The Truth of standard sizing

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Abstract

Sizing of clothing is key to how it is consumed, discussed and experienced within any society, as well as having a direct bearing on the wearer's body image. However, whilst it is common practice to define women's bodies by abstract size categories such as 10-12-14, there is little accessible discussion of how these systems are devised that allow a clear understanding of the dynamics they create for the consumer. This paper will integrate quantitative research into current sizing practices of UK women's wear retailers with qualitative feedback of women's experiences of sizing. Using content analysis methods sizing data has been collected from individual retailer websites and structured into a graphical format. This enables the simple comparison of retailers individual sizing systems and provides a clearer understanding of the dynamics they provide for the consumer. Experiences of sizing systems by UK consumers were collected through structured and semi structured questionnaires alongside the collection of their body measurements. This has enabled individual experiences to be recorded and contextualised in relation current sizing practices.

The dynamics of sizing and its complexities are discussed with reference to consumer experiences and sizing systems, raising issues around fit, proportion and the concept of size spread (The level of fit tolerance expected from each individual garment within a sizing range). This is contrasted to the idea of ideal fit. There were few indications of variation in expected proportions of key dimensions within sizing systems between retailers. This was perceived to have an impact on body image and be the cause of reported dissatisfaction. The research suggests a more holistic approach to understanding not only the creation of sizing systems, but also how they are interpreted and navigated by the consumers is needed

Key Words: Clothing size, clothing fit, women's wear, consumer experience, body image.

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1. Introduction

Clothing sizing is a key part of the consumption of clothing and is the means by which we match garments to our dimensions. Therefore it is intrinsically linked to our embodied identities. Often, sizing codes such as 10, 12 and 14 are used in social commentaries as if they are standard and have universal meaning. Further within the clothing industry terms like 'standard size 12' are frequently used, without more explicit recognition of how accurate this may be. This chapter argues that there is a need for wider social understanding of sizing systems and a

requirement for the industry to recognise the tools through which it conducts the provision of sizing standards through similarities of practice rather than governance. It is clear from this research that sizing through current systems has an impact on consumers' perceptions in relation to their body image, even though they seem to have an awareness of the considerable variation in current sizing schemes from their own experiences[1].

Sizing as a means to debate body ideals is often used in the media, with size zero being a common point of focus. The narrow categorisation of women's bodies by a single integer (size code) has a profound effect on how the body is discussed and experienced within popular media in western society, yet outside of concerns about thinness, little exists regarding the impact of the clothing norms on beauty and body ideals. This is especially so regarding the quantitative aspect of clothing determined through sizing schemes and the product development process. The undertaking of quantitative research into current sizing practices of UK women's wear retailers contextualised within women's experiences of sizing has provided an opportunity to examine the way sizing systems are structured, relate to each other and impact on the consumer. Structuring the sizing data from retailer websites into comparative graphical formats has provided an easy to read visual reference and prompts a debate around a number of key issues concerning clothing sizing. This data from retailers' online sizing schemes can also be used alongside published definitions of shape categories to determine the shape of key circumferences of bust, waist and hip. This research then enables a more informed discourse and for some of the ingrained practices in clothing provision to be more honestly discussed.

2. Sizing Systems and Their Dynamics

Ashdown explains that mass produced clothing creates a demand for a system of size classification to enable the consumer to select a garment that will most likely conform to their personal body measurement [2]. Furthermore the consideration of stock handling and mass production requires simple inventories produced in large volumes. Developments in sizing practice during the 20th century are discussed by Kunick and there is evident influence of proportional theory especially related to eight head theory [3], with its origins in artistic representation of the human figure, purports head length comprises one eighth of an individual's overall height and suggests many other proportional relationships of height, length and width in relation to head length, though these may vary slightly by source. Analysis of proportional relationships of the human body suggest little support of eight head theory and find these practices provide very narrow size and shape categories in relation to actual population[4]. Many of the approaches which support sizing practices were developed at a time just after the undertaking of the first two

major sizing surveys in the US (1941) and UK (1952) and highlight the difficulties experienced when creating sizing theories from limited prior experiences and limited access to large population datasets. Aldrich provides a detailed history of sizing practices and demonstrates that there is currently no conclusive sizing system while outlining the incremental development of sizing and clothing development practices, therein offering a clear understanding of how we have arrived at our current ready-to-wear sizing practices.[5] International efforts to create sizing harmony are discussed by Winks who suggests that varied practices between countries in terms of measurement and sizing practice is as much a barrier as are the varied population in terms of reaching any common agreement on methods to standardise sizing [6]

