

# **TEKSTİL VE MÜHENDİS** (Journal of Textiles and Engineer)



http://www.tekstilvemuhendis.org.tr

# Survey Study for Detection of Problems in Plus-Size Women's Clothing in Turkey

## Türkiye'deki Büyük Beden Kadın Giyimindeki Problemleri Belirlemeye Yönelik Anket Çalışması

Basak SULLER ZOR, Arzu VURUŞKAN Izmir University of Economics, Fashion and Textile Design Department, Izmir, Turkey

Online Erişime Açıldığı Tarih (Available online): 30 Eylül 2017 (30 September 2017)

### Bu makaleye atıf yapmak için (To cite this article):

Basak SULLER ZOR, Arzu VURUȘKAN (2017): Survey Study for Detection of Problems in Plus-Size Women's Clothing in Turkey, Tekstil ve Mühendis, 24: 107, 203-212.

For online version of the article: <a href="https://doi.org/10.7216/1300759920172410709">https://doi.org/10.7216/1300759920172410709</a>



TMMOB Tekstil Mühendisleri Odası UCTEA Chamber of Textile Engineers Tekstil ve Mühendis Journal of Textiles and Engineer

Araştırma Makalesi / Research Article

# SURVEY STUDY FOR DETECTION OF PROBLEMS IN PLUS-SIZE WOMEN'S CLOTHING IN TURKEY

### Basak SULLER ZOR\* Arzu VURUŞKAN

Izmir University of Economics, Fashion and Textile Design Department, Izmir, Turkey

Gönderilme Tarihi / Received: 18.04.2017 Kabul Tarihi / Accepted: 13.09.2017

**ABSTRACT:** Obesity is one of the important issues in the World's agenda. Similarly, in Turkey, obesity rate is gradually increasing and affecting people in many ways from health to clothing. In terms of clothing, despite increasing obesity rate, plus-size market has been underserved, and users have dissatisfactions in terms of overall shopping environment, size availability, design and garment fit. Thus, the main aim of this study was to determine the problems in plus-size women's clothing through a survey study and to introduce design approaches considering innovative materials, technologies and construction techniques. In this context, customization tools, 3D body scanning, seamless garment technology, functional clothing and smart textiles were researched.

Keywords: Plus-size clothing, fit, design, survey, 3D body scanning technologies, seamless garment technology, functional clothing

## TÜRKİYE'DEKİ BÜYÜK BEDEN KADIN GİYİMİNDEKİ PROBLEMLERİ BELİRLEMEYE YÖNELİK ANKET ÇALIŞMASI

**ÖZET:** Obezite Dünya gündemindeki önemli konulardan biridir. Benzer şekilde, Türkiye'de de obezite oranı artış göstermekte ve insanları sağlıktan giyime kadar birçok yönden etkilemektedir. Giyim açısından, obezite oranındaki artışa rağmen, büyük beden giyim pazarı yeterli hizmeti sunamamakta ve kullanıcılar genel alışveriş ortamı, kendilerine uygun bedenlerin olmaması, ürünün tasarımı ve vücuda uygunluğu açısından sorun yaşamaktadırlar. Buradan hareketle, bu çalışmanın temel amacı büyük beden kadın giyiminde karşılaşılan sorunları bir anket aracılığıyla belirlemek, yenilikçi malzemeleri, teknolojileri ve yapım tekniklerine yönelik tasarım yaklaşımlarını ele almaktır. Bu bağlamda, kişiselleştirme araçları, 3 boyutlu vücut tarama teknolojisi, dikişsiz giysi teknolojisi, fonksiyonel giysiler ve akıllı tekstiller araştırılmıştır.

Anahtar Sözcükler: Büyük beden giyim, bedene uygunluk, tasarım, anket, 3D vücut tarama teknolojileri, dikişsiz giysi teknolojisi, fonksiyonel giysiler

\* Sorumlu Yazar/Corresponding Author: basak.suller@izmirekonomi.edu.tr DOI: 10.7216/1300759920172410709, www.tekstilvemuhendis.org.tr

