IMPACT OF
QUICK RESPONSE TECHNOLOGY BASED ATTRIBUTES
ON CONSUMER SATISFACTION/DISSATISFACTION
AMONG FEMALE APPAREL CONSUMERS

by

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(ABSTRACT)

The purpose of this research was to test a conceptual model which examines consumer satisfaction/dissatisfaction (CS/D) with apparel retail stores and to investigate the moderating effects of shopping orientations and store type on confirmation/disconfirmation (C/DC) about quick response technologies (QRT) based attributes and CS/D with a retail store. Shopping orientation included fashion, economic, and time orientations. Store type included specialty chain, department, discount, and small independent stores. The conceptual framework for this study was based on retail strategic planning (Berman & Evans, 1992; Cory, 1988) and consumer satisfaction theory (Oliver, 1980).

A convenience sample of 200 female apparel consumers was selected from a southeast city in the United States. The survey design employed a structured questionnaire with some open-ended questions. A questionnaire was pilot tested for content validity and instrument reliability. Descriptive statistics (i.e., frequencies, percentages), multiple regressions, ANOVAs, and ANCOVA were used for data analysis to test the hypotheses. The response rate was 86.2 % for 200 usable responses.

C/DC (i.e., QRT based, non-QRT based attributes) had significant effects on CS/D with apparel retail stores. The results supported the disconfirmation of expectation model (Oliver, 1980). C/DC of QRT based attributes (e.g. reduced stockout, fast turnaround of goods) have more influence on CS/D than C/DC of non-QRT based attributes (e.g., location of store, store hours). Results from a preliminary test indicated that QRT based attributes are improved by implementing QRT.

The orientation of consumers is related to the level of C/DC of QRT based attributes, which determines CS/D. Fashion orientation, economic orientation, and store type were significant moderators between C/DC of QRT based attributes and CS/D with apparel retail stores. The retail QRT information assembled in the review of literature and the results of the study could help industry trade associations adjust their strategy for potential QRT adopters and promote QR implementation efficiently, and help retailers do strategic planning when they implement QRT.

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TABLE OF CONTENTS

LIST OF TABLES

Appendix B

LIST OF FIGURES

CHAPTER I

Introduction

Statement of Problem

With strategic planning, a firm can efficiently interact with the environment. Strategic planning addresses the analysis of the environment to maximize corporate strengths, to minimize corporate weaknesses, and to maintain a competitive edge by adapting the firm to the environment (Chakravarthy, 1982; Miles & Snow, 1978; Snow & Hambrick, 1980). Strategic planning affects the adoption of specific strategies (e.g., Quick Response) and the performance of the firm. Strategic planning is considered important in the apparel retailing industry since efficient interaction between a firm and the environment is necessary in a competitive environment.

In the turbulent business environment, apparel retailers can profit in return by delivering satisfaction with products and services to consumers. The attainment of consumer satisfaction (CS) is a key objective in modern retailing. Consumer satisfaction is crucial in meeting the various needs of consumers, business and society; therefore, this subject is an important topic of research for both academicians (e.g., Bitner, 1990; Czepiel, Soloman, & Surprenant, 1985; Lennon & Davis, 1989; Parasuraman, Zeithaml, & Berry, 1985) and practitioners (e.g., Bennett, 1990; Koepp, 1987).

CS is considered as an indicator of whether consumers will return to a store (Dube, Renaghan, & Miller, 1994). An analysis of the elements or attributes of consumer satisfaction may provide clues regarding what actions an apparel retail store manager should take to increase the likelihood that consumers will come back. Some estimates show that it costs as much as six times more to get a new consumer than it does to keep a current one (Rosenberg & Crepiel, 1984). A consumer's future decisions to buy again

from a store and to give positive word-of-mouth communications to others could affect the buying decisions of many more people. So, consumer satisfaction with a store is a critical issue.

Quick Response (QR) is a proposed business strategy in the apparel industry for providing higher CS. "QR is defined as a new business strategy to optimize the flow of information and merchandise between channel members to maximize consumer satisfaction" (Ko, 1993, p.20). This strategy is accomplished by close working partnerships and new technologies (e.g., electronic data interchange [EDI], bar coding) in manufacturing, distributing, and retailing. By the definition of QR, CS should be increased by implementation of QR technologies (QRT).

Unfortunately, little empirical research exists related to consumer satisfaction/dissatisfaction (CS/D) with apparel retail stores (e.g., Baugh & Davis, 1989), and even less information is available about the relationships of CS/D to QRT. Fiorito (1993) examined retailers' perceptions and attitudes toward QRT. About 85 % of the retailers surveyed perceived that QRT improved their customer service; however, the relationship between QRT and product/service attributes offered by apparel retailers has not been tested from the consumer perspective.

Testing the actual impact of QRT on CS/D is important. Retailers are making large capital investments in technologies to implement QR (e.g., Voluntary Interindustry Communication Standards [VICS], 1989). In this study, QRT based attributes are used as a proxy for QRT to examine the impact of QRT on CS/D. The impact of QRT on some product/service attributes (e.g., decreased stockout rate) is evident (e.g., AAMA, 1987); however, the relationships between QRT and other attributes are not so clearly defined. Understanding the impact of QRT on CS/D is critical to apparel retailers when they make a decision to implement QRT. This knowledge would not only provide insight into

satisfaction processes but also help retailers to better understand their consumers and plan for the future.

Purposes and Objectives

The purpose of this research is to test a conceptual model which examines CS/D with apparel retail stores and to investigate the moderating effects of shopping orientations (i.e., fashion, economic, time orientations) and store type on confirmation/disconfirmation (C/DC) of store attributes (i.e., QRT based, non-QRT based) and CS/D with a retail store.

Specific objectives are:

1. To identify QRT and non-QRT based store attributes offered by apparel retail stores,
2. To examine the relationship of C/DC of QRT based attributes and non-QRT based attributes to CS/D with a retail store,
3. To examine the moderating effects of shopping orientation (i.e., fashion, economic, time orientation) on the relationship between C/DC of QRT based attributes and CS/D with a retail store, and
4. To examine the moderating effects of store type on the relationship between C/DC of QRT based attributes and CS/D with a retail store.

Delimitations

This study has been delimited through careful selection of variables within the control of the researcher. The delimitations are enumerated below:

1. CS/D with apparel retail stores was measured by adapting the expectancy disconfirmation model. The study was delimited to measure disconfirmation and CS/D. The study is not attempting to determine the effect on other constructs such as purchase intention and performance.

2. Subjects are female apparel shoppers in Virginia.

Limitations

The study may be limited because of the imposed delimitations and other extraneous variables. The results must be generalized cautiously for other regions because subjects were selected from a certain part of the U.S. (i.e., Virginia) and with purposive sampling. All situations involved apparel products, and the results may not apply to all products. This study is initial research in apparel retailing; so, it should be replicated with additional samples from additional service settings.

Contributions of the Study

CS/D is critical to apparel retail stores, because it serves as an influential variable for future buying behavior and word of mouth advertising. This study is designed:

1. To assist retailers in adjusting and improving their strategies for their target market in a changing environment,
2. To assist consultants and academicians in better understanding retailers' competitive strategies,
3. To assist industry trade associations in adjusting strategies to promote QRT adoption by apparel retailers,

4. To help apparel retailers do strategic planning and evaluate the adoption of QRT, and

5. To provide additional understanding of CS/D in the apparel industry.

Conceptual Definitions

The definitions of the terms used in this study are based on the literature.

Confirmation/Disconfirmation (C/DC)

Confirmation/Disconfirmation (C/DC) is the user's perception that the performance of the product/service was better or worse than expected (Swan & Trawick, 1981). Confirmation/disconfirmation refers to the outcome of a situation in which the expectations of the consumer are met or not. Confirmation/disconfirmation may be either positive or negative.

Consumer Satisfaction/Dissatisfaction (CS/D)

CS is "the summary psychological state resulting when the emotion surrounding confirmed/disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (Oliver, 1981, p.27).

Quick Response (QR)

QR is "a new business strategy to optimize the flow of information and merchandise between channel members to maximize consumer satisfaction. This strategy is accomplished by close working partnerships and new technologies (e.g., EDI, bar coding) in manufacturing, distributing, and retailing" (Ko, 1993, p. 20).

QRT/non-QRT based Attributes

In this study, QRT/non-QRT based attributes are defined as a set of features which, when aggregated, describe an apparel retail store. These attributes can be described from the retailers' perspective and from consumers' perspective. QRT based attributes are one set of store attributes, which is related to QRT, while non-QRT based attributes are the other set of attributes, which is not related to QRT. For example, QRT based attributes include reduced stockout, faster checkout time, and variety of assortment, and non-QRT based attributes include location of store, display, and sales promotion program.

CHAPTER II

Literature Review

The review of literature will include four sections: (a) overview of the U.S. apparel retailing industry (i.e., definition, types of operations, important issues in retailing), (b) strategic retail planning, which explains retailers' courses of action, (c) store attributes, (d) technology management, (e) QR (i.e., concept, QR technologies, QRT and store attributes), (f) consumer satisfaction theory as a theoretical framework (i.e., overview, definition, CS process model, the expectation of the disconfirmation model), and (g) apparel purchase behavior.

Overview of the U.S. Apparel Retailing Industry

Definition

Lewison (1991) defined retailing as the business activity of selling goods or services to the final consumer. Retailers buy fashion merchandise from manufacturers all over the world and sell it to consumers (Frings, 1994). Retailers are responsible for moving products from manufacturers and wholesalers to a location that is convenient for consumers (i.e., place utility), making products and services available when consumers want them (i.e., time utility), and assuming risk through ownership and financing of inventories (i.e., possession utility) (Anderson, 1993). Among the two million retail firms in the U.S., 135,000 retailers specialize in fashion apparel and accessories and 70,000 include apparel and accessories among other merchandise (Frings, 1994). Successful retailers focus on identifying the characteristics, needs, and wants of specified consumer groups in order to offer products and services that will satisfy them.

Types of Operations

Many types of retail operations exist to meet consumer needs in the apparel retailing industry, but categories are not mutually exclusive, and even retail experts do not agree on how to categorize stores. By the variety and assortment of their merchandise, retailers are often classified as: specialty chain stores, department stores, and mass merchants or discount stores (Frings, 1994; Kotler, 1984; Mason & Mayer, 1987). Kotler (1984) included a small section of other chains and individual operations in the retail classification. Apparel retailers are often very small and individually operationalized in a regional area. The category of small independent stores is also included in the study. Small individual stores carry very limited merchandise but provide convenience of location and friendly personnel to keep customer loyalty.

Specialty chain stores provide a narrow focus of unique merchandise for specific tastes. Specialty chain stores carry either just one category of merchandise or some related categories of merchandise. Department stores provide many different kinds of merchandise, each in a separate section of the store. Apparel and accessories for men, women, and children are sold along with household goods such as furniture, home furnishings, kitchenware, and electronics. Sales assistance is expected, dressing rooms are generally readily accessible, and multiple payment methods are often accepted. Mass merchants or discount stores are the largest stores that sell commodity merchandise (e.g. standard basics) in a department store format. Mass merchants have masses of stores and mass-oriented, budget-to-moderate prices (Frings, 1994).

Kincade and Cassill (1993) used the retail classification by Kotler (1984) for their study on the effects of retail type on QR adoption among U.S. apparel manufacturers. Retail type was categorized as department, limited line, mass merchants, and others. They found that QR adoption among apparel manufacturers was significantly related to retail type of their customers. Shim and Kotsiopulos (1992) categorized retail store types

as discount, specialty, department, and catalogue stores for examining the relationships between patronage behavior and shopping orientation, store attributes, information sources, and personal characteristics of consumers. They found that all these four variables were predictive of consumers' patronage among different types. Store type has been expected as a determinant on innovation adoption and strategy development (Berman & Evans, 1992).

Major Objectives in Retailing

The major retail objective is to satisfy consumer needs at a profit. Retailers must maintain a balance between their ability to meet consumers' needs satisfactorily and their planning ability to operate a store effectively and efficiently (Lewison, 1991). The product and service needs of the consumer should be balanced with the operational and financial needs of the retailer for a successful retail business.

Retailers should respond to consumers' needs not only to satisfy consumers but also to develop strong relationships that lead to customer loyalty, better market feedback, and a basis of differentiation. Happy consumers who have been provided satisfaction are more profitable because they involve: (a) less wasted motion--retailers focus their resources on providing consumer satisfaction; (b) a greater price advantage--satisfied consumers are typically willing to pay a little extra for the additional satisfaction; (c) lower transaction costs--repeat sales are easier and faster than first time sales; and (d) lower communication costs--satisfied consumers are valuable word-of-mouth promoters (Lewison, 1991).

Strategic Retail Planning

Concepts

The basic function of a business requires a product or service to be developed or acquired, marketed, and financially supported. An ideal manager should be able to integrate or simultaneously operate these functions. Strategic planning is defined as "a process of developing and implementing a course of action or direction that an enterprise should take to achieve its objectives. The strategy is the course of action while plan is the detailed set of tasks to achieve the objectives" (Cory, 1988, p.209). The strategic planning process assesses the total business and its product and service today and in the future.

The strategic planning process affects what products a company develops, and the way it develops them. This process is usually viewed as an executive management mechanism.

Steps

The purpose of the strategic planning process is to establish long range direction, investment allocations, and operating commitments (Cory, 1988). From the literature, a strategic retail planning model includes five steps: (a) goals, (b) overall retailing strategy, (c) specific functional strategy, (d) investment analysis, and (e) feedback (Berman & Evans, 1992; Cory, 1988) (see Figure 1).

At the first step, the strategic goals are set by top management. The planning process begins with set targets, perhaps less ambitious than the strategy, and the required resources. Then the strategies are developed based on the goals. Goals are the long and short-run goals of a retailer. A firm may be interested in one or more of these objectives: sales, image positioning, and consumer satisfaction.

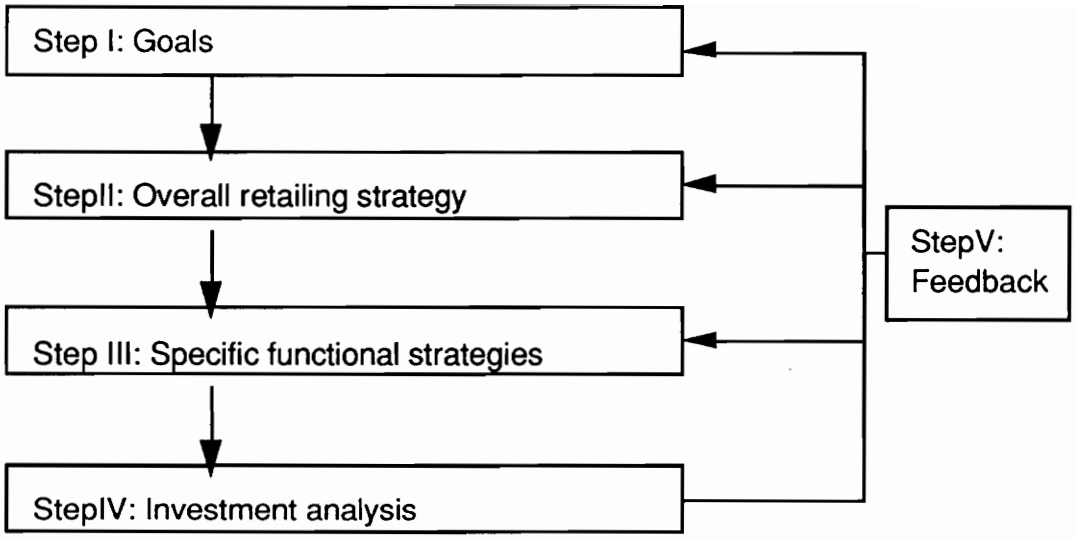

Figure 1 . Strategic retail planning model.

(Berman & Evans, 1992; Cory, 1988)

Retailing strategies provide the direction for marketing objectives. Generally, the development of retailing strategy is related to allocation of resources to achieve a company's marketing objectives with emphasis on opportunities, costs, and time (Berman & Evans, 1992; Lewison, 1991; Stevens et al., 1991). An overall retailing strategy is formed involving controllable and uncontrollable variables. Controllable variables are basically related to store service, merchandise, price, and communication with consumers. Uncontrollable variables are consumers, competition, economic conditions, and legal restrictions.

Next a retailer has to make and implement specific functional strategies based on the overall retailing strategy. Specific functional strategies are identified in general marketing management texts (Kotler, 1988; Pride & Ferrell, 1989), more specialized

retailing management texts (Berman & Evans, 1992; Mason & Mayer, 1987) and articles (e.g., Conant, Smart, & Solano-Mendez, 1993; Samiee, 1980; Udell, 1968).

Functional strategies are traditionally categorized into the 6Ps strategies (i.e., price, product, place, promotion, people, presentation) (Mason & Mayor, 1987). The six elements of a retail mix are the 4Ps from the marketing mix and two additional Ps for the retail mix (Mason & Mayor, 1987). By introducing technology implementation (e.g., QRT) into strategic planning, functional strategies can be reclassified into technological strategies and nontechnological strategies (Cory, 1988). Functional strategies support and implement overall retailing strategies.

An investment analysis of the specific functional strategies is also required. A financial assessment for analyzing strategic and investment decisions can be made. When the financial results of the strategic period are measured, the revenue from the current products and services in the marketplace provide the profit contribution and the cash flow to fund the investments necessary for tomorrow's products and services. Through an investment analysis, specific functional strategies should be evaluated and revised continuously. The last feedback step brings management full circle so that the updated plan can be used as input to develop new corporate goals for the next strategy cycle.

In this study, Step 3, specific functional strategies, is the focus. Price strategies may include carrying lower priced product lines, pricing below competitors, and carrying higher priced product lines. Product strategies include stocking highly recognized brand names, carrying a variety of products and lines, having depth of product selection, stocking private brand names, carrying traditional fashions, carrying high quality merchandise, stocking unique products, carrying trendy fashions, maintaining high inventory levels, and using computers to track inventory and sales.

Place strategies include providing good store location (e.g., easy accessibility), providing convenient store hours, providing a convenient parking place, providing dressing facilities, allocating rest space, and providing a convenient shopping environment (e.g., a restroom). Promotion strategies include advertising, having sales promotion programs (e.g., coupons), displaying attractively, holding sales, and advertising by direct mail.

People strategies include providing friendly personnel, having knowledgeable salespersons, speeding checkout time, providing service after the sale (e.g., gift wrapping), providing a return policy, and other customer services. Presentation strategies include marking prices on all items, displaying all items so they can be easily found, keeping well spaced merchandise, providing good exterior facilities, and providing a pleasant atmosphere (e.g., better sights and sounds).

Store Attributes

Store attributes are important to consumers when they decide where to shop (Cox, 1970; Dailey, 1978; Hansen, 1977; Scott, 1985). Store attributes are differently provided and presented by retailers according to their specific functional strategies for satisfying target consumers. Store attributes are the characteristics which appeal to consumers and draw them into the store. Certain attributes appeal to one type of consumer while other attributes appeal to others. It is important that product and service attributes are those desired by the consumer being targeted.

The challenge to retailers is to determine which store attributes are relatively more important to consumer satisfaction and to attempt to meet consumers' expectations that are reasonable and feasible. Maintaining the quality of these products/services is the hardest task. To thrive in the competitive environment of fashion retailing, retailers must

implement and maintain appropriate product and service attributes for their target consumers.

Twenty-seven store attributes have been identified from the literature (Berman & Evans, 1992; Haynes, Pipkin, Black, & Cloud, 1994; Huddleston, Ford, & Mahoney, 1990; Ji & Rhee, 1995; Mazursky & Jacoby, 1986; Paulins, 1992; Shim & Kotsiopulos, 1992, 1993; Williams, 1990) (see Table 1). Table 2 shows the comparison of different descriptions and/or presentations of similar store attributes from retailers' 6Ps strategies and consumers' perspectives. Some store attributes (e.g., better price for the value) represent several possible retail strategies.

Technology Management

Technology is an important asset in every company. It plays a significant role in determining the competitive position and the economic outlook of the company (Porter, 1980, 1982; Tushman & Anderson, 1968). Strategic planning must be considered in the technological environment. With the assumption that technology is important, some issues must be addressed by every company thinking about strategic planning. How does the implementation of technologies provide a competitive advantage to a company? What technologies do we need for today and tomorrow? How can we utilize new technologies?

Technology management links engineering, science, and management disciplines to plan, develop, and carry out technological capabilities to shape and accomplish the strategic and operational objectives of an organization (Cory, 1988). Technology management should be integrated with overall business strategies when planning and developing products or services to form and successfully achieve the strategic and operational objectives in a company.

Table 1
A Comprehensive List of Store Attributes Identified from the Literature

	Berman & Evans, 1992	Haynes et al., 1994	Huddleston et al.., 1990	Ji & Rhee, 1995	Mazursky & Jacoby, 1986	Paulins 1992	Shim & Kotsiopu-los, 1992	Shim & Kotsiopu-los, 1993	Williams, 1990
accuracy of advertised product	*			*					
after the sale service	*							*	*
availability of advertised product	*		*	*					
availability of clothing I like to buy	*			*					
checkout time	*		*						*
display	*	*				*		*	
dressing room	*					*		*	*
friendly personnel	*	*	*	*	*	*	*	*	*
garment fit	*		*	*	*		*		
home delivery	*		*			*			*
knowledgeable personnel	*	*	*	*	*	*	*	*	*
layaway	*					*		*	*
location of store	*	*	*	*	*	*	*	*	*
new/fresh merchandise	*			*					
outside appearance	*					*			
parking place	*		*	*	*	*	*	*	
price for the value	*	*	*	*		*	*	*	
quality merchandise	*		*	*	*		*		
rest space	*			*					
restrooms	*					*			*
return policy	*		*			*	*		*
sales promotion program	*		*	*				*	
store atmosphere	*	*		*				*	
store hours	*			*		*	*		
store layout	*		*	*		*	*	*	*
type of clothing I like	*	*	*	*		*		*	
variety of merchandise selection	*	*	*	*	*	*	*		

Table 2

Comparison of Different Descriptions about Store Attributes from the Retailers' and Consumers' Perspectives

	Retailers' perspective	Consumers' perspective
Product	trendy fashions	new/fresh merchandise
	high quality merchandise	garment fit, quality merchandise
	highly recognized brand names or private brand names traditional fashions unique products	type of clothing I like
	high inventory levels computer tracking inventory/sales	availability of clothing I like to buy
	variety of products, depth of product selection	variety of merchandise selection
Price	lower priced product lines pricing below competitors higher priced product lines	price for the value
Promotion	advertisements/direct mail advertisement	availability of advertised product
	advertisements/direct mail advertisement	accuracy of advertised product
	sales promotion programs	sales promotion program
Place	dressing facilities	dressing room
	convenient location of store	location of store
	convenient parking place	parking place
	convenient store hours	store hours
	allocation of space	rest space
	convenient shopping environment	restroom
People	faster checkout time	checkout time
	friendly personnel	friendly personnel
	knowledgeable salesperson	knowledgeable personnel
	other customer service	home delivery, layaway
	service after the sale	after the sale service
	return policy	return policy
Presentation	attractive display	display
	exterior facilities	outside appearance
	pleasant atmosphere(e.g., better sights and sounds)	store atmosphere
	easy accessibility to all items well spaced merchandise	store layout

Sources: Berman & Evans (1992), Conant et al. (1993), Mason & Mayer (1987), Samiee (1980), Udell (1968).

Technology is defined as "the physical combined with the intellectual or knowledge processes by which materials in some form are transformed into outputs used by another organization or subsystem within the same organization" (Hulin & Roznowski, 1985, p.47). Abell (1980) defined technology as the way consumer needs are satisfied, including elements such as human resource management, logistics, and marketing. A company must be aware of consumer needs and try to develop new opportunities. An adequate response to consumer requirements is a major factor determining innovative success (Cooper, 1979; Maidique & Zirger, 1985).

Porter (1980) suggested that technology as a strategic variable can provide a competitive advantage to a company and an industry. Technology can be employed to implement a firm's chosen strategy. Thus, technology implementation is a value-added activity within a firm. Porter (1980) recommended that firms should identify all the technologies in their value activities, and then determine which technologies have the most significance for reinforcing the competitive advantage which they are seeking to achieve and sustain. He noted that ". . . in choosing among technologies to invest in, a firm must base its decision on a thorough understanding of each important technology in its value chain . . ."(Porter, 1980, pp. 67-68).

Quick Response

Concepts

The concept of QR was presented initially as a survival strategy in 1984 in the first conference of the Apparel Research Committee (ARC), a division of American Apparel Manufacturers Association [AAMA]. Since 1984, some companies in the softgoods chain have adopted this strategy. QR is a broad strategy by which the apparel pipeline from fiber to finished goods is shortened, and retailers and manufacturers

collaborate to provide goods in response to consumer demand (AAMA, 1987; Hunter 1990; Tyler 1989). QR is more than just systems and technologies. It is the mind set summed up by the phrase "Value Adding Management" (Hunter, 1990). QR combines technologies, modular layouts, engineering, total quality management, and employee involvement.

The Textile Apparel Linkage Council (TALC) (1988) defined QR as, "A state of responsiveness in which a manufacturer seeks to provide a product to a customer in the precise quantity, quality, and time frame required. In doing so, lead times and expenditures for labor, materials and inventories are minimized; flexibility is emphasized in order to meet the changing requirements of a competitive marketplace" (p.7). The VICS (1989) definition of QR is "the establishment of new business policies, new procedures, and new relationships to speed the flow of information and merchandise between retailers and manufacturers of apparel and textiles in an effort to respond quickly to changing consumer demand" (p. 8).

Kincade, Cassill, and Williamson (1993) found that QR has three major concepts: (a) communication between suppliers and customers, (b) reduction of time between receipt of orders and final production, and (c) responsiveness to customers' demands. Sullivan (1990) identified three definitions of QR among New York apparel manufacturers: (a) a system that uses Universal Product Codes (UPC) for inventory control and electronic information sharing among textile mills, apparel manufacturers, and retailers; (b) a business philosophy that incorporates a just-in-time approach to manufacturing; and (c) a system that shortens the business cycle. Respondents were equally divided between the first (26%) and second (25%) definitions. Eighteen percent of respondents selected the third definition for QR.

Apparel retailers have been not only innovative in developing systems for distributing and handling apparel products but have also been responsible for developing

close working partnerships with suppliers. The implementation of QR is proposed as an apparel retailers' overall business strategy (VICS, 1989).

A synthesis of previous definitions which appeared in the literature provides the following definition of QR : "a new business strategy to optimize the flow of information and merchandise between channel members in order to maximize consumer satisfaction. This strategy is accomplished by close working partnerships and new technologies in manufacturing and distribution" (Ko, 1993, p.20).

QR Technologies

Major QR objectives are to reduce waiting time of inventory in the apparel pipeline by using new technologies and to develop improved partnership between apparel manufacturers and retailers, and to prepare products in response to consumer demand (AAMA, 1987; Fiorito, 1993; Hunter, 1990; Kincade et al., 1993; Ko, 1993). To accomplish the objectives of QR, retailers must use a variety of technologies (Fiorito, 1993; Kincade et al., 1993; Ko, 1993; VICS, 1989).

Technologies related to QR have been identified from several industry sources (AAMA, 1987; Black, 1993; Coopers & Lybrand, 1991; Ernst & Young, 1993; Ernst & Young, 1994; Gillease, 1988; Fiorito, 1993; Hunter, 1990; KSA, 1992; Robins, 1990) and research studies (Kincade & Cassill, 1993; Ko, 1993; Sullivan, 1990) (see Table 3). The fourteen most commonly mentioned retail technologies required for QR are: (a) automatic replenishment, (b) bar codes on each merchandise items, (c) consumer information system (e.g., demographics), (d) electronic data interchange, (e) inventory management systems, (f) product planning with customer, (g) reduction in inventory size, (h) sales captured at the item level, (i) scanning merchandise at point of sale (POS), (j) sharing product information with trading partners, and (k) small lot orders.

Table 3

A Comprehensive List of Store Attributes Identified from the Literature

QRT	Black, 1993	Coopers & Lybrand, 1991	AAMA, 1987	Ernst & Young, 1993	Fiorito, 1993	Hunter, 1990	Ernst & Young, 1994
Automatic replenishment	*			*	*	*	
Bar code	*	*		*	*	*	
Consumer information	*	*		*			*
EDI	*	*	*	*	*	*	*
Inventory management system	*		*	*	*	*	
Product planning with customer	*				*	*	
Reduction in inventory size	*					*	
Sales caputured at the item level	*			*	*	*	*
Scanning merchandise at POS		*		*	*	*	*
Sharing information with vendors	*	*		*		*	*
Small lot orders	*		*			*	

Table 3

(Continued)

QRT	Kincade & Cassill, 1993	Ko, 1993	Sullivan, 1990	Gillease, 1988	KSA 1992	Robins, 1990
Automatic replenishment					*	*
Bar code	*	*	*	*		*
Consumer information						*
EDI	*	*	*	*	*	*
Inventory management system	*	*	*		*	*
Product planning with customer	*	*	*			*
Reduction in inventory size	*	*	*		*	*
Sales caputured at the item level						
Scanning merchandise at POS		*	*	*		*
Sharing information with vendors	*	*	*	*	*	*
Small lot orders	*	*			*	*

QRT and Store Attributes

Today's retailers are using various QR technologies (e.g., bar coding, EDI, scanners) to provide better services to consumers (e.g., AAMA, 1987; Fiorito, 1993). QR technologies (QRT) create value for consumers and change the relationship between consumers and trading partners. Successful retail operations depend upon a store's ability to meet consumers' needs; therefore, changes in store attributes should be emphasized in retailers' strategic planning (e.g., Berman & Evans, 1992).

