Ready Made Clothing Production and Consumption Awareness of Consumers in Terms of Sustainability

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Abstract

With rapid production in ready-made clothing, the consumption increases rapidly as well. In this process, we need to ponder on sustainability more than ever. With the raising of awareness about environmental and ethical issues, consumers have started to question where and in what conditions ready-made clothing products are produced. Producers who recognized consumers' such considerations about these issues started to employ environmentally and economically sustainable strategies. Especially when the design is considered, it can be argued that the biggest struggle is made in sustainability in this period of time. The aim of this study is to determine the environmental worries and interest into various design and production strategies of the consumers with regard to ready-made clothing production. The sample of the study which is conducted with the survey model is composed of 198 students in Selçuk University. The data obtained through a questionnaire were analyzed in the SPSS software. The results of the study are expected to encourage both the ready-made clothing producers and their consumers to reconsider sustainability.

Keywords: *Ready-Made Industry, Sustainability, Design Strategy*

1. Introduction

Production and consumption, which rose by rapid population growth and industrialization that occurred especially as of the second half of the 20th century, constituted a serious threat for sustainable environment. It has now been acknowledged throughout the world that resources used during production process are not unlimited and that environmental effects of production are not restrained to being local and regional but that they are global. This awareness brought about the need to control environmental impacts through market forces rather than legal practices. These developments directed industrialists to such efforts as utilizing raw materials at minimum level, cutting energy usage and using clean sources of energy and unharmful inputs. Ready-made clothing sector is one of the sectors that have been affected by this process to the greatest extent (Halkbank, 2010:39). As a matter of fact, while ready-made clothing and textile sector are perceived to be the most harmful sectors in environmental terms today, it also has a bad record in terms of workers' rights. The sector is under hegemony of rapidly-changing trends which directs consumers to consume much more than they need to (Kanışkan, 2013:201). Replacing products which have not yet completed their economic life with new ones brings about significant economic problems especially in under-developed countries and render many consumers against fashion (Alagöz, 2009:536).

As environmental consciousness and concern rose especially in developed countries, making employees work under unhealthy conditions in production of ready-made products imported and matters such as child workers came to the forefront in public opinion, compliance with social and environmental standards emerged as a determinative factor in consumer preferences. Therefore, provided that success is reached in other matters related to competition, compliance with social and environmental standards is considered a competition tool for ready-made clothing industry today (Öngüt, 2007:12,23). With this consciousness, enterprises take care to preserve ecological and natural balance in design and production strategies while consumers examine whether the products are harmful to the environment, producer and consumer health while choosing their clothes. As a result of this interaction between producers and consumers, environmental awareness and the mentality to preserve natural balance started to be shaped more clearly for both sides (Çabuk and Nakıboğlu, 2003:40).

The aim of this study is to determine the environmental worries and interest into various design and production strategies of the consumers with regard to ready-made clothing production.

2. Research Material And Method

This study, which focuses on perspective of consumers studying at universities, was conducted by the method of scanning. Questionnaire form was used in collection of data. The questionnaire included questions that enabled consumers to express their environmental concerns about ready-made clothing production and their interest in various design and production strategies. The study entitled "Emerging Design Strategies in Sustainable Production and Consumption of Textiles And Clothing", which was published by Niinimäki ve Hassi (2011), was used in determination of questions in questionnaire form. The questionnaire was applied in Vocational Education Faculty of Selçuk University in 2013. Participants were chosen randomly in two numerically equal groups – students of clothing design and production and students of other departments (handicrafts, nutrition, pre-school teaching). Sample size was chosen as 198 at significance level of α=0.05 by taking ± 0.05 as sampling error.

Cronbach Alpha coefficients of sub-factors of the scale used in research was presented in Table 1. Coefficients of sub-factors of the scale used in research are given in Table 1.