Focusing directly on the UK, the British Standards Institution have directed their guidance on how sizing should be communicated, but have not dictated the measurement or measurement ranges that each size should adhere to[7]. In contrast the USA are much more deterministic in the expected size ranges that each size should be[8], though it is commonly accepted that in contrast to this, retailers will create their own standards. Based on the first UK sizing survey of the 1950's Kunick, 1984 suggests a need for a number of different size charts based around a common hip size[9], similarly Winks suggests over 100 sizes would be required to cover the entire population[10]. Importantly both Kunick and Winks note that variation in the proportions of key sizing dimensions (or shape) are fundamental to this achieve this coverage. However retailers do not seem to recognise or acknowledge this need, which in part could be a cost related argument as greater sizing variation means more flexible supply chains are required and may require higher costs to produce. Speculatively this proportional variation could perhaps occur if sizing across the entire industry was considered against target markets and actual customer dimensions. Though even with large-scale surveys good universal access to anthropometric data remains limited for many industry product developers. There have been few opportunities to study retailer sizing in depth, as up until the explosion of online retail, even the sizing dimensions (bust waist and hip) of each retailer were viewed as commercially sensitive data though now they are key parts of online retail communication. A further consideration is that teaching methods of product development often rely on historic data and are therefore grounded in practices that are not necessarily informed by the latest anthropometric data.

The creation of sizing systems often follows the simplistic application of set incremental changes between key dimensions, which are not derived from actual dimensions of a population. [11] Efforts have been made to suggest improvements to practice in terms of altering the increments to suit population variance[12], which is in contrast to assertions of set increments of earlier practitioners[13]. This disproportionate grading is also suggested in more recent work into sizing for the ageing population[14], however as accessibility to sizing data is limited, both in terms

of the data and how it is communicated, broader development of more realistic sizing systems is limited often even to those who can afford the cost of the data.

3. Sizing communication

Size coding is used to communicate the size of the garment to the consumer and presents further opportunities for inconsistency and non-standardisation as they do not relate universally to any set of measurments. Size increments between sizes can vary as can the method used to communicate the size[15]. A recent study by Powell- Smith that has received generous press attention demonstrates just how inconsistent sizing in the UK is[16]. One potential cause of this inconsistency is vanity sizing, a strategy used by retailers to flatter women into thinking they are a smaller size than they expected to be [171819]. It is perhaps understandable that retailers adopt systems that flatter women as they wish to meet sales targets and sell through their stock. In fact a previous study indicates that purchasing a garment with a size label representing a smaller size than is expected increases feelings of well-being, particularly for consumers who buy larger sizes[20]. It is however a false measure, if sizing systems are used as a marketing tool in this way they become meaningless. A much better approach would be to produce garments that flatter and fit a variety of body sizes, though this would require updating available resources for size and pattern development both for industry and education focused on clothing product development.

There are often discussions in popular media related to difficulties of sizing, though these generally fail to recognise the complexities involved as they have little scientific grounding[2122]. One example of this simplistic approach is the lack of understanding regarding the concept of ease, or the required difference between body and garment dimensions to allow for movement, comfort and styling choices. Shabi for instance, complains that the waist of size 14 trousers vary between different retailers[23]. This observation fails to recognise that style variation will impact on garment measurements. The length of the rise (the measurement from crutch to waist) will influence the waist dimension and the 'waistband' of a hipster trouser actually sits on the hip and therefore will be much larger than a high waist trouser. Therefore if comparisons are to be meaningful, style discrepancies and deliberate variation of ease to create tight or loose fit must be acknowledged.

