



## Size-specific Analysis of Body Scan Data to Improve Apparel Fit

Suzanne Loker, Susan Ashdown, and Katherine Schoenfelder  
Cornell University, Department of Textiles and Apparel  
326 MVR, Cornell University, Ithaca, NY 14853

[SL135@cornell.edu](mailto:SL135@cornell.edu), Phone: 607.255.6204, Fax: 607.255.1093

### ABSTRACT

*This paper describes how size-specific analyses of body scan data of an apparel company's target market can provide information that can be used to adjust ready-to-wear sizing to improve apparel fit. We describe a variety of size-based statistical and visual analysis methods that can be applied to target market body scan data. These analyses begin to describe and address the variety of body shapes and measurements that exist within a sizing system and identify potential design adjustments that could be made in order to increase the percent of acceptable fit within each size category for a target market.*

*Keywords: apparel, body scan, fit, sizing system*

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### Introduction

Apparel sizing and fit are difficult concepts to research and analyze as the relationship between the body and clothing is complex and often ambiguous. Current methods of creating sizes and analyzing garment fit are 1) based on measurements of one "ideal" customer embodied in a single fit model, 2) adjusted for additional sizes by using grade rules to define proportional increases and decreases from the base pattern, and 3) evaluated on the fit model visually and in two dimensions by comparing linear garment measurements to linear body measurements (Keiser & Garner, 2003). Although these methods are useful for evaluating simple garment fit issues, they are not adequate to investigate the complexities of the multifaceted relationship between the body and clothing for a large number of customers with a variety of body types within each size. It is not surprising that a Kurt Salmon Associates study

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reported that 50 percent of women claim they cannot find apparel that fits; other studies have indicated that fit problems are the reason for 50 percent of catalog returns (DesMarteau, 2000; Goldsberry, Shim, & Reich, 1996).

By definition, ready-to-wear clothing (RTW) is developed and offered for sale before potential customers select and try on styles of interest. RTW is offered in a variety of styles and stocked in a limited number of sizes, e.g., 416 for misses tops and bottoms or 32-44 for men's pants and suits. Most sizing systems are derived from ASTM standards (ASTM D5585-95, 1995; ASTM D6192-98, 1998; ASTM D6240-98, 1998; ASTM D4910-99, 1999; ASTM D 6458-99, 1999). However, individual firms have always interpreted the standards differently in order to distinguish their garments from their competitors' garments. In other words, size (and the resulting fit) is used as a marketing strategy. A size 10 at