(REFEREED RESEARCH)

# ANALYSIS OF ADDED VALUE CREATION PROCESS IN READY-MADE CLOTHING SECTOR: "TURKISH CASE"

# HAZIR GİYİM SEKTÖRÜNDE KATMA DEĞER YARATMA SÜRECİNİN ANALİZİ: "TÜRKİYE ÖRNEĞİ"

### Elif YILMAZ<sup>1</sup>, Turan ATILGAN<sup>2</sup>

<sup>1</sup>Ege University Emel Akın Vocational School, Izmir. <sup>2</sup>Ege University Textile Engineering Department, Izmir.

Received: 10.03.2016

Accepted: 19.10.2016

#### ABSTRACT

Turkish ready-made clothing sector is the one of the leading sectors of the Turkish industry. The companies in this sector should produce high added value products to protect their power on the international competition and increase their market shares. Creation of added value depends on various factors like improving the performance in production, producing design products and creating a brand. To analyze the added value process, it is necessary to identify the activities which add value on final product. This study based on the data obtained from three different companies. One of them is in Istanbul, the others are in Izmir and all of them are active in ready-made clothing area. In addition, by considering added value creation process of the other companies in this sector, the added value ratio of each step of added value creation process and the factors which create the added value for the interviewed companies were determined. According to the study data, brand value is the most important factor which determines the added value and sales stage when the final product meets customers is the highest added value step can be said.

Keywords: Ready-made clothing, added value, process, brand, sales.

#### ÖZET

Türk hazır giyim sektörü Türk endüstrisinin lokomotif sektörlerinden biridir. Sektördeki firmaların uluslararası rekabet ortamındaki güçlerini korumaları ve sahip oldukları pazar paylarını artırmaları için katma değeri yüksek ürünlere yönelmeleri gerekmektedir. Katma değer yaratmak; üretimdeki performansı artırmak, tasarım ürünlere yönelmek ve marka yaratmak gibi çeşitli faktörlere bağlıdır. Katma değeri yaratıldığı süreci analiz etmek için süreci oluşturan, nihai ürüne değer katan faaliyetlerin belirlenmesi gerekmektedir. Bu çalışma ikisi İzmir'de ve biri İstanbul'da bulunan ve hazır giyim alanında faaliyet gösteren üç ayrı firmadan elde edilen verilere dayandırılmıştır. Ayrıca sektörde faaliyet gösteren firmaların katma değer yaratma süreçlerinden yararlanılarak, görüşülen firmaların oluşturduğu katma değer yaratma süreçlerinin her bir basamağında hazır giyim ürününün sahip olduğu katma değer üzerine ne kadarlık bir katkı sağladığı belirlenmeye ve böylelikle katma değeri yaratan faktörler ortaya konulmaya çalışılmıştır. Çalışma verilerine göre, marka değerinin katma değeri belirleyen en önemli etken olduğu, katma değeri en yüksek olan halkanın nihai ürünün müşteri ile buluştuğu satış aşaması olduğu söylenebilmektedir.

Anahtar Kelimeler: Hazır giyim, katma değer, proses, marka, satış

Corresponding Author: Elif Yılmaz, elif.yilmaz@ege.edu.tr

#### 1. INTRODUCTION

#### Value, Value Chain and Added Value Concept, Impact and Importance

Value is a concept, which occurs after the production of a product or service with certain characteristics. Customers ready to pay for it which satisfies their needs in a definite

period by a definite price. Also it supplies technical, social, economic benefits (1, 2).