The issue of how to communicate garment size to the consumer is unresolved. Although Chun-Yoon; Jasper and Winks have proposed that size labels should provide the consumer with clear guidance on the key body dimensions that the garment is supposed to fit, focus groups exploring consumers' perceptions have shown that they can be resistant to this idea. When relating directly to shopping experiences of buying jeans and on-line purchases, only a small percentage of consumers acknowledged that they would make efforts to inform themselves of their key body dimensions in order to save time in fitting rooms. There was evidence of a general dissatisfaction with the inconsistencies and discrepancies

between size coding systems currently used by clothing providers. In addition the increasing number of different size coding systems caused by the globalisation of the industry was also a cause of complaint[24]. With the increase of online shopping, where it is not possible to try garments before purchase meaningful and accurate communication of sizing is increasingly important. Currently however retailers do not appear to be making any changes to their outmoded systems of sizing communication and designation. There are limited attempts to engage technological advances in helping the consumer to understand how the garment might fit, this is in part not helped by very negative retailer experiences of previous sizing surveys and the data supplied. Therefore more consideration is needed of how data is available to train students and established practitioners in the clothing industry to fully understand the complexities involved in sizing practices and with regard to consumer proportional variation.

4. Body shape variation

The notion of body shape as a more recent western phenomenon has had growing popularity following recent global sizing surveys (SizeUK, SizeUSA) although Eastern sizing systems have employed shape within their sizing for a number of years[25]. Body shape has not generally been addressed within mass production[26272829] as this often requires amendments to production practices and may result in smaller volumes and potentially higher costs. It is however generally acknowledged that even people within a population who share similar measurements will vary in posture, proportion and and figure discrepancy. Indications of this variance, is evidenced from a survey conducted by Beazley. Data analysis from 100 university students showed that when the bust measurement was subtracted from the hip measurement, the difference varied between 4cm to 22cm. A considerable variance of body shape was therefore found within a fairly small and homogeneous population[30]. It is asserted by Bougourd that consumers of mass produced clothing will only be offered garments based on the body shape selected by the retailers[31]. This situation is likely to limit the number of consumers who will be fully satisfied.

A. Body shape classification

Body scanners provide a tool to enable a sophisticated analysis of body shape, enabling researchers to identify new methods of classification. Connell et al. used experts to visually assess three dimensional body scans for the development of a software format for body shape analysis [32]. The shape analysis system was a method that assessed the body using ten pre-selected categories such as: hip shape, body build, abdominal shape, buttock shape and bust shape. The findings showed that methods using subjective judgement do not provide clear results. Gupta and Gangadhar identified the bust and hip dimension as the most critical girth measurements[33]. Simmons et al. identified nine body shapes within a population of

254[34]. These were given names such as hourglass, top hourglass and bottom hourglass. Each body shape is clearly defined through the use of a mathematical formula to determine the relationship between the hip, the waist and the bust measurements. These findings informed the development of a software package, *The Female Figure Identification Technique* (FFIT) which has since been tested and used to compare body shapes within varied populations[3536].

B. Size and fit

There are few studies which are able to offer a quantitative insight into how much tolerance people have for dimensional changes to the garment before bad fit is perceived. Ashdown & DeLong, 1995 tested the perceptions of fit in relation to trousers, providing samples with small differences in ease allowance, they established that small changes to key dimensions could be perceived as poor fit by participants[37]. Most notably these amounts that differentiate good fit from bad are smaller than the expected tolerance of fit within current sizing systems.

A different approach taken to gain insight into how consumers assess good fit is to explore perceptions from a psychological perspective. Clothing has been found to be used by individuals to emphasise or disguise what are considered to be positive or negative body characteristics in an attempt to conform to beauty ideals[3839]. Women have also been found to blame their bodies if clothing does not fit which in turn has a negative impact on body image[40].

5. Methodology

Sizing data from retailers who sell women's garments in the UK and have a web presence communicating their sizing systems were collected using content analysis method. This was undertaken in Summer 2010 and Spring 2012. The audit undertaken in 2012 was much more extensive and changes to sizing systems between retailers was evident between each audit.

The sizing systems were recorded within an Excel document and structured into set dimensions for each size from each retailer for the key body dimensions of bust waist and hip. Grade increments were determined and used to create a graphical representation of the sizing system of each retailer. This was used as a visual reference for participants in body scan sessions who were provided with a detailed printout after having their scan captured.