Table 1: Cronbach Alpha Coefficients of the Sub-Factors of the Scale Used for the Study

Sub Scales	Item Number	Cronbach Alpha
Environmental concerns of consumers	5	0,785
Product life phases that worries consumers	7	0,841
Interest in design and production strategies	14	0,709

Cronbach Alfa values of variables were considered before adding the scores related to variables. Cronbach Alfa value is 0.78 for factors for environmental concern, 0.84 for factors for economic life stages of products that worry consumers and 0.70 for factors related to interest in design and production strategies. Cronbach Alfa value of the scale shows that it is possible to add items scores about variables and to use total score in analyses.

In the study, means and standard deviations were calculated to measure environmental concerns and interests of consumers in various design and production strategies. Mann-Whitney U Test was used in order to determine the differences among the groups formed according to educational field and level of concern.

3. Finding of the Study

This section covers findings about environmental concern statuses of consumers and their interest in various design and production strategies.

3.1 Environmental Concerns of Consumers

This section focuses on environmental concerns of consumers. Participants were asked to evaluate the expressions in Table 2 with 5 point Likert scale in order to identify their environmental concerns about ready-made clothing production. Evaluations of participants regarding their environmental concern statuses that affect their purchasing decisions are given in Table 2.

Table 2: Consumers' Assessments with Regard to Environmental Concerns

Environmental Concerns of Consumers	Mean	Standard Deviation
The 'Made in Turkey' aspect in garments is important to me	4,21	0,82
It is important to me that garment production has a small environmental impact	4,18	0,79
I want to know about the production and environmental impact of the garments I am purchasing	4,13	0,78
I am worried about the ethicality of clothing production	3,95	0,61
I am worried about the environmental impact of textile and clothing production	3,61	0,92
Total	20,08	2,83

Notes: (i)n=198, (ii) In the scale, 1 refers to I do not agree at all and 5 refers to I completely agree. (iii) According to Friedman two-way Anova test, χ^2=615,185 and p<0,001 results are statistically significant

When Table 2 is examined, it is seen that local products form an important value for participants. The expression "Made

in Turkey" written on product labels was identified to be an important factor that affects purchasing decision for participants who are aware of the fact that clothes are predominantly produced in Asian countries which is less sensitive to environment, employee and consumer.

As much as environmental impact level of production highly affects participants' purchasing decision, participants would like to learn information about production and environmental impacts of the clothes they purchase. They are also concerned about ethical dimension of clothing production. Given the current production conditions, participants feel concerned about environmental impacts of textile and clothing production.

Product life stages that concern consumers are presented in Table 3.

Table 3: Product Life Phases that Concern Consumers

Product Life Phases that Concern Consumers	Mean	Standard Deviation
Lifetime of the product	3,92	0,99
Use phase (the use of water and energy)	3,70	1,07
Raw Material Production	3,65	1,09
Choice of Production Place	3,51	1,09
Product processing	3,29	1,09
Disposal of the product	3,28	1,14
Transportation	3,06	1,11
Total	24,41	5,44

Notes: (i)n=198, (ii) In the scale, 1 refers to I do not agree at all and 5 refers to I completely agree. (iii) According to Friedman two-way Anova test, χ^2=700,103 and p<0,001 results are statistically significant.

When results in the table are evaluated as a whole, it is seen that participants feel concerned about all stages of production and consumption of a product. When they think about production and consumption stages of products, the matter about which participants feel most concerned is the economic life of a product. The smallest source of concern is shipment of the product.

It was examined whether environmental concern statuses of participants who study clothing design and production and participants who study in other departments differ or not. Comparison of environmental concern statuses that affect purchasing decisions of participants grouped by their educational fields is given in Table 4.

