

# MODELING THE IMPACT OF RETAIL STOCKOUTS: IMPLICATIONS FOR CUSTOMER SATISFACTION AND RETENTION

Carlo D. Smith, The University of Tennessee

## ABSTRACT

The cost of retail out of stock conditions extends beyond the immediate loss in sales revenue. The impact of stockout conditions is reflected in customer satisfaction, loyalty, and resulting shopping behaviors. A conceptual model is presented to describe customer shopping behaviors prompted by stockout conditions and how such conditions may affect customer satisfaction and loyalty toward the service provider.

## INTRODUCTION

A 1996 Andersen Consulting study "The Retail Problem of Out-of-Stock Merchandise" offered dramatic evidence of the continuing significance of inventory stockout problems discussed by Schary and Christopher in 1979. The Andersen study, conducted in the retail grocery industry, presented the following summary results:

8.2% of items in the categories studied were out of stock each day, 11% on Sundays,

15% of all advertised items were out of stock on a daily basis during promotions,

66% of lost sales due to out of stock positions involved items which contributed to the fastest moving 25% of items,

34% of the time that products were out of stock, consumers postponed their purchases or looked elsewhere,

46% of the sales dollars associated with out of stock items were lost,

\$7 to \$12 billion of sales was "up for grabs" each year because merchandise was out of stock on store shelves.

While it is apparent that the immediate impact of a retail stockout may include the loss of revenue because customers cannot make their intended

purchase and choose not to buy an alternative, the longer term implications for corporate performance include the potential reduction in customer patronage, loyalty, and associated future revenues, as well the threat that negative word of mouth may deter other current and potential customers from patronizing the retailer (Schary and Christopher 1979).

Since the Schary and Christopher article, sophisticated point-of-sale and information management systems have provided retailers with more effective mechanisms to estimate the immediate impact of stock related lost sales. The impact of out-of-stock positions on customer loyalty, retention, and word of mouth behavior, however, is more difficult to assess.

Little research has been conducted to evaluate the impact of retail stockouts on customer behavior (Emmelhainz, Stock, and Emmelhainz 1991). The topic is of concern to researchers and practitioners in logistics, retail management, and marketing. Each of these areas has focused on different issues related to stock out conditions.

Logistics literature has addressed planning and control issues important in determining statistically based stock objectives necessary to meet customer service goals (Ballou 1992), customer decisions and behaviors resulting from out of stock conditions (Walter and LaLonde 1975, Emmelhainz, Emmelhainz, and Stock 1991), and the assessment of the economic cost of lost sales due to stockout conditions (Walter and LaLonde 1975).

Retail literature has also investigated customer decision processes associated with stockout conditions (Emmelhainz, Stock, and Emmelhainz 1991, Schary and Christopher 1979) and incorporated stock selection into the assessment of retail customer service (Westbrook 1981). Yet with few exceptions (Schary and Christopher 1979), the implications of retail stockout conditions have been considered part of an aggregate retail service construct.

Marketing literature in consumer satisfaction and service quality has not addressed inventory stock availability unless it has been interpreted as a tangible attribute of service quality (Zeithaml,

Berry, and Parasuraman 1993). The primary venue of satisfaction literature has involved the evaluation of post purchase product satisfaction (Oliver 1989, Churchill and Surprenant 1982, Woodruff, Cadotte, and Jenkins 1983) and more recently, the evaluation of dis/satisfaction with service offerings (Dabholkar 1995a). Service quality literature, on the other hand, has primarily been concerned with the identification and measurement of attributes of the service quality construct and, more recently, the assessment of the impact of service improvements on corporate performance (Zeithaml, Berry, and Parasuraman 1996).

While some companies have been rewarded for efforts to improve service quality, others have been reluctant to invest in such improvement efforts without evidence of a profitable outcome (Zeithaml, Berry, and Parasuraman 1996). This concern highlights the importance practitioners place on identifying a more effective means for assessing consequences associated with variations in customer service.

The purpose of this paper is to offer insights into the mechanisms by which a change in retail stock conditions, more specifically a stockout position, may affect the customer's immediate evaluation of dis/satisfaction with the retail service provider. The framework also indicates the potential longer term implications for the development of customer attitudes toward retailer loyalty and their resulting behaviors involving future patronage. This discussion is prompted by the following research questions:

*How do retail stockout conditions impact short-term customer dis/satisfaction?*

*How do repeated experiences associated with retail stockout conditions affect longer term customer loyalty and retention?*

To address these questions, a conceptual model of customer reaction to stock availability is presented. The theoretical base for this model combines research from dis/satisfaction and service quality literature along with that covering logistics and retail management. The model is used to propose changes in attitudes, intentions, and behaviors resulting from retail inventory stockout

conditions. The dynamics of the model presented considers potential short-term as well as long-term changes in customer shopping behavior, loyalty, and patronage resulting from the evaluation of service at the immediate transaction level.