6. Findings and discussion

A. Graphical Representations of Sizing

The following graphs show the proposed size coverage for sizes 6-18, of the retailers audited in 2012. To make the graphs easier to interpret according to size, retailers where ordered by the smallest size proposed to be covered by a size 12 garment. Whilst retailers may communicate size as a single number or a range, it is implicit within sizing that you would be a size 12 if your measurements were the

absolute dimension or differ by half the interval to the smaller or larger size. The changed order of retailers between graphs is indicative of the small proportional variation of the key dimensions of bust, waist and hip that they allow and the difference in ranges caused by the use of varied size intervals.

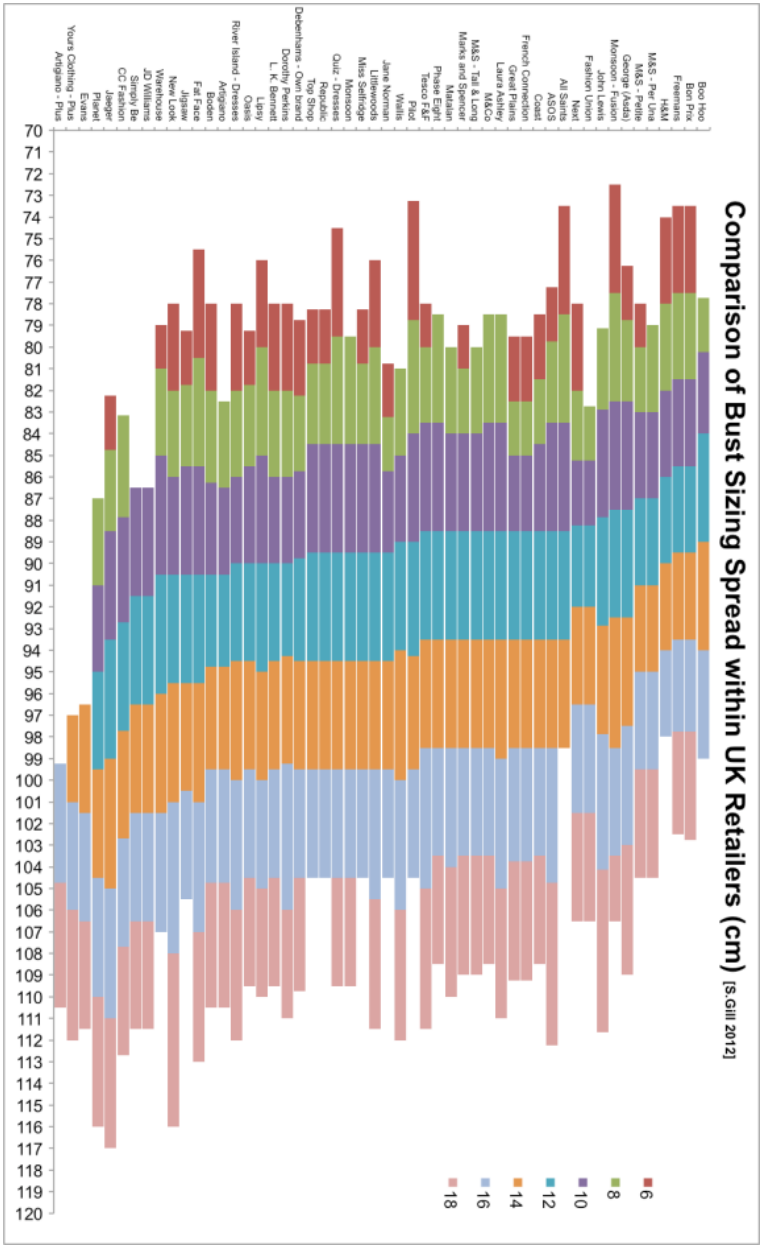

Image 1: Bust sizing spread of UK retailers

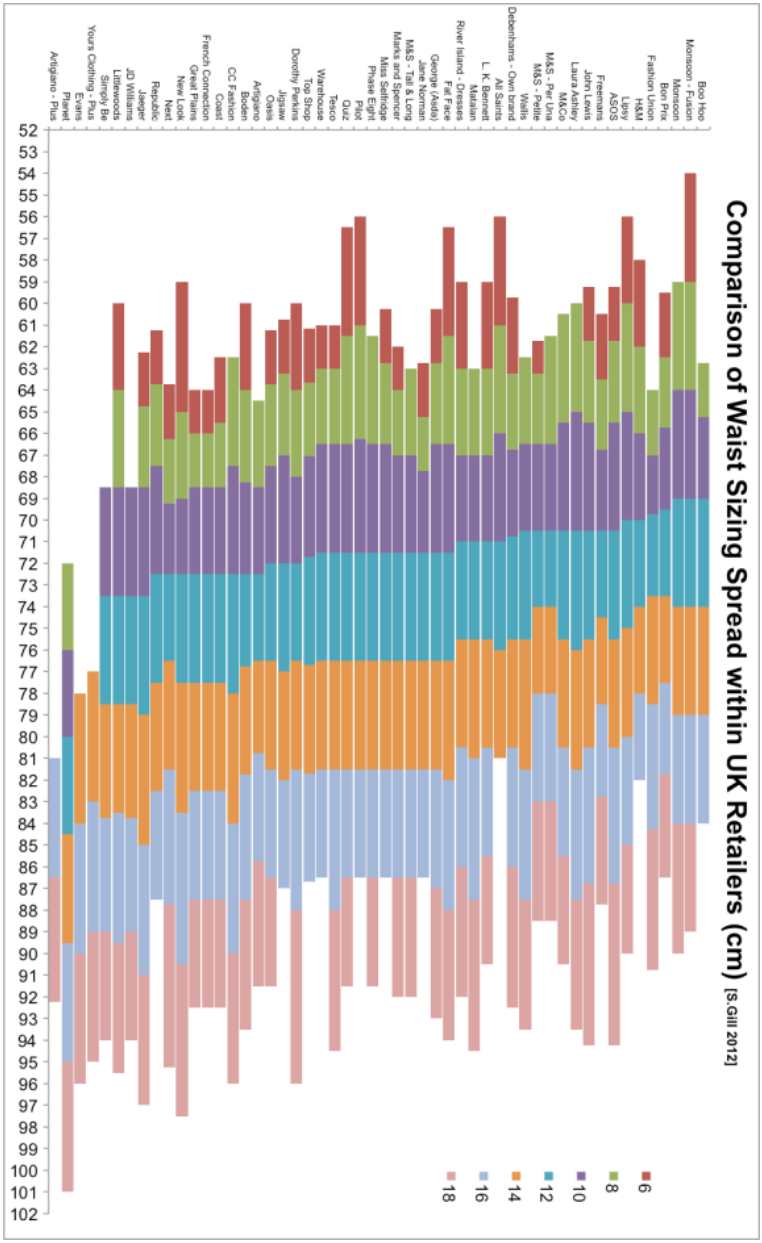

Image 2: Waist sizing spread of UK retailers

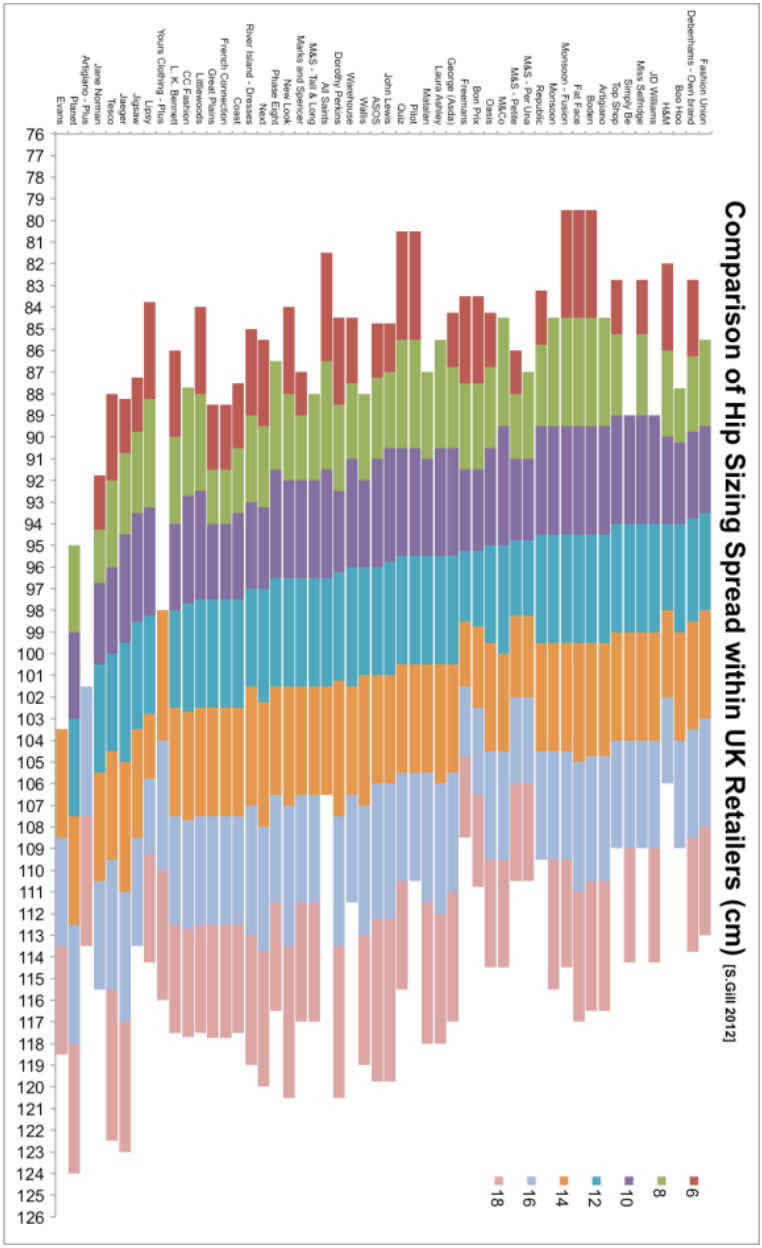

Image 3: Hip sizing spread of UK retailers

B. Non standardisation of sizing systems

