A Comparison of Linear and Somatotype Pattern Drafting for Standard and Plus Sizes

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Abstract
The purpose of this study was to evaluate garment fit drafted using somatotype and linear methods for a standard and a plus woman's size.

Keywords
linear, somatotype, pattern drafting, fit

Disciplines
Fashion Business | Fashion Design

Comments
A Comparison of Linear and Somatotype Pattern Drafting for Standard and Plus Sizes

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Keywords: Linear, Somatotype, Pattern Drafting, Fit

The ready-to-wear apparel industry has been in existence for over 100 years, yet the ability to provide well fitting garments has yet to be achieved (Ashdown & Dunne, 2006). Despite over a century of experience and experimentation, the achievement of garment fit remains one of the most difficult technical issues facing the ready-to-wear industry (Shin & Istock, 2007). Plus size consumers in particular experience difficulty finding clothing that fits (Brock, Ulrich, & Connell, 2010). To provide satisfactory garment fit, a number of pattern drafting methods were developed. The methods can be classified as either linear or somatology (Bye, LaBat, & DeLong, 2006;). Linear methods rely on length, width, and girth measurements taken at key points on the body. In addition to these measurements, somatology methods incorporate observations about body’s posture and shape. It is believed that patterns drafted using somatology methods provide a better garment fit in comparison with linear methods (Bye, LaBat, & DeLong, 2006). The purpose of the study was to evaluate garment fit drafted using a somatotype and a linear methods for a standard and a plus woman’s size.

Two methods included in this study were: (a) the linear method developed by Armstrong (1995) was selected because it is one of the methods most widely used to teach pattern drafting in U.S. universities; and (b) the somatotype method developed by a Russian apparel research organization was selected because it contains detailed guidance for drafting patterns for bodies of various sizes, shapes, and postures (Министерство Бытового Обслуживания Населения РСФСР, 1989). Top patterns (front and back up to the waist level and one-seam sleeve) were drafted using both methods for two sizes: a standard size 6 and a plus size XX. Measurements for the standard size were taken from a PGM dress form. To access the fit achieved for a realistic plus size, a model was recruited. Both, the model and the dress form, were measured by two researchers separately and results compared for consistency. Using the developed patterns, muslins were constructed to assess their fit.

The muslins were independently evaluated for fit by four experts. Each expert was first presented the muslin in standard size 6 on the dress form and was asked to make comments on how well the top fitted the form. All experts’ comments were recorded by one of the researchers. Next, each expert was presented the muslin in the plus size XX on the model, employing the same procedure for fit evaluation. In addition, the model was asked to move her arms while wearing both muslins to evaluate them for comfort. Observations made by the experts were tabulated and analyzed. The results revealed that both the linear and somatotype methods produced a satisfactory fit for the standard size 6. However, significant fitting differences were observed between the two methods for the plus size. While the somatotype method achieved an overall good fit with only minor adjustments necessary, the linear method was found to have
significant fitting issues in the plus size including both vertical and horizontal balance and armseye/sleeve cap area. The study provided detailed analyses of major areas of fit problems and made recommendations for drafting plus size top patterns to achieve satisfactory fit. The results might be useful for apparel companies targeting this segment of consumers for increasing their satisfaction with garment fit. Further research is needed to investigate the potential of somatotype drafting methods for other body shapes and sizes to determine if incorporating this method into mass customization software will enhance fit in a diverse population. A comparison of different somatotype drafting methods applied for women’s plus sizes may help to identify key components to the achievement of fit for this group of consumers.