Table 4: Assessments with Regard to Environmental Concerns in terms of the Department Attended

Environmental Concerns of Consumers	Receiving Education in Garment Design and Production Department (n=98)		Not Receiving Education in Garment Design and Production Department (n=98)		Mann-Whitney U	
	Mean	Standard Deviation	Mean	Standard Deviation	Z	p
The 'Made in Turkey' aspect in garments is important to me	4,32	0,79	4,09	0,83	-2,225	**<0,05**
It is important to me that garment production has a small environmental impact	4,38	0,63	3,98	0,88	-3,304	**<0,001**
I want to know about the production and environmental impact of the garments I am purchasing	4,25	0,66	4,01	0,87	-1,711	0,087
I am worried about the ethicality of clothing production	4,08	0,57	3,83	0,62	-2,747	**<0,05**
I am worried about the environmental impact of textile and clothing production	3,84	0,89	3,37	0,90	-3,473	**<0,001**
Total	20,88	2,50	19,28	2,93	-3,999	**<0,001**

Notes: (i)n=198

When results in Table 4 are considered as a whole, it is seen that a statistically significant difference exists among groups formed according to the departments where they study according to Mann-Whitney U Test. Participants who study clothing design and production are more concerned about environment that the other students. This can be interpreted as participants studying clothing design and production gaining higher awareness about environmental impacts of clothing

production and consumption in this process.

Comparison as to economic lives of products that concern participants who are grouped by their fields of education is given in Table 5.

Table 5: Worrying Product Life Phases in terms of the Department Attended

Product Life Phases Worrying Consumers	Receiving Education in Garment Design and Production Department (n=98)		Not Receiving Education in Garment Design and Production Department (n=98)		Mann-Whitney U	
	Mean	Standard Deviation	Mean	Standard Deviation	Z	p
Choice of Production place	3,57	1,06	3,44	1,12	-0,498	0,619
Product processing	3,39	1,07	3,18	1,10	-1,375	0,169
Lifetime of the product	3,99	0,96	3,85	1,02	-0,985	0,325
Transportation	3,16	1,05	2,96	1,17	-1,051	0,293
Raw material production	3,75	1,07	3,56	1,10	-1,107	0,268
Disposal of the product	3,41	1,07	3,15	1,19	-1,491	0,136
Use phase (the use of water and energy)	3,61	1,18	3,80	0,96	-0,882	0,378
Total	24,88	5,32	23,94	5,55	-0,971	0,332

Notes: (i)n=198

Given the groups formed by the departments of participants, it is seen that no significant statistical difference exists according to Mann-Whitney U Test in terms of economic life stages of product that concern consumers. When it is taken into account that all of the mean values related to concern statuses except the item "I am concerned about shipment of the product" are above 3, which is the median, it can be asserted that participants in both groups are concerned at medium level in all stages but that there is no difference among groups in terms of sources of concern.

3.2 Interest of Consumers in Various Design and Production Strategies

Answers of participants regarding their interest in various design and production strategies are given in Table 6.

Table 6: Consumers' Interest in Design and Production Strategies

Consumers' Interest in Design and Production Strategies	Mean	Standard Deviation
Garments have to be suitable for recycling	4,31	0,81
Garments could be upgradable.	4,26	0,87
Manufacturers could offer exchange and return services for garments.	4,22	1,03
Garments have to be designed for an optimal use period, and the optimal use period has to be communicated.	3,90	1,12
I could use repair and modification services.	3,87	0,94
I wear garment as long as its life-time	3,85	1,13
I am interested in the customization possibilities of garments.	3,78	1,12
Tailor-made production is to be continued	3,43	1,55
I buy garment although I know I will wear it very few times	3,34	1,28
I am interested in taking part in the design process e.g. through the internet.	3,13	1,24
I can rent garments for short-term use.	2,95	1,32
I am interested in affecting the manufacturing process e.g. through the internet.	2,92	1,28
I could buy a short-lifetime garment, which does not need any washing during its short life span	2,89	1,34
I can rent garments for long-term use (e.g. one year).	2,67	1,26
Total	49,52	7,55

Notes: (i)n=198, (ii) In the scale, 1 refers to I do not agree at all and 5 refers to I completely agree. (iii) According to Friedman two-way Anova test, χ^2=1083,882 and p<0,001 results are statistically significant.

When design and production of a piece of clothing is considered, the issue in which they are interested the most is whether it is designed and produced in such a way that it can be recycled. They are also highly interested in whether

clothes can be updated and whether producers provide exchange or return services for clothing products.