In this paper, we propose to extend research in two ways. First, we consider the application of objective measures in the evaluation of customer satisfaction and service quality. While numerous measures have been developed to assess consumer perceptions of satisfaction and service quality, there have been few efforts to identify and develop more objective measures such as stock availability. Previous research by Rust and Zahorik (1993) has quantified the financial impact of more objective customer satisfaction elements in the banking industry. Retail stock availability is proposed to offer one such attribute in the retail merchandise industry which may be monitored and which provides management with a means to effectively influence customer service in retail establishments.

Second, we address a secondary assessment of dis/satisfaction toward the retail outlet as a result of a stockout condition. Such an assessment occurs when a stockout position leads the customer to purchase a substitute product, (resulting in an assessment of dis/satisfaction with the product), or visit an alternate retail outlet, (resulting in an assessment of dis/satisfaction with the alternative outlet), and its influence on customer attitude toward the original retail outlet. This perspective on customer dis/satisfaction incorporates adaptation level theory (Oliver 1980) which views satisfaction as a source of influence regarding attitude change and purchase intention.

The discussion is presented in three sections. First, literature addressing the role of stock availability in retail customer service is presented. Second, a model of customer reaction to stock availability is introduced and explained. The model is presented in four components including customer satisfaction with retail outlet service quality, customer reaction to retail stockouts, the impact of alternate product selection on service expectations and attitude toward the primary retailer, and alternate service provider impact on service expectations and attitude toward the primary retailer. Finally, implications for research and practice are offered.

### CUSTOMER REACTIONS TO STOCK AVAILABILITY

Much of the extant literature regarding customer reactions to out of stock conditions focuses on the immediate behavioral responses to out-of-stock positions.

In a 1991 study, Emmelhainz, Stock, and Emmelhainz manipulated five items to be out of stock at a discount grocery store. They identified three factors determining item selection including product attributes, product purchase frequency, and the availability of size, variety, and brand substitutes. The three most common actions taken when a preferred item was not available included substituting a different brand and keeping size and variety constant, substituting a different variety and keeping size and brand constant, or not making a substitution and planning to go to a different store. In addition they identified three factors which appeared to affect the decision whether or not to substitute an item: perceived product risk, intended product usage, and urgency of need.

In a survey of patrons of conventional department stores, Westbrook (1981) identified eight factors associated with store characteristics which may impact retail customer satisfaction including salesperson, store environment, store merchandising practices, service orientation, retailer related experiences, store clientele, value of offering, and advertised sales. Within this framework, stock availability would be considered an attribute of the third factor associated with merchandise selection. While this study focused on measurements related to the experience of being in the store and consuming the products and services obtained from the retailer, the survey questions focused on items purchased. This rules out any explicit measure of the impact of stockout conditions on customer satisfaction.