In the previous section, twenty-seven store attributes were identified as important influences on CS/D. Among these twenty-seven attributes, QRT improves fourteen store attributes as identified by industry sources (AAMA, 1987; Braithwaite, 1990; Bravman, 1992; Ernst & Whinney, 1988; Fiorito, 1993; Hunter, 1990; KSA, 1986, 1987, 1992; VICS, 1989) and by a few academic research (Kincade, 1989; Ko, 1993; Sullivan, 1990). The fourteen improvements, as a result of QRT, are: (a) better price for the value, (b) faster turnaround of goods, (c) reduced stockout, (d) more variety of assortment, (e) merchandise type for target customers, (f) better garment fit, (g) quality merchandise, (h) return policy, (i) home delivery, (j) friendly personnel, (k) availability of advertised product, (l) accuracy of product advertisement, (m) faster checkout time, and (n) store layout. The 14 store attributes are identified from the literature as related to QRT based on retailers' perception, on theory, and case studies, not on empirical tests.

Better price for the value. By eliminating some forms of waste arising from the apparel pipeline, QRT enables companies to reduce costs (Ernst & Whinney, 1988; Hunter, 1990). A study by KSA (1986) found that implementation of QR, especially in fashion goods, lowers operating costs per unit. Through a partnership agreement, redundant testing is eliminated with a corresponding reduction in testing expenses. Costs also can be reduced by lowering inventory and having more frequent deliveries. Lower inventory and higher turn with the same level of sales have cost benefits for retailers.

Markdowns are reduced and profits are increased because products are produced in response to the consumer demand and preferences.

The tremendous cost reduction possible through QR enables companies to compete favorably in the marketplace. Price is a critical strategic weapon. The price of a product is determined by the market, not the individual producers, but companies try to reduce production and operating costs to make a reasonable profit margin (Bard & Moore, 1990; Gunston & Haworth, 1990; Moylan, 1991; Noble, 1989). Although the capital investment may be large, companies implementing QRT can gain a strategically advantageous position when they reduce production costs by reducing capital input per unit production (Hunter, 1990). Financial benefits (e.g., reduced markdowns, increased profits, increased return on assets) are possible with QR (Braithwaite, 1990; KSA, 1987; Sullivan, 1990; VICS, 1989). A pilot study by the Crafted with Pride Council and AAMA (1987) demonstrated positive financial returns with QR.

Fast turnaround of goods. As product life cycles become shorter and products become quickly obsolete, companies have to strive for short lead time in producing goods (e.g., AAMA, 1987; Hunter, 1990). Companies lag behind the competitors if they do not offer what the customers want within a reasonable lead time. QRT improves fast turnaround of goods by using small-lot orders, reduction in inventory size, EDI, and automatic replenishment (Braithwaite, 1990; Hunter, 1990; Kincade, 1989; S-Mariscal, 1995; Sullivan, 1990; Tyler, 1991).

Reduced stockouts. Retailers need to have the product in stock at the time and place as desired by the company (Walter & Grabner, 1975). Walter and Grabner (1975) discussed that retailers may suffer a relatively large percentage of lost sales if an item is out of stock. Pilot studies show that by using QRT to better anticipate customer behavior and to act on intimate knowledge of the customer, retailers are able to cut the number of

stockout situations and achieve better placement of items in the stores and more personalized promotions (e.g., AAMA, 1987; Fiorito, 1993).

The bar coding at point of sale (POS) and automatic replenishment system are used to reduce the incidence of stockouts and improve customer service. Pilot studies have shown that the ability to replenish merchandise in a short reorder time can reduce retailer initial inventory investment for a season and can increase sales by providing the stock needed throughout the season (AAMA, 1987).

Variety of assortment and merchandise type for target market. Today's consumers have become not only more sophisticated and diversified but also more demanding. QRT offers adaptation to changing market demands through small-lot orders, reduction in inventory size and product planning with customers (Ernst & Whinney, 1988; Hunter, 1990; Kincade, 1989; Sullivan, 1990).

Walter and Grabner (1975) suggested that a retailer should carry at least two different brands of the same variety and size as well as two different varieties of the same size and brand. Retailers can take actions to minimize lost sales by careful product substitution and careful ordering and stocking policies. QRT helps retailers to accomplish these actions. Pilot studies have shown that improved sales can be generated through better targeting for product positioning and reduction in inventory size (AAMA, 1987; KSA, 1986).

Garment fit and quality merchandise. Producing high quality products within a reasonable lead time is necessary, but not sufficient, in today's fiercely competitive market. According to the QR definition, providing quality merchandise is a key benefit achieved through QRT (Hunter, 1990; TALC, 1988). For apparel, a better fitting garment is achieved by sharing accurate information about consumers (e.g., complaints, body size) with trading partners. Fewer errors in production and distribution produce quality merchandise through electronic purchase reorder and small lot orders.

Return policy, home delivery, and friendly personnel. QR strategy includes a mindset of partnership and collaboration as well as usage of technologies (e.g., AAMA, 1987; Ko, 1993). Return policy, home delivery, and friendly personnel are very important service attributes which may distinguish a store for satisfying consumers in the competitive environment. Bravman (1992) and others (Kincade, 1989; Sullivan, 1990) discussed that retailers who have built QR programs will give preference to suppliers who can support a QR partnership. Manufacturers who implement QR will take business away from those who do not. Bravman (1992) and others (Ernst & Whinney, 1988; Kincade, 1989) also indicated that a QR partnership can maintain a long term relationship between manufacturers and retailers.

With partnership and incorporated channel relationship, product problems are shared between manufacturers and retailers through QRT and partnership. This strategy may improve not only getting the right goods the first time, but also reducing operating problems as they occur (e.g., returns). Sharing product information with partners and electronic purchase reorder also can improve the home delivery service by shipping goods directly from manufacturers. Home delivery service is also improved because of saving time and increasing information with inventory control. Retailers with strong partnerships should be operating within a strategy of collaboration not only with suppliers but also with final consumers. QRT such as inventory management system and electronic repurchase order helps to reduce the time for retailers to spend in inventory control and ordering, so retailers have more time in store service and friendly personnel can be provided without time pressure of the work.

Availability of advertised products and accuracy of product advertisement. Bar codes on each product, automatic replenishment, and sales captured at the item level help retailers to have enough quantities of products without stockouts because of timely communication and error free purchase orders (S-Mariscal, 1995). In addition, sharing

product information and other partnership activities should increase the retailers' knowledge of the product.

Faster checkout time and convenient store layout. Using bar codes and scanning merchandise at POS reduce checkout time. Seventy-nine percent of supermarket shoppers participating in a survey disliked the checkout delay (East, Lomax, Wilson, & Harris, 1994). Convenient store layout is also provided by reduction in inventory size and small lot orders. Well-spaced merchandise and selves or products with price marks allow consumers to find the products easily. Inventory management systems can be combined with graphics packages to provide retailers with visual displays of inventory levels and placements.

Consumer Satisfaction Theory

Overview of CS/D

CS is a useful construct in the linkage of customer assessment of service to future behavior and therefore to company revenues. Various consumer satisfaction studies have been done in past decades (e.g., Churchill & Surprenant, 1982; Day, 1977, 1984; Hunt, 1977; Latour & Peat, 1979; Oliver, 1980, 1981; Oliver & Bearden, 1983; Oliver & Linda, 1981; Tse & Wilton, 1988). These studies include a mixture of conceptual discussions and empirical testing of the antecedents and consequences of CS/D.

Satisfaction is thought to increase customer retention rates (Fornell, 1992), a result which is well known to be more cost efficient than attracting new customers. Further, several studies found that CS is positively related to re-purchase intentions (e.g., Anderson & Sullivan, 1992; Bearden & Teel, 1983; Kincade, Redwine, & Hancock, 1992). Bolton and Drew's (1992) study of small business customers indicated that perceived service value is positively related to behavioral intentions.

Satisfaction experiences influence future purchase intention as well as postpurchase attitude (LaBarbera & Muzursky, 1983; Oliver, 1980). Satisfaction, therefore, is related to operations' indicators for service monitoring and service improvements, and these improvements are related to customer reaction in terms of stated satisfaction and behavior. An analysis of attributes of CS may provide clues regarding what actions a company should take to maintain consumers. Czepiel et al. (1980) conclude that consumer satisfaction measurement provides a useful avenue to examine marketer effectiveness on a micro basis (i.e., one firm) in serving the consumer.

Definition of CS/D

Consumer satisfaction has been variously defined and operationalized in past research. Yi (1990) categorized various definitions of CS as two major types according to the emphasis of CS either as an outcome or as a process. CS, as an outcome resulting from the consumption experience, is defined by previous researchers. Howard and Sheth (1969) defined CS as "the buyer's cognitive state of being adequately or inadequately rewarded for the sacrifices he has undergone" (p.145). Westbrook and Reilly (1983) also defined CS as " an emotional response to the experiences provided by, associated with particular products or services purchased, retail outlets, or even molar patterns of behavior such as shopping and buyer behavior, as well as the overall marketplace" (p.256).

With an emphasis on CS as a process, CS is defined as "an evaluation rendered that the consumption experience was at least as good as it was supposed to be. So satisfaction is not an emotion, and it is the evaluation of an emotion" (Hunt, 1977, p. 459). CS is further defined as "the consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product as perceived after its consumption" (Tse & Wilton, 1988, p.204). CS is not just the pleasure

of a consumption experience, but the evaluation that the experience is as pleasurable as it was supposed or expected to be. For example, a consumer could have a pleasant experience but would still feel dissatisfied if it was below his or her expectation. Thus, it is possible to have dissatisfaction without having a negative emotion. This definition suggests that the evaluative process is an important component of CS.

The process-oriented definition has been adopted by many researchers (e.g., Bearden & Teel, 1983; Day, 1984; Oliver, 1980). This process-oriented definition, as compared to the outcome-oriented definition, spans the entire consumption experience and draws more attention to the perceptual, evaluative, and psychological processes that combine to generate CS (Yi, 1990).

CS definitions have been differently used in the research according to their levels of specificity for satisfaction: with a product (e.g., Churchill & Surprenant, 1982; Oliver & Linda, 1981; Swan & Trawick, 1981; Westbrook, 1980), with a consumption experience (e.g., Oliver, 1980, 1981; Westbrook & Reilly, 1983), and with a retail store (e.g., Oliver, 1981; Westbrook, 1981). For example, Oliver (1981) defined CS with a retail store as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (p.27). Engel and Blackwell (1982) concluded that Oliver's (1981) attempt at defining CS/D appears to have achieved the most agreement among researchers. Oliver's definition (1981) is appropriate in this research, because CS with apparel retail stores is a focus of the research.

CS/D Process Model

Most studies have sought to find antecedents of CS (Bearden & Teel, 1983). Key variables that have been found to affect CS include expectation, disconfirmation, and perceived performance (e.g., Bearden & Teel, 1983; Churchill & Surprenant, 1982;

Oliver & DeSarbo, 1988; Spreng & Olshavsky, 1992; Swan & Trawick, 1981; Swan, Trawick, & Caroll, 1980; Tse & Wilton, 1988). These key variables and CS are four major constructs for the disconfirmation of expectation model. This model will be discussed in detail in the next section. Other studies have focused on post-purchase evaluation of product performance by relating it to cognitive processes such as confirmation or disconfirmation of expectations (e.g., Anderson, 1973; Cardozo, 1965; Cohen & Goldberg, 1970; Deighton, 1984; Oliver, 1976, 1977; Olshavsky & Miller, 1972; Olson & Dover, 1976, 1979; Smith & Houston, 1983). The most common products in CS research were medical/health care (Oliver, 1980; Oliver & Bearden, 1983), durable goods (Churchill & Surprenant, 1982; Tse & Wilton, 1988), and automobiles (Oliver & Swan, 1989). Figure 2 shows the cognitive model of CS/D process including antecedents and consequences adapted from previous studies (Churchill & Surprenant, 1982; Oliver, 1980; Oliver & Linda, 1983; Smith & Houston, 1983; Spreng & Olshavsky, 1992; Tse & Wilton, 1988).

Oliver (1980) found that consumer satisfaction had a positive effect on attitudes in the 2,000 resident and 1,000 student sample included in his study of flu shots. This positive attitude was also found to increase purchase intentions, which is consistent with the Fishbein model (Fishbein & Ajzen, 1975). Purchase intentions were positively influenced by positive attitudes to the flu shots.

Many studies found that CS influences purchase intentions as well as post-purchase attitude (e.g., Oliver & Linda, 1981; Oliver & Swan, 1989). Oliver and Linda (1981) tested the cognitive consequences of a satisfaction decision empirically. Subjects of the study included 500 female and male mall shoppers who had purchased pajamas in a Chicago shopping center. Oliver and Linda (1981) found that satisfaction was influenced by expectation and disconfirmation. Purchase intention was a function of satisfaction and preference, which was influenced by satisfaction and disconfirmation.

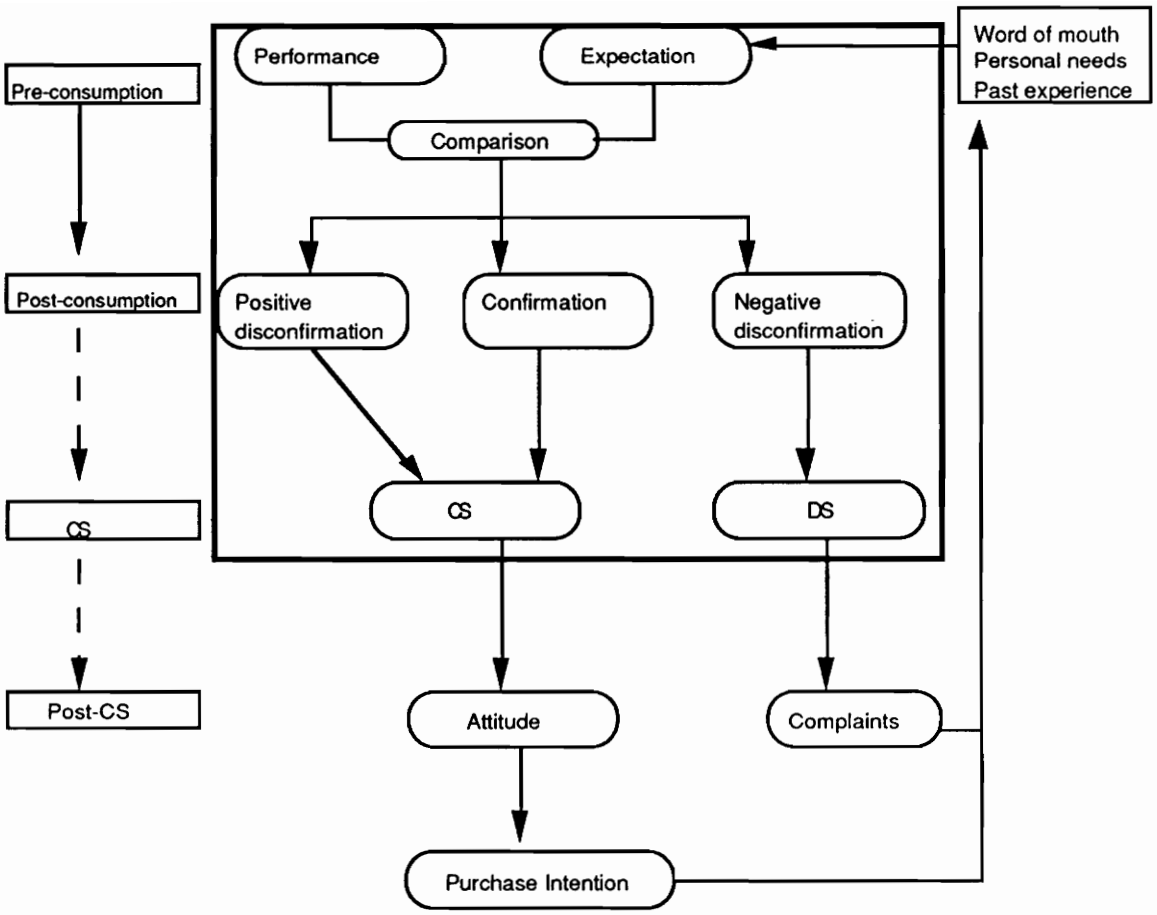

Figure 2. The cognitive model of the CS process.

Sources: Churchill & Surprenant (1982), Oliver (1980), Oliver & Linda (1983), Spreng & Olshavsky (1992), Tse & Wilton (1988).

Note. ☐ The focus about disconfirmation of expectation paradigm.

Satisfaction serves to reinforce a consumer's brand or store loyalty and/or resolution to buy the product more often (Oliver & Swan, 1989). Oliver and Swan (1989) examined postpurchase communications about the retailer, salesperson, and product among 184 new automobile buyers. They found that satisfaction was significantly related to more positive post-communications. Kincade et al. (1992) found that CS with an apparel product is related to repeat purchase and brand loyalty among 327 apparel consumers. More specifically, satisfaction with redress increased repurchase of the brand and return to the retail store.

Day (1977) conceptualized a process model of CS. He proposed that the satisfied consumer may discuss the experience with family and friends and urge them to try the product or service, while dissatisfied consumers take more action to modify their shopping behavior than do satisfied consumers and boycott the products or warn their friends not to buy them. Dissatisfaction, as a precondition for complaining behavior, can lead to complaints and negative word-of-mouth communication (e.g., Richins, 1984). Richins (1984) proposed that negative word-of-mouth communication should increase as consumer commitment to the product increases. This proposition was based on the assumption that the greater the commitment to the product, the more likely consumers are to make efforts to complain or to tell others. Richins (1984) tested his proposition with a pilot study.

Previous studies have also examined demographic and socio-psychographic characteristics of consumers as determinants of CS/D (Mason and Himes, 1973; Pfaff & Blivice, 1977; Robertson, Rossiter, & Ward, 1985; Swan, Darden, & Trawick, 1982). Overall, the findings on the relationships between CS/D and these factors are not conclusive. The most consistent finding is that age is directly related to satisfaction. Robertson, et al. (1985) investigated the impact of age, interaction with parents, and television exposure on CS/D with toys among pre-teenage children. The results indicated

that age was significantly related to CS/D. Younger children revealed greater dissatisfaction than older children.

Swan et al. (1982) found that satisfaction varies directly with the demographic characteristics that determine the target market segment for department stores. Satisfaction increased among consumers with higher income, higher education, and more prestigious occupations. Mason and Himes (1973) found marital status is one of the significant factors on CS/D with household appliances. They also found that total family income is a positive antecedent of CS/D with household appliances, but age was not significant in this research.

Pfaff and Blivice (1977) found significant relationships between socio-economic variables and satisfaction/dissatisfaction with food products. Socio-economic variables included gender, educational attainment, household size, age, and income. Satisfaction increased with age. Satisfaction decreased with decreasing household size and level of education. Females were more satisfied than males. Income was not a significant variable in this study.

These early CS/D studies dealt with the relationship between satisfaction and demographics. Inconclusive results of these relationships could be explained in the specific context of the research model. CS/D could be better explained with the disconfirmation of expectation model including the demographic variables as moderators. Demographic variables can be interacting with disconfirmation to influence CS/D.

The Disconfirmation of Expectation Paradigm

The dominant model of CS/D is the disconfirmation of expectation paradigm (Oliver & DeSarbo, 1988; Spreng & Olshavsky, 1992) (see Figure 2). The process oriented CS definitions represent the disconfirmation of expectation paradigm. Oliver (1980) played a leading role in developing the CS/D research using the disconfirmation

of expectation paradigm. Oliver's (1980) model has been extensively used for CS/D research and has been applied to a variety of contexts including product and/or service (Engel et al., 1986). The assumption of the model is that consumer expectations create a standard or reference against which consumers compare product and service performance.

In this disconfirmation of expectation paradigm, CS/D is described as the result of a comparison between the pre-use expectation that a consumer has about the product and the post-use perception of product performance (Oliver, 1980; Spreng & Olshavsky, 1992). This cognitive comparison is called disconfirmation. If expectation was negatively disconfirmed, dissatisfaction resulted, and if the expectation was positively disconfirmed, satisfaction resulted. The disconfirmation of expectation model helps to explain CS/D judgments (Oliver, 1980). The disconfirmation of expectation paradigm includes four constructs: expectation, performance, disconfirmation, and satisfaction (Churchill & Surprenant, 1982).

Expectations. Consumers who bring expectations to the market encounter attributes possessed by the product (Trawick & Swan, 1980). Expectations are beliefs about specific product attributes (Oliver, 1980; Swan & Trawick, 1980). These expectations are formed by previous experiences and knowledge of product attributes and by marketing communications such as advertising, word-of-mouth referrals, or any other marketing activities (Patterson, 1993).

Satisfaction literature suggests that consumers may use different types of expectations when forming opinions about a product's anticipated performance. Researchers have explored different expectations or comparison standards (Sirgy, 1984; Tse & Wilton, 1988). For example, Sirgy (1984) has identified three expectation constructs (i.e., ideal, expected, deserved) that may underlie CS formation. He developed the social cognition model of CS/D and tested it in an experiment study. The essence of

this model is that satisfaction is an emotional reaction to a motivated behavior. The individual compares a behavior to an evoked cognition or expectancy representing the original goal. A behavior represented as new and old product performance and an evoked cognition or expectancy represented three constructs (i.e., ideal, expected, deserved). The social cognition model of CS/D was supported with automobile purchase and postpurchase evaluation in the experimental design among the 136 undergraduate marketing students.

Tse and Wilton (1988) identified three approaches--equitable, ideal product, and expected product performance--to conceptualize the pre-experience comparison standard which has been suggested in consumer satisfaction literature. Tse and Wilton (1988) suggested that expected product performance is the most commonly used pre-consumption comparison standard. They examined the relationships between the performance of three different products and disconfirmation and determined that expected product performance is the best antecedent of disconfirmation. Their laboratory experiment design was done with a new electronic record player among marketing student volunteers.

Perceived performance. Performance is defined as the consumer's perception of the levels of attributes possessed by the product. In the CS process, these levels are compared to the consumer's prior expectations of levels of these attributes. Findings on perceived performance and its relationship to CS/D are not conclusive. Many studies have not included performance as a direct antecedent of CS (Oliver, 1980; Westbrook, 1987); however, a few studies (Churchill & Surprenant, 1982; Spreng & Olshavsky, 1992) do include it. Churchill and Surprenant (1982) found a strong positive relationship between perceived performance and disconfirmation with a nondurable product (i.e., a plant), but no relationship between perceived performance and disconfirmation with a durable product (i.e., a video disc player). They used 180 subjects who were recruited at

a shopping mall. Oliver (1989) discussed that a focus on specific attributes of performance influencing CS/D is not enough because it fails to identify the mechanism by which consumers convert performance into a psychological reaction.

Disconfirmation. Satisfaction literature shows that disconfirmation is a crucial mediating variable of CS/D (e.g., Oliver, 1980; Patterson, 1993; Spreng & Olshavsky, 1992). Disconfirmation arises from discrepancies between what is expected and what is perceived (Churchill & Surprenant, 1982). When perceived levels are the same as expected levels, consumers' expectations are confirmed. If perceived levels are higher than expected levels, consumers' expectations are positively disconfirmed. If perceived levels are lower than expected levels, then consumers' expectations are negatively disconfirmed. Positive disconfirmation and confirmation lead to satisfaction, while negative disconfirmation leads to dissatisfaction (Oliver & Swan, 1989; Smith & Houston, 1983).

Oliver (1980) claimed that disconfirmation has an additive effect on satisfaction, because the product usage experience interferes with the retention of expectations. In other words, experience with the product over time may cause expectations to be forgotten.

Disconfirmation is conceptualized as the result of subtractive functions between product performance and some comparison standards (Trawick & Swan, 1980) or as the subjective evaluation of this discrepancy (Churchill & Surprenant, 1982; Oliver, 1980). The subtractive disconfirmation is a function of the algebraic difference between the performance and expectation of a product or a store. The subjective disconfirmation measures the consumer's perception that the performance of each object was better or worse than expected (Churchill & Surprenant, 1982; Oliver, 1980).

The subjective approach to measuring disconfirmation is important in situations when performance cannot be discretely judged (Tse & Wilton, 1988). Tse and Wilton

(1988) warned that subtractive disconfirmation may induce overspecification of the consumer satisfaction model. Hence, subjective disconfirmation is likely to offer a richer explanation of the complex processes underlying consumer satisfaction formation because memory and other factors bias disconfirmation assessment (Olson & Dover, 1977). Jones (1981) argued that difference scores between performance and expectation have a number of problems, including lack of a theory relating the two components, the fact that the difference score often does not add anything "more" than the component scores, and the low reliability of difference scores. Subjective DC is generally believed to be a better predictor of satisfaction than are objective disconfirmation measures.

Satisfaction/Dissatisfaction. Within the disconfirmation of expectation paradigm, CS/D has been consistently defined with a comparison component for disconfirmation (Churchill & Surprenant, 1982; Oliver, 1980; Swan & Combs, 1976). CS was further defined as the subjective emotional state which occurs in response to an evaluation of a set of experiences (Locke, 1969). Oliver (1980) defined CS as a function of the expectation level and perception of disconfirmation. Oliver (1981) defined CS with a retail store as "the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer's prior feelings about the consumption experience" (p.27).

For measurement of CS, Oliver (1980) used a 6-item Likert scale constructed with items of emotional content. Items also included references to the respondent's outright satisfaction, regret, happiness, and general feelings about the decisions to receive or not to receive the flu shot. Oliver (1980) evaluated his measurement of satisfaction with coefficient alpha (i.e., Cronbach's alpha). Oliver's multi-item measurement of CS was evaluated as substantially reliable (.82) and is widely used in many studies.

Research supporting the disconfirmation of expectation paradigm. Past studies have supported pieces of the paradigm (Bearden & Teel, 1983; Churchill & Suprenant,

1982; Swan & Trawick, 1981; Swan, Trawick, & Carroll, 1980). Swan, Trawick, and Carroll (1980) found support for the disconfirmation of expectation paradigm in a restaurant setting. They measured two types of expectation for comparison to performance (i.e., disconfirmation) of seven attributes relating to food and service. They also measured the direct effects of these expectations on levels of satisfaction and intentions. Results indicated that satisfaction and intentions were at higher levels with positive disconfirmation of expectation and performance.

Swan and Trawick (1981) conducted a longitudinal study to investigate the applicability of the disconfirmation of expectation paradigm in a restaurant setting. Satisfaction was found to be related to the dinner's pre-use expectations. After dining in the restaurant, satisfaction was found to increase as perceived performance exceeded expectation. As satisfaction increased, intentions to re-patronize also increased. The results of this study provide support for the expectation paradigm (i.e., the comparison of expectations to perceived performance in determining disconfirmation and satisfaction).

Bearden and Teel (1983) found partial support for the disconfirmation of expectation paradigm. Both expectation and disconfirmation were found to have significant effects on CS with auto repair service. They used disconfirmation as a moderator variable and examined the relationship between expectation and disconfirmation. They obtained no significant results about this relationship. Oliver and Bearden (1983) found that expectation does not have any significant effects on CS with a product (i.e., a new diet suppressant), while an effect of disconfirmation on CS was found. In the longitudinal study design, a mail survey was conducted three times during a six month period among 91 users and 262 nonusers of the new diet suppressant. Churchill and Suprenant (1982) found the complete model was supported using a nondurable product (i.e., a plant), but only the partial model was supported using a durable product (i.e., a video disc player).

Oliver (1980) found in his study of flu shots that disconfirmation is positively related to CS. Expectations were found to be positively related to CS in one subsample (i.e., a student sample). In another subsample (i.e., a resident sample), however, expectations were not related to CS. Positive disconfirmation (i.e., perceived performance above the expectation) increased CS, while negative disconfirmation (i.e., perceived performance below the expectation) decreased CS (i.e., DS). The effects of expectations were somewhat mixed. CS had a positive impact on attitudes, as observed in the student sample.

In summary, there are mixed findings in previous CS studies. CS is found to be directly affected by expectations in some studies (Bearden & Teel, 1983; Oliver, 1980; Oliver & Linda, 1981; Westbrook & Reilly, 1983) and not in other studies (e.g., Oliver & Bearden, 1983). Most studies found that disconfirmation is a significant predictor of CS. The mixed findings suggest that the effects of expectation, disconfirmation, and performance on CS/D may be more complex than hypothesized by the original confirmation model (Yi, 1990). Further studies should be done to determine the moderators of these effects and to provide an integrated framework with consistent findings.

Apparel Purchase Behavior

Consumer Characteristics

Consumer characteristics have been considered as important predictors of clothing and shopping behavior (e.g., Cassill & Drake, 1987; Shim & Drake, 1988). The analysis of consumer characteristics has provided valuable information for retailers to understand target consumers, to determine the needs of consumers, and to identify effective ways of reaching the target market (Bickle & Shim, 1994). Female shoppers represent a

significant purchasing force in retail sales, and their needs should be of the utmost importance to retail store management (e.g., Lewison, 1991). According to Robinson (1989), married women spent 7.2 hours per week shopping while women not married spent 6.3 hours per week shopping. Women with children aged 5 or older spent 6.5 hours per week shopping and women with children under age 5 spent 7.1 hours per week shopping. This shopping time includes shopping for groceries, clothing, and other accessories.