#### Basak SULLER ZOR Arzu VURUŞKAN

#### 1. INTRODUCTION

Obesity is one of the important issues in the World's agenda. Similarly, in Turkey, number of obese or overweight people is gradually increasing. In the report named 'Turkey Nutrition and Health Survey – 2010' by the Ministry of Health of Turkey [1], it was found that 64.9% of people were overweight or obese in total, and 2.9% were extremely obese. The obesity prevalence through the gender was stated as 41% for women and 20.5% for men. This issue is affecting people in many ways from health to clothing. As defined by the World Health Organization [2], obesity is abnormal or excessive fat accumulation in fat tissues which normally constitute 15 - 20% of body weight of adult men and 25 - 30% of adult women [1]. In this case, local and abnormal accumulation of fat is remarkable. So in general, obesity types are divided in two groups depending on the area fat is accumulated. The first one is Ginoid (pear type) obesity, where accumulation of fat mostly occurs in lower part of body (i.e. around the hip circumference, legs and upper thighs). The second one, Android (apple type) obesity, refers that fat is accumulated mostly in the upper part of body, like around the waist line, arms, neck and shoulders [2]. In a study conducted to analyze Turkish women, it was seen that accumulation of fat can occur at both the waist line and at hip circumference [3]. Besides, body types or deformed body parts can vary even in the same weight or size. Therefore, for the people with obesity, one of the most important challenges is to find well-fitted clothes.

Clothing sizing systems vary from one country/region to another and there are no internationally accepted size intervals for plus size clothing. As for the definition of American Standard Test Method [4], in women's apparel, sizes 14–24 usually refer to full-figured women with larger torso proportions than misses' sizes 2–12, and plus-size refers to a larger figure correlating most commonly with misses' sizes 14W–32W (i.e. W means women). Ashdown (2007) mentions that retailers often merchandise the larger misses' size designations -16 and over- as plus sizes, or large sizes [5]. In addition, based on an international size chart for women with an average height of 164cm, garment size of 14 in US refers to 16 in UK, 44 in France, 42 in Germany and 48 in Italy [6]. In regard to Turkish sizing systems, there are various references, a common example is that size 42 [7] or size 44 [8] and above groups are accepted as plus-size in ready-to-wear.

In a research conducted by NPD Group Inc. (2012), two-thirds of females age 13+, within a nationally (US) representative sample, classified themselves as wearing 'special sized' clothes [9]. Relatively, one-third of these females classified themselves as 'plus-size' that is the highest represented size group among special size women. In terms of market standing, according to IBIS World (2016), the market for plus-size women was worth USD 10 billion in 2016 in US, and annual growth between 2011 and 2016 was determined as 2.3% [10]. Another study made by Parker (2011) includes estimation reports about women's plus-size clothing across more than 200 countries. Within the study, estimates of *latent demand* (i.e. potential industry earning P.I.E.) which refers to the demand for a product or service that a consumer cannot satisfy because they do not have

enough money, the product or service is not available, or they do not know that it is available, are reported for each year between 2006 and 2016 [11,12]. Considering the Turkey's P.I.E. in 2011, Turkey's the first three metropolises Istanbul, Izmir and Ankara were in the leading position among the other cities of Turkey. Thus, they constitute the 61.94% of the country with totally USD 755.57 million P.I.E in 2011 [11]. It means that despite high rates of plus-size consumers, the apparel market for those people is still underserved, and also far from meeting people's needs in terms of design elements [13].

Plus-size customers have difficulties and dissatisfactions in terms of design, garment fit, size availability, and overall shopping environment. Even though plus-size clothing brands or lines of brands are available in the market, there are challenges for apparel designers and merchandisers when trying to create the ideal fit and inviting retail experience. Consumers are dissatisfied especially with garment fit because of imprecisely made patterns which ignore the differences in body shapes or proportions of plus-size women, and lack of selection of contemporary styling. According to Pisut and Connell (2007), within the current sizing and grading systems in women's apparel, garments are graded up or down proportionally in all body dimensions with the increasing or decreasing sizes [14]. However, the human body does not grow proportionally [15] as suggested in the size charts that guide grading practices. Especially in obesity case, regional and abnormal accumulation of fat (i.e. adiposity in medical) is remarkable, and so is more problematic. In terms of design elements, because of the regional or abnormal adiposity, body shape features of plus-size women differentiate more than regular sizes. Accordingly, it was indicated that for women, the abdomen and hip areas in particular have a tendency to enlarge, and changes such as weight gain in these areas reflect proportionally different changes in the shape of body in contrast to women's sizing standards [13].

