

**MARKETING FASHION COLOR FOR PRODUCT LINE EXTENSION  
IN THE DEPARTMENT STORE CHANNEL**

Marguerite Moore  
University of Tennessee

Nancy L. Cassill  
North Carolina State University

David G. Herr and Nicholas C. Williamson  
University of North Carolina Greensboro

**ABSTRACT**

*Consumer demand, advances in manufacturing and retailing technology, and globalization contribute to an increasingly competitive domestic apparel market. In order to compete, retailers and manufacturers adopt aggressive product strategies designed to capture discerning consumers. A popular strategy for product line extension in the apparel industry is the addition of fashion color to core lines. Academics and practitioners alike have suggested that color can stimulate interest and, subsequently, sales of apparel products. The current study examines the impact of visible fashion color on sales of women's core apparel products in the department store context through a quasi-experimental approach. Hypothesis tests suggest that greater depth and magnitude of fashion color does not increase sales of either fashion color or basic color apparel. Managerial implications are offered for product strategy as well as future directions for academic research.*

**KEYWORDS:** Apparel marketing, retailing, fashion marketing, women's apparel, fashion color, product-line extension, retail environment

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**INTRODUCTION**

Over the past twenty years, global sourcing, multiple-channel retailing, the proliferation of mass merchandisers, and demanding consumers have contributed to the development of a dynamic and highly competitive U.S. apparel market. In order to compete in today's market, retailers and apparel manufacturers are increasingly adopting new product strategies, including both new innovations as well as product line

extensions to capture sales from discerning consumers. The design, production, and distribution of new products in apparel retailing currently occurs at much faster rates compared to a decade ago. Retailers such as The Limited, Inc. attribute their success to the ability to design, manufacture and deliver goods to the selling floor within a six-week time frame (Biederman, 2000).

A popular product strategy among apparel manufacturers and retailers is to inject fashion color into previously existing product lines. In many categories including active-wear, denim, and intimate apparel, designers use fashion color to add newness to an existing line and, in turn, attract consumers to the entire product line. Compared to a radical new innovation, the process of extending a product line through the addition of fashion color appears to be simple. However, the requirements of fashion apparel production including: longer lead times for production, procurement of new materials, coordination of color shading, production of samples, and execution of short production runs are comparatively riskier than those of core apparel production. Further, difficulty in forecasting sales for new apparel products poses additional problems in predicting demand—compared to core products with clear selling histories (Urban, Weinberg & Hauser, 1996). Forecasting error can lead to expensive inventory carrying costs or stockouts at the retail level, which can erode profits as well as customer loyalty for the retailer (Clarke, 1987; Emmelhainz & Emmelhainz, 1991).

Although fashion color line extensions are a common strategy among apparel companies, we know very little about their impact on sales of the entire product line. Because this type of product extension can result in sizable profits when they succeed, or great costs when they fail, it is important to understand their role in marketing apparel. To date, no single study has investigated the role of fashion color line extension in the apparel context. The purpose of this study is to examine the effect of fashion color introduction on the sales performance of a basic color (i.e., core) apparel line. Specifically, the study investigates whether increased quantities of newly introduced fashion-color inventory will impact sales in an apparel line that is typically marketed for its performance rather than its style. The context selected for the study is the women's intimate apparel category in the department store retail channel.

Through the use of a quasi-experimental design, this study provides an empirical investigation of the effect of fashion color on sales of apparel in the retail setting. Increased understanding of the impact of fashion color within the retail environment aids in informing future product line extension decisions among apparel manufacturing, marketing and retailing practitioners. Further, investigation of fashion color line-extension among a product line that is typically marketed for its performance attributes, contributes to our knowledge of target marketing in the apparel context.