Added value indicates the difference between input and output of any production process (3). At the same time, on micro-economical side it is defined as the difference between the purchase and the sale price of a product or service; on macro-economical side it is defined as an

additional value created by factors involved in productive activity (4). If the added value is high, this means the value of the service or product is high too (3). In addition to this, when added value increases, customer's sensitivity to price decreases and focusing on the added value increases. As a result the customer loyalty increases and this contributes to the profitability of the company positively. Added value is created in a value chain. Value chain is stated as definition of each operating activities or periods that transform inputs to outputs by Porter (5). This transformation originates in design period of the product or service and continues with activities like supplying, producing and marketing and finally ends with post-purchase services (5,6). In all stages of this transformation process, a value is added on the products and services (5). The aim of the companies is to ensure value creation and increment by continuity of these activities (6). It is only possible by sorting every activity as operations which are strategically important with the help of the value chain. By this means, effects of every activity on cost and value can be clearly understood. Value chain analysis is a strong tool that determines the main operations of a company, identifies and evaluates the strong and weak aspects of these operations and help company to obtain a potential of sustainable competitiveness (8). By value chain analysis, the value which is paid for the product, the share of the producing company in this value and the extent of factors which affects this share can be determined (7). Furthermore in this analysis the competitive advantages of the company can be understood by determining at which stage the offered value to the customers can be increased or the cost can be decreased, and by investigating the company's relationships with its suppliers, customers and the other companies in the sector (5). The purpose of the value chain is to raise the value offer to the highest level and lower the costs to the minimum level. The main idea of the value chain analysis is to offer more value to the customers and gain more competitive advantage. If the value revealed by a work is more than the cost value for the realization of the operations, it can be considered as a profitable business (8).

# Operation of Value Chain in Ready-Made Clothing Sector, Impact and Importance

In daily competition conditions, the success of the companies which are active in ready-made clothing sector depends on the creation of added value. Every company creates an added value with the products and service that are produced in a value chain. Every ring of this chain increases the value. The company's performance in every stage has a determinant role for the added value to be low or high. A typical value (supply) chain, consist of steps; supply, production, storage, shipping, distribution, retail and customers respectively (9). In textile sector, rings of value chain start with the forming yarn, continue with weaving or knitting and finishing processes. Every process in this chain increases the added value of the product, on the other hand they affect the functionality and design of the product in a positive direction (7). In a ready-made clothing company, value chain starts with design stage, just before the product is formed. After apparel process, the supply chain ends with delivering the final product to the end customer in stores by the retailer. However ready-made clothing supply chain includes recall, transfer and refund processes (10). In other words, the value chain, which adds a value to the product in every step, can be thought as an organization which includes supplying of raw material, transforming it to the product in the production process and delivering it to the customer (11). When the main activities in value chain generally examined, there is a flow like input function, operations, output, sales and marketing and customer services, respectively (7). Value flow includes all activities of added value creation process from supplier to the end customer and for its continuity it is necessary to produce and deliver the products and the services (1). Value chain rings in ready-made clothing are shown in Figure 1.

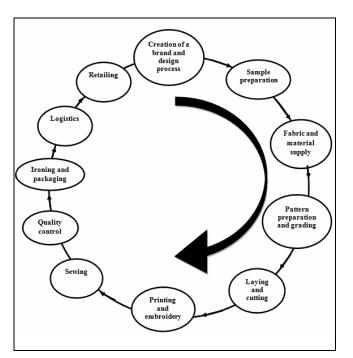


Figure 1. Supply chain in ready-made clothing

# 2. MATERIAL AND METHOD

In this study, data was collected by interviewing with department managers and planners of three different companies. Companies interviewed within the study are given in Table 1.

- The Company A is operating in Izmir Ata Industrial Zone and offers production services with 110 people staff. It also provides contract manufacturing services to the Company B.
- The Company B is operating in Izmir Atatürk Organized Industrial Site and outsources the production of the companies that are known worldwide by getting contract manufacturing service. Also it is a major garment manufacturer and exporter which offers design service to the customers with its own design department.
- The Company C is operating in Istanbul and makes successful progress in the domestic and foreign markets, although it does not have a very old history and admits the LCW as a biggest competitor.

Company Code	Α	В	C
Characteristics of the company	A sub producer	Qualified supplier (manufacturer and exporter)	Brand owner company
Company's mode of operation	Serve by performing the production stage of an offer given by a qualified supplier.	Offers a comprehensive service to the brand owner companies from design stage to production stage.	Designs its own collection, manufactures and/or has manufactured and offers for sale in its own retail stores with own branded products.