From the education perspective, plus-size practices are not widely adapted within the academic curricula of fashion design/ business departments [16]. There is limited number of studies on how academia can prepare fashion design and business students for the challenges in plus-size apparel practices. Academic textbooks for assisting students and educators in terms of plus-size design, plus-size sizing, plus-size grading and/ or merchandising methods are also limited [17].

Considering these issues, plus size clothing is investigated in this study in terms of design elements and fit. Design and innovation at production and retail are seen as key factors to success. Academic research on adaptation of innovations (i.e. masscustomization tools, 3D body scanning technology and smart textiles) and smart solutions into the plus-size clothing are also rare in order to be helpful for design, fit and style improvement. Thus, the main aim of this study is to determine the problems in plus-size clothing through a survey analyses and to introduce design approaches integrated with innovative materials, technologies and construction techniques by considering the survey results.

#### 2. METHODOLOGY

The study includes a survey, which was analyzed in order to determine the problems of plus-size clothing. The target population of the research consisted of Turkish plus-size women. The sample group was based on the women between the ages of 25-65, and wearing size 44 and over. Plus-size men, children, and pregnant women were taken out of the context. The survey was prepared as online and print-out. Contacts with dietitians in Izmir and the Turkish Association for the Study of Obesity helped to distribute the survey. Social media and personal contacts were other sources to reach participants. Before starting the survey, a pilot study was applied to 10 women, necessary points were revised. Among all received forms, 100 survey forms were taken into evaluation.

The survey consisted of 14 questions within two main sections. The first section included demographic information. In this section, age ranges, income levels, sizes and body types of respondents were asked as multiple choice questions. In addition, their height and weight were asked for the calculation of BMI (i.e. Body Mass Index) values regarding the formula:

BMI = weight (kg) / (height (m) \* height (m)).

According to the BMI calculation, respondents were categorized based on normal weight, overweight or obese as given in the Table 1.

	Principal Cut-off Points
Underweight	<18.50
Severe Thinness	<16
Moderate Thinness	16 – 16.99
Mild Thinness	17 – 18.49
Normal Range	18.50 - 24.99
Overweight	>25
Pre-obese	25 - 29.99
Obese	>30
Obese Class I	30 - 34.99
Obese Class II	35 - 39.99
Obese Class III	>40

**Table 1.** International classification of adult underweight, overweight and obesity

(www.apps.who.int/bmi/index.jsp?introPage=intro\_3.html)

The second section contained questions about respondents' problems in ready-to-wear. This section was divided into three parts in itself as 'general problems', 'pattern and design based problems', 'through usage problems'. In this part, there were ordinal scale questions, table questions and multiple choice questions. In 'pattern and design based problems' part, it was requested from the respondents to fill only one of the table questions according to their most problematic garment category including tops, bottoms and dresses/suits. After this part, the survey was concluded with an open-ended question asking for any additional comments.

After data collection, to analyze the data, respondents' BMI were calculated. Related with the BMI results, the overweight (preobese) and obesity levels and their percentages were determined. The results were evaluated with the help of SPSS (Statistical Package for Social Sciences) program, and visualized as crosstabs with related percentages to obtain the distributions between the variables of age, body shapes, garment size categories, BMI, most problematic garment categories and after design using problems. Based on survey results. recommendations through innovative concepts and technologies were offered, as a possible improvement in plus-size clothing in terms of style, fit/ pattern and after usage problems.

#### 3. RESULT AND DISCUSSION

#### 3.1. Survey Results

According to survey results, the number of respondents was almost equal in each age range; this claimed that plus-size does not refer to any particular age range. Examining the BMI values of each respondent, 49% of the sample group was at a level of Obese I. However, there were also respondents at the BMI level of 'healthy weight' (4%). Seeing respondents with healthy weight BMI values, but still wearing plus-size clothing, refers to the local weight and fat accumulation in plus-size bodies. Analyzing the body shapes of the respondents, it was determined that 39% of the respondents have pear type body shape, 21% of hourglass, 21% of rectangular and 19% of apple type body shape. Also, it was noticed that there was an increase in apple type with the increasing age (mostly in age group 55-65), while pear type and hourglass type declining. Thus, it can be said that adiposity in the waist and abdomen girth of women increase with menopause causing to changes in body shapes [18].