### BACKGROUND AND HYPOTHESES

The practice of consumer firms using color to attract attention to new products, packaging, and retail space is widely noted in the trade literature (Cowan, 1993; Kotler, 1999; Triplett, 1995). Unfortunately, there is currently no empirical evidence to uphold the claim that color actually influences the purchasing behavior of consumers specifically for apparel products. However, there is a related stream of research in the academic retailing literature that considers the influence of the store environment on consumer behavior. Borne out of environmental psychology, researchers such as Donovan and Rossiter (1982), Slama and Tashchain (1987), Buckley (1991), and Donovan, Rossiter, Marcoolyn, and Nesdale (1994) have examined the impact of store environment stimuli on consumer emotions and purchasing behavior through operation of the Mehrabian-Russel (M-R) Model. Based on the Stimulus-Organism-Response (S-O-R) framework, the M-R model contends that environmental stimuli lead to emotional states (i.e., pleasure/displeasure, arousal/non-arousal) which in turn lead to approach/avoidance behaviors. The majority of this research focuses on the 'emotion' interface between stimulus and response (Buckley 1991; Donovan, Rossiter, Marcoolyn and Nesdale, 1994).

In their 1982 study, Donovan and Rossiter pointed out the difficulty of isolating stimuli in the retail environment. They indicated a need

for greater understanding of in store stimulus including examples such as, “color arrangements, store layouts, noise levels and in-store promotions...”—for their effect on emotions and ultimately on shopping behaviors (1982, p.40). Further, the researchers point out that, in keeping with the M-R model, ‘information load’ in the complex retail environment can affect consumer arousal. That is, environments that are characteristically ‘high-load’, including more features and change, tend to stimulate customers compared to environments that are ‘low-load’ which make consumers feel calm or relaxed.

The intent of the current study is not to directly test the M-R framework. In fact, emotions are not measured in the study. However, the work of Bellizzi and Hite (1992), Buckley (1991) and, Donavan, Rossiter, Marcoolyn and Nesdale, (1994) have empirically linked in-store stimuli to emotions and behaviors including purchasing intent and actual behavior. Therefore, we hold that the stated research provides conceptual justification for investigating the effect of fashion color on shopping behavior within the retail environment. Based on this research, we agree that department stores are characteristically high-load, and propose that adding new fashion-color products to displays within this environment can stimulate consumers. In agreement with previous M-R research, this stimulation in-turn can influence consumers to spend more time and money in the retail environment. Therefore, we hypothesize the following:

H1: Greater quantities of visible fashion color will positively influence sales of full product-line in the retail environment.

We also reason that fashion color within a product line can act as a stimulus in the retail environment attracting attention not only to the fashion products themselves, but also to the core products that are merchandised alongside these new, fashion color products.

Therefore, we propose the following hypotheses:

H2: Greater quantities of visible fashion color will positively influence sales of these goods within the retail environment.

H3: Greater quantities of visible fashion color will positively influence sales of the core goods with which they are displayed within the retail environment.

## METHODOLOGY

### Research Design

The study employed a quasi-experimental method to investigate the hypotheses. The quasi-experimental design facilitated investigation in the realistic retail environment. In order to provide a useful result for both academics and practitioners, it was important to measure the impact of the additional color within the retail setting. Therefore, a degree of internal control was traded-off for the external reality required for insight into the question of interest. However, to provide an acceptable degree of internal validity the following rules of quasi-experimental design were applied to the current research: selection of equivalent groups for testing, assignment of manipulation and controls among these groups, and testing for differences among these groups (Cook and Campbell, 1979; Kerlinger, 1992).

A U.S. market leader in the branded manufacture of women’s department store intimate apparel was selected to participate in the study. The company agreed to increase visible quantities of fashion color merchandise within a featured product line for the upcoming spring selling season (seven weeks) in two test stores in two separate test markets (see Table 1). In addition, two control stores were also provided in each test market (see Table 2). Additionally, environmental influences within the test stores were monitored for their potential affect on the dependent variable.

The experimental unit for the study is weekly sell-through percentage of intimate apparel in the test product line for the full line (basic and fashion color units combined), basic colors only, and fashion color only. Weekly sell-through simply refers to the total unit sales per week divided by the total quantity of products available for sale per week (on-hand inventory) in each individual store. Weekly sell-through is the metric used, instead of basic unit sales, to correct for differences in individual store sales. Although the four test stores were chosen to be as similar as possible, their sales vary slightly—both within and across markets. However, this variation should not affect weekly sell-through percentages because each store is planned and set to a common stock-to-sales ratio. In addition, all accounts in the study are vendor managed and inventory is replenished on a weekly basis.

