	广告(Guangao), 宣传 (Shuanxuan), 品牌代言人(Pinpai diayenren)	35 (17.5%)
Customer Service (CS)	Offering after sells customer service	售後(Shohofuwu)	33 (16.5%)
Product Development (PD)	Innovation; Research & Development (R&D)	产品研究开(xenpin yenjiokaifa)	31 (15.5%)
OEM/ODM	OEM: Manufacturing products for others to repackage and sell. ODM: Designing and manufacturing products which are specified and eventually branded by another firm for sale.	加工(giagon)	10 (5.0%)
Importing	Purchasing materials or products from foreign distributers or firms	进口(jinko)	4 (2.0%)
Sourcing	Searching and purchasing materials for production	材料采购(xialiuo xiago)	3 (1.5%)
	Total sample size	*200*	
	Average number of descriptors used	*3.3*	

The Results of Analysis for Question 2

As the results of content analysis and frequency distribution analysis, under Barney's five firms' resources, twenty criteria of firms' resources performed by Chinese textile and apparel manufacturers emerged from the study data (See Table 5).

Textile and apparel manufacturers in China claimed they have "Good relationship" [116 out of 200 or 58%] the most as one of the firms' key resources. The following criteria were "Knowledge of high quality" [113 out of 200 or 56.5%], "Equipment" [107 out of 200 or 53.5%], "Customers satisfaction"[89 out of 200 or 44.5%], "Knowledge of fashion trend" [72 out of 200 or 36%], "Size" [71 out of 200 or 35.5%], "Reputation" [66 out of 200 or 33%], "Brand"[64 out of 200 or 32%], "Location" [64 out of 200 or 33.5%], "Knowledge of wide selection of products" [59 out of 200 or 29.5%], "Land or building" [58 out of 200 or 29%], "Skilled human resource" [58 out of 200 or 29%], "Managerial knowledge" [56 out of 200 or 28%], "Awards" [51 out of 200 or 25.5%], "Certificates" [49 out of 200 or 24.5%], "Experienced human resource" [32 out of 200 or 16%], "Financial resource" [30 out of 200 or 15%], "Training program" [14 out of 200 or 7%], "Quick delivery knowledge" [11 out of 200 or 5.5%], and "Access to raw materials " [3 out of 200 or 2%]. The results were not exclusive to each firms' resources category in this study.

The result shows that among the five Barney's firms' resources, textile and apparel firms in China seemed to have general organizational resources the most, accounting for 35%. Among the general organizational resources, "Good relationship" [116 out of 200 or 58%] is the majority which not only indicates over half of textile and apparel manufacturers having good relationship with licensees, licensors, suppliers,

government and academics, but also shows that “Good relationship” is an important resource to run business in China. The second most common key resource was organizational knowledge and learning resources, accounting for 33%. In this resources category, “Quality” [113 out of 200 or 56.5%] is the majority. The third most common resource was physical resources, accounted for 30%. “Equipment” [107 out of 200 or 53.5%] was the majority in this category. Human resources was the next, accounting for 17%, and “Skillful employees” [58 out of 200 or 29%] was the majority. The last one was financial resources, accounting for 15%. “Financial status” [30 out of 200 or 15%] was the only criteria found in this category.

Table 5. Firms' Resources Described by Textile and Apparel Manufacturers in China