On the other hand, considering respondents' general problems in plus-size ready-to-wear, the most important problem was determined as 'the difficulty of finding garments that participants like' according to 44% of participants. The second one was defined as the difficulty of finding garments suitable for their age with 27% rates (Figure 1).

Respondents were asked if they often made any alterations in purchased garments. More than half of the participants (57%) answered as 'yes' (Figure 2). Thus, the shortening of trouser legs, skirt or dress lengths were determined as the most frequent modifications. Following, change in the armhole or sleeve measurements for tops/ dresses, and taking in the waistline of bottoms were stated as other frequent alterations.

Since finding well-fitted garments is an important problem, most problematic garment categories, and the main problems within these categories were identified. Regarding the results, the most problematic garment category was defined as the bottoms at a rate of 42%. 30% of the respondents picked 'all tops' and 28% picked 'dresses/ suits' (Figure 3). This result has relevance with the respondents having pear body shapes and the weight or fat accumulation around their hipline.



Figure 1. Percentages of the general problems according to their importance level



Figure 2. Necessity for alterations.





After determining the most problematic garment categories, the most common problems in each category were examined. For tops, tightness in chest line was the main concern. Following, tightness in biceps and arm girth constituted other fitting problems. Additionally, nonconforming style lines/ darts and tightness of hem width were stated as the other important problems. Relatively, Table 2 gives the numbers of participants, their percentage values for these problems.

For the bottom pieces, the majority of respondents complained about grading problems, claiming that patterns get distorted for bigger sizes. In the second place, total length of trousers was mentioned as another main problem. Following, low waistline and tight hipline were determined as other important problems (Table 3).

As for dresses and suits (Table 4), the most frequently seen problem was the increasing disproportion between the upper and lower part of dresses or suits by increasing size. Besides, loose armhole for short sleeve or sleeveless dresses took the second place.

In the final section of the survey, it was found out that the most important problem through usage in clothing was pilling or deformation at the pants' crotch with 54% rates (Figure 4).

Table 2	Frequencies	of design/	pattern	problems	with	'Tops'
---------	-------------	------------	---------	----------	------	--------

	1		2		3		4		5	
PROBI EMS	Never		Sometimes		Usually		Mostly		Always	
I ROBLEMIS	Frequency (F)	Percentage (PCT.)	F	PCT.	F	PCT.	F	PCT.	F	PCT.
Fitting tight in chest line	4	13%	5	16%	2	6%	11	36%	8	26%
Fitting tight in biceps line	5	16%	6	20%	6	20%	8	26%	5	16%
Inappropriate style lines/ darts	3	10%	11	36%	7	23%	8	26%	1	3%
Fitting tight in hem line	5	16%	13	43%	6	20%	4	13%	2	6%

Table 3. Frequencies of design/ pattern problems with 'Bottoms'

	1		2		3		4		5	
PROBLEMS	Never		Sometimes		Usually		Mostly		Always	
	Frequency (F)	Percentage (PCT.)	F	PCT.	F	PCT.	F	PCT.	F	PCT.
Patterns get distorted in grading	1	2%	3	7%	5	11%	19	45%	14	33%
Long trousers' length	3	7%	10	23%	6	14%	12	28%	11	26%
Low waist of trousers	5	11%	13	30%	9	21%	12	28%	3	7%
Fitting tight in hipline	5	11%	14	33%	11	26%	8	19%	4	9%

Table 4. Frequencies of design/ pattern problems with 'Dresses/ Suits'

	1 Navar		2 Sometimes		3 Usually		4 Mostly		5 Always	
PROBLEMS	Frequency (F)	Percentage (PCT.)	F	PCT.	F	PCT.	F	PCT.	F	PCT.
Disproportion by increasing sizes	0	0%	5	17%	6	21%	7	25%	10	35%
Ill-fitting armhole of sleeveless/ short sleeve dresses	2	7%	15	53%	5	17%	6	21%	0	0%
Fitted skirt/ pants but tight jackets/ tops	10	35%	4	14%	6	21%	4	14%	4	14%
Loose waistline	6	21%	12	42%	4	14%	3	10%	3	10%



Figure 4. Problems through usage

The problems caused by usage are mostly related with the body shapes of respondents. Since weight accumulation for pear and hourglass types are around the hip area and buttocks, deformations occurred at pants' crotch area. Besides, bursting at seams with 25% at  $4^{\text{th}}$  level of importance and pilling of tops' armpit was indicated as the other important problems when using garments for apple types.

