

# **Understanding Fitting Preferences of Female Consumers: Development an Expert System to Enhance Accurate Sizing Selection**

## ***INVESTIGATORS:***

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## ***PROJECT GOALS:***

In addition to body measurements as a basis for apparel sizing, in order to produce garments that “fit”, manufacturers and retailers must understand consumer's perceptions of physical comfort, psychological comfort, and appearance which all impact the consumer decision process. The purpose of this project is to: 1) understand the nuances of fit as defined from the consumer's perspective, 2) develop instruments and methodologies to capture personal fit preferences of the consumer, and 3) translate consumer fit preference data into an expert system to be used in decision making involving fit.

## ***ABSTRACT:***

This report presents an overview of the first year plan for understanding the fit preferences of women for garments in various apparel categories. Work in the first year involves establishing a global consortium of researchers and industry personnel working in a range of areas impacting consumer preference and fit in women's apparel. Probing and projective techniques will be used to elicit responses from female consumers in five focus groups. Dialog from the focus groups will be analyzed to develop a model for understanding fit preferences for female consumers.

## ***INTRODUCTION:***

Much of the emphasis on competitiveness in the past decade has been focused on re-engineering processes. Out of the re-engineering processes, new technical capabilities have emerged that could allow manufacturers and retailers the ability to close the gap between what they provide to the marketplace and what the consumer actually purchases. The potential to develop technologies that allow the consumer to generate

the sale and make critical decisions up front removes the impact of guesswork, forecasting, and large inventories for retailers and manufacturers.

This project is unique in that it focuses on understanding consumer preferences relative to garment fit. A key component for industry competitiveness is not that we can obtain critical body measurements but that we understand how to translate these measurements into apparel items that satisfactorily fit what are becoming more and more diverse consumer segments. The process of accessing fit appears to be straightforward, but consumers consistently list fit among their major dissatisfactions with garment purchases. One recent study of sizing (Goldsberry, 1993) found that 69% of over 4,000 respondents were dissatisfied with the fit of ready-to-wear.

Fit is a significant problem for all retailers but it is especially compounded for those who are direct marketers selling through retail channels like catalogs, television, or the Internet. The emerging potential for increased apparel sales in an electronic environment heightens the need to better define fit from a consumer perspective. This project complements and extends the technical work currently in process at [TC]<sup>2</sup>, UNCG and Nottingham Trent University.

In the paradigm of mass production, consumer input into the Integrated Textile Complex has typically been at the point of sale. Fit is reported to be a major reason for consumer returns of apparel purchased through direct market sources. The inability of the female consumer to find satisfactory fit may include variability as a result of inaccurate pattern develop, inexact cutting and sewing in the manufacturing process or something as simple as not being able to determine an appropriate size because the measurement basis for each size varies from a lack of application of sizing standards.

Currently, sizing standards in women's wear are based on the Voluntary Product Standard, PS-42-70, which uses data from a 1941 study of women in the military. Data from both the U.S. and U.K. (Gray, 1997) indicate that the body shape for women has changed to a pear-shape rather than an hour glass shape over the past four decades. Yet dated standards remain the basis for launching pattern development. To compensate, manufacturers of women's wear develop standards for their target consumers resulting in inconsistency of sizing in the marketplace. In addition to all of these external influences on consumer satisfaction with fit, personal influences ranging from the positive and negative feelings that women hold about their personal image to women's preferences for closely or loosely fitted apparel impact on purchase decisions. Much of the work in consumer behavior is based on a model by Engel, Blackwell, and Kollat (1978) which included a process in the evaluation of alternatives in consumer choice that consisted of beliefs, attitudes,

intentions and ultimately, consumer choice. Using this model as a framework, this research will focus on probing consumer beliefs, attitudes and intentions related to the ultimate choices made in the fit of women's apparel. Body cathexis, the positive and negative feelings toward one's body, has been used to successfully study consumer satisfaction with the fit of apparel (Hwang, 1996). Factors including social ideals, apparel industry ideals, perceptions of what constitutes a good fit at specific body sites, and personal attitudes toward body shape and size will be explored.