Barney's firms' resource categories	**firms' resources**	**Description**	**Chinese description**	**Frequency (%)**
General organizational resources (GOR) ***(Average percentage: 35%)***	Good Relationships	Maintaining good relationships with licensees, licensors, suppliers government or academics	合作关系(hezuo guanshi)	116 (58%)
	Reputation	Well known for high quality, fashion, or honesty	口碑(kobei), 知名度(jemingdu)	66 (33%)
	Brand	Having own apparel brand	品牌(pingpai)	64 (32%)
	Awards	Receiving government, textile and apparel associations or public media awards for quality, market share, or fashion	荣誉(ronyu), 十大品牌/ 企业 (sheda pinpai/chiye)	51 (25.5%)
	Certificates	Receiving certification from government	ISO9001 质量认证(jelian renjan), ISO14001 环保认证(hungbao renjan)	49 (24.5%)
Organizational knowledge and learning resources (OKLR) ***(Average percentage: 33%)***	Knowledge of high quality	Knowledge of providing high quality products	高品質(gaipinge)	113 (56.5%)
	Knowledge of customers satisfaction	Ability of offering highest customer satisfaction or popular in the marketplace	市场占有率 (shechun jenyolu)	89 (44.5%)
	Knowledge of fashion trend	Ability to providing fashionable products Having talented designers; updating new look quickly	时尚(sheshung), 潮流(chaolio),流行(lioshing)	72 (36%)
	knowledge of wide selection of products	Ability to providing wide selection of products	款式(kuanshe), 款色(kuanse)	59 (29.5%)
	Managerial knowledge	Knowledge of having good management system for efficient production or for human resource management	管理系统(gunfli shitung),全面质量管理（TQM)	56 (28%)
	Quick delivery knowledge	Ability of reacting fast to market demands and providing on-time delivery	效率(shiolu)	11 (5.5%)

Physical resources(PR) (***Average percentage: 30%)***	Equipment	Having advanced equipment for production	先进生产设备 (shenjins henxun shebei)	107 (53.5%)
	Size	Having many production lines, equipment or being capable to produce huge amount of production	大规模 (daguamo), 大型实业(dashin xiyei)	71 (35.5%)
	Location	Locate in a geographically convenient place or a cluster area where historically famous for some certain products	座落于 (zuoluoyu), 经营位置(jinying weizi)	67 (33.5%)
	Land or building	Owning more than one factory or owing employees' damnatory	厂房(chungfong), 员工宿舍 (yunggun sushe), 占地面积(jendi mienji)	58 (29%)
	Access to raw materials	Having material with lower price	原材料采购	3 (2%)
Human resources (HR) ***(Average percentage: 17%)***	Skillful HR	Having skillful employees	技术(jishoo), 专业人才(juanye renxia)	58 (29%)
	Experienced HR	Having experienced HR	经验(jinyen)	32 (16%)
	HR training program	Providing training program for employees	培训(peishun)	14 (7%)
Financial resources(FR) ***(Average percentage: 15%)***	Financial resources	Having strong monetary support or have huge amount of investment	资金(zijing),资本雄厚(ziban shonho)	30 (15%)
		Total sample size: 200 *Average number of descriptors used: 5.9*		

The Results of Analysis for Question 3

As the result of frequency distribution of ownership types in this study, 127 of 200 textile and apparel firms in China (63.5%) had domestic ownership and 73 of 200 (36.5%) apparel firms in China had non-domestic ownership. (See table 6)

Table 6. Ownership types described by textile and apparel manufacturers in China

Ownership Types	Description	Chinese description	Frequency (%)
Domestic ownership	The ownership of the firm is from China	民营企业 (minying chiye)	127(63.5%)
Non-domestic ownership	The ownership of the firm is from a foreign country; or It is a cooperate ownership both from foreign country and China.	中外合资 (zhongwai hezi), 外商投资 (waishung taozi), 外商独资 (waishung duzi)	73(36.5%)

The Results of Analysis for Question 4

To understand if textile and apparel firms with different ownerships perform different business activities in the transition from growing to mature stage. The mean differences between the two groups (domestic vs. non-domestic ownership) were compared via Chi-square tests because the dependent variables (business activities) were nominal data, for example, performing manufacturing or not. If the *p*-value is greater than 0.1, it is considered that there is no statistically significant difference in business activities between the firms with domestic and non-domestic ownership. On the other hand, if the *p*-value is less than 0.1, it is considered that there is a statistically significant difference in business activities between the firms with domestic and non-domestic ownership. As Table 7 shows, there is only a statistically significant difference in manufacturing activities between the firms with domestic and non-domestic ownership. The *p*-value of manufacturing activity is .003, which less than p=0.1. The mean difference of manufacturing between domestic ownership and non-domestic ownership is a positive value. It suggested that the domestic ownership type performs more manufacturing activities than non-domestic type does.