### Selection of the Test Stores

Test stores for the study include two comparable locations of two different major national department store chains, for a total of four participating stores. Two stores, which belong to the same national chain, are located in the North Carolina Greensboro/Triad market (Chain A). The other two stores, which belong to a second national chain, are located in the Northern Virginia/Metropolitan Washington, DC market (Chain B). To reduce the possibility of a store or location effect, all four stores in the study were required to meet specific inclusion criteria (Tables 1 & 2).

Table 1  
Criteria for Department Store-Chain Selection

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1. Comparable market penetration
  2. Both chains are established home accounts in respective test market (15+years).
    - Both chains are headquartered in each test market.
  2. Comparable service levels for test brand
    - Inventory is vendor managed in all stores on a weekly basis.
  3. Comparable sales volume for test brand
    - All four stores have an “A” rating by the manufacturer, which indicates the highest sales volume grade for a retailer.
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Table 2  
Criteria for Individual Store Selection (2 stores/each market)

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1. Two stores belong to the same chain.
  2. Located in the same regional market.
  3. Comparable shopping environments.
  4. Same target consumer.
  5. Comparable square footage for store & Intimate Apparel Department.
  6. Comparable placement of manufacturer’s products in store.
    - All product displays for the manufacturer’s produces are visible from the main action aisle.
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### Selection of the Test Collection

Researchers worked with the manufacturer to select a product line that had a lengthy selling history and had incorporated fashion color in the past as a means of line extension. Specifically, the product-line had proven sales success over the past four years, ranking third out of ten, among the manufacturer’s product styles. In past seasons, fashion color had been injected into the line with success. As a fashion color vehicle, the line ranked first within the manufacturer’s lines that periodically incorporated fashion color. Further, the line was planned to introduce a new fashion color, *sorbet*, for the early spring selling season which spanned from the third week of March until the last week of April (seven weeks).

### Experimental and Control Treatments

At the beginning of the seven-week selling season, experimental treatments (i.e., high color) were administered to one store in each test market. The remaining stores in each market were designated as the control stores (i.e., low color). Therefore, each market and each chain had one experimental store (i.e., high color) and a corresponding control store (i.e., low color), totaling four test stores (Table 3).

The experimental stores were administered a double order (two times original plan) of fashion color merchandise for the test collection (Table 4). This double order of merchandise was fully displayed with the basic color products at the beginning of the selling season (March week 3) and remained

on the selling floor for the duration of the study. The intent of this experimental treatment was to visibly increase the magnitude and depth of color on the merchandise display.

Table 3  
Test Stores for the Study

|            | Chain A<br>N.C./Triad      | Chain B<br>Va./ D.C.       |
|------------|----------------------------|----------------------------|
| High Color | Store A1 –<br>Experimental | Store B1 –<br>Experimental |
| Low Color  | Store A2 –<br>Control      | Store B2 –<br>Control      |

The control stores were administered regular planned orders of the fashion color merchandise for the test collection (Table 4). Sales data generated in these “low color” stores provided a comparative basis for data from the experimental stores. Both experimental and control stores were monitored weekly by account managers—who ensured that all fashion color inventory was displayed on the selling floor during the full season.

Table 4  
Experimental and Control Treatments of Fashion Color

| Market                                 | Store                 | # Fashion Color<br>Units |
|--|-----------------------|--------------------------|
| Greensboro/Triad                       | Store A1 experimental | 28 <sup>a</sup>          |
|  | Store A2 control      | 14                       |
| Northern Virginia/<br>Washington, D.C. | Store B1 experimental | 48 <sup>a</sup>          |
|  | Store B2 control      | 24                       |

Note. <sup>a</sup> Indicates store with double fashion color.