Participants are interested in the opportunities to customize clothes and being involved in design process of a product via the internet. This can be interpreted as the fact that participants are interested in mass customization, which is a relatively up-to-date form of production for ready-made clothing industry. Mass customisation in the clothing industry is the new edge to competitive advantage in the 21st century. This approach is marketing orientated as it offers the exact product with the exact individual measurements to the increasingly demanding consumers (Vignali vd, 2004:502). Benefit, which is the primary function of a piece of clothing, left its place to such functions as differentiation and thrusting oneself forward and the tendency to individualize increased in clothing preference (Jones, 2009:25). Today, consumers demand their own special clothes and want to get involved in design processes of producers. These developments caused emergence of mass customization practices in ready-made clothing sector. Producers, who use various tools such as the internet and specialized software customize the products in line with personal expectations and allow consumers to be involved in design processes.

Agreement of participants on the need to sustain Tailor-made production type shows their interest in traditional tailor-made production practice. Traditionally design and production services for clothing have been employed in tailor-made garment. The tailor-made garment is a good example of the quality-durability-price connection. A tailor-made suit is more expensive than a ready-made garment, but on the other hand, it is made according to the user's preferences, needs and measurements, offering a perfect fit physically but also emotionally (Niinimäki and Hassi, 2011:1880). Although consumers intensely prefer ready-made clothing products today, people's interest in traditional tailor-made production type also continues.

The fact that participants exhibit no interest in purchasing a piece of clothing with short economic life without the need to wash it compared to their high interest in wearing a piece of clothing they purchase throughout its economic life can be interpreted as their being interested in slow-fashion strategy. Consumers prefer slow production and consumption mentality against fast fashion, which is considered as a trend that increases consumption and offers low-quality products with short economic life. Consumers are aware that individual consumption fosters organizational production, creating an ongoing cycle of appetite, simultaneously voracious and insatiable. This consciousness changed consumers' interest in production and design strategies. Fast fashion is criticized as a trend that increases production and that offers low-quality products with short economic life (Joy et al., 2012:277). This has encouraged the growth of a new movement that counteracts the increasing demand for fast fashion-the "Slow Fashion" movement. Slow fashion concept is based on sustainability within the fashion industry and design incorporating high quality,small lines,regional productions,and fair labor conditions (Pookulangara and Shephard, 2013:201).

Comparison as to interests of groups formed according to whether they study clothing design and production in various design and production strategies is given in Table 7.

Table 7: Interest in Design and Production in terms of the Department Attended

Consumers' Interest in Design and Production Strategies	Receiving Education in Garment Design and Production Department (n=98)		Not Receiving Education in Garment Design and Production Department (n=98)		Mann-Whitney U	
	Mean	Standard Deviation	Mean	Standard Deviation	Z	p
I could use repair and modification services.	3,93	0,84	3,82	1,04	-0,317	0,751
Garments have to be suitable for recycling	4,22	0,76	4,39	0,85	-2,127	**<0,05**
Garments could be upgradable.	4,32	0,81	4,19	0,93	-0,817	0,414
I am interested in the customization possibilities of garments.	3,87	1,12	3,70	1,11	-1,244	0,213
Manufacturers could offer exchange and return services for garments.	4,10	1,05	4,34	0,99	-2,117	**<0,05**
I can rent garments for short-term use.	2,90	1,31	3,00	1,34	-0,567	0,571
I can rent garments for long-term use (e.g. one year).	2,80	1,29	2,54	1,23	-1,435	0,151
I am interested in taking part in the design process e.g. through the internet.	3,41	1,07	2,85	1,34	-3,123	**<0,05**
I am interested in affecting the manufacturing process e.g. through the	3,19	1,26	2,65	1,25	-3,003	**<0,05**

internet.						
Tailor-made production is to be continued	4,39	0,92	2,46	1,45	-8,78	**<0,001**
Garments have to be designed for an optimal use period, and the optimal use period has to be communicated.	4,09	1,07	3,71	1,14	-2,715	**<0,05**
I could buy a short-lifetime garment, which does not need any washing during its short life span	3,03	1,30	2,75	1,37	-1,526	0,127
I buy garment although I know I will wear it very few times	3,38	1,20	3,30	1,35	-0,084	0,933
I wear garment as long as its life-time	3,90	1,06	3,80	1,19	-0,272	0,785
Total	51,55	6,91	47,49	7,65	-3,645	**<0,001**