Age and income. Age and income have been shown to influence purchasing behaviors of employed women (Rabolt & Drake, 1984-85; Solomon, 1987). Rabolt and Drake (1984-85) found that younger women and those with higher incomes were more likely to accept influence from reference persons when they purchased a business dress. Age and income also have been found to be related to attitudes regarding consultants usage and the benefits derived from clothing among a national sample of 245 consultants' female clients (Solomon, 1987). The older women were less inclined to employ a consultant for expressive/aesthetic benefits from clothing. Working women with high incomes were more likely to employ a consultant for functional benefits (e.g., a value for impression management in attaining professional goals). Thus they use their purchasing power to buy discretionary leisure time. Income has a significant effect on one's shopping orientation (Darden & Howell, 1987). Shopping orientations reflecting money-saving or economizing shopping strategies may be less necessary for upper-income shoppers. Income affects the types of stores patronized and payment mechanisms utilized.

Employment. Women's employment outside of the home has led to changes in lifestyle which affect consumption patterns and apparel shopping behavior (Cassill & Drake, 1987). These changes include: pressure of time, greater emphasis on leisure, increased education, greater mobility, desire for self-expression, concern for ecology, a

youth orientation, increased communication, technological innovation, increased services, and improved physical fitness (Eisenpreis, 1979; Lewison, 1991). One of the retail industry's myths is that the shopping public has lots of time (Eisenpreis, 1979); however, Bellenger and Korgaonkar (1980) have found that recreational shoppers use leisure time for shopping. Sixty-nine percent of respondents (n = 224) were categorized as recreational shoppers who are seeking stores with a variety of merchandise, high quality of product, and store decoration.

As more women work outside of the home, their shopping patterns change because they do not have time to shop leisurely at retailers. Today's shopper has many constraints on her time. She often fulfills many roles as wife, mother, and employee. Stipp, in American Demographics (1988) reported that among women aged 18 to 49, about 90% could be considered part of the labor force. Among the women aged 18 to 49, 67% were currently employed, 46% had been continuously employed, and 31% had discontinuous employment. Only 7% had neither worked in the past couple of years nor planned to be employed in the future.

Cassill and Drake (1987) found that women's employment status has a significant effect on their lifestyles and clothing selection criteria. Employment status refers to whether consumers are employed at home or outside the home. Additional research (Shim & Drake, 1988) confirms that employment status impacts apparel purchase behaviors among working women. Evaluative criteria for employment clothing is somewhat different in configuration than for clothing used in purely social settings. Bartos (1982) found that apparel purchasing differs with employment status. Employed women place greater value on time-saving and convenience-shopping outlets, place greater accent on fashion and its suitability for work, and spend more money on clothing (Shim & Drake, 1988). The specific relationship between lifestyle and evaluative criteria

for clothing is modified by the specific situations in which the product is used (i.e., employment, social settings).

Clothing expenditure. Amount of clothing expenditure is related to the apparel purchase behavior; therefore, clothing expenditure may relate to satisfaction with apparel retailers. The amount spent on clothing was found to be related to the decision to engage the services of a surrogate (Forsythe, Butler, & Schaefer, 1990). Bartos (1982) found that a segment of the employed women in her sample spent a considerable amount of money on clothing and considered apparel purchases to be an investment. Rabolt and Drake (84-85) found that individuals who spent the most on clothing accepted the most influence regarding business dress. Therefore, women who spend more money on their business clothing were more likely to engage a surrogate to insure that the proper investment has occurred. Women who spend more money on clothing may be more likely to seek quality products and value-added service provided by retailers.

Shopping Orientation

Shopping orientation is considered to be shopper styles with particular emphasis on certain activities (Hawkins, Best, & Coney, 1989; Shim & Kotsiopulos, 1993). Consumers with different shopping orientations have different apparel purchase behaviors, such as preferences for a store choice (Gutman & Mills, 1982), emphasis on store attributes (Lumpkin, 1985), need for information sources (Hawkins et al., 1989; Lumpkin, 1985), and different psychographics and demographics (Darden & Howell, 1987).

Gutman and Mills (1982) investigated clothing shopping orientation and its relationship to store patronage with apparel products. Female consumers who had high fashion orientation were more likely to enjoy shopping and were not cost/price-conscious. Female consumers who had low fashion orientation were less likely to enjoy

shopping and were highly cost/price conscious. They found that department stores were most preferred by highly fashion oriented consumers because they are willing to pay money to obtain fashion. In contrast, mass merchandisers were preferred by less fashion oriented consumers.

Lumpkin (1985) categorized elderly consumers (65 years or older) into three shopper types: active, uninvolved, and economic. With general products among 373 elderly consumers, Lumpkin (1985) found that shopping orientation is significantly related to store patronage and preference for store attributes. Specifically, uninvolved consumers shopped less often, regardless of store type. The economic and active consumer groups shopped at specialty stores more frequently than discount stores. Store location and shopping ease were not important to the active consumer group, but credit was an important attribute for their convenience, not economic necessity. Store reputation was a more important attribute than brand or label among all three groups. The uninvolved consumer group utilized all forms of information sources (i.e., newspaper, friends, salesperson) less than the other two groups. The dominant source of information for the active elderly consumer was the newspaper.

Darden and Howell (1987) found that demographics and psychographics are determinants of shopping orientation among 500 household research panel members. Family life cycle influenced shopping orientation (i.e., one-store personalizing shopping, shopping opinion leadership, credit shopping).

Most studies have been done to investigate general shopping orientations with general products (Darden and Howell, 1987; Hawkins et al., 1989; Lumpkin, 1985). A few studies has been done to examine shopping orientation with apparel product (Gutman & Mills, 1982; Shim & Kotsiopulos, 1993), and no studies have examined the relationship between shopping orientation and satisfaction with a store.

Some researchers have developed shopper typologies for various products. For example, Stone (1954) conceptualized shopping orientations for four types of shoppers: economic, personalizing, ethical, and apathetic. Stone's typology (1954) was based on his study of 119 Chicago housewives with general products. Economic shoppers considered price, quality, variety, and efficiency as important. Personalizing shoppers preferred to shop at the store with friendly personnel. Ethical shoppers felt obligated to shop specific local stores rather than chain stores. Apathetic shoppers had little interest in shopping.

Shim and Kotsiopulos (1993) developed a typology of shopping orientation by using apparel products and female consumers. Apparel shopping orientation included nine factors: fashion conscious, brand loyal, time/convenience oriented, shopping mall oriented, local store oriented, apathetic, catalogue oriented, economic/price conscious, and credit oriented. Measures of shopping orientation factors were evaluated with Cronbach's alpha. Cronbach's alphas of eight factors were above .71, indicating the measures have internal consistency. Only one measure (i.e., the apathetic factor) was lower than .7 (.69). These nine factors clustered into three types of apparel shoppers: convenience-oriented catalogue shoppers, highly involved apparel shoppers, and apathetic apparel shoppers. They found significant differences across groups in information sources, importance of store attributes, and lifestyle.

Closer examination of the nine factors shows that three factors (i.e., fashion conscious, time/convenience conscious, and economic/price conscious) are related to characteristics of QRT based attributes. Also these three factors are underlying the typologies of Gutman and Mills (1982) and Stone (1954).

Shim and Kotsiopulos (1993) found differences in importance of store attributes across shopper types. Highly involved apparel shoppers highly rated most store attributes as important to patronage behavior. Store attributes were store personnel, visual image of

store, customer service, price, easy access, and brand/fashion. On the other hand, apathetic shoppers were least likely to view these store attributes as important. The specific orientations of a shopper type are not examined for individual store attributes. For Shim and Kotsiopulos (1993), the approach was global and examined broad types to clusters and store attributes.

Fashion orientation has been a primary research focus. Bickle and Shim (1994) segmented the female apparel market based on clothing benefits sought by 610 female consumers and developed the profile of each segment based on shopping orientation, psychographics, and patronage behavior. Symbolic/instrumental users of clothing who are seeking clothing as a tool to enhance self-esteem, reputation, career advancement, and fashion image, enjoyed upscale department stores and were highly fashion conscious. Practical and apathetic users of clothing enjoyed shopping less and were less fashion conscious.

Economic/price orientation is a major factor in clothing purchases. Price has been included as an independent variable in past studies (Davis, 1987; Heisey, 1990; Maynes, 1976). Consumers who have high economic and price orientation would prefer to spend the least amount of money possible on a product while obtaining an acceptable level of quality (Maynes, 1976). Consumers often relate some measure of quality to the price of products. Heisey (1990) found a positive relationship between the price and quality of sweaters among 40 female students. Price was determined as a more important criterion than either quality or fashionability for purchase decisions (Davis, 1987). Female college students rated four white blouses on quality and fashionability with given information. Price and style were the most sought information.

Time orientation is considered another important factor in clothing shopping behavior. Personal time constraints and personal values placed on time and efficiency also contribute to purchase decisions (Lewison, 1991; Paulins, 1992). Very busy people

may not have time for leisurely shopping and may have other people shop for them (Solomon, 1987). High values placed on efficient use of time may result in increased mail and phone shopping and decreased store shopping. Planning before shopping has been found to influence purchases (Iyer, 1989). Consumers who shop with a definite intent to buy a particular product, as evidenced by lists and time restraints, tend to purchase fewer spontaneous items than consumers who are browsing and/or who are not restrained by time (Iyer, 1989).

Store Type

Store type is considered an important variable in apparel research on consumer behavior and evaluative criteria for apparel purchase (Bellenger & Korgaonkar, 1977; Gutman & Mills, 1982; Hawkins et al., 1989; Bickle & Shim, 1994). For example, store choice behavior was related to consumers' shopping orientation (Gutman & Mills, 1982; Hawkins et al., 1989). Gutman and Mills (1982) investigated clothing shopping orientation and its relationship to store patronage with an apparel product. They found that department stores were most preferred by highly fashion oriented consumers because they are willing to pay money to obtain fashion. In contrast, mass merchandisers were preferred by less fashion oriented consumers.

Recreational and economic shoppers were found to exhibit different desires with regards to store selection (Bellenger & Korgaonkar, 1977; Lumpkins, 1985). Recreational shoppers preferred stores with a variety of merchandise, service, and store decoration while economic shoppers preferred stores with low-price products. Consumers with different desires are different in store choice and preference (Bellenger & Korgaonkar, 1977; Shim & Bickle, 1994). Individual consumers may have differing satisfaction levels with store attributes in relation to store type.

Consumers value guarantee policies at department stores which have a positive image for merchandise, reliability, and price for audio equipment (Schiffman, Dash, & Dillon, 1977). Consumers differently value salesperson expertise and brand assortment at specialty stores, which have an overall high fashion image and location convenience. Consumers' decision of where to shop were formed based on store characteristics which may also influence the expectations of other criteria.

In a study by Dodge and Summer (1969), consumers selected different types of stores with different expectations of store characteristics. CS with a store differed by store type as well as demographic information. Older consumers spend more money on apparel and are more likely to shop at an upscale department store than younger consumers. Also older consumers respond more favorably to store services than younger consumers. Martineau (1958) found that consumers' selection of stores was influenced by the stores' functional qualities and psychological attributes. The presence or absence of such attributes contributes to the consumers' formation of store image. Consumers can make differentiating distinctions among stores (Sewell, 1974-1975). Post transaction satisfaction, one of seven factors, is related to forming store image (Fisk, 1961).

Bickle and Shim (1994) examined consumers' expectations and satisfaction with services offered by different retail store types (i.e., chain/specialty stores, upscale/better department stores, department stores, discount stores). Consumers' demographic and psychographic characteristics were also examined to see their influence on consumers' expectation and satisfaction. They found that consumers' demographic and psychographic characteristics and expectation level of service were significant predictors of overall satisfaction with services. By store type, significant predictors were varied.

Bickle and Shim (1994) found that a store's acceptance of charge cards, basic services (i.e., hassle free shopping, convenience, layaway) and premium services (i.e., quality sales assistance, in-home shopping, gift orientation, package assistance) were

significant in predicting satisfaction with chain/specialty stores. For satisfaction with the upscale/better department store, income, contemporary beliefs, basic services, and premium services were significant predictors. Fashion consciousness, satisfaction with life, and education were significant predictors in explaining levels of desired service. None of the significant predictors were found for overall satisfaction with department stores. Income and premium services were significant predictors on satisfaction with discount stores. Premium services were influenced by income, education, future-orientation, contemporary beliefs, and socialbility. They proved that consumers' individual characteristics may be a valuable component when investigating satisfaction with product and services.

Bickle and Shim (1994) investigated the satisfaction model with only service attributes offered by retailers, not including product attributes. Also general product shopping behavior was examined in their study. Uniqueness of the apparel product requires developing and testing a specific satisfaction model. In this study, an important determinant of CS, disconfirmation, was not included in the satisfaction model, and the directionality of predictors (i.e., consumers' demographic, psychographic characteristics, expectation level) was not examined. R squares of regression models by store type were low in explaining CS with selected predictors (i.e., demographics, psychographics), requiring the additional refined research.

CHAPTER III

Statement of Problem

The focus of the study was on testing a conceptual model which examines CS/D with apparel retail stores. The research objectives, conceptual framework, assumptions, and hypotheses are presented.

Research Objectives

The purpose of this research was to test a conceptual model which examines CS/D with apparel retail stores and to investigate the moderating effects of shopping orientations (i.e., fashion, economic, time orientation) and store type on confirmation/disconfirmation (C/DC) of store attributes (i.e., QRT based, non-QRT based) and CS/D with apparel retail stores.

Specific objectives are:

1. To identify QRT and non-QRT based store attributes offered by the apparel retail stores,
2. To examine the relationship of C/DC of QRT based attributes and non-QRT based attributes to CS/D with apparel retail stores,
3. To examine the moderating effects of shopping orientation (i.e., fashion, economic, time orientation) on the relationship between C/DC of QRT based attributes and CS/D while controlling for non-QRT based attributes , and
4. To examine the moderating effects of store type on the relationship between C/DC of QRT based attributes and CS/D with an apparel retail store.

Conceptual Framework

A model which integrates strategic planning (Berman & Evans, 1992; Cory, 1988) and satisfaction theory (Oliver, 1980) is used to frame the research questions. CS has become an extremely important part of many U.S. companies' service strategies (Drew, 1994). Satisfaction theory (Oliver, 1980) guides and helps apparel retailers to develop their specific functional strategies influencing CS. Retailers should (a) first practice enough communication to ensure a broad-based of awareness among their target audience and (b) measure both short term, consumer satisfaction with service encounters as well as longer-term attitudes toward service quality. The CS objective of a company tends to focus on tracking consumer opinions about the company's product and service. This information is often examined in isolation from the company's operations and strategies.

A more sophisticated system of CS measurement would link specific customer evaluations and satisfactions to a company's business and functional strategies. This linkage should relate a company's internal strategic management process to external activities so that an internal system is created to detect consumer satisfaction and problems and provide for adjustment in specific functional strategies (see Figure 3). A company's strategic planning, strategy, and operations should all relate to the voice of consumers. CS measurement and valuation of a company's product and service should become both the beginning and the end of a feedback loop between the customer, routine operations and service improvements. Attributes that are important to specific target markets should be focused on during strategic planning.

Satisfaction information will provide input to retailers' strategic planning and business actions and should improve resource-planning decisions, which make cost and quality controls more effective. Maintaining a retailer's competitive advantage and long-

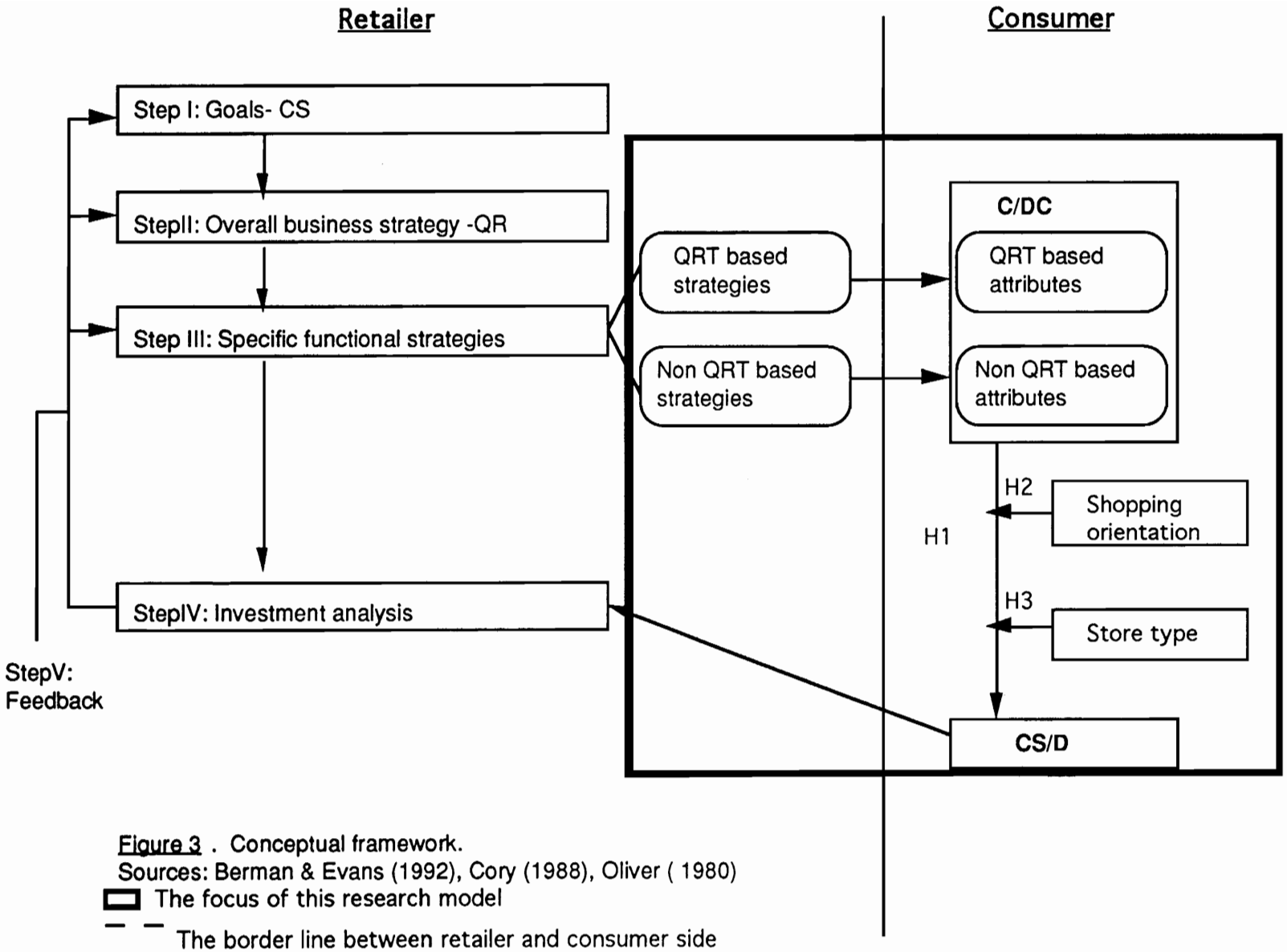

Figure 3 . Conceptual framework.
Sources: Berman & Evans (1992), Cory (1988), Oliver (1980)
The focus of this research model
The border line between retailer and consumer side

term profitability will rely on the integration of consumer satisfaction into the retailer's strategies and operations (e.g., Berman & Evans, 1992).

By implementing the new business strategy of QR in apparel retailing companies, functional strategies are changed by introduction of new technologies. Changes in functional strategies affect specific store attributes. After implementation of QR, store attributes can be divided into two categories: QRT based attributes (e.g., checkout time, stockout rate) and non-QRT based attributes (e.g., display, outside appearance). Product and service attributes are expected to influence CS. Specific product and service attributes have been evaluated for their influence on consumer satisfaction with and perceptions of medical/health care (Oliver, 1980; Oliver & Bearden, 1983), durable goods (Churchill & Surprenant, 1982; Tse & Wilton, 1988), and automobiles (Oliver & Swan, 1989), but not specifically for apparel retailing. Consumers have expectations about the product and service attributes. These expectations are formed by previous experiences with and knowledge of product attributes, marketing communications such as advertising, word-of-mouth referrals, or any other marketing activities (Patterson, 1993).

The most dominant model of CS/D, the disconfirmation of expectation paradigm, postulates that consumers reach satisfaction decisions by comparing a product/service with prior expectation about how the product/service would perform (Spreng & Olshavsky, 1992). This comparison process can result in disconfirmation. If expectation was negatively disconfirmed, dissatisfaction resulted. When expectation was positively disconfirmed, satisfaction resulted. In summary, the disconfirmation of expectation paradigm helps to explain consumer satisfaction judgments. Empirical support for this model varies, and findings suggest that the effects of disconfirmation on CS/D may be more complex than hypothesized by the original disconfirmation model (Yi, 1990).

In addition, for apparel retailers, consumer characteristics and shopping orientation have been considered as important predictors of clothing and shopping

behavior (Cassill & Drake, 1987; Shim & Drake, 1988). The analysis of consumer characteristics has provided valuable information for retailers to understand target consumers, to determine the needs of consumers, and to identify the effective manner of reaching the target market (Bickle & Shim, 1994).

Yi (1990) suggested that further studies should be done to determine the moderators between C/DC and CS/D and to provide an integrated framework with consistent findings. This study is designed to investigate moderating effects of consumer demographics, shopping orientation, and store type on perceived disconfirmation about store attributes and on CS/D. Figure 3 shows the conceptual framework, including hypothesized relationships among variables to be tested in the study. The consumer part of the framework is the focus of the study.

Assumptions

1. QRT based and non-QRTattributes can be identified by a literature review, personal interviews with experts, and a preliminary test.
2. The scale is appropriate for measuring the store attributes disconfirmation.
3. The scale used for measuring confirmation/disconfirmation (C/DC) and CS/D by Oliver (1980) is appropriate for evaluating CS/D with apparel retail stores.

Hypotheses

Based on the conceptual model, the following hypotheses were formulated. Table 4 shows a summary of research objectives, independent variables, moderators and dependent variables for each hypothesis. The nature of moderators includes direct effects of moderators on dependent variables and interaction effects with independent variables

on dependent variables (Baron & Kenny, 1986). Both effects of moderators were examined.

H1. CS/D with a retail store will be positively influenced by C/DC of store attributes (i.e., QRT based, non-QRT based attributes).

In accordance with the disconfirmation of expectation model, C/DC will positively influence CS/D. Consumers reach CS/D by C/DC, which is a process of comparing prior expectation about and actual performance of the product/service (Spreng & Olshavsky, 1992). The more/less C/DC score represents the positive/negative disconfirmation, and the more/less CS/D score represents satisfaction/dissatisfaction. Positive/negative disconfirmation will result in satisfaction/dissatisfaction according to the disconfirmation of expectation model (Oliver, 1980). C/DC includes two categories: C/DC of QRT based and C/DC of non-QRT based attributes . Each category of C/DC will influence CS/D.

Table 4

Summary of Research Objectives and Variables

Objectives	Hypotheses	Independent variables	Moderators	Dependent variables
2	1	C/DC of QRT based attributes & C/DC of non-QRT based attributes		CS/D
3	2	C/DC of QRT based attributes, C/DC of non-QRT based attributes	Fashion, Economic, Time orientation	CS/D
3	2-a	C/DC of QRT based attributes	Fashion orientation	CS/D
	2-b	C/DC of QRT based attributes	Economic orientation	CS/D
	2-c	C/DC of QRT based attributes	Time orientation	CS/D
4	3	C/DC of QRT based attributes & C/DC of non-QRT based attributes	Store type	CS/D

H2. CS/D with a retail store will be influenced by shopping orientation (i.e., fashion orientation, economic orientation, time orientation) interacting with C/DC of QRT based attributes, controlling for C/DC of non-QRT based attributes.

To extract possible confounds, C/DC of non-QRT based attributes was identified as a control variable. This variable was chosen because its impacts on CS/D have been shown in previous studies (Berman & Evans, 1992; Ji & Rhee, 1995; Paulins, 1992; Shim & Kotsiopulos, 1992, 1993; Williams, 1990).

H2-a. CS/D with a retail store will be influenced by fashion orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher fashion orientation will have higher CS/D than those who have a lower fashion orientation when C/DC of QRT based attributes is high .

Consumers who have higher fashion orientation are more innovative in seeking new fashions and unique products than those who have lower fashion orientation (Gutman & Mills, 1982; Lumpkin, 1985). QRT based attributes include new, fresh merchandise and increased variety of merchandise selection. These QRT based attributes are more attractive to consumers who have higher fashion orientation and are innovative in seeking fashion products.

H2-b. CS/D with a retail store will be influenced by economic orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher economic orientation will have higher CS/D than those who have a lower economic orientation with high C/DC of QRT based attributes.

Economic orientation includes a price conscious attitude (Shim & Kotsiopulos, 1993). Better price for the value, a QRT based attribute, is an important attribute for higher economic orientation consumers.

H2-c. CS/D with a retail store will be influenced by time orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher time orientation will have higher CS/D than those who have a lower time orientation with high C/DC of QRT based attributes.

The QRT based attributes of reduced stockouts, faster checkout time, and easy store layout save time. If stockout occurs, consumers do not likely return to the store because of the time needed for the return trip.

H3. CS/D with a retail store will be influenced by store type interacting with C/DC of QRT based attributes, controlling for C/DC of non-QRT based attributes. In high C/DC of QRT based attributes, specifically, when consumers shop in specialty chain and small independent stores, they will have lower CS/D than when they shop in department and discount stores.

Consumers' expectations of store characteristics vary with store type. Department and discount stores are expected to have a variety of merchandise. For example, department stores are expected to have a variety of merchandise and quality of product, attributes which are classified as QRT based. Specialty stores carry unique merchandise, and small independent stores keep long term customer relationships and convenience of location. Consumers will be more dissatisfied with department and discount stores that do not maintain QRT based attributes than other stores that do not maintain these attributes.

Oliver and Linda (1981) found that store attributes influence satisfaction, which determines store preference. Different types of stores provide different levels of QRT and non-QRT based attributes depending on stores' strategy and target consumers. Store attributes provided by retailers influenced consumers' satisfaction. If satisfaction is increased with store attributes provided by retailers, store preference would be maintained.

CHAPTER IV

Research Method

The purpose of the study was to test a conceptual model which examines CS/D with apparel retail stores and to investigate the moderating effects of shopping orientations and store type on C/DC of store attributes (i.e., QRT based, non-QRT based) and CS/D with apparel retail stores. The following sections cover the procedure to achieve the research objectives: (a) research design, (b) sampling, (c) preliminary test, (d) instrument, (e) data collection, (f) data analysis, and (g) multicollinearity diagnostics.

Research Design

The descriptive research design was used to test hypothesized relationships among variables based on the disconfirmation of expectation model. A descriptive design is considered a type of conclusive research to describe market characteristics or functions (Malhotra, 1993). This study was designed to examine the moderating effects of shopping orientation and store type on CS/D with apparel retail stores among female apparel consumers.

A structured questionnaire was used in the research. Structured means there was a degree of standardization in the data collection. The survey method allows a researcher to determine the interrelations among variables (Malhotra, 1993). The structured-direct survey is the most popular data collection method (Malhotra, 1993).

An experimental method was not used for this research because different usage levels of QRT by store type can not be manipulated in the real setting. This study was conducted in a classroom setting and in places where social gatherings occur (i.e., civic

organizations, church meetings). A self-administered questionnaire was distributed to the female consumers.

Sampling

Convenience sampling design was used for the study. Convenience sampling included use of students, church groups, and members of civic organizations. The sampling units were accessible, easy to measure, and cooperative with the least cost and time consumption, but convenience samples may not be representative for any definable population.

Calder, Phillips, and Tybout (1982, 1983) asserted that any sample (e.g., student subjects) can provide a rigorous test of a theory if proper methodological procedures are employed. The reasoning behind this conclusion is that homogeneous samples reduce random error due to irrelevant differences. Homogeneous samples with convenience sampling method increase power and provide a stronger test of the theory. Survey response rate is an important factor in evaluating the research method. Response rate is defined as the percentage of the total attempted interviews that are completed (Malhotra, 1993). In a mail survey of randomly selected respondents, without any pre-mailing contact, the response rate for consumers is typically less than 15% (Malhotra, 1993). The low response rate can lead to a serious nonresponse bias because the responding task to a survey is related to respondents' interest (Malhotra, 1993); therefore, use of sample subjects who are precontacted and personally interviewed are considered for the selection of the study design. With cohort analysis, potential for control of interview bias and social desirability are improved relative to other survey methods such as mall intercepts (Malhotra, 1993). The use of convenience sample is justified (Fromkin & Streufort, 1976; Kruglanski, 1975; Oaks, 1972; Shuptrine, 1975).