Table 1. Companies interviewed within the study

# The Company A

The Company A works as a sub producer. It performs the cutting, sewing, ironing and packaging processes of the orders given by an exporter company. The exporter company sends raw materials, accessories and patterns of the models for production. Because of this the Company A has no contribution to the added value chain in stages such as sample preparation, fabric and material supply, pattern preparation and laying. Whenever the Company A receives an order, at first band placement and line balancing operations are made, sewing yarns are provided and then the production starts. To sum up, added value creation process of Company A starts with cutting stage and completes with sewing, ironing and packaging.

Although the cycle time of the value chain created by the Company A changes due to the model, it continues on the average 2-3 weeks. After the ironing and packaging processes completed, the products received by the exporter company. The added value chain and product cycle time of the products manufactured by Company A are shown in Figure 2.

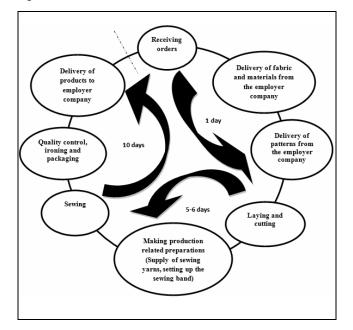


Figure 2. Added value chain and product cycle time of the products manufactured by Company A

#### The Company B

The Company B works as a qualified supplier and the added value creation process starts with two steps; design and

sample preparation. The company works with the customers in two different ways. In the first one, customer's own models are produced. Information about model design, fabric type, size chart, printing detail, is given directly by the customers. In this working style, the Company B just does sample preparation and pricing. When the sample and price approval are given by the customer; production process begins. In the second one, customers prepare and send mood boards to Company B according to the new trends and design department works on and prepares a collection which is offered to the customers. Customers can order this collection; at the same time they can do some revisions on it. So the revised samples are prepared and before the production sample approval is received again.

For a collection sample, time period for receiving themes from the customer, design process, preparing sample patterns, production of collection samples, offering the collection to the customer, pricing and approval of order is about 6-8 weeks.

In the next stage, patterns are revised according to the customer's size charts, fitting samples are produced. In addition to these, fabric and material supply process continues simultaneously. By customer's approval after sample production, production process begins. This process takes approximately 5-7 weeks.

During the production process, primarily patterns are prepared according to the customer's critics. Because the company hasn't got a production department in itself, orders produced by outsourcing. This process continues with activities such as laying, cutting, printing and embroidery, sewing, quality control, ironing and packaging and completes with shipping. This period continues about 2-3 weeks.

The Company B gives a standard deadline to the customers. When the order quantity is more than expected, shipping is done on time by capacity planning (e.g. working with 2 dye houses instead of 1, employ an atelier which has larger capacity). For instance, Zara ships in 3-4 weeks and C&A in 8-10 weeks after the order generated. This situation is related to cycle time of products in the stores and stock systems and determined in the direction of customer demands. Product cycle time of the products for C&A brand is shown in Figure 3 and product cycle time of the products for ZARA brand is shown in Figure 4. The responsibility of the company ends with the shipping of the order and the cycle time of the products are completed.

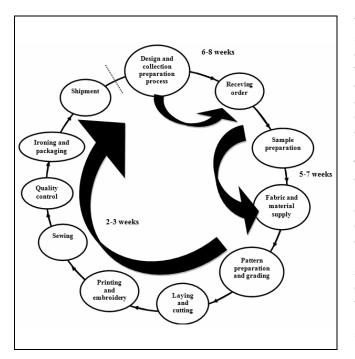


Figure 3. Added value chain and product cycle time of the products manufactured by Company B for C&A brand

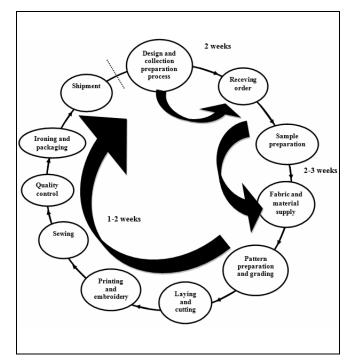


Figure 4. Added value chain and product cycle time of the products manufactured by Company B for ZARA brand