Notes: (i)n=198

When interests of groups formed according to whether they receive education about clothing design and production in design and production strategies are compared, it is seen that significant statistical differences exist among groups in some of the strategies (6 strategies) according to Mann-Whitney U Test.

In comparison to others, students who are not educated in the field of clothing design and production agreed to a higher extent on the fact that clothes should be appropriate for recycling and that producers should render exchange and return services for clothing products.

On the other hand, students receiving education in the field of clothing design and production agreed to a higher extent on the willingness to be involved in design and production process of a product via the internet and the opinion that traditional tailor-made production style should be sustained. This can be interpreted as the fact that students receiving education in clothing design and production are more highly interested in customized production and mass customization production strategies. Again, participants in this group agreed at a higher level on the opinion that clothes should be designed in line with their optimum period of use and that this period should be indicated on the product label.

It was also analyzed whether difference exists between interest of participants with low environmental concerns and those with high environmental concerns in various design and production strategies. Findings obtained are given in Table 8.

Table 8: Consumers' Interest in Design and Production Strategies in terms of the Level of Concern

Consumers' Interest in Design and Production Strategies	Environmental Concern				Mann-Whitney U	
	Low (n=114)		High (n=84)			
	Mean	Standard Deviation	Mean	Standard Deviation	Z	p
I could use repair and modification services.	3,85	0,84	3,90	1,07	-1,172	0,241
Garments have to be suitable for recycling	4,20	0,84	4,45	0,75	-2,307	**<0,05**
Garments could be upgradable.	4,14	0,84	4,42	0,89	-3,291	**<0,05**
I am interested in the customization possibilities of garments.	3,71	1,04	3,88	1,22	-1,609	0,108
Manufacturers could offer exchange and return services for garments.	4,25	0,95	4,19	1,14	-0,257	0,797
I can rent garments for short-term use.	2,93	1,27	2,98	1,41	-0,159	0,874
I can rent garments for long-term use (e.g. one year).	2,51	1,15	2,88	1,37	-1,723	0,085
I am interested in taking part in the design process e.g. through the internet.	2,98	1,22	3,33	1,25	-1,917	0,055
I am interested in affecting the manufacturing process e.g. through the internet.	2,73	1,16	3,18	1,39	-2,2	**<0,05**
Tailor-made production is to be continued	3,10	1,55	3,88	1,45	-3,836	**<0,05**
Garments have to be designed for an optimal use period, and the optimal use period has to be communicated.	3,76	1,08	4,08	1,14	-2,598	**<0,05**
I could buy a short-lifetime garment, which does not need any washing during its short life span	2,62	1,21	3,25	1,41	-3,205	**<0,05**
I buy garment although I know I will wear it very few times	3,38	1,22	3,30	1,35	-0,3	0,764
I wear garment as long as its life-time	3,78	1,13	3,94	1,12	-1,167	0,243
Total	47,94	6,95	51,67	7,83	-3,203	**<0,05**

Notes: (i)n=198

Given environmental concern levels of participants, significant statistical differences are found between groups according to Mann-Whitney U Test.

In comparison with participants with low environmental concerns, those with high environmental concerns more highly agreed on the opinions that clothes should be convenient for recycling and be able to be updated, that they are interests in intervening in production process of a product via the internet, that tailor-made production type should be sustained , clothes should be designed in line with their optimum period of usage and that this period should be indicated on product label. This can be interpreted as the fact that participants with high environmental concern are more interested in slow-fashion, customized production and mass customization production strategies. However, it can be asserted that thge interest exhibited by participants in this group in purchasing a cloth with short economic life that does not need any washing throughout its usage forms a contrast with their other thoughts and beliefs.