Subjects in this study were a convenience sample of female college students enrolled in several courses offered by the departments of Clothing and Textiles, Marketing, and Statistics in a major university in southeastern U.S. and adult females who are affiliated with specific social meetings (i.e., civic organizations, church meetings). Female college students and adult females in the sample would be homogeneous within each group since they are gathered for similar goals.

To test the proposed hypotheses, the sampling units are consumers who visit apparel retail stores and are females who are age eighteen and up. Since the majority of apparel shopping is done by women (Frame & Axelrod, 1990), female shoppers were used in this study. Age eighteen is selected as the cut-off age since independence, especially pertaining to shopping decisions, is generally considered to begin at this age (Kincade et al., 1992).

The sample size for a proposed design is determined by the desired precision, power, confidence level, and effect size. The targeted sample size was 200. To have a statistical power of .90, the minimum sample size needed for the study was 75 based on degrees of freedom. The selection power level (.90) is a tenth of a point better than .80, which is generally considered a reasonable goal (Cohen, 1977).

Preliminary Test for Identification of QRT Based Attributes

Before the main study with female apparel consumers, 27 store attributes were identified from the literature as determinants of CS with apparel retailers. Among 27 store attributes, literature supported 14 store attributes that can be identified as QRT based attributes because 14 store attributes are improved by QRT conceptually and some of attributes were confirmed as improvements of QRT with the evidence of several pilot studies (e.g., AAMA, 1987; KSA, 1992). The identification of QRT based and non-QRT

based attributes was done through a preliminary survey of apparel retailers (see Table 5). For proving the validity of the measure (i.e., C/DC of QRT based attributes), the preliminary test plays an important role.

For data collection for the preliminary test, thirty-two apparel retailers were surveyed. Twenty-six apparel retailers were surveyed at a professional meeting, QR 95 Conference in Atlanta, GA. This meeting is the biggest trade conference for developing a better QR strategy and providing prime networking and information sources. Those who attend this conference are experts (e.g., QR system managers, QRT developers); therefore, they are knowledgeable about QRT. This fact improves the face reliability of the instrument for developing QRT based store attributes. Six small, independent apparel retailers were also selected from a southeastern U.S. city in order to include in the preliminary test all types of stores which are itemized in the literature. All apparel retail store types were included in the preliminary test. The store types were department stores (41%), discount stores (28%), small independent stores (19%), and specialty chain stores (13%).

Questions for the preliminary test included usage of QRT, store attributes improved by QRT, and store type (see Appendix C). Usage of QRT and store attributes improved by QRT were measured by asking apparel retailers to assess for their stores the percentages from zero to 100 percent or more. Also no opinion category was included. Fourteen store attributes, which are expected as QRT based store attributes, were selected from the literature for the apparel retailers questionnaire. For each item, the respondent was asked to check an appropriate category.

Twelve store attributes were clearly identified as improved by QRT through the preliminary test. Two attributes (i.e., home delivery, friendly personnel) had more than 50 % in the no opinion category. On the basis of literature support and preliminary test

Table 5

Identification of QRT and Non-QRT Based Attributes from the Literature and Preliminary Test

QRT based attributes	Consumer questions: Section I-2	non-QRT based attributes	Consumer questions: Section I-2
price for the value	c	after the sale service	a
fast turnaround of goods (new/fresh merchandise)*	j	location of store	e
stockout (availability of clothing I like to buy)*	r	parking place	f
variety of assortment (merchandise selection)*	aa	store hours	g
merchandise for target market (type of clothing I like)*	q	attractive display	h
garment fit	m	dressing room	i
quality merchandise	u	knowledgeable salesperson	o
return policy	x	layaway	p
home delivery	n	outside appearance	s
friendly personnel	l	store atmosphere	t
availability of advertised product	b	rest space	v
accuracy of advertised product	d	restroom	w
checkout time	k	sales promotion program	y
store layout	z		

Note. * to help consumers to better understand the terms about store attributes, a description was differently used in the consumers' questionnaire.

findings, the decision was made to retain all 14 attributes. The store attributes which were perceived as most improved by QRT were fast turnaround of goods (70.3%), reduced stockouts (65.6%), and availability of advertised product (64.1%). Store attributes perceived as the least improved by QRT were home delivery (7.8%), friendly personnel (8.6%), and store layout (12.5%). Similar patterns in the improvements by QRT existed among four store types. The top three most improved store attributes (i.e., fast turnaround of goods, reduced stockouts, availability of advertised product) were same for all store types; however, small independent retailers perceived improvements to be lower than improvements seen by other store type retailers. Additional information about the preliminary test is reported in the manuscript (see Appendix C).

Instrument

Measures

An instrument was developed to address research objectives. The items in the questionnaire were selected from the review of literature (Cadotte et al., 1987; Cassill & Drake, 1987; Oliver, 1980). The questionnaire was divided into five sections (see Appendix A). Questions in Section I include shopping experience at a specialty chain store, C/DC of store attributes of a specialty chain store, and CS/D with the specialty chain store (see Table 6). Sections II, III, and IV include the same items as Section I, but for three additional store types (i.e., department, discount, small independent store). Questions in Section V include shopping orientations: fashion, economic, and time orientation. Questions in Section VI include consumer demographics: age, education, income, clothing expenditure, and employment status.

For each store type in a questionnaire, the respondent was asked to respond "yes" or "no" to the question "Have you ever been in [store type] to shop for apparel for

Table 6

Sections of Final Instrument

Section	Variables	No. of Questions
Section I	C/DC of **QRT** based attributes with specialty chain store	Q2-b, c, d, j, k, l, m, n, q, r, u, x, z, aa
	C/DC of **non-QRT based attributes** with specialty chain store	Q2-a, e, f, g, h, i, o, p, s, t, v, w, y
	CS/D with specialty chain store	Q3
Section II	C/DC of **QRT** based attributes with department store	Q2-b, c, d, j, k, l, m, n, q, r, u, x, z, aa
	C/DC of **non-QRT based attributes** with department store	Q2-a, e, f, g, h, i, o, p, s, t, v, w, y
	CS/D with department store	Q3
Section III	C/DC of **QRT** based attributes with discount store	Q2-b, c, d, j, k, l, m, n, q, r, u, x, z, aa
	C/DC of **non-QRT based attributes** with discount store	Q2-a, e, f, g, h, i, o, p, s, t, v, w, y
	CS/D with discount store	Q3
Section IV	C/DC of **QRT** based attributes with small independent store	Q2-b, c, d, j, k, l, m, n, q, r, u, x, z, aa
	C/DC of **non-QRT based attributes** with small independent store	Q2-a, e, f, g, h, i, o, p, s, t, v, w, y
	CS/D with small independent store	Q3
Section V	Fashion orientation	Q1, 2, 3, 4, 6, 7, 8, 13
	Economic orientation	Q5, 10, 14
	Time orientation	Q9, 11, 12
Section VI	demographic information	Q1-5

yourself?". If response was "yes", then the respondent was asked to respond to two sets of questions (i.e., C/DC, CS/D). If response was "no", then she was directed to skip the following questions within the section and go to next section for responses. Through this procedure, respondents who have not shopped in a given store type are excluded.

Confirmation/disconfirmation (C/DC) of store attributes was measured by store attributes expectations. Twenty-seven store attributes determining CS/D were identified from the literature (Berman & Evans, 1992; Haynes et al., 1994; Huddleston et al., 1990; Ji & Rhee, 1995; Mazursky & Jacoby, 1986; Paulins, 1992; Shim & Kotsiopulos, 1992, 1993; Williams, 1990). Twenty-seven store attributes were presented in the questionnaire (Appendix A). C/DC of store attributes was redivided for measuring the major construct of C/DC into two categories: QRT based attributes and non-QRT based attributes (see Table 5).

Fourteen QRT based attributes were identified as improvements by QRT from the literature (AAMA, 1987; Bravman, 1992; Braithwaite, 1990; Ernst & Whinney, 1988; Fiorito et al., 1993; Hunter, 1990; Kincade, 1989; KSA, 1986, 1987; Schmidt & Kernan, 1988; Sullivan, 1990; VICS, 1989) and were confirmed by a preliminary test (see Appendix C). Thirteen non-QRT based attributes which were identified from the literature were not related to QRT but were related to CS/D with apparel retail stores.

C/DC of each store attribute was measured from Likert-type statement on a 7-point scale from much worse than expected (1) to much better than expected (7). This measurement format was adapted from previous research (Bearden & Teel, 1983; Churchill & Surprenant, 1982; Oliver, 1980; Tse & Wilton, 1988). For store type C/DC of QRT based attributes, an average score of 14 QRT based attributes was formed. For store type C/DC of non-QRT based attributes, an average score of 13 QRT based attributes was also formed. For testing Hypotheses 1 and 2, overall C/DC of QRT based attributes was the average score of four store type measures of C/DC of QRT based

attributes. Overall C/DC of non-QRT based attributes was the average score of four store type C/DC of non-QRT based attributes from each store type. For Hypothesis testing 3, four store type C/DC of QRT based attributes were formed.

CS/D with a store was measured with six items on a 7-point Likert scale that was adapted from previous research (Oliver, 1980). As suggested by Oliver (1980), the questions were emotional in content and included references to the respondents' outright satisfaction, regret, happiness, and general feeling about the apparel and store selection. Each item had a 7-point response scale ranging from strongly agree to strongly disagree. An average score of all six items was formed for each person's CS/D. One strength of the research is the utilization of multiple items that are summed and averaged for purposes of analysis rather than single-item measures which have been in previous research. For Hypotheses 1 and 2, overall CS/D is an average score of four store type CS/D scores. Hypothesis testing 3, four store type CS/D about QRT based attributes were formed.

Shopping orientation includes fashion, economic, and time orientations. Three measurement items for each specific shopping orientation were used from previous research (Shim & Kotsiopulos, 1993). The measurement scale was changed from a 5-point to 7-point from previous research. All three orientations were measured from Likert-type statements on a 7-point scale ranging from strongly disagree (1) to strongly agree (7). Fashion orientation included eight items while time and economic/price orientations both included three items. Each type of shopping orientation was measured by an average score for each item, within each construct.

Demographics include age, education, employment status, clothing expenditure, and income. Questions about this demographic information were selected from the previous research (Cassill & Drake, 1987). Student respondents were asked their major and year in school.

Pilot Study

The questionnaire was pilot tested to identify errors and misleading or difficult instructions and to assess overall clarity by a group of five selected faculty, including Extension Specialists in the Department of Clothing and Textiles at Virginia Polytechnic Institute and State University and five students in the Department of Clothing and Textiles. Participants in the pilot study were not included in the main study. Through this pilot test, face reliability and content validity in the questionnaire were improved. Participants in the pilot test confirmed the major constructs as defined by the researcher.

Reliability and Validity of Measures

Measures of variables should have validity and reliability (Cronbach, 1971; Nunnally, 1978). Multiple measures of CS/D and shopping orientations have been used in past studies (e.g., Oliver, 1980; Shim & Kotsiopulos, 1993). The previous studies evaluated reliability of measures and supported them with Cronbach's alpha. Oliver's measures of CS/D were evaluated as substantially reliable (.82), and Shim and Kotsiopulos's (1993) measures of shopping orientations (i.e., time, economic, fashion orientation) were also higher than .7. Measure of fashion orientation (.78), measure of time orientation (.71), and measure of economic orientation (.70) were all evaluated as reliable. When Cronbach's alpha is higher than .7, it is considered as reliable (Nunnally, 1978). Measures of consumer demographics were widely used in previous research with reliability and validity checks.

Item correlations within each scale for CD/C about QRT based attributes, CD/C about non-QRT based attributes , and CS/D with a retail store were examined as a measure of reliability. Homogeneity of content, internal consistency and external consistency are criteria for creating a unidimensional set of indicators (Danes & Mann, 1984). One way of assessing whether multiple indicators are measuring the same

construct is to calculate the Cronbach's' alpha for each construct. As a measure of internal consistency, the inter-item correlations of all questions in each scale were analyzed. Items measuring the same construct are expected to be positively correlated with each other.

To test the construct validity of store type, this item was measured to determine if consumers can categorize store names (e.g., K-Mart) into a type of operation (e.g., discount store). A card sort technique was used. Store type included specialty chain, department, discount, and small independent stores for the study. Fifteen female subjects were selected to test the construct validity. Each term of store type was written on a 3 $\times$ 5 inche index card and were set up on a table. Twenty cards with a store name were given to subjects to categorize and match with the appropriate card stating a specified store type. Five store names for each store type were selected in the test. Specialty chain store type included Limited, Fashion Bug, Lerner, Ann Taylor, and Gap. Department store type included J.C. Penney, Leggett, Bloomingdales, Hechts, and Sears. Discount store type included Wal-Mart, K-Mart, Goodies, TGIF, and T.J. Max. Small independent store type included Bonomos, Fringe Benefits, Davidsons, Chantilly Lace, and Garetts.

All fifteen subjects agreed that the given terms of store type (i.e., specialty chain, department, discount, small independent store) were understandable. Store names, which were correctly categorized into given store type by all 15 subjects, were included in the final consumer survey questionnaire (see Appendix A). The Limited and Fashion Bug were selected as examples of specialty chain stores in the questionnaire. J.C. Penney and Leggett were selected as examples of department stores in the questionnaire because these two store names were categorized into department store by all fifteen subjects. Wal-Mart and Goodies were selected as examples of discount stores in the questionnaire. Bonomos and Fringe Benefits were selected as examples of small independent stores in

the questionnaire. All store names included in the questionnaire existed in the local area where the subjects of the study were selected.

Data Collection

The data were collected during April, 1995 in Blacksburg, VA. A convenience sample of female students enrolled in one of three courses offered by the departments of Clothing and Textiles, Marketing, and Statistics in one major university in southeastern U.S. and adult females who are affiliated with specific social meetings (i.e., civic organization A, B) and church activities (i.e., choir, Bible study group). The classes and social events for data collection were selected for their accessibility and assumed homogeneity. Before data collection, permission for data collection was obtained and prearrangement was made by telephone calls to instructors for the female student sample and to the president of groups for the female adults.

A self-administered questionnaire was used to survey the female apparel consumers. Before administering the survey, the researcher introduced herself as a Ph.D. candidate at Virginia Tech and asked if they would willing to participate in a research project related to CS/D with apparel retailers for the purpose of a dissertation. She explained that the questionnaire would take less than 15 minutes to complete. After completion of the questionnaire, students and female consumers were thanked for their participation.

For the female student sample, students were asked to participate in the study during regular class periods. Participation was on a volunteer basis. For the adult female sample, individuals were asked to participate in the study after social events, and the survey was completed on the spot or was taken home and returned by mail. Adult females who participated in the survey were eligible to win a $50.00 gift certificate for

use at a local shopping mall if they completed and returned their questionnaire and the entry form for the drawing. Consumers who agreed to participate but could not complete the questionnaire on the spot after social meetings were given a questionnaire and an entry form which had been placed in a postage-prepaid envelope.

Data Analysis

Descriptive statistics include frequencies of all variables and means for C/DC of QRT based attributes, C/DC of non-QRT based attributes , and CS/D. For testing Hypothesis 1, multiple regression was employed to examine the relationship between C/DC of store attributes (i.e., QRT based, non-QRT based) and CS/D with a retail store. To test Hypotheses 2, multiple regression was also used to investigate the moderating effects of shopping orientation (i.e., fashion, economic, time) between C/DC of QRT based attributes and CS/D with a retail store, while controlling for non-QRTattributes. For the regression analysis, any mixture of measurement scales (e.g., nominal, ordinal, interval) is allowable for the independent variables. In the regression analyses for Hypotheses 1 and 2, muliticollinearity diagnostics were done. An ANOVA table proves an overall summary of a multiple regression analysis, reflecting the contribution that all independent variables make to the prediction for each dependent variable.

To further examine the specific directions of interaction effects in Hypotheses 2-a, 2-b, and 2-c, analyses of variance (ANOVA) were used. In ANOVA, all independent variables were treated as nominal. Individual and interaction effects of independent variables were examined. To test Hypotheses 3, analysis of covariance (ANCOVA) was used to investigate the moderating effects of store type on C/DC of QRT baseed attributes and CS/D with a retail store. C/DC of non-QRT based attributes was ordinal data type, so it was included as a covariate in the model. Shopping orientations and store type were

tested as moderators in Hypotheses testing. The nature of moderators includes direct effects of moderators on a dependent variable and interaction effects with an independent variable on a dependent variable (Baron & Kenny, 1986). Both effects of moderators were examined in the data analyses. Statistical significance level was set at 0.05. Table 7 shows the summary of variables formation and data analysis.

Table 7

Summary of Variables Formations

Obje-ctives	Hypo-theses	Independent variables	Moderators	Depen-dent var.	Questions	Statistical analysis
2	1	C/DC of QRT based attributes, C/DC of non-QRT based attributes		CS/D	Section I-IV: Questions 2 &3	Multiple regression
2	2	C/DC of QRT based attributes, C/DC of non-QRT based attributes	Fashion, Economic, Time orientation	CS/D	Sections I-IV: Questions 2 &3, Section V	Multiple regression
2	2-a	C/DC of QRT based attributes	Fashion orientation	CS/D	Section V: Questions 1, 2,3,4,6,7,8,13	ANOVA
	2-b	C/DC of QRT based attributes	Economic orientation	CS/D	Section V Questions 5,10,14	ANOVA

Table 7

(Continued)

Obje-ctives	Hypo-theses	Independent variables	Moderators	Depen-dent var.	Questions	Statistical analysis
	2-c	C/DC of QRT based attributes	Time orientation	CS/D	Section V Questions 9,11,12	ANOVA
3	3	C/DC of QRT based attributes, C/DC of non-QRT based attributes	Store type	CS/D	Section I-V Questions 2 & 3	ANCOVA

Multicollinearity Diagnostics

Multicollinearity is present in a multiple regression problem when the independent variables are correlated among themselves. Multicollinearity can cause inaccurate estimates of regression coefficients, variance, and p values because the amount of information about the effect of each independent variable on the dependent variable declines as the correlation among the independent variables increases. Therefore, the regression coefficient has very little meaning when multicollinearity is present.

Several diagnostics are available to determine the existence and extent of multicollinearity in a data set. The first and most obvious of these is examination of the correlation matrix among variables. If two independent variables are nearly linearly dependent, the correlation between them will be close to 1 (Myers, 1990). However, there are no definite guidelines on the simple correlations, and multicollinearity often

involves associations among more than two independent variables will not be exhibited by simple correlations.

A second diagnostic tool is variance inflation factor (VIF), which represents the inflation that each regression coefficient experiences above the ideal, the ideal being a correlation matrix which is an identity matrix. The VIF for the i^{th} regression coefficient can be written: $VIF = 1/1\text{-}R^2_i$ where the coefficient of multiple determination of the regression is produced by regressing the variable x_i against the other independent variables. If this value is large, i^{th} independent variable has a strong linear association with the remaining independent variables. The VIF for each term in the model measures the combined effect of the dependencies among the independent variables on the variance of that term. If VIF becomes larger than 10, severe multicollinearity is indicated (Myers, 1990).

The third diagnostic tool is the eigenvalues of correlation matrix. If there are one or more near linear dependencies in the data, then one or more of the eigenvalues will be small. The strength of the linear dependency is indicated by the nearness to zero of the smallest eigenvalue. The number of eigenvalues near zero indicates the number of collinearities detected among the independent variables. Multicollinearity is often measured by the ratio of the largest to the smallest eigenvalue, which is called the condition number of the correlation matrix. A large condition number, defined as 1000 (Myers, 1990), indicates serious multicollinearity.

In the event of multicollinearity, the most preferable method (Myers, 1990) is to eliminate one or more independent variables. If the variables which are causing collinearity are not eliminated, cautious interpretation is required and the existence of multicollinearity must be stated.

CHAPTER V

Findings and Discussion

This study tested a conceptual model which examines CS/D with apparel retail stores and investigated the moderating effects of shopping orientations (i.e., fashion, economic, time orientation) and store type on confirmation/disconfirmation (C/DC) of store attributes (i.e., QRT based, non-QRT based) and CS/D with a retail store. The convenient sample of 200 apparel female consumers was asked about shopping orientations, C/DC of store attributes (i.e., QRT based, non-QRT based), and CS/D with apparel retail stores through a questionnaire survey. Retail stores were divided into specialty chain, department, discount, and small independent stores. The findings and discussion of the study are presented under the following headings: (a) return rate for the survey, (b) demographic profile of the respondents, (c) validity and reliability of measures, (d) C/DC and CS mean ratings by store type, (e) shopping orientations mean ratings, and (f) tests of hypotheses.

Return Rate for the Survey

A total of 232 self-administered questionnaires were distributed to female apparel consumers in a two week period in April, 1995. The sample included college students and adult residents. Two hundred questionnaires were usable for this study. The sources and number of questionnaires collected were reported in Table 8. Three classes in a major university were selected for the student sample and two civic organizations and two church meetings were selected for the adult resident sample. No questionnaire was eliminated in the data analyses. Among the total sample, 102 questionnaires were collected during class periods from the college students. Among adult resident sample,

55 questionnaires were collected during social gathering events and 43 questionnaires were returned by mail within a week. Ninety-eight of the residents returned back their entry forms for the drawing of the gift certificate. The response rates are shown in Table 9. Thirty-nine adult residents did not return the questionnaires. Overall, this study had a total response rate of 86.2%.

One concern associated with mail surveys is their typically low response rate, and the commitant possibility that nonrespondents may have responded differently enough to have altered the final results. This is of particular concern when the percentage of nonrespondents is high relative to the percentage of respondents. Given the high usable response rate in this research (86.2%), problems of nonresponse bias are less likely to be a major concern (Dillon, Madden, & Firtle, 1994).

Table 8

Source and Number of Questionnaire Respondents Profiled

Sample	Source	N	%
Students	Class 1	35	17.5
	Class 2	30	15.0
	Class 3	37	18.5
Residents	Civic organization A	28	14.0
	Civic organization B	19	9.5
	Church Choir	25	12.5
	Church Bible study	26	13.0
Total		200	100.0

Table 9

Return Rates of Questionnaires

Sample	Questionnaire distributed (n)	Questionnaire returned (n)	Total (%)
Students	102	102	100.0
Residents	130	98	75.4
Total	232	200	86.2

Demographic Profile of the Respondents

Section VI of the questionnaire requested demographic information from the respondents. Demographic information included age, education, income, and clothing expenditure for both the student and resident sample. The question that asked about employment status was included only for the resident sample, and the question about major was included only for the student sample. This section uses a table of frequency distributions for measured consumers' demographic information (see Table 10). Sample size (n) may vary with each analysis, because some respondents did not answer certain questions.

The major age group of the respondents was 18-34 (69%), followed by the 35-49 group (12.5%). Only 10 % of the respondents belonged to the 65 or older group. Respondents indicated the highest level of education that they had achieved. The largest percentage of subjects, 61.5%, had some college or trade school education while 19% had a graduate degree. Only 4% of the respondents had only a high school diploma.

Table 10

Percentage Distribution for Demographic Profile of the Respondents

Demographics	Students sample		Residents sample		Total sample	
	n	%	n	%	n	%
Age						
18-34	99	97.0	39	39.8	138	69.0
35-49	3	3.0	22	22.4	25	12.5
50-64	0	0	17	17.3	17	8.5
65 or older	0	0	20	20.4	20	10.0
Education						
graduate degree	0	0	38	38.8	38	19.0
bachelor's degree	1	1.0	30	30.6	31	15.5
some college or trade school	101	99.0	22	22.4	123	61.5
high school graduate	0	0	8	8.2	8	4.0
not high school graduate	0	0	0	0	0	0
Clothing expenditure						
below $200	4	3.9	22	22.4	26	13.0
$200-499	38	37.3	34	34.7	72	36.0
$500-999	32	31.4	32	32.7	64	32.0
$1000-1499	15	14.7	10	10.2	25	12.5
$1500-1999	2	2.0	0	0	2	1.0
$2000 or above	11	10.8	0	0	11	5.5
Income						
below $10,000	26	28.0	5	5.2	31	16.3
$10,000-14,999	6	6.5	9	9.3	15	7.9
$15,000-19,999	5	5.4	5	5.2	10	5.3
$20,000-29,999	4	4.3	9	9.3	13	6.8
$30,000-49,999	11	11.8	18	18.6	29	15.3
$50,000-74,999	13	14.0	30	30.9	43	22.6
$75,000 or above	28	30.1	21	21.6	49	25.8
Employment status						
at home			30	30.9		
full time	N/A	N/A	15	15.5		
part time			52	53.6		

With regard to clothing expenditure, the major group of the respondents (36%) spent $200-$499 on clothing last year. The second largest group (32%) spent $500-999 on clothing. Only 1% of respondents spent $1,500-1,999 on clothing annually. Interestingly, respondents in the student sample were more likely to be in the high clothing expenditure categories (i.e., $1,500-1,999, $2,000 or above). About 13 % of

student respondents spent either $1500-1999 or $2000 or above on clothing last year. No resident respondent checked these high expenditure categories. The means of clothing expenditure for each subsample were calculated as follows:

$$\text{Mean of grouped data} = \frac{\sum_{i=1}^{k} f_i \times \tilde{x}_i}{N}$$

In the formula, k means the number of categories (six in this case, see Table 10), $\tilde{x}_i$ represents a median of each category, and N stands for number of respondents (Howell, 1992).

The mean of clothing expenditure for the students' sample ($803.43) is much higher than for the residents' sample ($516.33). On average, female students spend $217.10 more on clothing than female adults.

The income question asked respondents to check the household annual income before taxes. The largest group (25.8%) of respondents had the income range $75,000 or above, and the second largest group (22.6%) of respondents had the income range $50,000-74,999. The smallest group (5.3%) of the respondents had the income range $ 15,000-19,999.

Employment status was asked of only the residents' sample (n = 98). In the residents' sample, the largest group (53.6%) of respondents was employed part time. Only fifteen respondents (15.5%) were employed full time.

Validity and Reliability of Measures

Before subsequent analyses using measures are carried out, it is necessary to verify the reliability of measures (Churchill, 1979). To assess reliability of measures, coefficient alpha was used. Coefficient alpha tested the internal consistency of the multiple items in relation to a single trait within the instrument (Nunnally, 1978). Churchill (1979) recommends that coefficient alpha absolutely be the first measure calculated to assess the reliability of the instrument.

Table 11 provides the standardized coefficient alphas for three constructs (i.e., C/DC of QRT based attributes, C/DC of non-QRT based attributes, CS/D) by store type, as well as average standardized coefficient alphas which are the average scores of four standardized coefficient alphas for each store type. Table 12 presents standardized coefficient alphas for shopping orientation (i.e., fashion, economic, time). All constructs had standardized coefficient alphas above 0.70. A coefficient alpha of .70 or higher was considered to be an adequately reliable measure (Nunnally, 1978). Internal consistency was thus judged as acceptable for this research.

Table 11

Standardized Coefficient Alphas of C/DC and CS/D measures by store type

Measures	SP	DEPT	DIS	SM	Average
C/DC of QRT based attributes	0.94	0.95	0.72	0.75	0.84
C/DC of non-QRT based attributes	0.93	0.87	0.71	0.88	0.85
CS/D	0.97	0.97	0.96	0.98	0.97

Note. SP = Specialty chain store, DEPT = Department store, DIS = Discount store, SM = Small independent store, Average = average of four store type C/DC .

Table 12

Standardized Coefficient Alphas of C/DC and CS/D measures by store type

Measures	Standardized coefficient alpha
Fashion orientation	0.90
Economic orientation	0.71
Time orientation	0.73

C/DC and CS/D Mean Ratings

C/DC Mean Ratings

Confirmation/disconfirmations (C/DC) of the 27 store attributes were measured from Likert-type statements on a 7-point scale from much worse than expected (1) to much better than expected (7). Twenty-seven attributes were divided into two categories: QRT based and non-QRT based attributes . For store type C/DC of QRT based attributes, an average score of the 14 QRT based attributes was formed for each store type. For store type C/DC of non-QRT based attributes, an average score of 13 QRT based attributes is also formed. Overall C/DC of QRT based attributes is an average score of four store type C/DC scores of QRT based attributes. Overall C/DC of non-QRT based attributes is an average score of four store type C/DC scores about non-QRT based attributes. The four store types C/DC scores for each attribute and overall averages are shown in Table 13.

Within the specialty chain store, respondents rated relative high C/DC on new/fresh merchandise and type of clothing I like attributes, with individual mean values

all over 4.86 (see Table 13). The mean value of C/DC of rest space, home delivery, and restroom were 4.11 and below.