### Environmental Influences

Environmental influences within were monitored on a weekly basis to reduce the potential for confounded results in each of the four test stores. Promotions, placement of the test product on the displays, mall and store events, and competitor’s comparable products were monitored during the seven-week experiment. Three levels of price promotion were tracked including price, bundling and

manufacturer’s rebates. Three levels of merchandise placement were tracked for the participating manufacturer as well as their competitor’s comparable products including main action aisle placement, visibility from the main action aisle, and no visibility from the main action aisle. Store and mall events including intimate apparel sales, storewide sales/events and mall sales/events were monitored on a weekly basis. The participating manufacturer identified three major brands in the department store market and additional specialty retail brand as its primary competitors. The specialty retailer was located in each of the test stores’ host mall—and was therefore included in the study. These four brands were monitored during the seven-week study for special promotions, floor moves and new product introduction.

### Data

Data for the study were obtained from two sources. Point-of-sale (POS) data was provided to the researchers through the manufacturer’s sales and inventory system which is directly linked to each retail account. Data was sent to the researchers on a weekly basis from a company contact. Weekly sales data was provided for the fashion and basic color products within the test line which began the third week of March and concluded the first week of May. On-hand data (inventory in stock) was provided as well. However, this data was provided at the beginning of each month rather than on a weekly basis.

The environmental influence data was concurrently collected on a weekly basis. Account managers supplied environmental influences data to the researchers for the Northern Virginia test stores. The Greensboro/Triad stores were monitored by the researchers.

### Analysis

#### Preparation of the Dependent Variable

The dependent variable is weekly sell-through in units. The formula for weekly sell through is:

$$\text{Weekly sell-through} = \frac{\text{total units sold for week}}{\text{total units available at beginning of week}}$$

Sell-through ratios were calculated individually for basic and fashion colors and in combination. Specifically, basic color sell-through was calculated by adding together weekly sales for the two core colors: white and nude. Fashion color sell through reflected unit sales of sorbet alone. Sell-through of the full line was simply calculated by adding nude, white, and sorbet together and dividing by total inventory available.

At the time of data collection, the manufacturer's POS system was unable to track weekly inventory levels in each store. Instead the manufacturer provided researchers with monthly beginning inventory in units. The inventory amount was only provided for weeks one, four and seven for Store A (experimental and control) and weeks one, three and seven for Store B. Since the amount of inventory was not available for the remaining weeks it was necessary to estimate the amount of inventory available for these weeks. A quadratic curve was fitted to the actual on-hands inventory observations for each store chain (Table 5). This method was used because three actual on-hand observations for each store provided adequate data to obtain an exact fit. The quadratic curve did not adjust any of the original on-hand observations (Table 6).

### Statistical Procedures

Analysis of Covariance (ANCOVA) was used to test all hypotheses. Least square means and focused contrasts were examined to determine the effect of greater quantities of visible fashion color on weekly-sell through of the test collection. In accordance with the hypotheses, all contrasts assumed that weekly sell through would be greater in the experimental stores (High Color) compared to the control stores (Low Color). Within the three statistical tests, each model was adjusted for a time covariate (by weeks). In addition, interaction terms were tested to indicate any influence of store by treatment effects.

Table 5  
Quadratic Curve Results

|                         | Intercept | Week   | Week <sup>2</sup> |
|-------------------------|-----------|--------|-------------------|
| Store A1 (experimental) |           |        |                   |
| Basic Color Inventory   | 144.28    | -18.60 | 1.32              |
| Fashion Color Inventory | 31.38     | -3.64  | 0.26              |
| Store A2 (control)      |           |        |                   |
| Basic Color Inventory   | 178.95    | -39.85 | 2.90              |
| Fashion Color Inventory | 15.23     | -1.21  | -0.02             |
| Store B1 (experimental) |           |        |                   |
| Basic Color Inventory   | 161.54    | 13.94  | -0.48             |
| Fashion Color Inventory | 55.17     | -7.72  | 0.55              |
| Store B2 (control)      |           |        |                   |
| Basic Color Inventory   | 114.91    | 79.61  | -4.52             |
| Fashion Color Inventory | 15.23     | -1.21  | -0.02             |

Note. Quadratic curve results were used to estimate inventory levels with the following equation: Intercept + (Linear week estimated coefficient \* Week number) + ([Quadratic week estimated coefficient] \* [Week Number]<sup>2</sup>) = Inventory Available.