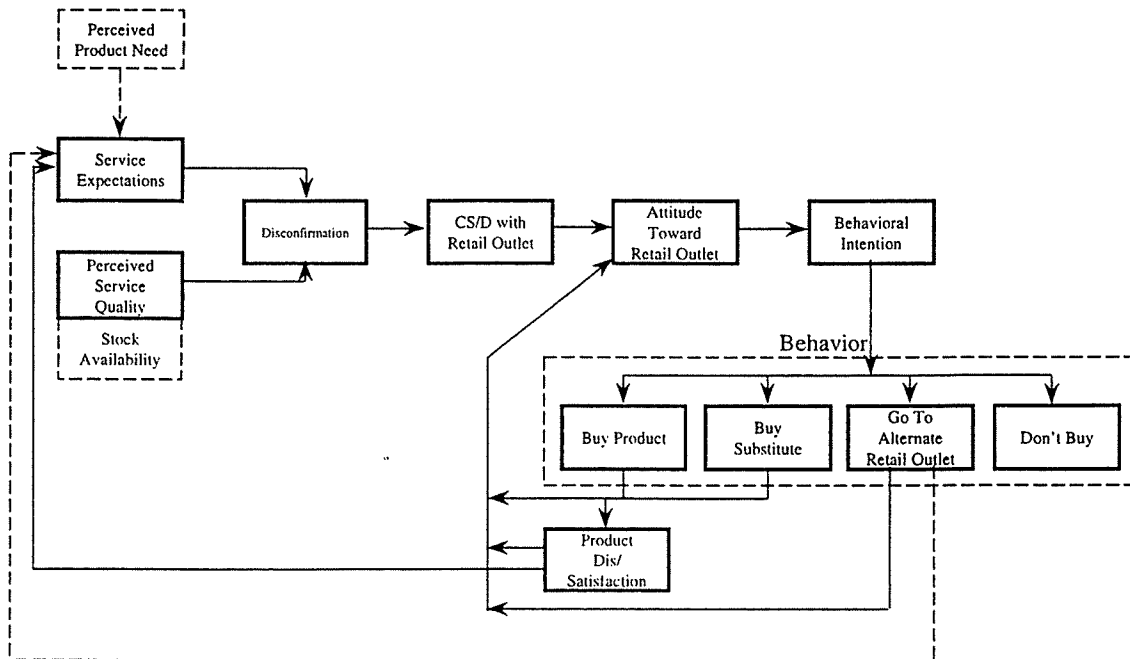
Schary and Christopher (1979) presented a detailed process model of customer stockout behavior and reported on the results of a survey conducted at two units of a British supermarket chain. Their model utilized some aspects of disconfirmation theory suggesting that consumer behavior presumes expectation based on previous performance or other sources of objective knowledge. Incorporating four component

modules associated with decisions in response to stockout conditions: store and product decisions, consumer behavior, response to out of stock situations, and retail merchandising strategies, only stockout behavior and merchandise strategy are suggested as offering an opportunity for measurement. Schary and Christopher noted a potential shift in customer attitude toward the retailer in addition to the behaviors displayed in response to the stockout conditions.

Walter and LaLonde (1975) and Walter and Grabner (1975) quantified the economic cost from retail out-of-stock conditions. They introduced and tested a stockout model which suggested six alternative customer behaviors in response to a stockout condition including purchasing a substitute at a higher price, purchasing a substitute at the same price, purchasing a substitute at a lower price, purchasing the same brand in a different size, returning to the store at a later date, or visiting an alternative store. By measuring the frequency of each behavior in addition to product costs, prices, and average sales per customer, the model established an expected value for an out-of-stock condition. They extended the model to consider behaviors associated with customers experiencing repeated stockout conditions after two visits to the retail outlet. These extensions included the possibility of placing a special order for the item or asking for the original items desired. The repeated stockout model presented the option of switching stores before determining a product substitution strategy. The "basic stockout model" as well as the "model for repeated stockouts" were tested in a survey of customers patronizing liquor stores in the state of Ohio. The Ohio state government controls and operates all retail liquor outlets in the state. This presented a unique opportunity to assess the implications of stockouts because of the limited pricing and promotion activities. Results indicated an expected revenue loss equal to 24 per cent of the retail price of the average product.

Walter and LaLonde (1975) and Walter and Grabner (1975) presented an effective method to assess the cost of lost sales associated with product stockout conditions. A potential limitation recognized by the authors involved the generalizability of the model to more competitive situations incorporating alternative retail sources

Figure 1  
A Model of Customer Reactions to Stock Availability



and pricing factors. In addition, both stockout models focused on the immediate behavior of individuals patronizing the store and did not consider the impact on customer attitudes and future shopping behaviors.

#### MODELING THE CUSTOMER REACTION TO STOCK AVAILABILITY

Figure 1 presents a conceptual model of the retail shopping experience of an individual. More specifically, the model illustrates the temporal changes in attitude and behavioral intentions related to an evaluation of dis/satisfaction with retail service. The model also identifies alternative behaviors which may be exhibited by customers based on stock availability.

To summarize the process depicted, the model begins with a customer's perceived need for a product, leading to an assessment of service from the selected retail outlet based on availability of the item. If the product is available, service

expectations are confirmed, attitude toward the retail outlet is likely to remain stable or become more favorable, the customer purchases the desired product, and the focus of dis/satisfaction then is directed toward an assessment of the product at the time of consumption (as depicted in the Product Dis/Satisfaction construct). In cases where the desired product is available, there is not likely to be a shift in service expectations or attitude toward the retail outlet.

If the product is not available from the retail outlet, negative disconfirmation toward the outlet is realized by the customer, leading to a level of dissatisfaction. The customer may experience some immediate change in their attitude toward loyalty and will contemplate a number of behavioral alternatives each of which, depending on the outcome, may contribute to a further change in attitude toward the primary retail outlet as well as a shift in expectations of service during the next service incident.