#### 4. CONCLUSION

The survey in this research was designed in order to identify the problems of plus-size women in terms of clothing in Turkey. In the survey, general problems, fit problems and problems through usage were examined. As a result, more than the half of participants stated that they often made alterations to purchased garments. Hence, fit problems and the lack of design in plus-size clothing were identified as the main results of the survey in this study. For instance, fitting tight in chest line, fitting tight in biceps/ arm girth and non-conforming style lines/ darts were determined as the mostly seen problems for tops. On the other hand, grading problem was found out as the main problem for both bottoms and dresses. Also, in plus-size clothing, garments may deform easier than the regular sizes. Regarding this, in the survey the problems through usage were also examined. The most important problems were observed as pilling or deformation of the pants' crotch, bursting at seams, and pilling of tops' armpit.

Considering the survey results, innovative materials, technologies and construction techniques have the potential to improve plussize clothing in terms of both an aesthetic look and fit of the garment. Therefore, mass customization (MC) tools, 3D body scanning technology, seamless garment technology and functional clothing/ smart textiles can be discussed as being some innovative approaches for improvement in plus-size clothing.

Regarding the difficulties in plus-size clothing and deficiency in this market, the garment characteristics, such as style, color, fabric and fit are key elements of brands/ retail selection. In relation with style problems of plus-size women, online shopping supported with M C tools may offer individualized style options (i.e. design choices such as collar and neckline shapes, sleeve styles, silhouette options and color alternatives etc.), so plus-size consumers become co-designers, and have a different and enjoyable shopping experience. Besides, the details/ accessories, the style and model options can be enhanced according to different body types, body proportions of plus-size women. For instance, one dress style can be adapted into different silhouettes depending on body shapes. In other respects, through the systems and applications such as virtual try-on system, 3D body scanning technology can help plus-size customers in style selection by entering their body scan data in both online and brick and mortar shopping [19].

On the other hand, as stated in the survey results, ill-fitted garments, especially the pattern distortion through increasing sizes were observed to be the most common problems in plussize clothing. It was determined that plus-size did not mean the proportionally bigger version of regular sizes. Another important problem was identified as the difference between their upper and lower body parts. Therefore, it is required to specially design the patterns and the regional adiposity and differences between body shapes or body proportions of plus-size women should be considered. In plus-size clothing, both manufacturing processes with engineering applications, and product development activities need user-based, fast and sensitive measuring and marketing systems [20]. At this point, 3D Body Scan technology may help to eliminate fit problems in plus-size garments through use of anthropometric data showing exact body proportions as well as weight distribution. Thus, this technology enables companies to visualize their target customers' body proportions or body shapes more clearly in order to identify and develop classification among different body shapes. Considering apparel market in Turkey, 3D body scanning technology may improve the plus-size clothing in terms of fit and pattern making through a deep analysis of physical features and anthropometric measurements of Turkish plus-size consumers.

Another innovative concept *Seamless Technology* provides comfort, fit and breathability for plus-size users, through seamfree structured garments eliminating uncomfortable stitches placed at moving parts of the body, and by avoiding seam puckering or mismatching of the pattern. In addition, this technology prevents the elasticity difference between the seams and body fabric enabling body to move easily. Thus, seamless garments also may add benefit to plus-size clothing by preventing problems stated in the survey results of this study such as 'fitting tight in chest line' for tops, and 'fitting tight in hip line' for bottoms and remove 'bursting and removal at seams'.

On the other side, combining innovative design and production techniques with functional textile materials/ fabrics can provide a considerable market niche for plus-size clothing in Turkey with high added-value, and also can provide both comfort and multifunctions. For instance, microencapsulation technique can be applied on fabric in terms of reducing cellulite, moisturizer, and preventing malodor with anti-bacterial ingredients [21, 22]. Fibers and fabrics with different properties as thermal insulation, barrier to liquids, antistatic etc. can be helpful. In addition, natural fibers or functional synthetic fiber mixtures which allow the skin to breathe should be used in plus-size clothing. Besides, durable fabrics against easily deformation or pilling should be used in production, and fabrics that combine different types of threads such as fiber blends of natural and synthetic fibers should not be preferred, because they tend to be more pilling.