Table 6  
Available Inventory (units) by Week

|               | Weeks            |     |                  |                 |     |     |                  |
|---------------|------------------|-----|------------------|-----------------|-----|-----|------------------|
|               | #1               | #2  | #3               | #4              | #5  | #6  | #7               |
| Store A1      |                  |     |                  |                 |     |     |                  |
| Fashion Color | 28 <sup>a</sup>  | 5   | 23               | 21 <sup>a</sup> | 20  | 19  | 19 <sup>a</sup>  |
| Basic Color   | 127 <sup>a</sup> | 112 | 100              | 91 <sup>a</sup> | 84  | 80  | 79               |
| Store A2      |                  |     |                  |                 |     |     |                  |
| Fashion Color | 14 <sup>a</sup>  | 13  | 12               | 10 <sup>a</sup> | 10  | 9   | 8 <sup>a</sup>   |
| Basic Color   | 142 <sup>a</sup> | 111 | 85               | 66 <sup>a</sup> | 52  | 44  | 42               |
| Store B1      |                  |     |                  |                 |     |     |                  |
| Fashion Color | 48 <sup>a</sup>  | 41  | 37 <sup>a</sup>  | 27              | 31  | 29  | 29 <sup>a</sup>  |
| Basic Color   | 175 <sup>a</sup> | 188 | 199 <sup>a</sup> | 209             | 219 | 227 | 242 <sup>a</sup> |
| Store B2      |                  |     |                  |                 |     |     |                  |
| Fashion Color | 24 <sup>a</sup>  | 19  | 14 <sup>a</sup>  | 11              | 7   | 6   | 7 <sup>a</sup>   |
| Basic Color   | 190 <sup>a</sup> | 256 | 313 <sup>a</sup> | 361             | 400 | 430 | 462 <sup>a</sup> |

<sup>a</sup> Actual on-hand data (units) observation.

## RESULTS

### Time Effect & Interaction

The covariate for weeks indicated a positive effect for time as the seven-week study progressed for all three dependent variables. All means and subsequent contrasts were adjusted by the time covariate. Hypothesis 1 indicated a positive coefficient (2.29) and a

small p-value, ( $p=0.033$ ) (Table 7). Hypothesis 2 indicated a positive coefficient (3.30) and a small p-value, ( $p=0.0159$ ) (Table 8). Hypothesis 3 indicated a positive coefficient (2.09) and a small p-value, ( $p=0.0124$ ) (Table 9).

Interaction between store and treatment was tested for the three dependent variables. Large p-values indicated that interaction was not present in the three statistical models. Hypothesis 1 indicated a large p-value, ( $p = .4674$ ) (Table 7), as did Hypothesis 2, ( $p = .8674$ ) (Table 8) and Hypothesis 3, ( $p=.8674$ ) (Table 9).

### Hypotheses Tests

Although the full model was significant at ( $p=.0135$ ), the focused contrasts indicated that there were not significant differences between weekly sell through in the experimental versus the control stores. The focused contrast that compared weekly sell through of fashion color and basic color combined between experimental and control stores indicated a large p-value ( $p=0.955$ ) (Table 7). Additional contrasts between experimental and control stores within markets produced similar results. The contrast between Store A-experimental and Store A-control for weekly sell through of fashion color and basic color combined indicated a large p-value ( $p=0.9700$ ) and the contrast between Store B-experimental and Store B-control also indicated a large p-value ( $p=0.6600$ ). All contrasts assumed that weekly sell through would be greater in experimental (high color) stores than in control (low color) stores. However, the test of Hypothesis 1 indicated negative estimates between the experimental stores and the control stores. Therefore, the published statistic was divided in half and subtracted from one to derive the actual p-value that corresponded to the hypothesis tested. Judging from the focused contrast of ANCOVA, Hypothesis 1 was not supported.