Table 7. Results of Chi-square Tests in Business Activities

Business Activities	**Mean**		**Mean difference**	***p*-value**
	Domestic Ownership	Non-domestic Ownership		(Chi-square test)
PD[1]	.18	.11	.07	.225
Design	.52	.53	-.01	.884
Manufacturing	.96	.84	.12	.003*
WHL[2]	.30	.30	.00	1.000
DRET[3]	.57	.62	-.05	.654
Marketing	.16	.21	-.05	.441
Exporting	.21	.16	.05	.462
Importing	.02	.03	-.01	.624
CS[4]	.15	.19	-.04	.437
Sourcing	.02	.01	.01	.147
Licensing	.23	.23	.00	1.000
OEM/ODM	.06	.03	.03	.332

*$p<0.1$
[1]*Product development*
[2]*wholesaling*
[3]*Domestic retailing*
[4]*Customer service*

The Results of Analysis for Question 5

In order to answer whether textile and apparel firms with different ownerships have different key resources to obtain competitive advantages in today's global marketplace, Mann-Whitney test and Chi-square test were performed in this study. Because the dependent variables (general organizational resource, organizational knowledge and learning resource, physical resource, and human resource) were component by several resources, the data are ordinal. The dependent variable (financial resource) was only component by one resource therefore it was nominal data

As the results of content analysis and Mann-Whitney test and Chi-square test, it was found that there is a statistically significant or suggestive difference in physical,

financial, and general organizational resources between the firms with domestic ownership and non-domestic ownership. There were no statistically significant differences in human and organizational knowledge and learning resources. As table 8 shows the *p*-value of physical resource is 0.047and the *p*-value of general resource is 0.066 which are less than 0.1. The *p*-value of financial resource is 0.1. Therefore, it has a suggestive significant difference. The values of *p*-value of human resource and the *p*-value organizational knowledge and learning resource are 0.89 and 0.69 which are greater than 0.1.

Table 8 also shows that textile and apparel manufacturers with domestic ownership own more physical resources, general organizational resources, and financial resources. The mean difference data suggested that domestic firms emphasize on more physical resources (.343), more general organizational resources (.373), and more financial resources (.085) than firms with non-domestic ownership.

Table 8. Results of Mann-Whitney and Chi-square Tests in Firm Resources

Firms' resource category	**Mean**		**Mean difference**	***p*-value**
	Domestic ownership	Non-domestic ownership		(Chi-square test)
GOR[1]	1.866	1.493	.374	.066*
OKLR[2]	2.024	1.959	.277	.690
PR[3]	1.646	1.301	.344	.047*
HR[4]	.512	.534	-.022	.890
FR[5]	.181	.097	.085	.100

*$p<0.1$

[1] General organizational resources

[2] Organizational knowledge and learning resources

[3] Physical resources

[4] Human resources

[5] Financial resources

CHAPTER V: CONCLUSIONS

This chapter includes (a) summary of the research questions, (b) discussions and implications of the major findings, (c) contributions of findings, and (d) study limitations and future research suggestions.

Summary of the Research Questions

From the industry life cycle perspective, the textile and apparel industries in China are believed to be in the growth stage or close to the mature stage. The industry life cycle theory suggests that firms seek different competitive advantages as they operate in different phases of the industry life cycle. To date, the key aspects of the success of the textile and apparel industries in China have been examined through competitive advantages based on economies of scales and low labor cost (Chen & Shih, 2004; Dickerson, 1999; Dicken, 2007; Guercini, 2004; Jin, 2004). Yet, considering the fact that the textile and apparel industries in China appear to be transitioning from the growth to mature stage of the industry life cycle, it is expected that business activities, key resources for competitive advantages, and the status of ownership types of textile and apparel manufacturers may differ from the past. Thus, this study was designed to explore what kinds of business activities Chinese textile and apparel manufacturers are currently performing for their success. Second, the study explored the types of firm resources these manufacturers possess to achieve competitive advantages. Third, the study examined differences in firms' business activities and resources for competitive advantages among

different firm ownership types. In sum, the study had the following five research questions:

Research question 1: What do textile and apparel manufacturers in China do (or what kinds of business activities do these firms perform) while facing transition from the growth to mature stage of the industry life cycle?