During data collection it was noted that retailers adopted a variety of sizing practices, some communicated a single body measurement for each dimension in each size, other provided ranges. Most adhered to the numerical 10-12-14 system, or provided a means to interpret their sizing in this format.

It is clear from analysis of retailers sizing systems that there is little standardisation between many of the retailers, even those who operate under the same parent company. Questions can be raised regarding the examples of retailers offering much larger size ranges for the same size codes than other clothing retailers, though this could display an awareness of the changed dimensions of their target customer due to aging. The graphs also show that size intervals or the difference between one size and another varies across the retailers size ranges. At the smaller end of the size scale (8 and10) there are often only 2cm or 3cm difference between the waist, hips and bust of a size 10 and a size 8. In contrast at the larger end of the sizing scale a size 18 can be 7 or 8cm larger than a size 16. It is difficult to understand why smaller sized women effectively are provided with more size choice than larger women, who according to the data would have to buy a skirt 7cm larger at the waist, hip or bust if a size 16 was just a little too tight.

The dynamic provided by these sizing systems suggest optimum fit for matched dimensions and less optimum fit the further you are as shown in image 4.

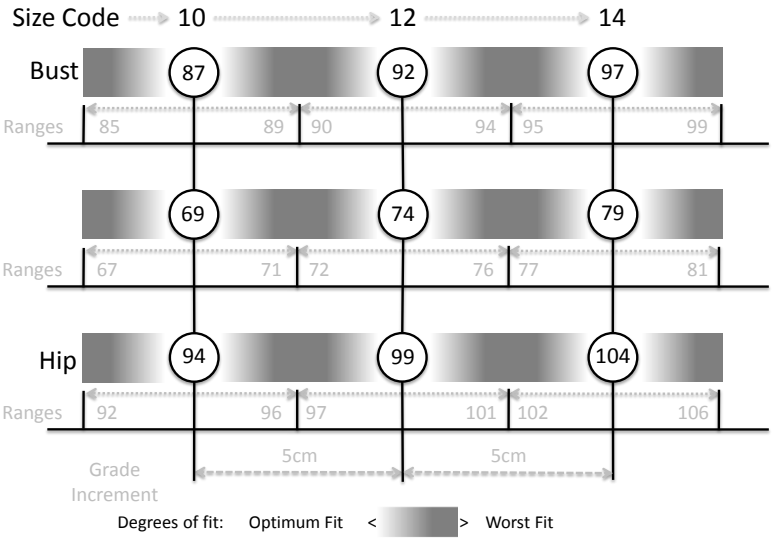

Image 4: Example of the dynamics of sizing systems

C. Body shape representation

Analysis of the sizing data in the graphs shows that according to their published size charts most retailers are catering for women who adhere to either rectangle or hourglass body shapes. These shapes which show limited proportional variation between the key dimensions of bust, waist and hip are only two of the nine defined within the FFIT shape system, though they are suggested as the most common found in studies analysing shapes of the population. However this does mean that customers having more extreme differences between their dimensions would need to shop across sizes within a retailer and this poses difficulties for purchase of dresses which have a fit relationship with all three dimensions.