Table 13

Scale Means and Standard Deviations for C/DC of QRT/non-QRTBased Attributes by Store Type

Construct	SP M (SD)	DEPT M (SD)	DIS M (SD)	SM M (SD)	Average **
C/DC of QRT based attributes* **	4.56 (0.90)	4.25 (0.80)	4.32 (0.73)	3.71(0.97)	4.21 (0.85)
price for the value: QRT1	4.42 (0.99)	3.36 (1.14)	4.25 (1.02)	4.56(1.07)	4.15 (1.06)
availability of advertised product: QRT2	4.30 (1.40)	2.90 (1.45)	5.11 (1.15)	4.03 (1.44)	4.09 (1.36)
accuracy of advertised product: QRT3	4.28 (0.89)	3.52 (0.80)	4.69 (1.08)	4.22 (0.81)	4.18 (0.90)
new/fresh merchandise: QRT4	4.90 (1.28)	4.33 (1.10)	4.07 (0.99)	4.77 (1.36)	4.52 (1.18)
checkout time: QRT5	4.30 (1.14)	4.94 (1.15)	4.07 (1.28)	4.94 (1.26)	4.56 (1.21)
friendly personnel: QRT6	4.47 (1.28)	5.15 (1.36)	4.31(1.09)	5.11 (1.33)	4.76 (1.27)
garment fit: QRT7	4.45 (1.29)	3.08 (1.31)	4.05 (0.96)	4.85 (1.15)	4.11 (1.18)
home delivery: QRT8	4.10 (1.22)	2.00 (0.90)	4.55 (0.93)	3.50 (1.00)	3.54 (1.01)
type of clothing I like: QRT9	4.86 (1.36)	5.00 (1.25)	4.07 (1.19)	5.13 (1.36)	4.77 (1.29)
availability of clothing I like to buy: QRT10	4.46 (1.62)	3.89 (1.36)	3.76 (1.26)	4.89 (1.43)	4.25 (1.42)
quality merchandise: QRT11	4.68 (1.30)	3.00 (1.07)	4.05 (1.11)	4.96 (1.22)	4.17 (1.18)
return policy: QRT12	4.69 (1.15)	4.07 (0.94)	4.41 (1.07)	4.07 (1.81)	4.31 (1.24)
store layout: QRT13	4.65 (1.12)	4.16 (1.20)	4.22 (1.03)	4.46 (1.17)	4.37 (1.13)
variety of merchandise selection: QRT14	4.65 (1.29)	3.20 (1.22)	4.35 (1.08)	4.68 (1.37)	4.22 (1.24)

Table 13

(Continued)

Construct	SP M (SD)*	DEPT M (SD)	DIS M (SD)	SM M (SD)	Average **
C/DC of non-QRT based attributes ****	4.35 (0.61)	4.35 (0.61)	4.34 (0.61)	4.35 (0.61)	4.35 (0.61)
after the sale service: Non QRT1	4.19 (0.69)	4.62 (1.10)	4.13 (0.88)	4.81 (1.40)	4.44 (1.02)
location of store: NonQRT2	4.37 (0.96)	4.51 (0.90)	4.63 (1.00)	4.65 (1.19)	4.54 (1.01)
parking place: NonQRT3	4.41 (1.24)	4.57 (1.13)	4.29 (1.23)	3.77 (1.23)	4.26 (1.21)
store hours:NonQRT4	4.24 (0.84)	4.44 (0.98)	4.74 (1.17)	4.09 (1.25)	4.38 (1.06)
display:NonQRT5	4.55 (1.02)	4.36 (1.04)	3.80 (0.95)	4.82 (1.11)	4.38 (1.03)
dressing room:NonQRT6	4.50 (1.05)	4.13 (1.06)	3.64 (0.98)	4.09 (1.07)	4.09 (1.04)
knowledgeable salesperson:NonQRT7	4.55 (1.20)	4.37 (1.36)	3.63 (1.25)	5.06 (1.22)	4.40 (1.26)
layaway: NonQRT8	4.44 (1.05)	4.30 (0.78)	4.18 (0.73)	4.50 (1.21)	4.36 (0.94)
outside appearance: NonQRT9	4.70 (1.07)	4.51 (1.08)	3.95 (0.73)	5.01 (1.12)	4.54 (1.00)
store atmosphere: NonQRT10	4.73 (1.11)	4.46 (1.18)	3.97 (0.90)	4.95 (1.19)	4.53 (1.10)
rest space: NonQRT11	4.11 (1.53)	3.87 (1.37)	3.38 (1.43)	3.53 (1.20)	3.72 (1.38)
restroom: NonQRT12	3.71 (1.38)	4.33 (1.01)	3.56 (1.45)	3.00 (1.11)	3.65 (1.24)
sales promotion program: NonQRT13	4.41 (1.19)	4.50 (1.17)	4.41 (1.21)	4.35 (1.28)	4.42 (1.19)

Note. SP = Specialty chain store, DEPT = Department store, DIS = Discount store, SM = Small independent store, *Standard deviation listed in parenthesis,

**Average of four store type C/DC,

$$\text{C/DC of QRT based attributes}^{***} = \frac{\sum_{i=1}^{n} QRT_i}{n} \qquad (i = 1, 2, 3, ...14)$$

$$\text{C/DC of non-QRT based attributes }^{****} = \frac{\sum_{i=1}^{n} NonQRT_i}{n} \qquad (i = 1, 2, 3, ...13).$$

In the department store, respondents rated relative high C/DC of friendly personnel and type of clothing I like, with mean values all over five (somewhat better than expected) (see Table 13). The mean values of C/DC of home delivery and availability of advertised product were 3 and below (somewhat worse than expected).

In the discount store, respondents rated relative high C/DC of the availability of advertised product attribute, with a mean value over five (somewhat better than expected) (see Table 13). The mean values of C/DC of rest space and restroom were 3.56 and below.

In the small independent store, respondents rated relative high C/DC of the friendly personnel and type of clothing I like attributes, with mean values all over five (somewhat better than expected) (see Table 13). The mean value of C/DC of home delivery and restroom were 3.5 and below.

For store type C/DC, respondents rated relatively higher C/DC of QRT based attributes with the specialty chain ($\underline{m}$ = 4.56) and discount stores ($\underline{m}$ = 4.32) than department ($\underline{m}$ = 4.25) and small individual stores ($\underline{m}$ = 3.71). Respondents rated similar C/DC of non-QRT based attributes by store type. C/DC of non-QRT based attributes with the discount store was 4.34, and C/DC of non-QRT based attributes with other store types were 4.35.

CS/D Mean Ratings

CS/D with a retail store was measured on a 6-item Likert Scale. Each item had a 7-point response scale from strongly disagree (1) to strongly agree (7). Store type CS/D is an average score of six items for each store type, and overall CS/D is an average of four CS/D scores from each store type.

Table 14

Scale Means and Standard Deviations for CS/D of QRT/non-QRT Based Attributes by Store Type

Construct	SP M (SD)*	DEPT M (SD)	DIS M (SD)	SM M (SD)	Average **
CS/D* **	5.36 (1.21)	4.93 (1.28)	5.01 (1.10)	5.13 (1.14)	5.11 (1.18)
I was satisfied with my decision to shop this store: CS/D1	5.46 (1.25)	5.05 (1.44)	5.00 (1.30)	5.46 (1.20)	5.24 (1.30)
I feel good about this shopping experience: CS/D2	5.28 (1.38)	4.91 (1.58)	5.04 (1.19)	5.25 (1.47)	5.12 (1.41)
My choice to shop in this store was a wise one: CS/D3	5.23 (1.32)	5.03 (1.46)	5.02 (1.22)	5.35 (1.38)	5.16 (1.35)
I was happy about this shopping experience: CS/D4	5.33 (1.37)	4.91 (1.51)	4.84 (1.36)	5.22 (1.53)	5.08 (1.44)
If I had it to shop again, I would feel the same about this store: CS/D5	5.42 (1.27)	5.15 (1.38)	5.13 (1.09)	5.45 (1.27)	5.29 (1.24)
I think that I did the right thing when I decided to shop in this store: CS/D6	5.44 (1.28)	4.93 (1.48)	5.07 (1.06)	5.32 (1.37)	5.19 (1.30)

Note. SP = Specialty chain store, DEPT = Department store, DIS = Discount store, SM = Small independent store, *Standard deviation listed in parenthesis,

**Average of four store type CS/D,

$$CS/D^{***} = \frac{\sum_{i=1}^{n} CS/D_i}{n}, \quad (i = 1, 2, ..., 6).$$

For the specialty chain store, the mean of CS/D for the "satisfied with my decision" item was relatively high (m = 5.46) (see Table 14). For the department store, the mean of CS/D for the return to the store item was relatively high (m = 5.15). For the discount store, the mean of CS/D for the return to the store item was relatively high (m = 5.13). For the small independent store, the mean of CS/D for the satisfied decision item was relatively high (m = 5.46).

For store type CS/D, respondents rated relatively highest CS (m = 5.36) with the specialty chain store (see Table 14). This (m = 5.36) is slightly higher than overall CS/D with all four store types (m = 5.14).

Shopping Orientation Mean Ratings

Shopping orientation includes fashion, economic, and time orientations. Three specific shopping orientations were measured from Likert-type statements on a 7-point scale ranging from strongly disagree (1) to strongly agree (7). Fashion orientation included eight items, and time and economic/price orientations both included three items. Each type of shopping orientation was measured by an average score for each item within each construct.

Table 15 shows mean values for 13 components of shopping orientation. Respondents tended to be somewhat fashion oriented (m = 5.41), somewhat economic oriented (m = 5.08), and somewhat less time oriented (m = 4.09).

Table 15

Scale Means and Standard Deviations for Shopping Orientations

Construct	Means	SD
Fashion Orientation*	5.41	1.01
FO1: I feel very confident in my ability to shop for clothing.	5.78	1.28
FO2: Dressing well is an important part of my life.	5.75	1.27
FO3: I think I am a good clothing shopper.	5.74	1.20
FO4: When I find what I like I usually buy it without hesitation.	4.81	1.67
FO5: I have the ability to choose the right clothes for myself.	5.67	1.23
FO6: A person's reputation is affected by how she dresses.	5.11	1.36
FO7: I like to be considered well-groomed.	5.95	1.14
FO8: I try to keep my wardrobe up-to-date with fashion trends.	4.50	1.62
Economic Orientation**	5.08	1.26
EO1: I usually read the advertisements for announcements of sales.	4.53	1.83
EO2: I pay a lot more attention to clothing prices now than I ever did before.	5.19	1.61
EO3: A person can save a lot of money by shopping for bargains.	5.64	1.26

Table 15

(Continued)

Construct	Means	SD
Time Orientation***	4.09	1.27
T1: I don't like to spend too much time planning my clothing shopping.	4.68	1.83
T2: I shop where it saves time.	4.23	1.61
T3: I usually buy at the most convenient store.	3.36	1.31

Note.

Fashion orientation* = $\frac{\sum_{i=1}^{n} FO_i}{n}$, (i = 1, 2, ..., 8)

Economic orientation** = $\frac{\sum_{i=1}^{n} EO_i}{n}$, (i = 1, 2, 3)

Time orientation*** = $\frac{\sum_{i=1}^{n} T_i}{n}$, (i = 1, 2, 3)

Test of Hypotheses

To examine the moderating effects of shopping orientations and store type on C/DC (i.e., QRT based, non-QRT based attributes) and CS/D with apparel retail stores, multiple regression analyses were done for testing Hypotheses 1 and 2. Shopping orientations and store type were tested as moderators in Hypotheses testing. Moderators can have direct effects on a dependent variable and interaction effects with an independent variable on a dependent variable (Baron & Kenny, 1986). Both effects of

moderators were examined in the data analyses. Before doing the multiple regression analyses, collinearity diagnostics were done.

To examine further interaction effects of three specific shopping orientations for Hypothesis 2-a, 2-b, and 2-c, ANOVAs were employed. To test Hypothesis 3, ANCOVA was used to examine the moderating effects of store type on CS/D. C/DC of non-QRT based attributes was included as a covariate variable. For all analyses, the statistical significance level was set at 0.05.

H1. CS/D with a retail store will be positively influenced by C/DC of store attributes (i.e., QRT based, non-QRT based).

Multicollinearity Diagnostics

To examine collinearity among independent variables, the correlations matrix, VIF, and eigenvalues were examined. First, correlation (r) between C/DC of QRT based attributes and C/DC of non-QRT based attributes was 0.827 (see Table 16). This is close to 1, indicating a high correlation between the two variables. This high correlation value indicated the existence of collinearity, so additional analyses (i.e., VIF, eigenvalues) were employed to see the extent of severity in collinearity. VIF scores of both C/DC of QRT and non-QRT based attributes (3.14) were under 10, which is a standard score for comparison (see Table 1 in Appendix B). Multicollinearity was also examined by the ratio of the largest to the smallest eigenvalue, which is called the condition number of the correlation matrix (see Table 1 in Appendix B). The condition number of eigenvalue was 10.45. This is much lower than the standard for comparison score (i.e., 1,000). Therefore, the collinearity problem is not serious in this regression model.

Table 16

Correlations among Variables

	Fashion	Economic	Time	QRT	INT1	INT2	INT3	NONQRT	CS
Fashion	1.0								
Economic	0.286	1.0							
Time	-0.259	0.056	1.0						
QRT	0.141	0.094	-0.068	1.0					
INT1	0.807	0.258	-0.226	0.691	1.0				
INT2	0.301	0.867	0.010	0.571	0.552	1.0			
INT3	-0.181	0.085	0.897	0.354	0.075	0.243	1.0		
NONQRT	0.069	0.087	-0.009	0.836	0.551	0.482	0.359	1.0	
CS	0.151	0.219	0.011	0.549	0.421	0.459	0.230	0.358	1.0

Note. Fashion = Fashion Orientation, Economic = Economic Orientation, Time = Time Orientation,
QRT = Overall C/DC about QRT based attributes,
INT1 = Interaction between fashion orientation and C/DC about QRT based attributes,
INT2 = Interaction between economic orientation and C/DC about QRT based attributes,
INT3 = Interaction between time orientation and C/DC about QRT based attributes,
NONQRT = Overall C/DC about non QRT based attributes,
CS/D = Overall consumer satisfaction/Dissatisfaction.

Overall Test

Multiple regression analysis was used to test the model that explained CS/D with apparel retailers among female apparel consumers. The dependent variable was overall CS/D with apparel retailers. Overall CS/D was an average score of all four store type CS/D. The independent variables were overall C/DC of both QRT based and non-QRT based attributes. Overall C/DC of QRT based attributes was an average score of all four store type C/DC of QRT based attributes. C/DC of non-QRT based attributes was an average score of all four store type C/DC of non-QRT based attributes .

The regression model was significant in predicting overall CS/D (F [2, 196] = 51.74, p = .001) (see Table 17). Therefore, the null hypothesis was rejected, and the F value was sufficient to support the hypothesis that both C/DC of QRT based and C/DC of non-QRT based attributes significantly contributed to the prediction of CS/D. R square, the coefficient of multiple determination for CS/D, equals 0.35 and indicates 35% of the variance in CS/D is explained by C/DC of QRT based and C/DC of non-QRT based attributes .

Individual Test

A test of the relative contribution of each independent variable to CS/D yielded significant t values (α = .05) for C/DC of QRT based and C/DC of non-QRT based attributes (see Table 17). The standardized regression coefficients (β) of the regression results indicated the relative importance of predictor variables. β is interpreted as indicating the expected change in the dependent variable, expressed in standard scores, associated with a one standard deviation change in an independent variable, while controlling for the remaining variables constant (Pedhazur, 1982). Unlike the regression coefficient (b), β is scale-free and therefore can be compared across different variables. C/DC of QRT based attributes (β = 0.88) was considered two times more

Table 17

Results from Regression Analysis for Hypothesis 1

Analysis of Variance

Source	DF	SSquares	Mean Square	F Ratio
Model	2	36.65305	18.3518	51.74
Error	196	69.56435	0.3547	**Prob>F**
C Total	198	106.21739		0.0001
RSquare	RSquare Adj	Root Mean Square Error		Mean of Response
0.345476	0.338393	0.595752		5.143247

Parameter Estimates

Term	Standardized Estimate	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	0.000000	2.6252048	0.32117	8.17	0.0000
QRT	0.876393	1.03918	0.12164	8.54	0.0000
NonQRT	-0.406018	-0.485682	0.12306	-3.95	0.0001

important than C/DC of non-QRT based attributes ($\beta = 0.41$) in explaining CS/D. This finding supports the idea that QRT based attributes are a key focus to differentiate store service and strategy (Cory, 1988; Porter, 1980). This is an interesting result with managerial implications. Adoption of QRT based attributes has more potential for increasing CS/D than non-QRT based attributes .

Further, the test for the increment due to C/DC of non-QRT based attributes and the increment due to C/DC of non-QRT based attributes, respectively, was given by:

$$F = \frac{(R^2_{y.12\ldots k_1} - R^2_{y.12\ldots k_2}) / (k_1 - k_2)}{(1 - R^2_{y.12\ldots k_1}) / (N - k_1 - 1)}$$

where $R^2_{y.12\ldots k_1}$ = the squared multiple correlation coefficient for the regression of Y on k1 variables (the larger coefficient, referred to as the full model); $R^2_{y.12\ldots k_2}$ = the squared multiple correlation coefficient for the regression of Y on k2 variables, where the smaller set of variables selected from among those of k1 (referred to the restricted model); N= sample size (Pedhazur, 1982).

In this study, r^2cs/d•qrt = R^2cs/d•qrt = 0.293. C/DC of QRT based attributes by itself accounts for about 29.3% of CS/D. C/DC of non-QRT based attributes by itself accounts for about 9.67 % of CS/D. Together, the two variables account for about 33.8% of variance (R^2cs/d•qrt,nonqrt = 0.338).

Testing the increment due to C/DC of non-QRT based attributes is as follows:

$$F = \frac{(0.338 - 0.293) / (2 - 1)}{(1 - 0.338) / (198 - 2 - 1)} = \frac{0.045}{0.0034} = 13.24$$

with df (1, 195), $p < .05$. The increment in variance due to C/DC of non QRT based attributes is statistically significant. Although C/DC of non-QRT based attributes by itself accounted for 9.67% of variance, its increment to the accounting of variance over C/DC about non-QRT based attributes is about 4.5% (0.045). This is because C/DC of QRT based attributes and C/DC about non-QRT based attributes are correlated (Pedhazur, 1982).

Testing the increment due to C/DC of QRT based attributes is as follows:

$$F = \frac{(0.338 - 0.09) / (2 - 1)}{(1 - 0.338) / (198 - 2 - 1)} = \frac{0.248}{0.0034} = 72.94$$

with df (1, 195), $p < .01$. The increment in variance due to C/DC of QRT based attributes is about 24.8% (0.248) and statistically significant. C/DC of QRT based attributes by itself accounted for 29.3% of variance of CS/D. The reduction from 29.3% to 24.8% indicates that C/DC of QRT based attributes and C/DC of non-QRT based attributes are correlated.

By including C/DC of non-QRT based attributes in the regression model for explaining variance in CS/D, only 4.5% of R square was improved. A small increase in R square by C/DC of non-QRT based attributes means that C/DC of QRT based attributes has a more significant role in explaining variance in CS/D than C/DC of non-QRT based attributes.

The regression coefficient of C/DC of QRT based attributes was positive (+1.04), indicating that a higher C/DC of QRT based attributes led to higher consumer satisfaction with apparel stores. This is consistent with the hypothesized relationship. CS/D was expected to be influenced by C/DC of QRT based attributes. The coefficients of C/DC of non-QRT based attributes was negative (-0.49). This direction is not consistent with the hypothesized relationship. This inconsistent direction is thought to be caused by collinearity between C/DC of QRT based attributes and C/DC of non-QRT based attributes ($\underline{r} = 0.827$, see Table 16). Collinearity reduces the efficiency of estimates for the regression parameters and changes the direction of the regression parameters (Pedhazur, 1982). To prove that the direction in consistent with the hypothesis was caused by collinearity, a simple regression analysis was done with C/DC of non-QRT based attributes as an independent variable and CS/D as a dependent variable. In the regression model, the regression coefficient of C/DC of non-QRT based attributes was positive (+ 0.38) (see Table 2 in Appendix B). This result supported the idea that the negative sign of the regression coefficient of C/DC of non-QRT based attributes was

caused by collinearity in the regression model. Therefore, C/DC of non-QRT based attributes is positively related to CS/D.

As indicated, the hypothesized effect of both C/DC of QRT based and C/DC of non-QRT based attributes on CS/D was strongly supported in multiple regression. C/DC of QRT based attributes makes a larger contribution to CS/D.

The estimate regression equation for the two variables is:

CS/D= 2.63+ 1.04 QRT - 0.49 NONQRT

where QRT stands for C/DC of QRT based attributes and NONQRT stands for C/DC of non-QRT based attributes.

These results of the study were consistent with previous studies (Oliver, 1980; Spreng & Olshavsky, 1992) which showed that C/DC is a significant predictor on CS/D. The disconfirmation of expectation model is supported among female apparel consumers when they experience and evaluate the apparel retail stores.

H2. CS/D with a retail store will be influenced by shopping orientation (i.e., fashion orientation, economic orientation, time orientation) interacting with C/DC of QRT based attributes, controlling for C/DC of non-QRT attributes.

Multicollinearity Diagnostics

To examine collinearity among independent variables used in the regression model for Hypothesis 2, the correlations matrix, VIF, and eigenvalues were examined. First, correlation (r) between C/DC of QRT based attributes and C/DC of non-QRT based attributes was 0.83 (see Table 16). This is close to 1, indicating the high correlation between the two variables. Correlations between fashion orientation and INT1 (i.e.,

interaction between fashion orientation and C/DC of QRT based attributes), economic orientation and INT2 (i.e., interaction between economic orientation and C/DC of QRT based attributes), and time orientation and INT 3 (i.e., interaction between time orientation and C/DC of QRT based attributes) were relatively high, all over 0.80 ($\underline{r}$ = 0.81, 0.86, 0.90). Also INT1 and C/DC of QRT based attributes were correlated ($\underline{r}$ = 0.69).

High correlation values indicated the existence of collinearity; therefore, additional analyses (i.e., VIF, eigenvalues) were employed to see the extent of severity. VIF scores of all unstandardized regressors except C/DC of QRT based attributes were over 10, standard for comparison (see Table 4 in Appendix B). Multicollinearity was also examined by the ratio of the largest to the smallest eigenvalue, which is called the condition number of the correlation matrix. The condition number of eigenvalue was 1201.07 (see Table 4 in Appendix B). This is higher than standard for comparison, 1,000. Therefore, collinearity problem exists in this regression model for Hypothesis 2.

Based on the results of multiple regressions with the standardized regressors and unstandardized regressors, the values of VIF were also compared. Values of VIF were larger when unstandardized regressors were used (see Table 4 in Appendix B). These results suggest that the estimate of the regression coefficients with unstandardized regressors are indeterminate. Therefore, the standardized estimate of the regression coefficients (β) were used to interpret the regression model.

Overall Test

A multiple regression analysis was performed by using the three specific shopping orientations (i.e., fashion, economic, time) as moderating variables on QRT based C/DC and CS/D. The dependent variable, overall CS/D with apparel retail stores, was

operationalized by the average score of store type CS/D scores with each of the four store types.

The regression model was found to be significant (F [8, 183] = 14.949, p = .0001) (see Table 18). The p value was sufficient to support the regression model. When taken together, the four independent variables, three interaction variables and one control variable, significantly helped to explain the CS/D of the respondents. The four independent variables were C/DC of QRT based attributes (QRT), fashion orientation, time orientation, and economic orientation. The three interaction variables were interaction 1 between C/DC of QRT based attributes and fashion orientation (INT1 or QRT*Fashion), interaction 2 between C/DC of QRT based attributes and economic orientation (INT2 or QRT*Economic), and interaction 3 between C/DC of QRT based attributes and time orientation (INT3 or QRT*Time). The one control variable was C/DC of non-QRT based attributes (NONQRT).

To extract possible confounds, C/DC of non-QRT based attributes was identified as a control variable. The C/DC of non-QRT based attributes variable was chosen because its impacts on CS/D have been shown in previous studies (e.g., Oliver, 1980; Oliver & Linda, 1981). Literature showed that non-QRT attributes were related to CS/D (Mazursky & Jacoby, 1986; Shim & Kotsiopulos, 1993; Williams, 1990). Mazursky and Jacoby (1986) found that location convenience and salesclerk service were related to store image. Williams (1990) found that knowledgeable personnel, clean fitting rooms, and location of the store were preferred services offered by a department store. Seventy-five percent of women agreed that they were satisfied with these services.

Also the empirical test in this study of H1 supports the concept that C/DC of non-QRT attributes is related to CS/D. Consumers who had higher C/DC of non-QRT based attributes had higher satisfaction with the apparel retailers. For these reasons, the non-

Table 18

Results from Regression Analysis for Hypothesis 2

Analysis of Variance

Source	DF	SSquares	Mean Square	F Ratio
Model	8	39.66533	4.95817	14.9189
Error	183	60.81853	0.33234	**Prob>F**
C Total	191	100.48386		0.0000

RSquare	RSquare Adj	Root Mean Square Error	Mean of Response
0.394743	0.368284	0.576491	5.173644

Parameter Estimates

Term	Standardized Estimate	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	0.000000	0.4759765	2.64882	0.18	0.8576
NonQRT	-0.260083	-0.303445	0.13398	-2.26	0.0247
QRT	1.005436	1.1648776	0.56942	2.05	0.0422
Fashion	1.209449	0.8874108	0.38441	2.31	0.0221
Eco	-1.284391	-0.730782	0.34517	-2.12	0.0356
Time	0.438896	0.2501429	0.22043	1.13	0.2579
Fashion *QRT	-1.605637	-0.189857	0.08413	-2.26	0.0252
Eco*QRT	1.738258	0.1825807	0.07667	2.38	0.0183
Time*QRT	-0.399015	-0.046578	0.04809	-0.97	0.3340

QRT basedC/DC variable was included in the regression model for Hypothesis 2 as a control variable.

The R square, the coefficient of multiple determination for the CS/D, equals 0.3952 and indicates that 39.52 % of the variance in the CS/D is explained by the combination of C/DC of QRT based attributes, C/DC of non-QRT based attributes, economic orientation, fashion orientation, QRT*Fashion, and QRT*Economic.

The estimate regression equation is:

CS/D = 0.50 + 1.16 QRT - 0.30NONQRT + 0.89 Fashion - 0.73 Economic + 0.250 Time - 0.19 INT1 (QRT*Fashion) + 0.18 INT2 (QRT*Economic) - 0.05 INT3 (QRT*Time)

Individual Test

Since the global regression model was significant, individual tests were done to examine the relative contribution of each independent variable. A test of the relative contribution of each independent variable to CS/D yielded significant t values ($\alpha = .05$) for C/DC of QRT based attributes, C/DC of non-QRT based attributes, fashion orientation, and economic orientation (see Table 18). The standardized regression coefficients (β) of variables indicate the relative importance of the predictor variables.

Among four independent variables and one control variable, the standardized regression coefficient for economic orientation was 1.28, indicating that economic orientation had the strongest predictor on CS/D at p value was .04. The standardized regression coefficients for C/DC of QRT and non-QRT based attributes, and fashion orientation were all substantial (1.01, -0.26, 1.21, respectively) and significant at $p < .05$. Time orientation was not significant in predicting CS/D ($p = .26$).

Interaction Test

From Table 18, the largest standardized estimate value was INT2 (QRT*Economic) (β = 1.74). This result indicated that INT2 (QRT*Economic) made the largest contribution in explaining CS/D, followed by the INT1 (QRT*Fashion) (β = -1.61) and economic orientation (β = 1.28).

The overall regression model of Hypothesis 2 did not show the specific directions of interaction variables. In the following individual ANOVA tests, specific directions among interaction variables were examined. A median split method is used when the researcher is interested in comparisons between low and high levels of each construct (i.e., fashion, economic, time, C/DC of QRT based attributes). In this study, the researcher is interested in examining the difference between low and high levels of C/DC of QRT based attributes and its interacting effects with the specific orientation (e.g., high fashion, low fashion).

H2-a. CS/D with a retail store will be influenced by fashion orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher fashion orientation will have higher CS/D than those who have a lower fashion orientation when C/DC of QRT based attributes is high.

Table 18 shows a significant interaction between fashion orientation and C/DC of QRT based attributes in this regression model for predicting CS/D (t = - 2.26, p = .03). The percentage of variance in total CS/D associated with this interaction (QRT*Fashion) is 19.5%, indicating the degree of contribution of the interaction on CS/D.

To examine the specific interaction direction, ANOVA was employed with the median split method. The researcher is interested in examining the difference between low and high levels of C/DC of QRT based attributes and its interacting effects with

fashion orientation (e.g., high fashion, low fashion). Two constructs, C/DC of QRT based attributes and fashion orientation, were transformed from ordinal data type (i.e., 1-7 scale) to nominal data type with two levels for each construct (i.e., high, low). There can be four matrix combinations of fashion orientation levels and C/DC levels about QRT based attributes. The medians of fashion orientation (5.5) and C/DC of QRT based attributes (4.34) were considered appropriate for identifying low and high conditions (Dillon et al., 1994).

Therefore, the levels of fashion orientation and C/DC of QRT based attributes were defined and coded as follows:

If fashion orientation $<$ 5.5 then fashion orientation = low
If fashion orientation $\geq$ 5.5 then fashion orientation = high

If C/DC of QRT based attributes $<$ 4.34 then C/DC of QRT based attributes = low
If C/DC of QRT based attributes $\geq$ 4.34 then C/DC of QRT based attributes =high
In the analysis, two levels of fashion orientation and C/DC of QRT based attributes were examined to assess their interaction effects on CS/D.

Table 19 shows the results of the individual ANOVA test with fashion orientation. Overall ANOVA model was found to be significant (F [3, 195] = 18.25, p = .0000). The interaction between fashion orientation and C/DC of QRT based attributes was also found to be significant (F [3=1, 195] = 10.89, p = .0001). Table 20 shows LSMs for the matrix combination of two levels of each construct.