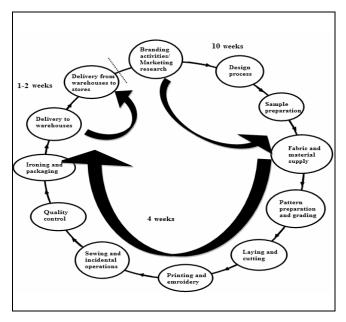
# The Company C

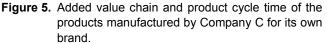
The Company C makes 64% of its production in the country and the rest part of its production is made by 72 suppliers in 6 different countries. Also the Company C manages its own logistic service. In the study, we also interviewed with a company which is the own producer of Company C.

The company's value chain starts with design and budgeting stages, in which the company creates added value. At design stage designers visit the fashion centers abroad, go to fairs and shopping, and work on the latest fashion designs. On the other hand budget stage is conducted. After approval of the first designs, an option plan is prepared for each product group and each model by planning department. This plan is made for determining how many products required in the stores according to summer and winter seasons. In accordance with this, starting budget is determined and capacity planning is made. Decisions are made by planning and buying teams, comparing with the data of the previous years. Designs are made in the direction of these decisions. At the same time, advance orders of the materials such as yarn and fabric for the basic products are given in high quantity. This increases the speed and the productivity in the production stage and decreases the material supply periods. The next step in the value chain of the Company C is sample production. At this point, fabrics and the other materials are supplied and suppliers have an important role. Sample production process continues approximately 2 weeks in the own producer of the Company C. The duration of the process starts with designing, budgeting, planning, sample production and price approval till the formation of order is about 12 weeks.

After sample production and approval of designs, planning department studies on assortment and count of products, prepares technical documents for production. Also at this stage quotes are got from suppliers and cost studies are carried out. When price is approved, order is generated and the production process begins. For products with one month length of term, the production process in the producer of Company C continues for 2 weeks. When assessed by sample production process, the elapsed time in the producer company is stated as 4 weeks (Information for the sample production and the main production is provided from the Company C's own producer).

After production process is completed, products are sent to the Company C's own warehouses. For the retail part of the company, the cycle time of a product begins at the time when the product enters the warehouse. An inspection process is performed for products which are produced in domestic suppliers. In addition to inspection process, customs procedures exist for products which are produced in overseas suppliers. Storage duration of the products is indicated about 1-2 weeks and delivery time from warehouses to stores in Turkey is maximum 4 days. In this case, the elapsed time for process starts with design and ends with sales in stores is 15-16 weeks. According to another information received from the company, the period starting with the product idea to the implementation of the product is 3-4 months for innovative products (color changing T-shirts, headset hat, double sided pants etc.) produced in the Company C. Data obtained from the study verifies this information. Added value chain and product cycle time of the products manufactured by Company C for its own brand are shown in Figure 5.





Company C has three types of stores. Product types and counts that can be displayed in each store are determined. When occupancy rate of the product type and quantity is high, shipping is not done to the stores. However in a normal flow, products are shipping to the stores daily. The residence time of the products in the store at least 8 weeks for a normal product, and is more than 12 weeks for basic products. Sell through rate of the Company C is accepted as 92-95%. So when 90-95% of the order is sold, it is considered that the cycle time of the product has been completed.

# 4. FINDINGS

In this study three different company models were examined to show how important value and value chain for the companies. Companies are different from each other in terms of added value chain they created. The findings were evaluated separately for each company.

## The Company A

The Company A creates added value by providing production service to the companies which don't have production department or whose production capacity is not enough. The stages of added value process of Company A are given in Table 2.

The following information is obtained from Table 2;

- Raw material, accessories, the printing and embroidery processes have no impact on the unit cost of production. Because raw materials and accessories are sent from the employer company. Printing and embroidery are also in the responsibility of the employer company.
- Worker labour constitutes the whole unit cost of production.
- The Company A supplies the sewing yarn for incoming orders to perform the production of the models. As well as buying sewing apparatus for some special models or hiring a special machine, which doesn't include in, may be required. Furthermore, food and service expenses of workers, maintenance and repair costs of the machines and office expenses such as workplace rent and cleaning constitute the company's general and other expenses item and affect the sales price to the employer company by adding in the ratio of 2% general and other expenses item to the unit cost of production.
- Assessed from the Table 2 by just offering manufacturing services, Company A can contribute only a portion of 33% to the added value of created by employer company and 11% to the final added value.