Research question 2: What key resources do textile and apparel firms in China, whose industry is currently going through transition from the growth to the mature stage, claim to have in order to achieve competitive advantages in today's global market environment?

Research question 3: What is the status of ownership types in today's textile and apparel industries in China?

Research question 4: Do textile and apparel firms with different ownerships perform different business activities?

Research question 5: Do textile and apparel firms with different ownerships have different key resources to obtain competitive advantages in today's global marketplace?

Discussions and Implications of the Major Findings

Content analysis of "About Us" on the Web sites of 200 sample firms selected from the section of textile and apparel manufacturers in the directory published by the Chinese International Trade Department and simple statistical analyses revealed several interesting findings on the textile and apparel industries in China.

First, the results suggested that the textile and apparel firms in China seemed to be not only focusing on manufacturing but also expanding into other business functions. Although almost all sample firms were engaged in manufacturing, approximately half of them were performing domestic retailing and designing activities. This result indicates that Chinese textile and apparel industries are beyond manufacturing and exporting, both of which are typical business activities found in the growth stage of the industry life cycle. Instead, the industries seemed to progress toward the mature stage, in which domestic retailing and designing activities are commonly found within the industry life cycle.

Second, the results also showed that some textile and apparel manufacturers are also engaged in licensing, marketing, and customer service activities. These three business activities are also typically found in the mature stage of the industry life cycle. Marketing, customer service, and licensing agreements with well-known brands are important value-added activities that firms could offer in a highly competitive market environment of the mature stage of the industry life cycle. In addition, the study results showed that very few of the study samples were performing exporting, OEM or ODM activities. These are another clue that Chinese textile and apparel industries may not be in the growth stage of the industry life cycle.

Third, from the perspective of firm resources emphasized by the sample firms, the study findings showed that today's textile and apparel manufacturers put high priorities on general organizational resources and organizational knowledge and learning resources, followed by physical, human, and financial resources. The results were also supportive for the argument that the Chinese textile and apparel industries may be in the transition from the growth to mature stage of the industry life cycle. When the industry is in the growth stage, businesses tend to focus on physical and financial resources to accommodate output growth and growing demands. In other words, physical and financial resources are important to obtain advanced equipment for production growth and having many production lines to take advantage of economies of scale. However, the study results showed that textile and apparel firms in China seemed to focus less on physical and financial resources than others.

Instead, the sample firms ranked the general organizational resources and the organizational knowledge and learning resource as the top two critical resources. In other words, textile and apparel manufacturers in China emphasized that they maintain good relationships with licensees, licensors, suppliers, government or academics. They also stressed that they maintain good reputation and manage their own brand very well, as supported by various certificates and awards given by governments, trade associations, and public media. In addition, sample firms repeatedly communicated through their Web sites that they possess exceptional managerial knowledge and the ability to satisfy customers, and capabilities to provide high quality and stylish products. These results also suggest that the Chinese textile and apparel industries are no longer dependent on low price achieved from economies of scales. Instead, they are emphasizing their ability

to produce quality and fashionable products. Once again, these were additional evidences that the Chinese textile and apparel industries are in the transition from the growth to the mature stage of the industry life cycle.

Fourth, the study result showed that there are more domestic firms than foreign firms in today's Chinese textile and apparel industries. Historically, the textile and apparel industries in developing countries are initiated and advanced by firms from developed countries. Thus, it is very common to see foreign firms in the growth stage of the industry life cycle. The study result on ownership types also supports the thesis that the Chinese textile and apparel industries are in the transition period from the growth to mature stage. In addition, firms with domestic ownership seemed to perform more manufacturing activities than firms with foreign ownership did. This result suggests that foreign firms are less interested in setting up manufacturing facilities in China than domestic textile and apparel businesses. .

Finally, the study result showed that firms with domestic ownership seemed to emphasize more on physical, financial, and general organizational resources than firms with non-domestic ownership. This result indicates that there are sufficient capital, physical, and organizational resources without heavily relying on foreign investment. Once again, the result suggests that domestic businesses have been growing and becoming mature to have large physical, financial, and organizational resources.

