



## VALIDATION OF 'FEMALE FIGURE IDENTIFICATION TECHNIQUE (FFIT) FOR APPAREL<sup>®</sup>' SOFTWARE

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### ABSTRACT

*The software "Female Figure Identification Technique (FFIT) for Apparel" was developed at North Carolina State University, College of Textiles as a starting point to classify females based on their body shapes. The nine body shapes identified in the software could be used effectively to implement mass customization strategies in the apparel retail industry. In addition the shapes could be used in developing new sizing standards for the apparel industry. The software was built using a convenience sample of 253 female subjects primarily from the state of North Carolina. This study was developed to validate the software using a larger population. Multivariate statistical methods of discriminant analysis and Multivariate Analysis of Variance (MANOVA) were used for the validation process. The percentage accuracy of the FFIT for Apparel<sup>®</sup> software was found to be around 90% and was better than the discriminant function developed from the training sample used to build the software. During the validation process, the scans were visually analyzed and many interesting details throwing light on the influence of body scan data on shape analysis were found.*

*Keywords: Female Figure Identification Technique (FFIT) for Apparel, Body shape studies, Apparel sizing*

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### Introduction

The emergence of sophisticated 3-dimensional body measurement technologies and apparel CAD systems has allowed major apparel retailers to use "made-to-measure" apparel as a viable marketing tool. To successfully implement mass customization strategies in the apparel industry, it is necessary to have 1) a sophisticated body measurement technology, 2) an integration tool that allows the body measurements to be analyzed and directed into

CAD systems and, 3) a standard set of patterns that can be altered according to the customer's body shape determined from their body scan data. Developing these standard patterns could be based on the body shapes found in the population, since research studies have shown that pattern alteration points and processes often differ for people with different body shapes. Hence it is necessary to identify the standard body shapes representative of the current population since the process of generating customized patterns from 3-D body scan data