# The Company B

Each step of the Company B's value chain adds a new value to the final product and it determines the product price. The stages of added value process of Company B are given in Table 3.

Added value generating steps in value chain	Value-added ratio created by Company A
Raw material	0%
Accessory	0%
Print/Embroidery	0%
Cutting/Sewing/İroning-Packaging	9%
Unit cost of production	9%
General expenses and other expenses	2%
Contract service charge of Company A to the exporter company	11%
Sale price of the exporter company to the parent company	33%
Retail sales price of the parent company (Final added value)	100%
Percentage of unit cost of production in retail sales price	9%
Percentage of the added value created by Company A in retail sales price	11%
Retailing expenses, brand value (Parent company)	67%

As seen in Table 3; raw material is the largest proportional factor and constitutes 10-14% of the final added value and it corresponds approximately 35-50% of the unit cost of production.

Design service offered by design department has no measurable value proportionately, so it is not given in the Table 3. However, according to the information received from the company, orders are received and added value is created through the design service. Namely, design service increases the preference of Company B by the customers; amount of orders received and correspondingly increases the sales and the turnover. For instance, design service constitutes 70% of the total turnover. In addition to this, collections prepared by the company's design department are generally sold for higher prices than other orders. When considered in this context, it is seen that 70% of the added value created by the company B caused by the design services offered to the customers.

# The Company C

The added value creation process of the products produced by Company C can be summarized by the examples from its own producer is given in Table 4. According to the Table 4; raw material constitutes 19-20 % of the final added value and it corresponds approximately 55-60% of the unit cost of production. As it is seen in the table, raw material has the largest proportion in the value chain of the Company C. Based on another information received from Company C, a product received from the supplier for one unit is put on the market in the mark-up ratio of 2.4-2.7 except value added tax and 1.6-1.7 mark up ratio is considered as a breakeven point.

# **5. EVALUATION OF THE FINDINGS**

The Company A has the smallest value chain because it only provides production service. It hasn't got a brand, also could not offer a design service. The company A operates according to the needs of an exporter company. The cycle time of the value chain is averagely 2-3 weeks due to order count and the difficulty level of the model. Company A can contribute only a portion of 11% in added value created by Company A in retail sales price (see Table 2). When assessed in the direction of the study data, percentage of unit cost of production in retail sales price is quite low.

Table 3. The stages of added value creation process of Company B

Added value generating steps in value chain	Value-added ratio created by Company B
Raw material	10-14%
Accessory	3-4%
Print/Embroidery	1.5-3%
Cutting/Sewing/İroning-Packaging	7-8%
Unit cost of production	28%
General expenses and other expenses	3%
Sales price of Company B	31%
Retail sales price of the parent company (Final added value)	100%
Percentage of unit cost of production in retail sales price	28%
Percentage of the sales price of Company B in retail sales price	31%
Retailing expenses, brand value (Parent company)	69%

 Table 4. The stages of added value creation process of Company C

Added value generating steps in value chain	Value-added ratio created by Company C
Raw material	19-20%
Accessory	2.5-4%
Print/Embroidery	1-3%
Cutting/Sewing/İroning-Packaging	8.5-10%
Unit cost of production	34%
General expenses and other expenses	3.8%
Sales price of Company C	38%
Retail sales price of the parent company (Final added value)	100%
Percentage of unit cost of production in retail sales price	34%
Percentage of the sales price of Company C in retail sales price	38%
Retailing expenses, brand value	62%

Cycle time of products produced at Company B for C&A brand is approximately 3.5-4.5 months and for ZARA brand is 1.5-2 months. These durations are valid for new orders. Cycle time decreases for the repeated orders. Because the stages such as designing, pattern preparation and grading have studied before. The cycle time of the products may vary by customers. Company B doesn't do any activities about branding, warehousing and retailing in its value chain, because it doesn't have its own brand. The responsibility of the company ends with shipment of the order and the cycle time is valid for this period.