D. Consumer perceptions of sizing provision

The following analysis of data collected from 54 participants who took part in a body scanning procedure show the varied perceptions of consumers current experiences of sizing practices. During the process, they were provided with one self-administered open question as follows, 'do you have any general observations on your experience of sizing?' It was possible to code the data into two primary coding categories. The most commonly occurring observation (noted by 27 of the 54 participants) was the evident variation between retailers' sizing systems. The following comments are typical examples:

'Sizes vary enormously between shops and even within shops (between styles)'.

'I don't think that sizes are very well standardised; often I am different sizes in different shops.'

The second coding category was identified as the non-standardised body. 19 of the participants stated that they had specific problems and blame specific body regions that they feel are outside the normal standard and therefore create fit problems. The following comments demonstrate how varied these perceived problem regions are:

' jeans which fit on my legs are too big on my waist'

'I have a petite frame but usually those size clothes don't tend to fit my chest size, but larger sizes are not as flattering.'

'I find it harder to find garments to fit my lower body'

'I struggle to find clothes that are long enough in the arm or leg.'

Other comments relating to this feeling of being outside of the norm provide indication that sizing issues can impact on self-esteem:

'Sometimes it can be very demoralising in this society of dress size '0' to wear a higher dress size than you want to!'

7. Conclusions

Whilst there is no standardisation in sizing, the recent accessibility of sizing data, though just for measurements considered as key dimensions, provides an opportunity for the consumer to be better informed of potential garment fit. It is clear that consumers are aware of size variance, but not the dynamics of sizing systems in terms of fit tolerances.

It is possible to describe the dynamics of sizing in a manner accessible to the consumer and this must start with tools for comparing sizes between retailers. Once described it is possible to establish how these systems would serve different members of the population and can empower people to shop differently and retailers to recognise where opportunities may lie for providing garments outside of the current narrow size ranges.

Greater variation in the expected proportions of bust, waist and hip of retailers sizing might provide more opportunity for more customers, especially those outside of the narrow proportional categories to achieve acceptable fit. However as there is little to suggest proportional similarity between customers of a store, then the current model of exclusion will impact on what is acceptable fit or where is acceptable to shop.

Notes

[7] BSI. "Bs En 13402-3:2004, Size Designation of Clothes - Part 3: Measurements and Intervals.
[8] C.L. Moore, , K.K. Mullet, and M. Prevatt-Young. Concepts of Pattern Grading.
[9] Kunick, Modern sizing and pattern making
[10] Winks, International sizing
[11]
[12] Ashdown, An Investigation of the Structure of Sizing Systems
[13] Kunick, Modern sizing and pattern making
[14] Moore et al, Concepts of Pattern Grading.
[15] Winks, International sizing

[16] Powell- Smith
[17] Karen LaBat,. Sizing Standardisation
[18] Kate Kennedy,. "What Size Am I? Decoding Women's Clothing Standards." *Fashion Theory* 13, no. 4 (2009): 511-30.
[19] Philip Treleavan. 'How to fit into your clothes Bust, waist, hips and the UK national sizing survey' *Significance* Vol 3 Issue 4 pp113-117 (2007) accessed online 16.04.09
[20] Kathryn Brownbridge
[21] Shabi
[22] Hardy
[23] Shabi
[24] Kathryn Brownbridge
[25] Winks
[26] Beazley 1997
[27] Tambourino
[28] Alexander et al
[29] Lee et al
[30] Beazley 1997
[31] Jenny Bougourd, Sizing Systems, Fit Models and Target Markets
[32] Connell et al
[33] Gupta and Gangadhar (2003)
[34] Simmons
[35] Lee et al 2007
[36] Devarajan and Istook 2004
[37] Ashdown and Delong,
[38] Rudd & Lennon, 2001
[39] Chatteramann & Rudd, 2006
[40] Sarah Grogan, Body Image

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