Contributions of Findings

The findings of this study have important contributions for both academia and practitioners. First, the study findings elucidated the fact that Chinese textile and apparel industries are in the transition from the growth and the mature stage of the industry life cycle. Second, the study findings were also supportive for the competitive advantage theory suggesting different competitive advantages are required in different stages of the industry life cycle.

Third, for firms who are interested in investing in the textile and apparel industries in China, the study findings offer insights into the types of business activities that textile and apparel manufacturers in China are currently performing. These results specified manufacturing, domestic retailing, and designing are booming. There are heavy competitions in the Chinese textile and apparel industries. On the other hand, there seemed to be growing demands for licensing, marketing, customer service, and product development.

Fourth, the study findings on key firm resources for success suggested that firms that are interested in investing in the textile and apparel industries in China may want to prepare themselves with good relationships, high reputation, strong brand to complete instead of low cost.

Fifth, the study results also serve as an important reference for textile and apparel firms in other developing countries. By showing what textile and apparel manufacturers in China are currently doing now and which resources are important for their success, the findings help businesses in other developing countries determine which aspects they can and should place more effort to be competitive in the global marketplace.

Sixth, this study provided timely information about Chinese textile and apparel firms for U.S. buyers to make business decisions. The finding showed that competition purely based on low cost is no longer a viable option for Chinese textile and apparel manufactures. Instead, knowledge of high quality, knowledge of customer satisfaction, knowledge of fashion trend, knowledge of wide product selection, and managerial knowledge are critical for the success of Chinese textile and apparel manufacturers.

Finally, the study findings are an important trend guide for educators and students in the textile and apparel related programs in the world to decide on which skills and knowledge the program focus. The study showed that manufacturing, domestic retailing, and designing are booming careers in China. Licensing, marketing, customer service, and product development may also be popular careers for students who are inclined to have a textile and apparel related job in China.

Study Limitations and Future Research Suggestions

Despite the significant results obtained from this study there were a few limitations in this study. First, although published by the Chinese government and well known among Chinese business members, the directory of the Chinese International Trade Department had only approximately 200 firms with valid Web site addresses. Thus, the study results reflect these 200 firms that published their Web site addresses in this directory. Generalization of this finding must be done with caution.

Second, considering there were over 7,000 textile and apparel firms in China, a larger sample size may need to be collected and analyzed in order to truly obtain a more comprehensive understanding of the Chinese textile and apparel industries. Future research should examine the differences in business activities and firms' resources among domestic ownership, foreign ownership, and co-ownership. This will allow investors to have a deeper

and detailed understanding to help them make investment decisions. In addition, this will help academia have a more comprehensive angle to understand what the impactions of different ownership types are in Chinese textile and apparel industry.

Third, the sample firms of the study were limited in the coastal provinces. Because the measure of China is very big, for example the manufacturers in interior and the manufacturers in coastal area might have different characteristics of the industry life cycle, perform different business activities, or obtain different firms' resources. Thus, future research could examine if there are differences in business activities and firms' resources among different provinces or between interior and coastal areas. This will help investors have a better preview about geographically differences before they invest in China.

Fourth, the sample firms of the study were concentrated on apparel production. Textiles manufacturing firms and apparel manufacturing firms might have different characteristics of the industry life cycle, perform different business activities, or obtain different firms' resources. Thus, future research could examine if there are differences in business activities and firms' resources between textiles manufacturing firms and apparel manufacturing firms. This will help educators have a more completed understanding and allow investors have more detailed view about the Chinese textile and apparel industries.

As a final point, future researches are required and should be based on more samples from different ownership types, production types, and areas in China. This study only investigated and compared the differences in business activities and firms' resources between domestic ownership and foreign ownership types. However, the status of ownership types are more complicated in China, the factor of production types, and geographically difference might cause a different result. Therefore, future research may

want to compare the differences in business activities and firms' resources among domestic ownership, foreign ownership, and co-ownership, between the textile manufacturing and apparel manufacturing firms, and among different areas in China.

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