Table 19

Results from ANOVA for Hypothesis 2-a

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	3	23.28703	7.76234	18.2521
Error	195	82.93036	0.42528	**Prob>F**
C Total	198	106.21739		0.0000
RSquare	RSquare Adj	Root Mean Square Error	Mean of Response	
0.219239	0.207228	0.652138	5.143247	
Source	**DF**	**Sum of Squares**	**F Ratio**	**Prob>F**
Fas	1	3.186874	7.4935	0.0068
QRT	1	12.950288	30.4509	0.0000
Fas*QRT	1	4.629836	10.8865	0.0012

Note. QRT = C/DC of QRT based attributes, Fas = Fashion orientation.

Table 20

LSMs from ANOVA for Hypothesis 2-a

Level (Fas, QRT)*	N	LSMs	Std Error
high,high	58	5.656696485	0.0856299071
high,low	43	4.836050461	0.0904352613
low,high	52	5.094854629	0.0994501040
low,low	47	4.888357868	0.0961524941

Note. QRT = C/DC of QRT based attributes, Fas = Fashion orientation.

Figure 4 shows the interaction effects of the level of fashion orientation with C/DC of QRT based attributes on CS/D. LSMs for four combination levels were plotted to examine the specific interaction direction. CS/D increased with increasing fashion orientation as the C/DC of QRT attributes changes from low to high. In the low level of C/DC of QRT based attributes, subjects with a high fashion orientation perceived a little higher CS/D than did subjects having a low fashion orientation. In the high level of C/DC of QRT attributes, subjects having a high fashion orientation perceived a lot higher CS/D than subjects having a low fashion orientation. Subjects having a high fashion orientation were more influenced by C/DC of QRT based attributes than subjects having less fashion orientation. These results of the study supported Hypothesis 2-a.

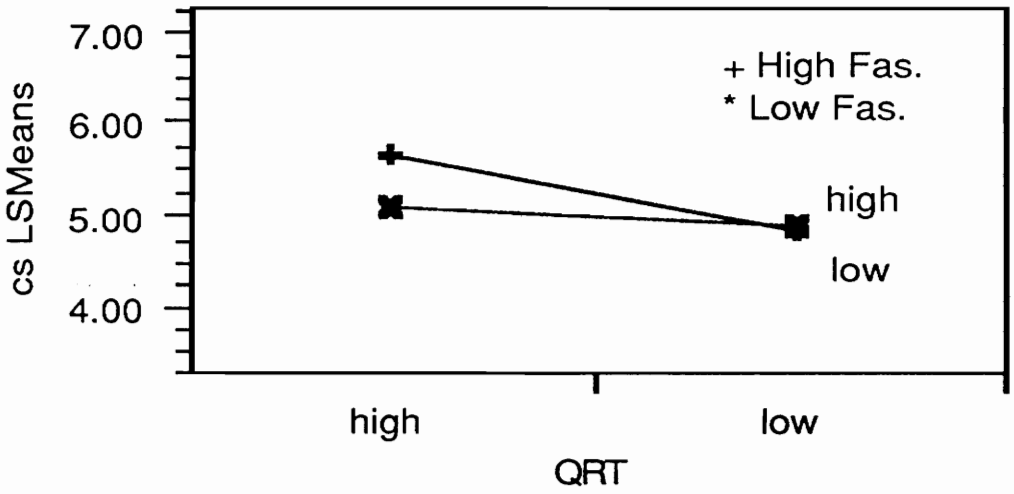

Figure 4. Interaction plot by fashion orientation and C/DC for CS/D.
Note. CS = CS/D.

CS/D is influenced by fashion orientation interacting with C/DC of QRT based attributes. Since consumers who have higher fashion orientation are more innovative in seeking new fashions and unique products than those who have lower fashion orientation (Gutman & Mills, 1982; Lumpkin, 1985), QRT based attributes (e.g., faster turnarounds

of goods, variety of assortment) are more attractive to these consumers. Hypothesis 2-a was supported.

H2-b. CS/D with a retail store will be influenced by economic orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher economic orientation will have higher CS/D than those who have a lower economic orientation when C/DC of QRT based attributes is high.

Table 18 shows a significant interaction between economic orientation and C/DC of QRT based attributes in a regression model for predicting CS/D (t = 2.38, p = .02). Admittedly, the percentage of variance in total CS/D associated with this interaction (QRT*Economic) is 18.4%, indicating quite a contribution from the interaction on CS/D.

To examine the interaction direction, ANOVA was also employed with the median split method. Two constructs, C/DC of QRT based attributes and economic orientation, were transformed from ordinal data type (i.e., 1-7 scale) to nominal data type with two levels (i.e., high, low). There can be four matrix combinations of economic orientation levels and C/DC levels about QRT based attributes. The medians of economic orientation (5.33) and C/DC of QRT based attributes (4.34) were considered appropriate for identifying low and high conditions.

Therefore, the levels of economic orientation and C/DC of QRT based attributes were defined and coded as follows:

If economic orientation < 5.33 then economic orientation =low

If economic orientation ≥ 5.33 then economic orientation =high

If C/DC of QRT based attributes < 4.34 then C/DC of QRT based attributes = low

If C/DC of QRT based attributes ≥ 4.34 then C/DC of QRT based attributes =high

In the analysis, two levels of economic orientation and C/DC of QRT based attributes were examined to assess important interaction effects among independent variables on CS/D.

Table 21 shows the results of the individual ANOVA test with economic orientation. Overall ANOVA model was found to be significant (F [3, 195] = 18.65, p = .0000). The interaction between economic orientation and C/DC of QRT based attributes was also found to be significant (F [1, 195] = 16.02, p = .0001). Table 22 shows LSMs for matrix combination of two levels of each construct.

Table 21

Results from ANOVA for Hypothesis 2-b

Source	DF	SS	MS	F Ratio
Model	3	23.67605	7.89202	18.6445
Error	195	82.54135	0.42329	**Prob>F**
C Total	198	106.21739		0.0000
RSquare	RSquare Adj	Root MSE		Mean of Response
0.222902	0.210946	0.650607		5.143247
Source	**DF**	**SS**	**F Ratio**	**Prob>F**
QRT	1	13.259058	31.3239	0.0000
Eco*QRT	1	6.780223	16.0180	0.0001
Eco	1	1.433020	3.3854	0.0673

Note. QRT = C/DC of QRT based attributes, Eco = Economic orientation.

Table 22

LSMs from ANOVA for Hypothesis 2-b

Level (QRT, Eco)*	N	LSMs	Std Error
high,high	59	5.643810588	0.0847017651
high,low	42	4.749611815	0.0980826358
low,high	44	5.099579059	0.1003907783
low,low	55	4.951040112	0.0885363445

Note. QRT = C/DC of QRT based attributes, Eco = Economic orientation.

Figure 5 shows that the situation where the relationship between CS/D and C/DC of QRT based attributes are interacting with the level of economic orientation. CS/D increases with increasing economic orientation as the C/DC of QRT based attributes change from low to high. In the low level of C/DC of QRT attributes, subjects with low economic orientation perceived in little higher CS/D than did subjects having high economic orientation. However, in the high level of C/DC of QRT attributes, subjects having low economic orientation perceived lower CS/D than subjects having high economic orientation. Subjects having high economic orientation seem to be more influenced by C/DC of QRT based attributes than subjects having low economic orientation. These results of the study were consistent with the previous study (Shim & Kotsiopulos, 1993) which showed that DC about store attributes is a significant factor on CS/D. CS/D with a retail store was expected to be influenced by economic orientation interacting with C/DC of QRT based attributes. QRT attributes, including better price for the value, is an important attribute for higher economic orientation consumers. Hypothesis 2-b was supported.

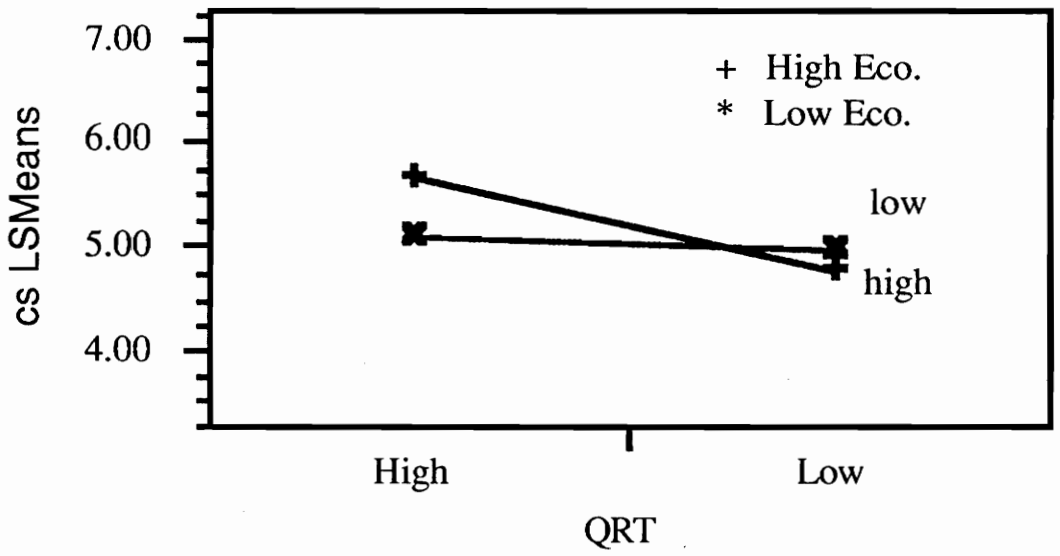

Figure 5. Interaction plot by economic orientation and C/DC for CS/D.
Note. CS = CS/D.

H2-c. CS/D with a retail store will be influenced by time orientation interacting with C/DC of QRT based attributes. Specifically, consumers who have a higher time orientation will have higher CS/D than those who have a lower time orientation with high C/DC of QRT based attributes.

Interaction between time orientation and C/DC of QRT based attributes was not found to be significant ($t = 0.97$, $p = .33$). QRT based attributes (e.g., faster checkout time, easy store layout) are reported to be important for consumers to save time during shopping (e.g., East et al., 1994). If a stockout occurs, consumers are not likely to return to the store. Therefore, CS/D was expected to be influenced by time orientation interacting with C/DC of QRT based attributes. From the overall regression test, both the individual effect of time orientation and the interaction between QRT based C/DC and time orientation were not related enough to explain CS/D with apparel retail stores. No

further individual interaction direction analysis was done. Hypothesis 2-c was not supported.

H3. CS/D with a retail store will be influenced by store type interacting with C/DC of QRT based attributes, controlling for C/DC of non-QRT based attributes. In high C/DC of QRT based attributes, specifically, when consumers shop in specialty chain and small independent stores, they will have lower CS/D than when they shop in department and discount stores.

To test Hypothesis 3, analysis of covariate (ANCOVA) was used. In this data analysis, only respondents (n=50) who answered questions about all four store types were included. The dependent variable was CS/D, and independent variables were C/DC of QRT based attributes and store type. Both C/DC and CS/D were measured as four scores, one for each store type. Store type included specialty chain, department, discount, and small independent stores. C/DC of non-QRT based attributes was also included as a covariate variable in ANCOVA. Overall, the ANCOVA model was found to be significant (F [57, 142] = 8.88, p = .00). Interaction between C/DC of QRT based attributes and store type was a significant factor in predicting CS/D from ANCOVA analysis (F [3, 142] = 15.57, p = .00) (see Table 23).

The construct of C/DC of QRT based attributes was transformed from ordinal data type (i.e., 1-7 scale) to nominal data type with two levels (i.e., high, low). There can be eight matrix combinations of store type and C/DC levels of QRT based attributes. The median of C/DC of QRT based attributes (4.34) was considered appropriate for identifying low and high conditions.

Therefore, C/DC of QRT based attributes was defined and coded as follows:

Table 23

Results from ANOVA for Hypothesis 3

Source	DF	SS	MS	F Ratio
Model	57	364.0182	6.3863	8.8773
Error	142	102.1541	0.33234	**Prob>F**
C Total	199	466.17234		0.0000
RSquare	RSquare Adj	Root MSE	Mean of Response	
0.692904	0.692904	0.848172		4.506763
Source	**DF**	**SS**	**F Ratio**	**Prob>F**
NonQRT	1	0.01643	0.0228	0.8801
ST	3	27.63312	12.8039	0.0000
QRT	1	107.27338	149.1161	0.0000
ST*QRT	3	33.61048	15.5735	0.0000
SUB	49	53.08393	1.5059	0.0333

Note. QRT = C/DC of QRT based attributes, Non QRT = C/DC of Non QRT based attributes, ST = store type, SUB = Subjects.

If C/DC of QRT based attributes < 4.34 then C/DC of QRT based attributes = low

If C/DC of QRT based attributes ≥ 4.34 then C/DC of QRT based attributes =high

In the analysis, C/DC of QRT based attributes was examined to assess important interaction effects among independent variables on CS/D. Figure 6 shows the interaction direction between store type and C/DC of QRT based attributes on CS/D. Table 24 shows LSMs for the eight matrix combinations of the two levels of C/DC and four different store types.

CS/D with department and discount stores was increased more as the C/DC of QRT based attributes changed from low to high than CS/D with specialty chain and small independent stores. The difference in LSMs between the low and high level was higher

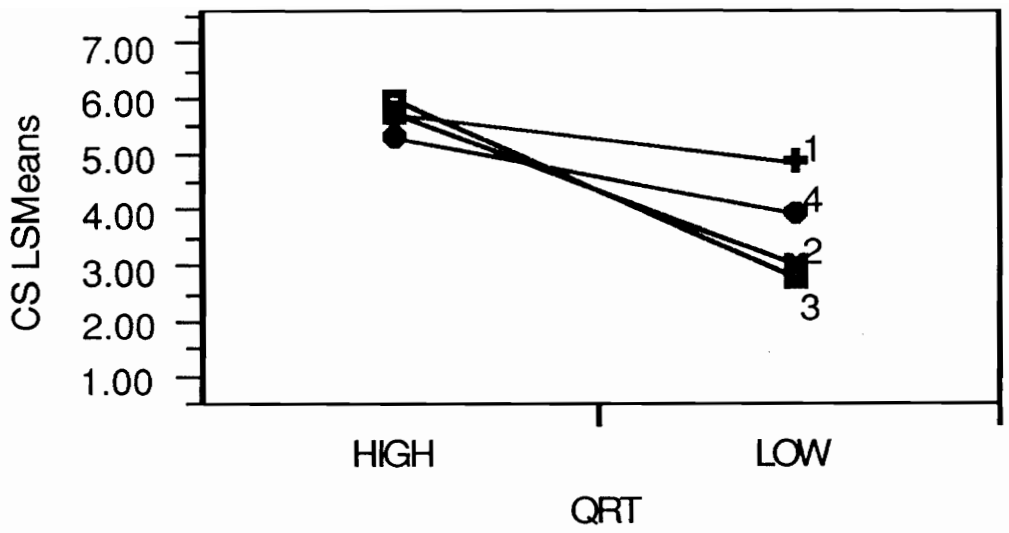

Figure 6. Interaction plot by store type and C/DC of QRT based attributes for CS/D

Note. 1= Specialty chain store, 2 = Department store, 3 = Discount store, 4 = Small independent store, CS = CS/D.

Table 24

LSMs from ANOVA for Hypothesis 3

Level (ST, QRT)*	LSMs	Std Error
1,HIGH	5.672075103	0.1888940850
1,LOW	4.855600105	0.1804607308
2,HIGH	5.665084645	0.1998336030
2,LOW	3.011545040	0.1740448732
3,HIGH	5.933115565	0.2103041771
3,LOW	2.795723850	0.1714145434
4,HIGH	5.256470967	0.1899797486
4,LOW	3.897410615	0.1831474884

Note. QRT = C/DC of QRT based attributes, ST = store type.

for the department store ($\underline{m}$ = 2.64) and in the discount store ($\underline{m}$ = 3.14) than for the specialty chain store ($\underline{m}$ = 0.82) and small independent store ($\underline{m}$ = 1.36) (see Table 24). In the low level of C/DC of QRT based attributes, subjects perceived a little higher CS/D with specialty chain and small independent stores than did subjects with department and discount stores. In the high level of C/DC of QRT based attributes, subjects perceived higher CS/D with specialty chain and discount stores than did subjects with department and small independent stores. These results of the study were consistent with previous studies (Bellenger & Korgaonkar, 1977; Bickle & Shim, 1994). CS/D with a retail store was expected to be influenced by store type interacting with C/DC of QRT based attributes.

Consumers' expectations of store characteristics change with store type (Bellenger & Korgaonkar, 1977; Schiffman et al., 1977; Shim & Bickle, 1994). Consumers with different desires are different in store choice and preference (Bellenger & Korgaonkar, 1977; Shim & Bickle, 1994).

Department stores were expected to have a variety of merchandise and quality of product, which are classified as QRT based attributes (Bellenger & Korgaonkar, 1977; Schiffman et al., 1977). Discount stores were expected to provide good price/value ratios to consumers (Bellenger & Korgaonkar, 1977; Gutman & Mills, 1982). Specialty chain stores were expected to carry unique merchandise and small individual stores to keep long-term customer relationship and convenience of location. If specific attributes are highly expected in a specific store type, but are not maintained, consumers are more dissatisfied than when their expectations are not met in other stores. Research hypothesis 3 was supported.

CHAPTER VI

Summary, Conclusions, Implications, and Recommendations

Summary

The purpose of this research was to test a conceptual model which examines CS/D with apparel retail stores and to investigate the moderating effects of shopping orientations and store type on confirmation/disconfirmation (C/DC) of QRT based attributes and CS/D with a retail store. Shopping orientations included fashion, economic, and time orientation. The conceptual framework for this study was based on strategic planning (Berman & Evans, 1992; Cory, 1988) and consumer satisfaction theory (Oliver, 1980).

In a turbulent business environment, apparel retailers can obtain profit in return for delivering satisfaction with products and services to consumers (Kincade, 1989; Ko, 1993). The attainment of consumer satisfaction (CS) is a key objective in modern retailing (e.g., Yi, 1990). Retailers must maintain a balance between their abilities to meet consumer's needs satisfactorily and to plan ways to operate a store effectively and efficiently (Lewison, 1991).

For providing higher consumer satisfaction, Quick Response (QR) is a proposed management strategy in the apparel industry. QR is defined as "a new business strategy to optimize the flow of information and merchandise between channel members to maximize consumer satisfaction. This strategy is accomplished by close working partnerships and new technologies (e.g., EDI, bar coding) in manufacturing, distributing, and retailing" (Ko, 1993, p.20). Thus, QRT should improve store attributes and consequently increase CS.

Testing the actual impact of QRT on store attributes is important. Retailers are making large capital investments in technologies to implement QR (e.g., VICS, 1989). In this study, QRT based attributes are used as a proxy for QRT to examine the impact of QRT on CS/D with apparel retail stores. QRT based attributes were operationalized by measuring C/DC of QRT based attributes. Understanding the usage of QRT and its impact on store attributes of apparel retailers is critical to apparel retailers when they implement QRT. This study provides information to apparel retailers as they do strategic planning and evaluate the implementation of QRT.

A convenience sample of 200 female apparel consumers was selected from a city in the southeastern U.S. A survey design with a structured questionnaire with some open-ended questions for female apparel consumers was employed for this research. A questionnaire was pilot tested for content validity and instrument reliability. Descriptive statistics (i.e., frequencies, percentages), multiple regressions, ANOVAs, and ANCOVA were used for data analysis to test hypotheses. The response rate was 86.2 % for 200 usable responses .

Demographic Profiles of the Respondents

Demographic information included age, education, income, and clothing expenditure for both the student and resident sample. The question that asked about employment status was included only for the resident sample, and the question about major was included only for the student sample. The primary age group of the respondents was 18-34 (69%). Only 10 % of the respondents belonged to the 65 or older group. The largest percentage of subjects, 61.5%, had some college or trade school education. Only 4% of respondents had only a high school diploma.

With regard to clothing expenditure, the primary group of the respondents (36%) spent $200-$499 on clothing last year. The mean of clothing expenditure for the students'

sample ($803.43) was much higher than for the residents' sample ($516.33). On average, female students spent $217.10 more on clothing purchases than female residents.

The largest group (25.8%) of respondents had the income range $75,000 or above, and the second largest group (22.6%) of respondents had the income range $50,000-74,999. The smallest group (5.3%) of the respondents had the income range $ 15,000-19,999. Employment status was asked of only the residents' sample (n=98). In the residents' sample, the largest group (53.6%) of respondents were employed part time. Only fifteen respondents (15.5%) were employed full time.

The sample women included in this study were relatively young, highly educated, part time workers who spent a moderate amount on clothing. The respondents' income were distributed in the high income categories.

Tests of Hypotheses

For this study, three hypotheses were used to investigate the moderating effects of shopping orientation (i.e., fashion, economic, time) and store type on C/DC of QRT based attributes and on CS/D with a retail store. Regression analyses, ANOVAs, and ANCOVA were used to analyze data. Multiple regression analysis was used to test the relationship between C/DC and CS/D with apparel retailers (Hypothesis 1). C/DC of QRT based attributes and C/DC of non-QRT based attributes were independent variables and CS/D with apparel retail stores was the dependent variable.

Another multiple regression analysis was done for testing the moderating effects of shopping orientations on C/DC (i.e., QRT based, non-QRT based attributes) and CS/D with apparel retail stores (Hypothesis 2). Using CS/D as the dependent variable, the selected regressors were: C/DC of QRT based attributes as an independent variable, C/DC of non-QRT based attributes as a covariate variable, and shopping orientations (i.e., fashion, economic, time) as moderators.

To examine further individual interaction effects of the three specific shopping orientations for Hypothesis 2-a, 2-b, and 2-c, ANOVAs were employed. To test Hypothesis 3, ANCOVA was used to examine the moderating effects of store type on CS/D with apparel retailers. For all analyses, the statistical significance level was set at 0.05.

The regression model for testing Hypothesis 1 showed that C/DC of QRT based attributes and non-QRT based attributes had significant effects on CS/D with the apparel retailers. Consumers who had higher C/DC of QRT based attributes had the higher CS/D scores with the apparel retailers. Consumers who had positively disconfirmed expectations about QRT based attributes were likely to be satisfied with the apparel retailers. Research Hypothesis 1 was supported.

The regression model for testing Hypothesis 2 showed that the interaction between C/DC of QRT based attributes and economic orientation had the strongest relationship to CS. C/DC of QRT based attributes, C/DC of non-QRT based attributes, fashion orientation, economic orientation, and interaction between C/DC of QRT based attributes and fashion orientation were significant related to CS/D. The relationship between time orientation and CS and the relationship between the interaction between C/DC of QRT based attributes and time orientation were not found to be significant.

Additional ANOVAs showed that fashion and economic orientations were significant moderators on C/DC of QRT based attributes and CS/D with apparel retailers. Fashion orientation was independently related to CS/D, and the interaction between C/DC of QRT based attributes and fashion orientation was also significant related to CS/D. Consumers who had higher a fashion orientation had more increase in CS/D than those who had a lower fashion orientation as C/DC of QRT based attributes increased. Consumers who had a higher fashion orientation are more likely to be innovative in seeking new fashions and unique products than those who had a lower fashion

orientation, so QRT based attributes (e.g., faster turnarounds of goods, variety of assortment) were more important to consumers who have a higher fashion orientation. The research Hypothesis 2-a was supported.

Economic orientation was independently related to CS/D, and the interaction between C/DC of QRT based attributes and economic orientation was also significant related to CS/D. Consumers who had a higher economic orientation had more increase in CS/D than those who had a lower economic orientation as C/DC of QRT based attributes increased. CS/D with apparel retail stores was influenced by economic orientation interacting with C/DC of QRT based attributes. Better price for the value, which is improved by QRT, is an important attribute for higher economic orientation consumers. Research Hypothesis 2-b was supported.

Time orientation was not found to be a significant moderator on C/DC of QRT based attributes and CS/D with apparel retail stores. Research Hypothesis 2-c was not supported. Respondents who were included in this study do not have very high time orientation, and most of them had moderate time orientation. The distinction between a low and high level of time orientation was not clear; therefore, possible interaction effects with the two levels of time orientation could not be clearly shown.

Store type was another significant moderator for predicting CS/D. When consumers shop in specialty chain and small independent stores, they have less increase in CS/D than when they shop in department and discount stores as C/DC of QRT based attributes increases. Research hypothesis 3 was supported.

Conclusions

This study focused on testing a conceptual model. Fashion orientation, economic orientation, and store type were significant moderators in the CS/D model among female apparel consumers. When a company makes a decision to invest large capital in implementing QRT, knowing the benefits and impacts of QRT is critical in helping apparel retailers with strategic planning and evaluation of QRT. In this study, QRT based attributes were used as a proxy for QRT to examine the impact of QRT on CS/D with apparel retailers. CS is a key concept in modern retailing to maintain retailers' profitability and competitive advantage. From the results of the research, several conclusions can be drawn.

To be competitive in the retail business environment, QR as a proposed management strategy in the apparel industry has been offered. Knowledge of apparel consumers is important for retailers who are establishing strategic planning. CS has been identified as a key objective in modern retailing. CS is also considered an indicator of whether consumers will return to a store (Dube et al., 1994). The model developed and tested for examining the potential effect of consumer C/DC of store attributes on CS/D with apparel retail stores was supported. The results indicated that C/DC of QRT based attributes had a significant effect on CS/D.

Results from the study indicated that consumer satisfaction is increased by QRT based attributes offered by apparel retail stores. From the preliminary test, QRT based attributes are improved by implementing QRT. The data indicated that QRT based attributes (e.g. reduced stockout, fast turnaround of goods) have more influence on CS/D than non-QRT based attributes (e.g., location of store, store hours). In addition, the orientation of consumers is related to the level of C/DC of QRT based attributes, which determines CS/D.

CS/D is more influenced by C/DC of QRT based attributes among consumers with a high fashion or high economic orientation. Economic orientation was the most significant predictor in explaining CS/D.

Although literature supports the relationship, time orientation was not found to be a significant moderator in explaining CS/D. This might be explained by that ninety-one percent of the respondents are not full-time workers, so they are not restricted by time. Twenty-six percent of the respondents were not working outside home, 15 % of respondents were part-time workers, and 51% of the respondents were students. These facts may contribute to the insignificant result of the hypothesized relationship.

Store type was found to be a significant moderator in explaining CS/D. Consumers' expectation about store attributes differ according to store type. Therefore, different strategies are recommended for the different types of apparel retail stores.

If retailers' target consumers are highly fashion and economic oriented, they should consider implementing QRT to provide CS/D, which determines retailers' long-term profitability and customer loyalty. The decision for a retailer is not whether the implementation of QRT with capital investment is recommended, but rather who are their target consumers and which specific attributes are most attractive to those consumers.

Implementation of QRT is correlated with QRT based attributes, and QRT based attributes are correlated with CS/D. Store attributes offered by apparel retailers are improved by implementation of QRT from the preliminary test. These changes may also be caused by additional variables, but all apparel retailers should be aware of the potential for changes in product and service attributes to influence consumers' satisfaction.

Implications

The hypotheses of this study were based on CS theory as related to the influence of C/DC on CS/D (Oliver, 1980) and consumer shopping behavior literature as related to the moderating effects of fashion, economic orientation, time orientation, and store type on CS/D (Shim & Kotsiopulos, 1994). The findings of this study have several implications.

Retail QRT information assembled in the review of literature and the results about improvement of store attributes by implementation of QRT may encourage apparel retailers to adopt retail QRT. The implementation of QRT can assist apparel retailers in improving their store attributes for serving final consumers.

The results of the study could be useful to industry trade associations (e.g., VICS) in adjusting their strategies for potential QRT adopters and promoting QR implementation efficiently. The implementation of retail QRT is related to improvements of store attributes offered by retailers. Store characteristics, type, and target consumer characteristics should be considered when trade associations develop and promote QRT to apparel retailers.

Since C/DC of store attributes and CS/D level varies by consumer shopping orientation, retailers should do strategic planning by considering the type of consumers and evaluating the implementation of QRT. Knowledge of consumer satisfaction with store attributes is essential when retailers do strategic planning. Apparel retailers can be segmented according to consumers' needs and different concerns. QRT can be utilized differently by different segments of retailers in the apparel market. Retailers need to segment their target market according to the consumers' needs and characteristics, which influence retail functional strategy (i.e., QRT based, non-QRT based). Differences

among apparel retailers do exist, and these differences do relate to QRT and consumer satisfaction.

The survey tool can be used periodically to track apparel retail service expectations and satisfaction and to determine the relative importance of different store attributes in influencing overall satisfaction with apparel retail stores. By periodically conducting a CS/D survey and evaluating the results, retail managers will learn about their customers and will be more capable of satisfying them. Offering unexpected benefits from QRT based attributes to satisfy consumers is a great challenge for retailing.

Comprehensive store attributes were included which determine CS/D with apparel retail stores. A retail store can also use the survey to assess performance relative to its principle competitors or to track its level of service.

One goal of promotion by apparel retailers is to create a certain store image to differentiate their services from competitors. Traditionally, the development of store image is typically based on the attributes of product and service. It will be beneficial to create a particular store image through promotions that include attractive attributes for target consumers.