Table 7  
Analysis of Covariance for Hypothesis 1

Dependent Variable: Weekly sell-through of fashion & basic color

| Source          | DF | Sum of Squares | Mean Square | F    | Pr>F   |
|-----------------|----|----------------|-------------|------|--------|
| Model           | 4  | 875.544        | 218.886     | 3.98 | 0.0135 |
| Error           | 23 | 1265.133       | 55.005      |      |        |
| Corrected Total | 27 | 2140.678       |             |      |        |
| R-Square        |    | .409003        |             |      |        |

  

| Contrast            | Estimate | Std Err | T     | Pr> T               |
|---------------------|----------|---------|-------|---------------------|
| Time Effect         | 2.294    | 0.7008  | 3.27  | 0.0033              |
| Interaction         | -4.1428  | 5.6064  | -0.74 | 0.4674              |
| A1 vs. A2           | -7.0000  | 3.9643  | -1.77 | 0.0907 <sup>a</sup> |
| B1 vs. B2           | -28571   | 3.9643  | -0.72 | 0.4783 <sup>a</sup> |
| A1 & A2 vs. B1 & B2 | 7.000    | 5.6064  | 1.25  | 0.2244              |

Note. Where values of estimated coefficients are negative corresponding p-values were divided in half and subtracted from one to derive the actual p-value for the contrast.

<sup>a</sup> The actual p-values for the contrasts are as follows:  
A1 vs. A2-- $p=0.9700$ , B1 vs. B2 -- $p=0.6600$ .

Table 7 (Continued)

| Contrast                                 | Estimate | Std Err | T     | Pr> T               |
|--|----------|---------|-------|---------------------|
| A1 & B1 vs. A2 & B2 (High vs. Low Color) | -9.8571  | 5.6064  | -1.76 | 0.0920 <sup>a</sup> |
| A2 s vs. B2 (Low vs. Low Color)          | 5.5714   | 3.964   | 1.41  | 0.1733              |
| A1 vs. B1 (High vs. High Color)          | 1.4285   | 3.964   | 0.36  | 0.7219              |

<sup>a</sup> The actual p-values for the contrast is as follows:  
A1 & B1 (high color) vs. A2 & B2 (low color) -- $p=0.9550$ .

The second hypothesis considered the effect of the experimental treatment on sell through of fashion color products only. The overall ANCOVA model was significant with an observed ( $p=.0149$ ; Table 8). However, the focused contrast that examined the dependent variable between the experimental and control stores indicated a negative estimate. The actual p-value associated with Hypothesis 2 is ( $p= .9950$ ) indicates no significant difference in weekly sell through of fashion color goods in the experimental versus control stores. Therefore, Hypothesis 2 is not supported.

**Table 8**  
**Analysis of Covariance for Hypothesis 2**

Dependent Variable: Weekly sell through of fashion color (only)

| Source           | DF | Sum of Squares | Mean Square | F Value | Pr>F   |
|------------------|----|----------------|-------------|---------|--------|
| Model            | 4  | 2802.6071      | 700.6517    | 3.88    | 0.0149 |
| Error            | 23 | 4150.2500      | 180.445     |         |        |
| Corrected Total  | 27 | 6952.8571      |             |         |        |
| R-Square .403087 |    |                |             |         |        |

  

| Contrast                   | Estimate | Std Err | T     | Pr> T               |
|----------------------------|----------|---------|-------|---------------------|
| Time Effect                | 3.0357   | 1.2692  | 2.60  | 0.0159              |
| Interaction                | -1.7142  | 10.1543 | -0.17 | 0.8674              |
| A1 vs. A2                  | -15.8571 | 7.1802  | -2.21 | 0.0375 <sup>a</sup> |
| B1 vs. B2                  | -14.1428 | 7.1802  | -1.97 | 0.0610 <sup>a</sup> |
| Store A1 & A2 vs. B1 & B2  | -0.2857  | 10.1543 | -0.03 | 0.9778              |
| A1 & B1 vs. A2 & B2        | 30.0000  | 10.1543 | -2.95 | 0.0071 <sup>a</sup> |
| (High color vs. Low color) |          |         |       |                     |
| Store A2 s vs. Store B2    | 0.7142   | 7.1802  | 0.10  | 0.9216              |
| (Low vs. Low color)        |          |         |       |                     |
| A1 vs. B1                  | -1.0000  | 7.1802  | -0.14 | 0.8904              |
| (High vs. High color)      |          |         |       |                     |

<sup>a</sup> The actual p-values for the contrasts are as follows: Store A1 vs. Store A2--p=0.9813, Store B1 vs. B2, p=0.9695, and A1 & A2 (high color) vs. Store A2 & B2 (low color) p=0.9950.