Lastly, it was also determined that there is a deficiency in this market in terms of brands or retailers. Since the plus-size clothing market is underserved in a global perspective, this market offers opportunities for brands/ retailers that will fulfill the needs. In order to succeed in today's plus-size's market potential, companies/ brands or retailers serving in plus-size apparel market must be consumer oriented and innovative to fulfill needs. The brands or retailers should make a market research in order to better understand the target customers and their expectations. Following this, companies should increase the variety of plus-size product. Also, curricula of the fashion design or business departments must be supported in terms of plus-size design, plus-size sizing, plus-size grading and merchandising methods.

#### REFERENCES

- 1. Ministry of Health of Turkey General Directorate of Primary Health Care (2010). *Obesity Prevention and Control program of Turkey* (2010-2014), Kuban Matbaacılık, Ankara.
- World Health Organization (WHO), *Obesity*. www.who.int/topics/ obesity/en/ (20.03.2016).
- Yıldıran, F., (2006), Obezite Hastalarının Giyim Problemleri, Master Thesis, Selçuk University Department of Clothing Industry and Fashion Design Education.
- ASTM International, (2004), D6960-04 Standard Table of Body Measurements Relating to Women's Plus-size Figure Type, Sizes 14W-32W, ASTM Book of Standards www.astm.org/standards/ D6960.htm (23.03.2017).

- Ashdown, S. P., (2007), Sizing in Clothing: Developing Effective Sizing Systems for Ready-to-Wear Clothing, Woodhead Publishing, Cambridge.
- Cihangir, E., (2002), *Hazır Giyimde Ölçüler*, ITKIB Teknik El Kitapları Serisi, İstanbul Tekstil ve Konfeksiyon İhracatçı Birlikleri Genel Sekreterliği, İstanbul.
- Kaynak, M., (2005), Büyük Beden Tüketicisi Bayanların Büyük Beden Kıyafetlerden Ceket ve Pantolonda Karşılaştıkları Model ve Kalıp Kaynaklı Problemlere İlişkin Görüşlerinin İncelenmesi, Master Thesis, Gazi University Department of Clothing Industry and Fashion Design Education, Ankara.
- Safa, S., (2007), Akdeniz Bölgesinde Yaşayan Büyük Beden Bayan Tüketicilerin Hazır Giyim Ürünlerinde Karşılaştıkları Problemler, Master Thesis, Gazi University Department of Clothing Industry and Fashion Design Education, Ankara.
- NPD Group Reports, (2012), Size Matters to American Women, https://www.npd.com/wps/portal/npd/us/news/pressreleases/pr\_120910/ (23.03.2017).
- IBIS World, (2016), *Plus-Size Women's Clothing Stores Market Research Report*, http://www.ibisworld.com/industry/plus-sizewomens-clothing-stores.html (23.03.2017).
- 11. Parker, P. M., (2010), *The 2011-2016 World Outlook for Women's Plus-size Clothing*, Icon Group International Inc. www.icongroupline.com (10.11.2012).
- 12. http://dictionary.cambridge.org/dictionary/english/latent-demand (23.03.2017).
- Alexander, M., Pisut, R. G., Ivanescu, A., (2011), *Investigating Women's Plus-size Body Measurements and Hip Shape Variation Based on Size USA Data*, International Journal of Fashion Design, Technology and Education, 5 (1): 3-12.
- 14. Pisut, G., Connell, L. J., (2007), *Fit Preferences of Female Consumers in the USA*, Journal of Fashion Marketing and Management, 11(3): 366–379.
- 15. O'Brien, R., Shelton, W. C., (1941), Women's Measurements for Garment and Pattern Construction. Miscellaneous Publication, Washington.
- 16. Czerniawski, A. M., (2015), Fashioning Fat: Inside Plus-Size Modeling, NYU Press, New York.
- 17. Christel, D. A., (2016), *The Efficacy of Problem-based Learning of Plus-size Design in the Fashion Curriculum*, International Journal of Fashion Design, Technology and Education, 9 (1): 1-8.
- Mayo Clinic, Belly Fat in Women: Taking and Keeping It Off, http://www.mayoclinic.org/healthy-lifestyle/womens-health/indepth/belly-fat/art-20045809 (15.06.2017).
- 19. Loker, S., Ashdown, S., Carnrite, E., (2008), *Dress in the Third Dimension: Online Interactivity and Its New Horizons*, Clothing and Textiles Research Journal, 26 (2): 164-176.
- Dayık, M., Kodaloğlu, M., Güler, Ç., Sivrikaya, D., (2008), *3Boyutlu Vücut Tarama Sistemleri*, Tekstil Teknolojileri Elektronik Dergisi, (3): 59-76.
- Dikkaya, Ö. G., (2010), Innovative Clothing Design Through the Use of Advanced Textiles in Formation of Fashion Sportswear. Master Thesis, İzmir University of Economics, Design Studies MDes., İzmir.
- 22. O'Mahony, M., Braddock, S. E., (2002), *Sportstech: Revolutionary Fabrics, Fashion and Design*, Thames & Hudson Ltd., London.