The technical approach for this project is three-fold. First, understanding fit issues involves comprehension of both the physiological and the psychological aspects that produce the concept of fit in the mind of the consumer. The current body of literature is not definitive on a methodology to approach a study of fit from a consumer perspective. An interactive web site where global researchers, retailers, manufacturers, and consumers can discuss various approaches to fit is being developed by researchers at Nottingham Trent. This will allow researchers interested in fit to communicate to consider various methodologies that could be used to understand the concept of fit for the consumer. These discussions via the web site with the research team will form the basis for the development of methodologies to understand fit preferences of consumers.

Secondly, beyond exploring methodologies, this project will explore the role that fit plays in the purchase decision process for apparel from the "mind of the consumer".

Five focus groups will be held in the Southeastern U.S. segmenting various populations or consumer sizes to allow participating researchers, manufacturers, and retailers to understand consumer concerns and expressed vocabulary relative to fit. Probing and projective questions and other stimuli may be used to elicit discussion. Focus groups will be taped and transcribed. The research team will use content analysis and a pre-determined coding format based on current literature to place focus group discussions in a framework. Initially, a panel of experts will examine the qualitative data for patterns of consistency and diversity. Validation will be supported through publishing the results of the panel of experts to the web site for discussion from a broader group of researchers.

Final analysis of the information and verbiage from focus group discussions will be used to develop a research questionnaire for a national survey of women consumers of apparel products. The questionnaire design will include research tools to define demographic and psychographic profiles of women and their beliefs, attitudes, and intentions related to the fit of apparel. Data from this survey will be analyzed for significant beliefs and attitudes and demographic or psychographic factors that influence decisions and choices related to the fit of apparel.

The final phase of the project will involve the development of an expert system to aid industry and consumers in decision making related to the fit of women's apparel. On-line communication, focus group information, and survey data will be used to determine the best approach for the development of an expert system. Functional fit experts identified by the project will work with MIS professionals to define the structure and content of the expert system in the third year of the project.

The goal for the first year of the project is understand the depth and breadth of the problem of fit in women's apparel. The process has proceeded as follows:

1) A communication link is being developed by Nottingham Trent University in the form of a web page to allow for developing a process for communication among a broad based consortium of researchers, industry partners, and consumers who are interested in understanding the topic of fit.

2) Research team members have been assigned topics in the body of literature including anthropometric studies, pattern development and grading processes, the technology and psychology of sizing, the strategies used in fitting and consumer beliefs, attitudes and intentions that impact decisions consumers make related to the fit of apparel. Researchers are reviewing literature and will use Internet discussions and team meetings to assess the state of the knowledge pool on fit as it relates to women's apparel.

Primary work on the project has occurred at this level to date. Understanding the literature in order to provide essential background information for the development of both focus group and survey work is proceeding. Critical issues involve understanding how the focus groups should be structured and managed. The research team has been considering issues concerning the structure of the focus groups around the question of how to screen participants. Issues being considered include whether to define groups by age or by apparel size. Understanding factors which affect the perception of clothes and the psychology of fit as related to demographic variables are being studied as background for the development of projective techniques or probing questions.

In addition to the focus group work, survey research is also being developed to provide insight into variables that impact fit preferences for women's apparel. Issues with body cathexis, satisfaction and dissatisfactions with fit and shopping strategies relative to fit are being explored.

- 3) Based on the literature review and research discussions, the research team will develop techniques to elicit discussion during the focus group sessions. Potential techniques include probing and projective techniques and scenarios to focus or stimulate discussion in focus group research.
- 4) Five focus groups will be conducted with women in various market segments in the Southeast to discuss beliefs, attitudes, intentions and purchase behavior related to the fit apparel items.
- 5) Based on content analysis of focus group research, a model of beliefs, attitudes, and intentions related to the question of fit preferences for women will be developed.

The magnitude of the problem of consumer satisfaction with fit is extremely broad touching virtually every retailer and manufacturer. This project has generated interest among retail and manufacturing partners as well as other research units. Involving industry and other research units is an important component of this research.

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I98-A8/6

Manuel, Melissa. (In process). Understanding fit preferences using web based technologies. Auburn University, Auburn.

***PRESENTATIONS:***

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Kuczynski, Alex. (1998, August 30). One riddle fits all. The New York Times, pp. 17.