The third and final hypothesis considered the impact of the experimental treatment on weekly sell through of the basic color products within the test line. The overall ANCOVA model was marginally significant with an observed ( $p=.0645$ ; Table 9). However, the focused contrast that compared the experimental stores with the control stores indicated that there was no significant impact of the fashion color treatment on sales of basic color goods ( $p=0.9172$ ). Therefore, Hypothesis 3 was not supported either.

**Environmental Influences**

During the seven-week study, promotions, location of product displays and store and mall events were monitored. The store environment was heavily promotional during the test period. Promotions were present in four out of seven weeks in Chain A and five out of seven weeks in Chain B, for both the test manufacturer’s brand as well as competitor brands. Promotional activities across all stores were identical for the test products. The only difference in promotional

activity between the four stores, was the presence of a bundling promotion for a competitor’s comparable product in Chain B. The test products maintained action-aisle placement during all weeks of the study. Display of the competitors’ comparable products occasionally changed during the seven weeks. No mall events occurred during the study period. However, within Chain A four storewide sales occurred which lasted a total of four weeks. Chain B also had four sales which spanned four weeks. Overall, the promotional activity, presence of competitor’s products, and store and mall events were very consistent across the four test stores.

**Table 9**  
**Analysis of Covariance for Hypothesis 3**

Dependent Variable: Weekly sell through of basic color (only)

| Source           | DF | Sum of Squares | Mean Square | F Value | Pr>F   |
|------------------|----|----------------|-------------|---------|--------|
| Model            | 4  | 699.7946       | 172.4486    | 2.58    | 0.0645 |
| Error            | 23 | 1539.2053      | 66.9219     |         |        |
| Corrected Total  | 27 | 2229.0000      |             |         |        |
| R-Square .309464 |    |                |             |         |        |

  

| Contrast              | Estimate | Std Err | T     | Pr> T               |
|-----------------------|----------|---------|-------|---------------------|
| Time Effect           | 2.0982   | 0.7729  | 2.71  | 0.0124              |
| Interaction           | -1.14285 | 6.1839  | -0.18 | 0.8550              |
| High vs. Low Color    | -8.8571  | 6.1839  | -1.43 | 0.1655 <sup>a</sup> |
| A2 vs. B2             | 3.4285   | 4.3727  | 0.78  | 0.4410              |
| (Low vs. Low Color)   |          |         |       |                     |
| A1 vs. B1             | 2.2857   | 4.3727  | 0.52  | 0.6062              |
| (High vs. High Color) |          |         |       |                     |
| A1 vs. A2             | -5.0000  | 4.3727  | -1.14 | 0.2646 <sup>a</sup> |
| B1 vs. B2             | -3.8571  | 4.3727  | -0.88 | 0.3869 <sup>a</sup> |
| Chain A vs. B         | 5.7142   | 6.1839  | 0.92  | 0.3651              |

<sup>a</sup> The actual p-values for the contrasts are as follows: Store A1 vs. A2 --p=0.8677, Store B1 vs. B2--p=0.80655, and High Color vs. Low --Color p=0.9172.

**CONCLUSIONS & LIMITATIONS**

Judging from the hypothesis tests, the experimental manipulation of fashion color within the retail environment (intimate apparel) did not increase sales of these goods. Although we did not directly test whether the greater presence of fashion color stimulated consumer interest, we posed that if fashion color does, in fact, stimulate consumer interest, sales should logically increase. Three major points should be weighed when considering this result. First, it is highly possible that the complexity of the retail

environment reduced the strength of the experimental manipulation. In other words, greater depth of fashion color, although visibly more impressive in the test than control stores, may have not been enough to stimulate consumers in an environment that was highly complex. Promotional activity was frequent across the four test stores—at both the store and department level—and visual signs within the merchandise displays were changing week to week. Although this is a common factor in this merchandise category, its presence could have reduced the impact of fashion color within the intimate apparel department.