Recommendations

This study tested a conceptual model which examines CS/D with apparel retail stores and investigated the moderating effects of shopping orientations (i.e., fashion, economic, time orientation) and store type on confirmation/disconfirmation (C/DC) of store attributes (i.e., QRT based, non-QRT based) and CS/D with a retail store.

The study is limited in generalizability since all responses are from a convenience sample and the respondents were limited to female shoppers in a southeastern U.S. city. Although the generalizability of the results is limited, several future directions for

research are suggested. A replication of this study could be conducted drawing samples from other geographic areas. For the future study, a large sample with variability in time orientation should be considered.

Shopping orientation and store type were examined as moderators to determine CS/D with apparel retail stores. Other variables (e.g., demographic, psychographic variables) as moderators for CS/D may be selected in future research. For example, income is recommended to be included in the CS/D model. The sample of this study included relatively higher income consumers. The difference between high income consumers and low income consumers can be examined in the future study.

This study examined apparel product purchase as a whole. Different preferences for store attributes in the consumers' shopping decision may be related to product category and style. Further study is recommended to examine apparel products according to the category (i.e., men's wear, women's wear, children's wear), style (e.g., shirts, suits), and price level (e.g., budget, moderate).

For any future study, which specific QRT based attributes are most related to the specific target market should be known. This study developed and tested a comprehensive list of store attributes determining CS/D. QRT and non-QRT based attributes were examined for their influence on CS. In depth studies of specific store attributes could be conducted to identify consumer preference and CS/D relating to different product categories.

Future study could be done to examine whether retailers are involved with a strategic planning process when they decide to take actions (e.g., the implementation of QRT). CS/D should be considered important and be evaluated for retail strategic planning. Future research is needed to investigate whether retailers consider store attributes that determine CS in their strategic planning and if CS is measured periodically.

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Appendix A.

Questionnaire for Apparel Consumers

A-1: For student sample

A-2: For resident sample

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Department of Clothing and Textiles

College of Human Resources
Blacksburg, Virginia 24061-0410

Cover letter for the consumer questionnaire

April 3, 1995

Dear Patron:

I am a Ph.D. candidate in the department of Clothing and Textiles at Virginia Tech. working on my dissertation in the subject of consumer satisfaction with apparel retail stores. As a part of my research, I want to collect information about how well retail store experiences are satisfying your expectations.

Your participation will take less than fifteen minutes. I am interested in your UNBIASED feelings about **CLOTHING** shopping experiences in retail stores. The knowledge gained from the information collected in this questionnaire will be used to learn more about consumers' wants and needs and to guide efforts to benefit your interests. In the Questionnaire, Sections I-IV have same sets of questions about your opinions for several types of store, and Section V-VI are questions about shopping experiences and demographic information.

We know that your information must remain confidential. All data collected will be used without identifying individuals. If you have any questions about the research, please contact me (703)231-5205 or my advisor, Dr. Kincade at (703)231-7937. If you have questions about the conduct of this research, please contact Dr. Stout, the research division at (703)231-9359. Thank you very much.

Sincerely,

Eunju Ko

Eunju Ko
Ph.D. Candidate

Doris H. Kincade, Ph. D.
Assistant Professor and Advisor

Enclosures

QUESTIONNAIRE FOR APPAREL FEMALE CONSUMERS

Section I. Specialty chain store: Please Circle One best answer per question.

1. Have you been in a specialty chain store (e.g., The Limited, Fashion Bug) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____ What type of clothing did you shop for? ____
Please respond to all of the following statements based on the recent experience.

No If no, please go to Section II.

2. Please indicate if the most recent ***clothing*** shopping experience at the specialty chain store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the specialty chain store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section II. Department store: Please Circle One best answer per question.

1. Have you been in a department store (e.g., J.C. Penney, Leggett) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____What type of clothing did you shop for? _____
Please respond to all of the following statements based on the recent experience.
No If no, please go to Section III.

2. Please indicate if the most recent ***clothing*** shopping experience at the department store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the department store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section III. Discount store : Please Circle One best answer per question.

1. Have you been in a discount store (e.g., Wal-Mart, Goodies) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____What type of clothing did you shop for? _____
Please respond to all of the following statements based on the recent experience.
No If no, please go to Section IV.

2. Please indicate if the most recent ***clothing*** shopping experience at the discount store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the discount store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section IV. Small independent store : Please Circle One best answer per question.

1. Have you been in a small independent store (e.g., Fringe Benefits, Bonomos) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____ What did you shop for? _____

Please respond to all of the following statements based on the recent experience.

No If no, please go to Section V.

2. Please indicate if the most recent ***clothing*** shopping experience at the small independent store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the small independent store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section V: Please Circle One best answer per question based on your **clothing** shopping experience.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1. I feel very confident in my ability to shop for clothing.	1	2	3	4	5	6	7
2. Dressing well is an important part of my life.	1	2	3	4	5	6	7
3. I think I am a good clothing shopper.	1	2	3	4	5	6	7
4. When I find what I like I usually buy it without hesitation.	1	2	3	4	5	6	7
5. I usually read the advertisements for announcements of sales.	1	2	3	4	5	6	7
6. I have the ability to choose the right clothes for myself.	1	2	3	4	5	6	7
7. A person's reputation is affected by how she dresses.	1	2	3	4	5	6	7
8. I like to be considered well-groomed.	1	2	3	4	5	6	7
9. I don't like to spend too much time planning my clothing shopping.	1	2	3	4	5	6	7
10. I pay a lot more attention to clothing prices now than I ever did before.	1	2	3	4	5	6	7
11. I shop where it saves time.	1	2	3	4	5	6	7
12. I usually buy at the most convenient store.	1	2	3	4	5	6	7
13. I try to keep my wardrobe up-to-date with fashion trends.	1	2	3	4	5	6	7
14. A person can save a lot of money by shopping for bargains.	1	2	3	4	5	6	7

Section VI: Please Circle One best answer per question.

1. What age group are you in?
1) 18-34 2) 35-49 3) 50-64 4) 65 or older

2. Your college and major:
College:_____
Major: _____

3. Year classification:
1) freshman 2) sophomore 3) junior 4) senior 5) graduate

4. How much did you spend on clothing purchase for yourself over last year?
1) below $200
2) $200-499
3) $500-999
4) $1000-1499
5) $1500-1999
6) $2000 or above

5. What was the annual total household income last year before taxes?
1) below $10,000
2) $10,000-14,999
3) $15,000-19,999
4) $20,000-29,999
5) $30,000-49,999
6) $50,000-74,999
7) $75,000 or above

THANK YOU FOR YOUR TIME!

Virginia Tech
VIRGINIA POLYTECHNIC INSTITUTE
AND STATE UNIVERSITY

Department of Clothing and Textiles

College of Human Resources
Blacksburg, Virginia 24061-0410

Cover letter for the consumer questionnaire

April 3, 1995

Dear Patron:

I am a Ph.D. candidate in the department of Clothing and Textiles at Virginia Tech. working on my dissertation in the subject of consumer satisfaction with apparel retail stores. As a part of my research, I want to collect information about how well retail store experiences are satisfying your expectations.

Your participation will take less than fifteen minutes, and you could win a $50 gift certificate. I am interested in your UNBIASED feelings about **CLOTHING** shopping experiences in retail stores. The knowledge gained from the information collected in this questionnaire will be used to learn more about consumers' wants and needs and to guide efforts to benefit your interests. In the Questionnaire, Sections I-IV have same sets of questions about your opinions for several types of store, and Section V-VI are questions about shopping experiences and demographic information.

We know that your information must remain confidential. All data collected will be used without identifying individuals. For the drawing please fill out the attached form on the next page. If you have any questions about the research, please contact me (703)231-5205 or my advisor, Dr. Kincade at (703)231-7937. If you have questions about the conduct of this research, please contact Dr. Stout, the research division at (703)231-9359. Thank you very much.

Sincerely,

Eunju Ko

Eunju Ko
Ph.D. Candidate

Doris H. Kincade, Ph. D.
Assistant Professor and Advisor

Enclosures

Prize Entry Form

Yes, I would like to a chance to win $50.00 gift certificate. Please enter my name for the drawing.

Name: _____

Address: _____

_____

Phone: _____

QUESTIONNAIRE FOR APPAREL FEMALE CONSUMERS

Section I. Specialty chain store: Please Circle One best answer per question.

1. Have you been in a specialty chain store (e.g., The Limited, Fashion Bug) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____ What type of clothing did you shop for? ____
Please respond to all of the following statements based on the recent experience.

No If no, please go to Section II.

2. Please indicate if the most recent ***clothing*** shopping experience at the specialty chain store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the specialty chain store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section II. Department store: Please Circle One best answer per question.

1. Have you been in a department store (e.g., J.C. Penney, Leggett) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____What type of clothing did you shop for? _____
Please respond to all of the following statements based on the recent experience.

No If no, please go to Section III.

2. Please indicate if the most recent ***clothing*** shopping experience at the department store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the department store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section III. Discount store : Please Circle One best answer per question.

1. Have you been in a discount store (e.g., Wal-Mart, Goodies) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____What type of clothing did you shop for? _____
Please respond to all of the following statements based on the recent experience.
No If no, please go to Section IV.

2. Please indicate if the most recent ***clothing*** shopping experience at the discount store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the discount store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section IV. Small independent store : Please Circle One best answer per question.

1. Have you been in a small independent store (e.g., Fringe Benefits, Bonomos) to shop for ***clothing*** within the past year?

Yes If yes, when was the most recent experience? _____ What did you shop for? _____

Please respond to all of the following statements based on the recent experience.

No If no, please go to Section V.

2. Please indicate if the most recent ***clothing*** shopping experience at the small independent store was better or worse than expected.

	Much worse than expected	Worse than expected	Somewhat Worse than expected	Just as expected	Somewhat Better than expected	Better than expected	Much better than expected	No opinion
a) after the sale service (e.g., gift wrapping)	1	2	3	4	5	6	7	x
b) availability of advertised products	1	2	3	4	5	6	7	x
c) price for the value	1	2	3	4	5	6	7	x
d) accuracy of advertised product	1	2	3	4	5	6	7	x
e) location of store	1	2	3	4	5	6	7	x
f) parking place	1	2	3	4	5	6	7	x
g) store hours	1	2	3	4	5	6	7	x
h) display	1	2	3	4	5	6	7	x
i) dressing room	1	2	3	4	5	6	7	x
j) new/fresh merchandise	1	2	3	4	5	6	7	x
k) checkout time	1	2	3	4	5	6	7	x
l) friendly personnel	1	2	3	4	5	6	7	x
m) garment fit	1	2	3	4	5	6	7	x
n) home delivery	1	2	3	4	5	6	7	x
o) knowledgeable personnel	1	2	3	4	5	6	7	x
p) layaway	1	2	3	4	5	6	7	x
q) type of clothing I like	1	2	3	4	5	6	7	x
r) availability of clothing I like to buy	1	2	3	4	5	6	7	x
s) outside appearance	1	2	3	4	5	6	7	x
t) store atmosphere	1	2	3	4	5	6	7	x
u) quality merchandise	1	2	3	4	5	6	7	x
v) rest space	1	2	3	4	5	6	7	x
w) restroom	1	2	3	4	5	6	7	x
x) return policy	1	2	3	4	5	6	7	x
y) sales promotion program (e.g., coupon)	1	2	3	4	5	6	7	x
z) store layout (e.g., easy to find items)	1	2	3	4	5	6	7	x
aa) variety of merchandise selection	1	2	3	4	5	6	7	x

3. Please respond by circling the number which best reflects your own perceptions of the small independent store.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
I was satisfied with my decision to shop this store.	1	2	3	4	5	6	7
I feel good about this shopping experience.	1	2	3	4	5	6	7
My choice to shop in this store was a wise one.	1	2	3	4	5	6	7
I was happy about this shopping experience.	1	2	3	4	5	6	7
If I had it to shop again, I woud feel the same about this store.	1	2	3	4	5	6	7
I think that I did the right thing when I decided to shop in this store.	1	2	3	4	5	6	7

Section V: Please Circle One best answer per question based on your **clothing** shopping experience.

	Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1. I feel very confident in my ability to shop for clothing.	1	2	3	4	5	6	7
2. Dressing well is an important part of my life.	1	2	3	4	5	6	7
3. I think I am a good clothing shopper.	1	2	3	4	5	6	7
4. When I find what I like I usually buy it without hesitation.	1	2	3	4	5	6	7
5. I usually read the advertisements for announcements of sales.	1	2	3	4	5	6	7
6. I have the ability to choose the right clothes for myself.	1	2	3	4	5	6	7
7. A person's reputation is affected by how she dresses.	1	2	3	4	5	6	7
8. I like to be considered well-groomed.	1	2	3	4	5	6	7
9. I don't like to spend too much time planning my clothing shopping.	1	2	3	4	5	6	7
10. I pay a lot more attention to clothing prices now than I ever did before.	1	2	3	4	5	6	7
11. I shop where it saves time.	1	2	3	4	5	6	7
12. I usually buy at the most convenient store.	1	2	3	4	5	6	7
13. I try to keep my wardrobe up-to-date with fashion trends.	1	2	3	4	5	6	7
14. A person can save a lot of money by shopping for bargains.	1	2	3	4	5	6	7

Section VI: Please Circle One best answer per question.

1. What age group are you in?
1) 18-34 2) 35-49 3) 50-64 4) 65 or older

2. Are you employed? (please answer based on your primary concern)
1) at home as a housewife
2) outside home as a full time status
3) outside home as a part time status

3. How much did you spend on clothing purchase for yourself over last year?
1) below $200
2) $200-499
3) $500-999
4) $1000-1499
5) $1500-1999
6) $2000 or above

4. What is highest attained eucational level?
1) graduate degree
2) bachelor's degree
3) some college or trade school
4) high school graduate (or equivalent)
5) not high school graduate

5. What was the annual total household income last year before taxes?
1) below $10,000
2) $10,000-14,999
3) $15,000-19,999
4) $20,000-29,999
5) $30,000-49,999
6) $50,000-74,999
7) $75,000 or above

THANK YOU FOR YOUR TIME!

Appendix B

Statistical Results

Table 1

Collinearity Diagnostics from the Hypothesis 1

Variance Inflation Analysis

Variable	Parameter Estimate (b)	Variance Inflation
Intercept	2.6252	0.0000
QRT	1.0392	3.1370
NonQRT	-0.4857	3.1370

Eigenvalue Analysis

Number	Eigenvalue	Condition Index	Variation Proportion QRT	Variation Proportion NONQRT
1	1.82537	1.00000	0.0873	0.0873
2	0.17463	3.23303	0.9127	0.9127

Table 2

Results from Regression Analysis with C/DC about non QRT Based Attributes and CS/D

Analysis of Variance

Source	DF	SSquares	Mean Square	F Ratio
Model	1	10.6963	10.6963	22.058
Error	197	95.5270	0.4849	**Prob>F**
C Total	198	106.2233		0.0001

RSquare	RSquare Adj	Root Mean Square Error	Mean of Response
0.1012	0.0966	0.6961	5.143247

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	3.47992	0.3566	9.76	0.0000
NonQRT	0.38220	0.0812	4.71	0.0000

Table 3

Results from Regression Analysis with C/DC about QRT Based Attributes and CS/D

Analysis of Variance

Source	DF	SSquares	Mean Square	F Ratio
Model	1	31.1247	31.1247	81.6532
Error	197	75.0927	0.3812	**Prob>F**
C Total	198	106.21739		0.0000

RSquare	RSquare Adj	Root Mean Square Error	Mean of Response
0.2930	0.2894	0.6174	5.143247

Parameter Estimates

Term	Estimate	Std Error	t Ratio	Prob>|t|
Intercept	2.2779	0.3201	7.12	0.0000
QRT	0.6429	0.0711	9.04	0.0000

Table 4

Collinearity Diagnostics from the Hypothesis 2

Variance Inflation Analysis

Variable	Standardized Parameter Estimate (β)	Variance Inflation with Standardized Variables	Parameter Estimate (b)	Variance Inflation with Unstandardized Variables
Intercept	0.0000	0.0000	0.4759	0.0000
NonQRT	-0.2601	3.7688	-0.3034	73.2246
QRT	1.0054	3.8979	1.1649	3.8979
Fashion	1.2094	1.2412	0.8874	82.4978
Economic	-1.2844	1.1314	-0.7308	109.2206
Time	0.4389	1.1152	0.2501	44.8347
INT1	-1.6056	1.4656	-0.1899	152.4315
INT2	1.7383	1.2796	0.1826	158.6163
INT3	-0.3990	1.2178	-0.0466	51.0889

Eigenvalue Analysis

Num-ber	Eigenvalue	Condition Index	Variance Proportion QRT	Variance Proportion NONQRT	Variance Proportion Fashion	Variance Proportion Economic	Variance Proportion Time	Variance Proportion INT1	Variance Proportion INT2	Variance Proportion INT3
1	3.3630	1.0000	0.0008	0.0127	0.0003	0.0002	0.0000	0.0004	0.0004	0.0002
2	2.1234	1.2585	0.0001	0.0027	0.0008	0.0000	0.0041	0.0001	0.0000	0.0036
3	1.3854	1.5580	0.0015	0.0309	0.0002	0.0031	0.0007	0.0001	0.0006	0.0000
4	0.9255	1.9063	0.0005	0.0160	0.0055	0.0007	0.0030	0.0010	0.0006	0.0014
5	0.1831	4.2847	0.0220	0.8179	0.0024	0.0010	0.0006	0.0008	0.0010	0.0008
6	0.0123	16.4875	0.0092	0.0243	0.0404	0.0000	0.7311	0.0422	0.0000	0.7343
7	0.0043	28.0811	0.9197	0.0079	0.2792	0.3489	0.0515	0.2884	0.3538	0.0538
8	0.0028	34.4292	0.0462	0.0875	0.6711	0.6461	0.2090	0.6669	0.6384	0.2060

Appendix C

Supplement

C-1: Manuscript about impacts of QRT on retail store attributes

C-2: Questionnaire for Apparel retailers

IMPACTS OF QR TECHNOLOGIES ON RETAIL STORE ATTRIBUTES

ABSTRACT

In the competitive business environment, retailers can be successful and obtain profit by strategic planning and delivering consumer satisfaction. Quick Response (QR) has been considered as a new business strategy to maximize consumer satisfaction by implementing new technologies (e.g., bar coding, scanner). The purpose of this research was to identify the usage of Quick Response technologies (QRT) and to identify store attributes that are improved by QRT. The conceptual framework for this research was based on strategic retailing planning.

A convenience sample of thirty-two apparel retailers participated in this survey research. The most frequently used technologies were sales captured at the item level, bar codes on each merchandise item, and merchandise scanned at point of sale. The most frequently cited store attributes that are improved by QRT were fast turnaround of goods, reduced stockouts, and availability of advertised product. Both the usage of QRT and improvement level of store attributes differed by store type. Small independent store had the lowest usage of QRT and had the lowest perception score in improvement level of store attributes.

This information will help apparel manufacturers and retailers to evaluate the implementation of QR technologies. Also, this information will assist practicians and academicians to understand better the linkage between improved store attributes and the usage of QRT.

IMPACTS OF QR TECHNOLOGIES ON RETAIL STORE ATTRIBUTES

INTRODUCTION

In the turbulent business environment, apparel retailers can obtain profit in return by delivering satisfaction through improved store attributes. Retailers must maintain a balance between their ability to meet consumer's needs satisfactorily and their ability to operate a store effectively and efficiently [1]. The product and service needs that are delivered through store attributes should be balanced with the operational and financial needs of retailer for the successful retail business. To achieve both operational efficiency and retaining effectiveness, Quick Response (QR) is a proposed management strategy in the apparel industry. QR is defined as "a new business strategy to optimize the flow of information and merchandise between channel members to maximize consumer satisfaction" [2, p. 20].

The QR strategy is accomplished by implementing QR technologies (QRT). QRT includes a variety of activities such as EDI, bar coding, and point of sale date capture. The impact of QRT on some store attributes (e.g., decreased stockout rate) is evident; however, relationships between QRT and other store attributes are not so clearly defined. Fiorito [3] examined the retailer's perceptions and attitudes toward QRT. About 85 % of the retailers surveyed perceived that QRT improved their customer service; however, the relationship between QRT and other store attributes offered by apparel retailers has not been examined. Retailers are making large capital investments in technologies to implement QR [4]. Understanding usage of QRT and its impacts on store attributes of apparel retailers is critical to evaluate results of strategic planning.

STRATEGIC RETAIL PLANNING

The basic element of a business requires a product or service to be developed or acquired, marketed, and financially supported. An ideal manager should be able to

integrate or simultaneously operate these functions. Strategic planning is defined as "a process of developing and implementing a course of action or direction that an enterprise should take to achieve its objectives. The strategy is the course of action while plan is the detailed set of tasks to achieve the objectives" [5, p. 209]. The strategic planning process affects what products a company develops and the way it develops them. From the literature [5,6], strategic retail planning model includes five steps: (a) goals, (b) overall retailing strategy, (c) specific functional strategy, (d) investment analysis, and (e) feedback (see Figure 1).

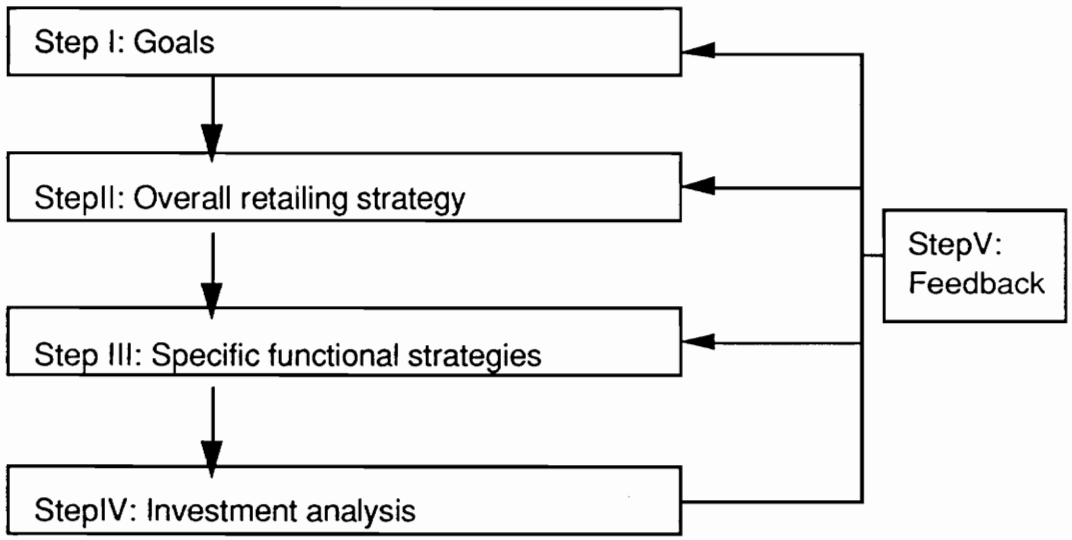

Figure 1 . Strategic retail planning model.

(Berman & Evans, 1992; Cory, 1988)

With strategic planning, a firm can efficiently interact with the environment. Strategic planning addresses the analysis of the environment to maximize corporate strengths, to minimize corporate weaknesses, and to maintain a competitive edge by

adapting the firm to environment [7-9]. Strategic planning affects the adoption of specific strategies (e.g., Quick Response) and the performance of the firm. Strategic planning is considered important in the apparel retailing industry since efficient interaction between a firm and the environment is necessary in a competitive environment.

Overall retailing strategies provide the direction for retailing objectives. For example, QR is one of overall retailing strategies in the apparel industry. Next, a retailer has to make and implement specific functional strategies based on the overall retailing strategy. Functional strategies are traditionally categorized into 6Ps strategies (i.e., price, product, place, promotion, people, presentation) [10]. By introducing technology implementation (e.g., QRT) into strategic planning, functional strategies can be reclassified into technological strategies and nontechnological strategies [5]. When implementing the new business strategy of QR in apparel retailing companies, functional strategies can be divided into (a) QRT based strategies which are specific to QRT implementation (e.g., EDI), and (b) non QRT based strategies which are more related to physical environment (e.g., display, store hours, parking place). Functional strategies (e.g., QRT) affect specific store attributes, which are related to consumer satisfaction, within a store. By implementing QRT, store attributes may be improved (see Figure1).

When the financial results of the strategic period are measured, the revenue of the current products and services in the marketplace provide the cash flow profit contribution. Through an investment analysis, specific functional strategies should be evaluated and revised continuously. Evaluating the effect of new technologies will be important to retailers. Maintaining a retailer's competitive advantage and long-term profitability will rely on the integration of consumer satisfaction into the retailer's strategies and operations [6]. This last feedback step brings management full circle so

that the updated plan can be used as input to develop new corporate goals for the next strategy cycle.

The purpose of this research was:

(a) to identify the usage of QRT;

(b) to identify store attributes that are improved by QRT;

(c) to examine differences in QRT usage by store type (i.e., department store, specialty store, discount store, small independent store);

(d) to examine differences in improvements of store attributes by store type .

OVERVIEW OF APPAREL RETAILING INDUSTRY

Definition

Retailing is defined as the business activity of selling goods or services to the final consumer [1]. Apparel retailers buy fashion merchandise from manufacturers all over the world and sell it to consumers in their stores [11]. Retailers are responsible for moving products from manufacturers and wholesalers to a location that is convenient for consumers (i.e., place utility), making products and services available when consumers want them (i.e., time utility), and assuming risk through ownership and financing of inventories (i.e., possession utility) [12]. Among the two million retail firms in U. S., 135,000 retailers specialize in fashion apparel and accessories and 70,000 include apparel and accessories among other merchandise [11]. Successful retailers focus on identifying the characteristics, needs, and wants of specified consumer groups to offer products and services that will provide satisfaction.

Store Type

Many types of retail operations exist to meet consumer needs in the apparel retailing industry. By the variety and assortment of their merchandise, retailers are often classified as: specialty chain stores, department stores, and mass merchants or discount

stores [10,11]. Kotler [13] included into retail classification a small section of other chains and individual operations.

Specialty chain stores provide a narrow focus of unique merchandise for specific tastes. Department stores provide many kinds of merchandise. Apparel and accessories are sold along with household goods such as furniture, home furnishings, kitchenware, and electronics. Mass merchants or discount stores are the largest stores that sell commodity merchandise in a department store format. Mass merchants or discount stores have masses of stores and mass-oriented budget-to moderate prices [11]. Apparel retailers are often very small and individually operationalized in the regional area. Small individual stores carry very limited merchandise but provide convenience of location and friendly personnel to keep customer loyalty.

Kincade and Cassill [14] used the retail classification by Kotler [13] for their study to examine the effects of retail type on QR adoption among U.S. apparel manufactures. The retail type was categorized as department, limited line, mass merchants, and others. They found that retail type significantly influences QR adoption. Shim and Kotsiopulos [15] categorized retail store types as discount, specialty, department, and catalogue stores for examining the relationships between patronage behavior and shopping orientation, store attributes, information sources, and personal characteristics. All four consumer variables had predictability of choosing among store types for apparel shopping. Store type has been expected as a major determinant on innovation adoption and strategy development [6].

QUICK RESPONSE TECHNOLOGIES (QRT)

Major QR objectives are to reduce waiting time of inventory in the apparel pipeline by using new technologies, to develop improved partnership between apparel manufacturers and retailers, and to prepare products in response to consumer demand

[3,14,16,17]. To accomplish the objectives of QR, retailers must use a variety of technologies [3,4]. Technology is defined as " the physical combined with the intellectual or knowledge processes by which materials in some form are transformed into outputs used by another organization or subsystem within the same organization" [18]. Technology includes the use of new equipment and new process; however, all technologies do not require equipment and capital investment. The use of bar coding at point of sale (POS) is one example of how QRT can be used to reduce incidence of stock-outs and improve customer-service. Pilot studies have shown that ability to replenish merchandise in a short reorder time can reduce retailer initial inventory investment for a season and can increase sales by providing the stock needed throughout the season.

A variety of technologies related to QR have been identified from numbers of industry sources [19-22] and research studies [2,3,14,23,24]. The twelve most commonly mentioned retail QRT are: (a) automatic replenishment, (b)bar codes on each merchandise, (c) consumer information system (e.g., demographics), (d) electronic data interchange, (e) electronic purchase reorder, (f) inventory management systems, (g) product planning with customer, (h) reduction in inventory size, (i) sales captured at the item level, (j) scanning merchandise at POS, (k) sharing product information with trading partners, and (l) small lot orders.

STORE ATTRIBUTES

Store attributes are important to consumers when they make the decision where to shop [25-28]. Store attributes are differently provided and presented by retailers according to their specific functional strategies for satisfying target consumers. Store attributes are the characteristics which appeal to consumers and draw them into the store such as variety of assortment, quality of product, and friendly personnel. Certain attributes appeal to one type of consumer while other attributes appeal to others. It is

important that the store attributes offered are the ones that are desired by the targeted consumer.

The challenge to retailers is to determine which store attributes are relatively more important to the targeted consumer and to meet those consumers' expectations that are reasonable and feasible. Providing appropriate store attributes is not enough to satisfy consumers and guarantee store loyalty. Maintaining the quality of these attributes is the hardest task and critical to survival in the competitive nature of fashion retailing.