The Company C has its own brand and stores. In its value chain; there are activities like delivering to warehouses, storing and delivering from warehouses to stores. Although the number of rings in the value chain is more than the Company B's, cycle time of a product is 15-16 weeks. So it can be said that value chain cycle of the Company C is faster.

The cycle time of the Company A is lower than the companies B and C. That's because the Company A has fewer activities in its value chain and correspondingly creates less added value.

Based on data from the Table 3 and Table 4, added value ratio and percentage in total added value created by companies B and C were compared. Accordingly, the added value creation process from design stage to the end of production is similar for both companies. When unit cost of production was examined, it was seen that fabric has

maximum added value ratio and labour factor (cutting, sewing and quality control, etc.) is in the second place. However, total added value of a final product is in the sales ring where the product and the customers meet.

The value chain of the Company B ends after production. For 14-18 weeks duration, Company B takes part in the final product's total added value only in the ratio of 31 %. Because the Company B doesn't have its own brand and the value chain is uncompleted. Products which are produced by Company B for C&A are sold in customer's own-branded stores 3-3.5 times more than the unit cost of production price. In this case, it can be said that the unit cost of production price of a branded product is about 3-3.5 times less than the retail sales price because of brand value, retailing expenses and brand profit margin.

When evaluated the unit cost of production which is accepted as 100 %, the Company C creates added value in the ratio of 100 % in 15-16 weeks duration and compared with Company B, it is seen that the Company C creates more added value than the Company B. That's because the number of rings in the value chain of the Company C is more than Company B. Also the Company C makes the products produced with its own brand and offers them to the customers in its own branded stores.

Stages of the evaluated companies have a part in readymade clothing added value chain and shares taken from the final added value are shown in Figure 4.

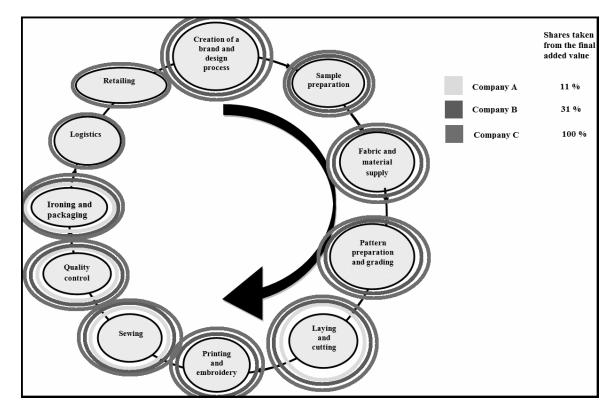


Figure 4. Stages of the evaluated companies have a part in ready-made clothing added value chain and shares taken from the final added value.

#### 6. CONCLUSION, ASSESSMENTS AND SUGGESTIONS

Nowadays, it is not enough to produce a service or a product just qualified or sell them at affordable prices. In addition to these, products should be high value added and companies should response to customer demands rapidly. These factors are necessary to be successful. At this point, factors such as brand, design and productivity become important.

Design is one of the effective tools to create product-based significant differences and added value. Creating an added value through design forms the basis of "Differentiation and Branding". Although European companies are more successful in fashion and branding (12), Turkish companies try to improve themselves and create brands at international level.

A product or a service is produced in a value chain and each activity in this chain adds a ring to this chain which adds a value to the manufactured product or service. If the added value creation process shortens, productivity increases and the created added value becomes so great. This reveals the importance of the elimination of unnecessary activities in the value chain and increase of the productivity in main activities.

In ready-made clothing sector where plenty of competitors compete with each other, the success of a company is determined according to the created added value high or low. In today's conditions, it is definitely impossible to be competitive with low added value products or services. Furthermore, a company can't create high added value if it produces a product or service in the same way as its competitor. Therefore, companies which are different, faster and better than the competitor create more added value and succeed.