Second, the test product line is typically marketed for its basic color, performance centered, foundation garments. The test manufacturer's target customer is a college educated female between the ages of 25-54 who value the benefits of fit, support, and comfort over fashion. The line had proven success among its target market with more than four years of successful selling history. Because of the line's success as a performance-centered product, it is highly possible that potential and past customers are less sensitive to the addition of fashion color within the line.

Third, this investigation examined the impact of fashion color within a single apparel line. Although measures were taken to select a line that would reflect a difference if the added fashion color increased interest, it is difficult to generalize these findings across all apparel lines, selling seasons, and retail environments.

### **IMPLICATIONS & FUTURE RESEARCH**

Although the hypothesized directions of this research were not supported, the results suggest some important implications for researchers, apparel producers and marketers. Our results indicated that greater depth of visible fashion color did not contribute to the profitability of a core apparel product line in the competitive department store environment. From a research standpoint, this suggests that our manipulation may not have been strong enough, or was perhaps counteracted by some other force within the complex environment.

Therefore, it would be helpful to examine the direct impact of color on consumer stimulation in a controlled environment, within the S-O-R paradigm. Greater understanding of this phenomenon could help us to understand the degree to which different factors (e.g., color, music, and promotions) affect approach and avoidance behaviors in high load environments. Further, it would be useful to examine how different stimuli affect purchasing behavior.

From a managerial standpoint this result suggests several important implications. In integrated supply chains, as well as less formal channels of distribution, fashion color incorporation for apparel marketing occurs on a regular basis, season after season. Marketers, designers and manufacturers have to make routine color decisions for their product lines—which are sold in the complex retail environment. The test collection that we examined in the quasi-experiment was among the test manufacturer's top product lines for featuring seasonal color. Additionally, the Spring selling season was among the best times of the year to sell color foundations for the test manufacturer. However, the greater depth and breadth of fashion color did not increase consumer response to these products. The same challenge that we faced in designing this project, creating a noticeable stimulus in a dynamic environment, faces practitioners in making daily product decisions. Because of the many factors that influence the success of apparel products in the retail marketplace—practitioners need to leverage any and all knowledge available to make more informed product decisions.

The new product literature offers some meaningful directions for future research in this area, as well as strategic initiatives that can aid in making extension and new product decisions within continuous development firms (Andrews and Smith, 1996; Mahajan and Wind, 1992; Wind and Mahajan, 1997). Although the majority of this research is geared towards consumer durables and technological products, it offers potential guidance for product decisions within the

apparel context. The suggestions of Thomas (1993) including: increased market analysis, generation of options, evaluation of new product concepts and their affect on strategy, forecasting under adaptive conditions and testing/ monitoring early sales; could be particularly helpful for apparel marketers and manufacturers in developing both product line-extensions as well as new products (Wind and Mahajan, 1997).

A final implication for marketers is the fact that a line that is typically marketed for utility may not always be a successful vehicle for fashion color. Simple rules of target marketing and the use of information in making color decisions can increase the success and decrease the failure of routine product decisions.

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#### **AUTHOR'S INFORMATION**

T

Marguerite Moore  
Department of Retail & Consumer Sciences  
University of Tennessee  
230 Jessie Harris Building  
1215 West Cumberland Avenue  
Knoxville, Tennessee 37996-1900, U.S.A.  
(865) 974-2141  
[mmoore@utk.edu](mailto:mmoore@utk.edu)

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T

M

Nancy Cassill  
Department of Textile and Apparel  
Technology and Management  
North Carolina State University  
College of Textiles, 2401 Research Drive  
Raleigh, North Carolina 27695-8301, U.S.A.  
(919) 515-6633  
[nlcassil@unity.ncsu.edu](mailto:nlcassil@unity.ncsu.edu)

David G. Herr  
Department of Statistics  
Bryan School of Business  
University of North Carolina Greensboro  
Greensboro, North Carolina  
[DGHerr@uncg.edu](mailto:DGHerr@uncg.edu)

Nicholas Williamson  
Department of Business Administration  
Bryan School of Business  
University of North Carolina Greensboro  
Greensboro, North Carolina  
[ncwillia@uncg.edu](mailto:ncwillia@uncg.edu)