4. Conclusion

Fast consumption that increases with the support of fast production forces both producers and consumers to think about sustainability more than ever. With the raising of awareness about environmental and ethical issues, consumers have started to question where and in what conditions ready-made clothing products are produced. Producers who recognized consumers' such considerations about these issues started to employ environmentally and economically sustainable strategies. This study was conducted in order to present environmental concern statuses of ready-made clothing consumers and their interest in various design and production strategies. Today, young people, especially university students, constitute the sample of the research due to increasing purchasing power and desire of young population.

Findings obtained demonstrated that consumers have significant concerns regarding ready-made clothing production and consumption. Especially production place of clothing was identified to be an important factor that affects purchasing decision. At this point, the expression "Made in Turkey" written on product labels is a source of trust for consumers.

Given the phases in production and consumption of clothing, the issue that concerns consumers the most was identified as economic life of products. Consumers who find short economic life alarming in environmental terms expect the clothing they purchase to have a long economic life.

The matter in which participants are interested the most in terms of design and production of a piece of clothing was identified to be their convenience to be recycled. This is a parallel expectation with their environmental concern.

It was identified that participants are interested in mass customization, which is a relatively up-to-date production form for ready-made clothing sector. They are interested in the opportunities to customize clothes for people and getting involved in design process of a product via the internet. At the same time, it is expected that the traditional tailor-made production form is sustained for clothing production. Consumers prefer the concept of slow fashion over fast fashion, which has been criticized as a tendency to trigger consumption and that offers low-quality products with short economic life.

The results of the study are expected to encourage both the ready-made clothing producers and their consumers to reconsider sustainability.

References

Alagöz, S. (2009). Pazarlamada Yükselen Trend: Moda, [Rising Trend in Marketing: Fashion], *Sosyal ve Ekonomik Araştırmalar Dergisi*, Sayı:18, Konya.

Çabuk, S. ve Nakıboğlu, B. (2003). Çevreci Pazarlama ve Tüketicilerin Çevreci Tutumlarının Satın Alma Davranışlarına Etkileri İle İlgili Bir Uygulama, [An Application Regarding Effects of Environmental-Friendly Marketing and Environmentally Conscious Attitudes of Consumers on Purchasing Behaviors], *Çukurova Üniversitesi, Sosyal Bilimler Enstitüsü Dergisi*, Sayı:12, Adana.

Halkbank. (2010). *Tekstil ve Hazır Giyim Sektör Raporu*, [Textile and Ready-Made Clothing Sector Report], Ankara.

Jones, S. J., (2009). Moda Tasarımı, [Fashion Design], Güncel Yayıncılık, İstanbul.

Joy, A. Et al. (2012). Fast Fashion, Sustainability, and the Ethical Appeal of Luxury Brands, *Fashion Theory*, Volume 16, Issue 3, pp. 273 – 296.

Kanışkan, E. (2013). *Moda Tasarım*, [Fashion Design], (Editör: Füsun Curaoğlu), Eskişehir.

Niinimäki, K. And Hassi, L. (2011). Emerging Design Strategies in Sustainable Production And Consumption of Textiles And Clothing, *Journal of Cleaner Production*,19, Elsevier Ltd., 1876-1883.

Öngüt, Ç.E. (2007). *Türk Tekstil ve Hazır Giyim Sanayiinin Değişen Dünya Rekabet Şartlarına Uyumu*, [Turkısh Textile And Clothıng Industry's Adaptation To The Changing Competitive Conditions], DPT Uzmanlık Tezi, Ankara.

Pookulangara, S. and Shephard, A. (2013). Slow Fashion Movement: Understanding Consumer Perceptions-An exploratory study,

Journal of Retailing and Consumer Services 20, 200–206.

Vignali, C., Vrontis, D. and Vronti, P. (2004). Mass Customisation And The Clothing Industry, *Ekonomski Pregled*, 55 (5-6) 502-512.