IMPACTS OF QRT ON STORE ATTRIBUTES

QRT create value for consumers and change the relationship with consumers and trading partners [3,16]. Successful retail operations depend upon a store's ability to meet consumer's needs; therefore, changes in store attributes, should be emphasized in retailers' strategic planning [6]. Fourteen store attributes which may be improved by QRT, have been identified from industry sources [4,16,29-34] and academic studies [3,23,24,35]. According to the nature of store attributes, these fourteen store attributes identified form the literature can be grouped into three categories: time/availability, store environment, and value added service (see Table I).

Table I. Store Attributes

Time/Availability	Store Environment	Value Added Service
reduced stockouts	quality merchandise	better price for the value
variety of assortment	right merchandise type for target market	garment fit
fast turnaround of goods	friendly personnel	return policy
availability of advertised product	convenient store layout	home delivery
accuracy of product advertisement		
faster checkout time		

Time/Availability

One important aspect to retailers is having the product in stock at the time and place desired by the company [36]. Retailers may suffer a relatively large percentage of lost sales if an item is out of stock [36]. The bar coding at POS, error free purchase order, sharing product information with trading partners, and automatic replenishment system are used to reduce the incidence of stock-outs and improve customer service. Pilot studies show that by using QRT to better anticipate and understand customer behavior, retailers are able to reduce the number of stock-outs situations, achieve better placement of items in the stores, and increase personalized promotions [3,16,37]. Pilot studies have shown that a short reorder time can reduce retailer initial inventory investment for a season and can increase sales by providing the stock needed throughout the season [16, 37].

Today's consumers have become not only more sophisticated and diversified but also more demanding. Companies lag behind the competitors if they do not offer what the customers want within a reasonable lead time. QRT offers adaptation to changing market demands with fast turnaround of goods through small lot orders, reduction in inventory size and product planning with customer [23,24,31,32].

Store Environment

Producing high quality products within a reasonable lead time is necessary, but not sufficient, in today's fiercely competitive market. Providing quality merchandise in a convenient and friendly atmosphere is a key concept to achieve through QRT [32]. Retailers need to identify who are their target consumers and what are their wants. Retailers can take actions to minimize lost sales by careful product substitution and careful ordering/stocking policies [36]. Retailers try to improve sales and develop better store image through quality merchandise, right merchandise type for target market, friendly personnel, and convenient store layout.

Friendly personnel distinguish one store from other stores. Inventory management systems and electronic repurchase order reduce the time for inventory control and ordering; therefore, retailers have more time in store service and friendly personnel can be provided. Convenient store layout is also enhanced by reduction in inventory size and small lot orders. Well spaced merchandise and all price marked selves or products allow consumers to find the products easily. Inventory management systems can be combined with graphics packages to provide retailers with visual displays of inventory levels and placements.

Value Added Service

Price is a critical strategic weapon in a competitive environment. The price of a product is determined by the market, not the producers, but companies try to reduce production and operating costs to make a reasonable profit margin [38,39]. Although the capital investment may be large, companies implementing QRT can gain a strategically advantageous position, by reducing capital input per unit production [32]. Reduced markdowns, increased profits, and increased return on assets are possible with QR [4,16,,24,30,34].

By eliminating some forms of waste arising from the apparel pipeline, QRT enable companies to reduce costs [31,32]. A study by KSA [33] found that implementation of QR, especially in fashion goods, lowers operating costs per unit. Through a partnership agreement, redundant testing is eliminated with corresponding reduction of the testing expenses. Costs can also be reduced by lowering inventory and having more frequent deliveries. Lower inventory and higher turn with same level of sales have cost benefits for retailers. Markdowns are reduced and profits are increased because products are produced by responding to the consumer demand and preferences.

Through QRT and partnership product problems are shared between manufacturers and retailers. This strategy may improve not only getting the right goods

at the first time, but also reducing returns. For the apparel retailer, better fitting garment is achieved by sharing accurate information about consumers (e.g., complaints, body size) with trading partners. Fewer errors in production and distribution produces quality merchandise. Sharing product information with partners and electronic purchase reorder improve production of quality, targeted merchandise and provide the home delivery service by shipping goods directly from manufacturers. Retailers with strong partnership can operate within a strategy of collaboration not only with suppliers but also with final consumers.

RESEARCH HYPOTHESES

H1. Usage of QRT differs by store type (i.e., department store, specialty store, discount store, small independent store).

H2. Improvement of store attributes (e.g., stockouts) by usage of QRT (e.g., bar coding, scanner) differs by store type (i.e., department store, specialty store, discount store, small independent store).

RESEARCH METHOD

The interview survey method was used to identify the usage of QRT, to identify store attributes which are improved by QRT, and to examine usage level of QRT and improvement level of store attributes (e.g., stockouts) by different store types (i.e., department store, specialty store, discount store, small independent store).

Sampling

A convenience sample of thirty-two apparel retailers were selected for the study. Twenty-six retailers were randomly selected from a professional meeting, QR Conference in Atlanta, GA. This meeting is the biggest retail trade conference for developing a better QR strategy and providing prime networking and information sources. Those retailers

who attend this conference are experts (e.g., QR system managers, QRT developers); therefore, they are knowledgeable about QRT. Only three store types of apparel retailers (i.e., department store, specialty store, discount store) were available in this QR conference sample. Six small independent apparel retailers were also selected from a southeast city to include all types of stores as itemized in the literature. Store types as represented in the study were department stores (41%), discount stores (28%), small independent stores (19%), and specialty chain stores (13%).

Instrument

An interview instrument was developed for the study. Questions included usage level of QRT, improvement level of store attributes by QRT implementation, and store type. The questionnaire was pilot tested to identify errors and misleading or difficult instructions and to assess overall clarity. The pilot test sample include a group of five selected retailers, not in the final sample, and faculty members at a major university. Through this pilot test, face reliability and content validity in the questionnaire were evaluated. Participants in the pilot test confirmed the major constructs as defined by the researcher.

Usage of QRT was measured by the reported usage of twelve QRT. Twelve QRT were selected as those most commonly cited in the literature. For each item, the respondent was asked to select the usage of technologies on a scale from 0% to 100% or more. Usage of QRT was measured by an average score of reported QRT usage by respondent retailers.

Improvement of store attributes by QRT was measured by the reported improvement level of fourteen store attributes by implementing QRT. Fourteen store attributes were included as most commonl y mentioned store attributes which are improved by QRT in the literature. For each store attribute, the respondent was asked to select the improvement level of store attributes by implementing QRT on a scale from

0% improvement to 100% or more improvement. Improvement of store attributes by QRT was measured by an average score of improvement level as reported by respondents.

Store type was divided into four groups: department store, specialty store, discount store, and small independent store as itemized in the literature. Apparel retailers were instructed to select the category which best represented their store.

Data Collection

An interview survey method for three types of apparel retailers (i.e., department store, specialty store, discount store) was employed in this research. Only retailers within a seven foot radius of the researcher at the registration office in the 95 QR Conference, who made eye contact with the researcher, and responded to a greeting were asked to participate. Pencil and paper questionnaire were used to survey retailers on the spot. Six small independent stores were randomly selected in the local telephone directory and called them to make an appointment for the interview survey in a southeast city. The researcher visited selected retailers and did interview survey with store managers.

Data Analysis

Descriptive statistics (i.e., frequencies, percentages) were used to identify usage of QRT and company demographics. For testing Hypothesis 1 and 2, multivariate analysis of variance (MANOVA) was conducted to examine the difference of usage of QRT and improvement of store attributes by QRT among different store types. The orthogonal nature of the dependent variables indicated a need for an additional series of one-way analyses of variance (ANOVA). Least squares means (LSMs) were used to provide more detailed information about the significant relationships. Statistical significance level was set at 0.05.

RESULTS AND DISCUSSIONS

Usage of QR Technologies

The usage of QRT varied by apparel retailers (see Table II). The most frequently used technologies among all surveyed retailers were sales captured at the item level (76.5%), scanning merchandise at point of sale (POS) (71.5%), and bar codes on each merchandise (66.2%). The least used QR technologies among all surveyed retailers were small lot orders (11.9%) and consumer information system (17.8%). For specialty chain stores, scanning merchandise at POS (93.8%) was the most frequently used technology, and, for discount stores, sales captured at the item level (94.4%) was the most used technology. For department stores, scanning merchandise at POS (86.5%) and sales captured at the item level (86.5%) were equally most used technology. For small independent stores, sales captured at the item level (37.5%) was the most used technology, but usage level was relatively much lower than other store types. Similar patterns in the most frequent QRT usage existed among four store types. Small lot orders was the least used technology among apparel retailers.

Table II. Usage of QRT Reported in Percent of Responses by Apparel Retailers

QRT	Specialty chain	Depart-ment	Discount	Small independ-ent	Total
automatic replenishment	62.5	55.77	55.56	4.17	44.50
bar codes on each merchandise	81.25	80.77	86.11	16.67	66.20
consumer information system (e.g., demographics)	12.5	26.92	27.78	4.17	17.84
electronic data interchange	68.75	63.46	66.67	0.00	49.72
electronic purchase reorder	75	61.54	66.67	0.00	50.80
inventory management systems	68.75	53.85	63.89	33.33	54.95
product planning with customer	62.5	25.00	36.11	12.50	34.03
reduction in inventory size	25	32.69	50.00	16.67	31.09
sales captured at the item level	87.5	86.54	94.44	37.50	76.50
scanning merchandise at point of sale	93.75	86.54	88.89	16.67	71.46
sharing product information with trading partners	62.5	57.69	52.78	16.67	47.41
small lot orders	12.5	11.54	11.11	12.50	11.91

For Hypothesis testing, QRT usage was further refined. To check unidimensionality of the measure about the usage of QRT, Principle Components Method of Factor Analysis was used. If the summation variable was homogeneous, all items would load on only one factor; however, two orthogonal factors resulted from the factor analysis (see Table II). Factor loadings generated by rotated factor pattern were evaluated. Individual items, which loaded higher than .50 on that factor and lower than .30 on the other factors, were retained. Of the twelve QRT, nine QRT were significantly loaded on the factors. The items, electronic data interchange, electronic purchase reorder, and sales captured at the item level, did not show a strong relation to any single factor. These items were eliminated from further analysis. The resulting factors were distinct and definable. Factor 1 was labeled Information Sharing, and Factor 2 was labeled Product Inventory/Availability. To judge the strength of measurement of the underlying constructs, the two factors were also tested for reliability. Each factor had Cronbach's alpha value above .65, and was considered excellent measures of indicated constructs [40]. To represent QRT usage, the two factors of Information Sharing and Product Inventory/Availability were used.

Information Sharing represents the dimension of QRT promoting improved communication between suppliers and customers. Five items were retained in this factor with the items loading between .59 and .86 (see Table III). Apparel retailers who scored high on this factor used automatic replenishment and inventory management system to confirm order with vendors. Consumer information system, product planning with customer, and sharing information with trading partners are soft technologies to share information between retailers and vendors.

Product Inventory/Availability represents the dimensions of QRT controlling inventory and offering product availability. Four items were retained in this factor with the items loading between .50 and .88 (see Table III). Apparel retailers who scored high

TABLE III. Factor Loading of Usage of QRT

Factor	Eigen Value	Cronbach's Alpha	Loadings
Information Sharing	6.31	.86	
automatic replenishment			.59
consumer information system (e.g., demographics)			.82
inventory management systems			.86
product planning with customer			.85
sharing product information with trading partners			.65
Product Inventory/Availability	1.54	.65	
bar codes on each merchandise			.64
reduction in inventory size			.50
scanning merchandise at point of sale			.88
small lot orders			.50

on this factor were active in the reduction of inventory size. Related to the action of actual reduction of the inventory size is small lot orders. Bar codes on each merchandise and scanning merchandise at point of sale are core technologies to keep record on product inventory and to provide product availability.

The Improvement of Store Attributes by Usage of QRT

The improvement of each store attribute by QRT varied by apparel retailers (see Table IV). Of the fourteen store attributes identified from the literature, store attributes, that were perceived as the most improved by QRT, were fast turnaround of goods (70.3%), reduced stockouts (65.6%), and availability of advertised product (64.1%). Store attributes perceived as the least improved by QRT were home delivery (7.8%), friendly personnel (8.6%), and store layout (12.5%). Similar patterns in the

improvements by usage of QRT existed among four store types. The top three most improved store attributes (i.e., fast turnaround of goods, reduced stockouts, availability of advertised product) were same for all store types; however, small independent retailers perceived improvements to be lower than improvements seen by other store type retailers.

TABLE IV. Improvement Level of Store Attributes Reported in Percent of Responses by Apparel Retailers

Store Attributes	Specialty chain	Depart-ment	Discount	Small individual	Total
fast turnaround of goods	75	86.54	77.78	20.83	70.31
return policy	12.5	23.08	25.00	16.67	21.09
friendly personnel	0	3.85	22.22	4.17	8.59
availability of advertised product	75	73.08	75.00	20.83	64.06
variety of assortment	43.75	44.23	47.22	12.50	39.06
accuracy of product advertisement	37.5	57.69	58.33	12.50	46.88
better price for the value	37.5	28.85	55.56	20.83	35.94
reduced stockout	75	78.85	72.22	20.83	65.63
garment fit	25	15.38	27.78	20.83	21.09
store layout	0	11.54	19.44	12.50	12.50
faster checkout time	37.5	59.62	55.56	16.67	47.66
home delivery	0	7.69	5.56	16.67	7.81
merchandise type for target customers	37.5	50.00	50.00	25.00	43.75
quality merchandise	18.75	17.31	36.11	16.67	22.66

For hypothesis testing, improvement of store attributes by usage of QRT was further refined. To check unidimensionality of the measure about the improvement of store attributes by QRT, Principle Components Method of Factor Analysis was used. If summation variables was homogeneous, all items would load on only one factor; however, two orthogonal factors resulted from the factor analysis (see Table V). Factor loadings generated by rotated factor pattern were evaluated. Individual items, which loaded higher than .63 on that factor and lower than .43 on the other factors, were retained. Of the thirteen improvement level of store attributes by QRT, ten items were significantly loaded on the factors. Home delivery item was eliminated before factor analysis because 78% of respondents omitted answering the item. The items, return

policy, better price for the value, better fitting garment, did not show a strong relation to any single factor. These items were eliminated from further analysis. The resulting factors were distinct and definable. Factor 1 was labeled Time/Availability. Factor 2 was labeled Store Environment. To judge the strength of measurement of the underlying constructs, two factors were also tested for reliability. Each factor had Cronbach's alpha value above .65, and was considered excellent measures of indicated constructs [40].

TABLE V. Factor Loading of Improvements on Store Attributes

Factor	Eigen value	Cronbach' alpha	Loadings
Time/Availability	5.08	.85	
fast turnaround of goods			.87
availability of advertised product			.76
variety of assortment			.74
accuracy of product advertisement			.63
stockout			.83
faster checkout time			.69
Store Environment	2.56	.65	
friendly personnel			.77
store layout			.88
merchandise type for target customers			.64
quality merchandise			.86

Time/Availability represents improvements in time related store attributes and availability of merchandise related. Six items were retained in this factor with the items loading between .69 and .87. Time related items are fast turnarounds of goods and faster checkout time. Availability related items are availability of advertised products, accuracy of products advertisement, reduced stockouts, and variety of assortment.

Store Environment represents the improvements in physical store environment and service related attributes. Four items were retained in this factor with the items loading between .63 and .88. Apparel retailers who scored high on this factor perceived

that QRT improves store environment with friendly personnel, convenient store layout, and quality and right product for their target market.

Tests of Hypotheses

H1. Usage of QRT differs by store type (i.e., department store, specialty store, discount store, small independent store).

Results from a MANOVA revealed that the two factors of QRT usage (i.e. Information Sharing, Product Inventory/Availability) were significantly different by store type ($F[3, 28]= 3.75$, $p = .02$). To examine the source and direction of significance among store type, ANOVA with LSMs data were further analyzed. From the first ANOVA, a significant difference existed in the Information Sharing by store type ($F[9, 30]= 3.74$, $p=.02$) (see Table VI). Specialty chain stores had the highest mean scores in usage of Information Sharing (m=53.75). Discount and Department stores were similar in usage of QRT, and small independent store the lowest usage of Information Sharing (m=14.17).

TABLE VI. Store Type Effect on Factors in Usage of QRT and Improvements on Store Attributes: ANOVA Results with LSMs

Variables	*M*				*F*
	Specialty chain	Department	Discount	Small individual	
Usage of QRT					
Information Sharing	53.75[a]	43.84[b]	47.22[c]	14.17[abc]	3.74*
Product Inventory/ Availability	53.13[a]	52.88[b]	59.03[c]	15.63[abc]	25.88**
Improvements on Store Attributes					
Time/Availability	55.21[a]	59.29[b]	59.72[c]	18.06[abc]	13.28**
Store Environment	14.06	20.67	31.94	14.58	1.03

Note. A pair of means with the same superscript indicates a significant difference

between two groups. *p<.05, **p<.01

A significant difference existed in the Product Inventory/Availability factor by store type (F[3, 31]=25.99, p=0.00) (see Table VI). Discount stores have the highest mean scores in usage of Product Inventory/Availability (m=59.03). Specialty chain and department stores were similar mean scores in usage of Product Inventory/Availability, and small independent store had the lowest mean scores in usage of Product Inventory/Availability (m=15.63). This findings is consistent with previous studies of QRT usage [2,14]. Apparel manufacturers who have retail customers with specialty chain and discount store had the higher QRT usage than other store types of customers [14]. Retailers' technology implementation also depends on who are their partners and what they are using [14]. Small individual stores often do not have the capital to invest in the technology equipment needed for some QRT. Hypothesis 1 was not rejected.

H2. Improvement of store attributes (e.g., stockouts) by usage of QRT (e.g., bar coding, scanner) differs by store type (i.e., department store, specialty chain store, discount store, small independent store).

Results from a MANOVA revealed that improvements in store attributes by QRT (i.e., Time Availability, Store Environment) were significantly related to store type (F[3, 28]= 4.21, p =.01). From ANOVA analysis with LSMs, a significant difference was shown in the Time/Product Availability when compared by store type (F[3, 28]=13.28, p=0.00) (see Table VI). Discount stores had the highest mean scores in improvements of Time/Product Availability factor (m=59.72). Department and specialty chain stores were similar mean scores in improvement of Time/Product Availability, and small independent stores had the lowest mean scores in improvement of Time/Product Availability

(m=18.06). No significant difference existed in improvements in store attributes of Store Environment factor by store type ($F[3, 28]=1.03$, $p=.39$). Hypothesis 2 was not rejected.

CONCLUSIONS AND RECOMMENDATIONS

To be competitive in the retail business environment, apparel retailers have been offered a new business strategy, QR. This research identified the usage of QRT, identified improvements of store attributes by QRT, and investigated differences in usage of QRT and improvements of store attributes depending on store type (i.e., department store, specialty store, discount store, small independent store). QRT usage and its ability to improve store attributes varied by apparel retail store type.

The most frequently used technologies among all apparel retailers were sales captured at the item level, bar codes on each merchandise, and scanning merchandise at POS. The most frequently cited store attributes which were improved by QRT were fast turnaround of goods, reduced stockouts, and availability of advertised product. Both the usage of QRT and the improvement of store attributes by QRT differed by store type. Small independent store had the lowest usage of QRT and had the lowest perception score in improvement of store attributes. From additional interview questions, all small independent stores were found to have little knowledge about QRT and its improvements for their service; therefore, education programs about QRT are needed for small apparel retailers.

Small lot orders was the least used technology among apparel retailers, which implies that still large quantity orders with discounts continue to be used. Small lot orders only requires change of management thought without large technology implementation cost. This new functions strategy can decrease overhead cost to retailers (e.g., storage of inventory) and increase return on investment immediately. Other least used technologies were consumer information system (e.g., demographics) and reduction

in inventory size. Also faster turn and fresher merchandise can create excitement within a store which may help retailers to attract consumers.

QRT adopters more often use technologies which require expensive hardware rather than those activities which require only change in methods. A little change in people's mind can bring companies high financial returns and customer loyalty. Barriers for changing and lack of use of small lot orders should be identified in the future research.

Retail QRT information assembled in the review of literature and the results from this empirical study provide direction for organizations who are developing QRT. Some QRT are widely used by apparel retailers. Other QRT have not been implemented. Planners should consider the differences among these technologies and potential barriers to implementation. The information is valuable to retailers who wish to evaluate the effects of their strategic planning. Changes in technologies and modes of retail operation can impact store attributes. These attributes are seen by consumers. The implementation of QRT can have a positive effect on store attributes. From the findings, fast turnaround of goods and reduced stockouts were improved by usage of QRT.

Manufacturers should be aware of the increased usage levels of QRT by retailers. Many of the technologies which were reported in high usage by retailers require interaction or partnership activities with suppliers. Sales captured at the item level and scanning merchandise at POS were mostly used QRT by apparel retailers. Manufacturers who deal with these QRT users will need to restructure how they are doing business and, perhaps, will be required to make large capital investments to do business with these QRT users.

Generalization of these findings must be done with caution. The small, purposive sample may not be representative of the U.S. apparel retail population. The retailers at the 95 QR Conference may be a specialized group of retailers who are drawn to the

conference by their heightened interest in QR. However, the comprehensive information about QRT usage and its impacts on store attributes from the research provides a basis for developing the further research with national-wide survey. Second, reported QRT usage may be higher than the reported levels. The retailers at the 95 QR Conference may represent a more innovative groups of retailers in implementation of QRT than common retailers, but from this study the future trend for technology adoption can be predicted for followers in QRT implementation.

Further research is recommended to explore the findings from this article. The factors for QRT usage and for store attribute improvement should be examined with a broader sample. In addition, other variables may be selected for use as moderators to determine relationships between factors in further research (e.g., organizational structure, performance, communication channels, other external influences). The implementation level of QRT varied with the individual QRT activities. More information is needed about the perceived barriers and benefits for these items. The actual process of implementation and other impacts of this strategy should be examined.

QR was examined from the perspective of apparel retailers. Future research is needed to develop an integrated model including the perspectives of manufacturers and textile producers because trading partners in the apparel complex are related. Specifically, identification and standardization of technologies used by manufacturers and textile mills are needed for better channel service.

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Cover letter for the retailer questionnaire

February 16, 1995

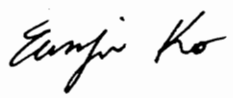
Dear store manager:

I am a Ph.D. candidate in the department of Clothing and Textiles at Virginia Tech. working on my dissertation research. The purpose of the research is to examine impacts of Quick Response technologies (QRT) on consumer satisfaction (CS) with retail stores. As a part of my research, I want to document your concerns about retailing strategies, Quick Response technologies (QRT) usage, and their relationships to consumer satisfaction . You and your store will share in the results by receiving an executive summary of the study.

The questionnaire will take about ten minutes to complete. All of your responses will remain confidential. All data collected will be used without identifying individuals. The information collected in this questionnaire will be used to assist retailers to adjust their strategies in a changing environment and to provide possible competitive advantages to retailers by maximizing CS.

I realize your time is at a premium, but the success of this important study will depend on your response. Please compete the questionnaire. If you wish to receive an executive summary of the study, please fill out the attached form on the next page. The results will be mailed to you within next few months. If you have any questions about the research, please contact me (703)231-5205 or Dr. Kincade at (703)231-7937. If you have questions about the conduct of this research, please contact Dr. Stout, the research division at (703)231-9359. Thank you very much.

Sincerely,



Eunju Ko
Ph.D. Candidate

Enclosure

Request for Executive Summary

Yes, I would like to receive an executive summary of this study.

Name: _____

Address: _____

_____

Phone: _____

QUESTIONNAIRE FOR APPAREL RETAILERS

Please Circle One best answer per question

Quick Response (QR) *is defined as a new business strategy to optimize the flow of information and merchandise between channel members in order to maximize consumer satisfaction. This strategy is accomplished by close working partnership and new technologies (bar coding, etc.) in manufacturing, distribution and retailing.*

1. Please indicate what implementation level for each QR technology in your store.

	0%				100% more	no opinion
1) automatic replenishment	0	25	50	75	100	X
2) bar codes on each merchandise	0	25	50	75	100	X
3) consumer information system (e.g., demographics)	0	25	50	75	100	X
4) electronic data interchange	0	25	50	75	100	X
5) electronic purchase reorder	0	25	50	75	100	X
6) inventory management systems	0	25	50	75	100	X
7) product planning with customer	0	25	50	75	100	X
8) reduction in inventory size	0	25	50	75	100	X
9) sales captured at the item level	0	25	50	75	100	X
10) scanning merchandise at point of sale	0	25	50	75	100	X
11) sharing product information w/trading partners	0	25	50	75	100	X
12) small lot orders	0	25	50	75	100	X
Others (Specify)_____	0	25	50	75	100	X

2. How much improvement do you think you can achieve with QR technologies in:

	no (0%) improvement				100% improvement	no opinion
1) enhancing fast turnaround of goods	0	25	50	75	100	X
2) enhancing return policy	0	25	50	75	100	X
3) having friendly personnel	0	25	50	75	100	X
4) increasing availability of advertised products	0	25	50	75	100	X
5) increasing variety of assortment	0	25	50	75	100	X
6) increasing accuracy of product advertisement	0	25	50	75	100	X
7) offering better price for the value	0	25	50	75	100	X
8) preventing stockouts	0	25	50	75	100	X
9) providing better fitting garment	0	25	50	75	100	X
10) providing convenient store layout	0	25	50	75	100	X
11) providing faster checkout time	0	25	50	75	100	X
12) providing home delivery	0	25	50	75	100	X
13) providing merchandise for target market	0	25	50	75	100	X
14) providing quality merchandise	0	25	50	75	100	X
Others (Specify)_____	0	25	50	75	100	X

3. What type of organization is your firm?

1. Specialty chain store
2. Department store
3. Mass merchant or Discount store
4. Small independent store

THANK YOU FOR YOUR TIME!

VITA

Eunju Ko

EDUCATION

6/95 Ph.D., Clothing and Textiles with a special focus in Apparel Marketing
Virginia Polytechnic Institute and State University, Blacksburg, VA

5/93 M.S., Clothing and Textiles with a special focus in Fashion Merchandising
Virginia Polytechnic Institute and State University, Blacksburg, VA
Thesis topic: "A study of relationship between organizational characteristics and QR adoption in the U.S. apparel industry"

2/91 B.S., Clothing & Textiles with a coordinated focus in Apparel Design and Textiles Science, Yonsei University, Seoul, Korea

6-7/93 Summer School, Fashion Design & Textile Design
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Business and industry experiences

Fashion merchandiser
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Assistant Inspector
Pacific Buying & Merchandising Service, Seoul, Korea 01/89

TEACHING INTERESTS

Fashion merchandising, Computer applications of retailing, Consumer behavior, International apparel marketing, Small business management, Research methods

RESERACH INTERESTS

Apparel retailing (e.g., service quality, computer application), Consumer behavior (e.g., consumer satisfaction), Management issues related to strategic planning and innovation adoption, International marketing

PUBLICATIONS

Refereed paper with a presentation

Ko, E. & Kincade, D.H. (in press). Impacts of QRT based attributes on CS/D among apparel female consumers. VICS & AIM, Chicago, IL. Quick Response 96 Conference Proceedings. (Invited as a guest speaker).

Ko, E. & Kincade, D. H. The relationship between organizational characteristics and the usage level of QR technologies. International Textile Apparel Association, Annual meeting, White Sulfur Springs, WV, 1993. 25 pages. Abstract printed in ITAA Proceedings 1993, 50, p. 101 (Received honorable mention in the graduate student competition).

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Papers under review

Ko, E. & Kincade, D. H. Product line characteristics as determinants of environmental interpretation response in the case of information technology adoption. Clothing & Textiles Research Journal.

Ko, E. & Kincade, D. H. QR adoption process in the apparel industry. ITAA Proceedings.

Ko, E. & Kincade, D. H. The usage of QR elements as a predictor of QR adopters and nonadopters. ITAA Proceedings. (Ph.D. Student Competition Paper)

Ko, E. & Kincade, D.H. Impacts of QRT on apparel retailing. International Journal of Retail & Distribution Management.

GRANTS

Research Grants

* "Quick Response adoption in the apparel industry". Voluntary Interindustry Communication Standards (VICS) (a consortium of U.S. manufacturers and retailers). 1993

* "Impacts of Quick Response strategy on consumer satisfaction". VICS. 1995

HONORS/AWARDS

Faculty Leadership and Service Award, 1994, Virginia Tech
Honorable mention in ITAA Graduate Students Competition Paper, 1993, Virginia Tech
Wall Street Journal Award, 1992, Virginia Tech
Human Resources Supplemental Awards, 1992, Virginia Tech
Undergraduate Scholarship, 1988, Yonsei University
Undergraduate Alumni Fellowships, 1987, Yonsei University

PUBLIC SERVICE

Leadership activities

Judicial Panel, Graduate Honor System at Virginia Tech,	08/92-12/93
Investigative Panel, Graduate Honor System at Virginia Tech	01/94-present

Professional meetings

QR Conference, 1995, Atlanta, GA
ITAA, 1993, Greenbrier, WV
Academic Apparel Research Conference, Defense Logistics Agency, 1993, Raleigh, NC
QR Conference, 1992, Chicago, IL

Memberships

International Textiles Apparel Association Membership
Korean Society of Clothing & Textiles
Virginia Tech Graduate Student Assembly