Zara brand is one of the most successful examples of creating added value in the international arena. The secret

of the success of the brand is to be innovative, rapid and economic response to customer demands and managing the value creation process as well. Customer feedback in Zara is directly transmitted to the designer. By this means, customer preferences can be understood faster and accurately, and the latest fashion products could be offered to the customers in a short span of time such as three to six weeks at affordable prices. Consequently, the sales and the profit margins increase (13). Koton is one of the domestic brands works with short length of term and manages value chain well (9).

According to the study data, branding and design products are found to be the most important factors which create added value. While a company sells its products with its own brand creates high added value, other company without a brand has only a small part in the created added value. This shows the importance of branding clearly. On the other hand, design increases evaluated as a factor which increases the preferability and sales for all companies.

According to the general view obtained from the research, it is suggested to the companies operating in the ready-made clothing sector to create their own brand, tend towards the innovative and trendy products by organizing their design teams, increase their productivity by eliminating non-value adding activities in the production and manage their value chain effectively. By this means, as well as the competitiveness of the companies will increase in domestic and foreign markets and economic progress of our country can be possible.

As a result, the power of the added value depends on two factors which are necessary for Turkish ready-made clothing companies to be successful. The first one is the short duration of value added creation process and the second one is the added value creation stages should be controlled by the company.

#### REFERENCES

- 1. Çoruh, E., 2010, "Production System Approaches for Readymade Garment Industry", Journal of Textiles and Engineers, 17, pp. 11-19.
- Alaca, H., 2010, Value Chain Analysis With Value Stream Mapping Tools: White Good Industry Application, M.Sc. Thesis, Istanbul Technical University, Institute of Science and Technology, Department of Industrial Engineering.
- Yayar, R., Çoban, M.N., 2012, "Data Envelopment Analysis Approach to Measure Activities of ISO 500 Firms: Weaving And Clothing Industry", Niğde University Faculty of Economic and Administrative Sciences Journal, 5, pp.165-180.
- 4. Koca, M., 2010, The Evaluation of Manufacturing Industry Sectors in Turkey as of The Value Added They Create, M.Sc. Thesis, Istanbul University, Institute of Social Sciences, Department of Economics, Istanbul.
- Akbaş, H. E., 2008, The Effects of Value-Chain Analysis on Product Costs in Industrial Companies and A Case Study, Ph.D. Thesis, Marmara University Institute of Social Sciences, Department of Business Administration, İstanbul.
- Savcı, M., 2012, Value Chain Analysis of Product Costs in Tea Companies, Ph.D. Thesis, Kocaeli University Institute of Social Sciences, Department of Business Administration Kocaeli.
- 7. Atılgan, T., 2006, "The Value Chain in Textile and Apparel Sector and Their Economical Influences", Journal of Textile and Apparel, 16, pp. 260-270.
- Eraslan, İ. H., Helvacıoğlu Kuyucu, A.D., Bakan, İ., 2008, "Evaluation of Turkish Textile and Clothing Industry by Value Chain Method", Afyon Kocatepe University, Faculty of Economic and Administrative Sciences Journal ,10, pp. 307-332.
- 9. Kırım, A., 2004, Smart Purple Cow, Book Of Differentiation Your Business, Sistem Publishing.
- 10. Sefai, M.S., 2011, Application Of Supply Chain Analysis and Improvement Methods to A Ready-To-Wear Retailing System, M.Sc. Thesis, Bahçeşehir University, Institute of Science and Technology, Department of Industrial Engineering. Department of Supply Chain and Logistic Management, Istanbul.
- 11. Kurtoğlu, Ö., 2009, Analyzing The Suitable Production and Quality Control Systems for the Stages of Collection Preparation, M.Sc. Thesis, Ege University Institute of Science and Technology, Department of Textile Engineering, Izmir.
- 12. Işbilen, A., 2005, In The Face of Design Concept of the Global World in Apparel, Competitiveness of Burdur's Regional Dresses, 1<sup>st</sup> Burdur Symposium.
- 13. Web Journal, 2015 http://www.dergil.com/tr/dergi/mart-nisan-2013/tedarik-zincirinde-yenilikci-bakis-acisi/440.aspx Access date: June 2015.