#### **APPENDIX I:** SURVEY FORM

#### **BÖLÜM 1 (Demografik Bilgiler)**

#### 1. Yaş Grubunuz

- a. 25 34
- b. 35 44
- c. 45 54
- d. 55 65

#### 2. Gelir Durumunuz

a.	750 TL altı	d. 2000 – 3000 TL
b.	750 – 1000 TL	e. 3000 – 5000 TL
c.	1000 – 2000 TL	f. 5000 TL ve üzeri

#### 3. Boyunuz:..... Kilonuz:.....

#### 4. Vücut Tipiniz

- a. Elma Tipi; Göğüs ve bel çevresi geniş, kalça/ basen daha dar
- b. Armut Tipi; Kalça/ basen çevresi geniş, omuz ve üst beden daha dar
- c. Kum Saati; Omuz, göğüs ve kalça/ basen çevresi orantılı, bel çevresi daha ince
- d. Dikdörtgen; Omuz, göğüs ve kalça/basen aynı orantıda

#### 5. Üst Gruplar İçin Beden Numaranız (Ceket, bluz, gömlek vs.)

- a. 44
- b. 46
- c. 48
- d. 50 ve üzeri

#### 6. Alt Gruplar İçin Beden Numaranız (Pantolon, etek vs.)

- a. 44
- b. 46
- c. 48
- d. 50 ve üzeri

#### 7. Elbise ve Takımlar İçin Beden Numaranız

- a. 44
- b. 46
- c. 48
- d. 50 ve üzeri

#### BÖLÜM 2 (Büyük Beden Hazır Giyimde Karşılaşılan Sorunlar)

#### A) Genel Sorunlar

- 8. Büyük beden hazır giyimde karşılaştığınız sorunlar nelerdir? (Lütfen önem derecesine göre sıralayınız; 5 en önemli – 1 en az önemli)
- () Hazır giyimde büyük bedene yönelik ürünleri satan marka/ mağaza sayısı yetersiz
- () Beğendiğim ürünlerin büyük bedenini bulamıyorum
- () Modaya ve trendlere uygun ürün bulmakta sıkıntı çekiyorum
- () Piyasadaki büyük beden ürünleri pahalı buluyorum
- () Piyasada yaşıma uygun büyük beden giysi bulmakta sıkıntı çekiyorum
- 9. Satın almış olduğunuz ürünlerde tadilat yaptırıyor musunuz?
  - a. Evet
    - b. Hayır

#### B) Kalıp ve Model Kaynaklı Problemler

#### 10. En sık model ve kalıp kaynaklı sorun yaşadığınız giysi grubu hangisidir?

- a. Üst Grup (gömlek, bluz, ceket vb.)
- (Bu seçeneği işaretlediyseniz, lütfen sadece 11. soruyu yanıtlayıp C Bölümüne geçiniz.)b. Alt Grup (pantolon, etek vb.)
- (Bu seçeneği işaretlediyseniz, lütfen sadece 12. soruyu yanıtlayıp C Bölümüne geçiniz.)
- c. Elbise/ Takım (pantolon/ etek takımlar) (Bu seçeneği işaretlediyseniz, lütfen sadece 13. soruyu yanıtlayıp C Bölümüne geçiniz.)

#### 11. Satın almış olduğunuz (size uygun beden numarasıyla) üst grup ürünlerinde karşılaştığınız kalıp ve model kaynaklı sorunlar nelerdir? (Lütfen karşılaşma sıklığına göre işaretleyiniz)

ÜST GRUP ÜRÜNLERİNİN;	HİÇBİR ZAMAN	ARA SIRA	GENELLİKLE	ÇOĞU ZAMAN	HER ZAMAN
Yakası yukarıda kalıyor					
Yaka çevresi bol					
Yaka çevresi dar					
Yaka çevresi bol					
Yaka çevresi dar					
Omuz ölçüsü geniş					
Omuz ölçüsü dar					
Kolevi ölçüsü bol					
(Kolun bedene takıldığı yer)					
Kolevi ölçüsü dar					
Pazu çevresi dar					
Pazu çevresi bol					
Uzun kollu ürünlerin kol boyu uzun					
Uzun kollu ürünlerin kol boyu kısa					
Göğüs çevresi bol					
Göğüs çevresi dar					
Uygulanan pens ve kupların yeri uygun değil					
Etek ucu genişliği bol					
(kalçaya denk gelen kısmı)					
Etek ucu genişliği dar					
Ön ve arka beden boyları uyumsuz					

#### 12. Satın almış olduğunuz (size uygun beden numarasıyla) alt grup ürünlerinde karşılaştığınız kalıp ve model kaynaklı sorunlar nelerdir? (Lütfen karşılaşma sıklığına göre işaretleyiniz)

ALT GRUP ÜRÜNLERİNİN;	HİÇBİR ZAMAN	ARA SIRA	GENELLİKLE	ÇOĞU ZAMAN	HER ZAMAN
Bel ölçüsü bol					
Bel ölçüsü dar					
Basen/ kalça çevresi bol					
Basen/ kalça çevresi dar					
Pantolonların ağ kısımları bol					
Pantolonların ağ kısımları dar					
Pantolonların beli çok yüksek					
Pantolonların beli çok düşük					
Pantolonlarda bacağın üst kısımları bol					
Pantolonlarda bacağın üst kısımları dar					
Pantolonların baldır kısımları bol					
Pantolonların baldır kısımları dar					
Pantolonların boyu uzun					
Pantolonların boyu kısa					
Eteklerde etek ucu kısmı önden yukarı kalkıyor					
Eteklerde etek ucu kısmı arkadan yukarı kalkıyor					
Beden büyüdükçe kalıplar bozuluyor					

# 13. Satın almış olduğunuz (size uygun beden numarasıyla) elbise/ takımlarda karşılaştığınız kalıp ve model kaynaklı sorunlar nelerdir? (Lütfen karşılaşma sıklığına göre işaretleyiniz) \*Alt ve üst bedenim orantılı olmadığı için;

ELBİSE ve TAKIMLARDA;	HİÇBİR ZAMAN	ARA SIRA	GENELLİKLE	ÇOĞU ZAMAN	HER ZAMAN
Ceket/ üst kısım (elbise için) tam, etek kısmı/pantolonu dar					
Etek/ pantolon tam, ceket/ üst kısım dar					
Kolsuz/ kısa kollu elbiselerde kolevi ölçüsü bol					
(Kolun bedene takıldığı yer)					
Kolsuz/ kısa kollu elbiselerde kolevi ölçüsü dar					
Elbiselerin beli bol					
Elbiselerin beli dar					
Beden büyüdükçe alt-üst arasındaki orantısızlıkta artma					
Belden kesmeli/ kemerli elbiselerde kemerden yukarıda kalan kısım uzun					
Belden kesmeli/ kemerli elbiselerde kemerden aşağıda kalan kısım uzun					

#### C) Kullanım Sonrası Ortaya Çıkan Sorunlar

# 14. Satın almış olduğunuz giysilerinizde, kullanım sürecinde karşılaşılan sorunlar nelerdir? (Lütfen önem derecesine göre sıralayınız; 5 en önemli – 1 en az önemli)

- () Dikişlerde patlama/ sökülme
- () Fermuarlarda patlama/ bozulma
- () Pantolonların ağ kısımlarında tüylenme/ erime
- () Üst grup ürünlerinin kol altı kısımlarında tüylenme/ erime
- () Düğmelerde kopma
- ( ) Diğer (Lütfen belirtiniz) .....

#### 15. Son olarak, eklemek istedikleriniz/ yorumlarınız ve üreticilerden beklentileriniz nelerdir?

.....

#### İLGİNİZ ve YARDIMLARINIZ İÇİN TEŞEKKÜR EDERİM...