Components of the model draw from theories

associated with the determinants of customer expectations of service quality and satisfaction (Zeithaml, Berry, and Parasuraman 1996, Westbrook 1981, Oliver 1980, Dabholkar 1995a, Dabholkar 1995b, Dabholkar, Thorpe, and Rentz 1996), the role of disconfirmation as an antecedent to the customer assessment of dis/satisfaction with service encounters (Westbrook 1981, Rust and Zahorik 1993, Parasuraman, Zeithaml, and Berry 1985), the transition of a dis/satisfaction assessment into a more global attitude construct (Oliver 1980, Bolton and Drew 1991), the development of behavioral intentions as a result of the combined dis/satisfaction and attitude assessment (Zeithaml, Berry, and Parasuraman 1996), the decisions associated with purchase behavior involving out of stock conditions (Emmelhainz, Stock, and Emmelhainz 1991, Emmelhainz, Emmelhainz, and Stock 1991, Schary and Christopher 1979), and the post consumption assessment of product satisfaction (Oliver 1980, 1989, Tse and Wilton 1988, Woodruff, Cadotte, and Jenkins 1983, Spreng and Mackoy 1996).

#### **Customer Satisfaction with Retail Outlet Service Quality**

The first component of the model addresses the assessment of service dis/satisfaction and development of attitudes toward the service provider, in this case a retail outlet. The service transaction is initiated by the recognition of a product need on the part of the customer. Based on that need the customer visits the primary retail outlet in order to purchase the product. Depending on previous experience with the retail outlet the customer may have formed some basis of loyalty to patronize a specific retailer and store.

**Customer Evaluation of Retail Service.** The theoretical basis for both customer dis/satisfaction and service quality evaluations is the disconfirmation paradigm originally received from social psychology research (Oliver 1980). The disconfirmation paradigm involves the formation of expectations regarding product or service performance and the disconfirmation of those expectations as a result of some performance comparison. While the customer satisfaction construct is typically associated with the post

consumption evaluation of product performance versus a comparison standard, service quality is generally associated with an assessment of service attributes based on more idealized performance standards (Dabholkar 1993). Satisfaction and service quality have generally been supported by separate streams of research. While service quality research has focused on attributes associated with service performance, dis/satisfaction research has primarily focused on product evaluation. Research in satisfaction, however, is beginning to incorporate service phenomena. Recent debates suggest there are circumstances when measures of one or both constructs, (satisfaction or service quality) may provide better insights into customer evaluations of service (Dabholkar 1995a).

In a series of articles, Dabholkar (1993, 1995a, 1995b) investigated the similarities and differences between the satisfaction and service quality constructs. Her original analysis distinguished the constructs in the literature in that dis/satisfaction expectations are based on experience or another evaluative standard rather than the ideals which are used in service quality; dis/satisfaction takes a transaction level perspective evolving into a more global attitude while service quality is viewed as a more global concept; evaluations of dis/satisfaction contain aspects of affect as well as cognition while service quality is primarily cognitive in nature. Dabholkar (1993) speculated that whereas the two constructs were likely to overlap under certain conditions, there was potential for the constructs to be operationalized as separate factors and the possibility of a causal link between the two constructs. In a following article, Dabholkar (1995a) offered further theoretical evidence of a causal link which varied according to contingencies between the dis/satisfaction and service quality constructs. Dabholkar (1995b) confirmed her original speculation regarding construct similarities and distinctions with an empirical examination which identified customer dis/satisfaction and service quality as separate factors when viewed in the short term, and converging into one indistinguishable factor in the long term based on the cognitive and affective aspects of the constructs. This finding appears to have been confirmed by Spreng and Mackoy (1996) in an

empirical study of student assessments of undergraduate advising. Their study evaluated both dis/satisfaction and service quality operationalizing service quality based on a distinction between desires and evaluation of service received.

The representation of both satisfaction and service quality constructs are important to the temporal application of the model depicted in Figure 1. Viewing a customer transaction involving a stockout situation as an isolated incident suggests that the satisfaction construct may form the basis for comparison incorporating previous experience with the current or an alternate retail outlet. Over an extended relationship with a retail outlet involving a series of shopping experiences, either satisfaction or service quality play a role in the disconfirmation process.

A second debate more directly associated with consumer dis/satisfaction research concerns standards of comparison used in the evaluation of consumer dis/satisfaction. Woodruff, et al (1991) provide an assessment of alternative comparison standards presented in the dis/satisfaction literature, their distinctions and commonalities, and the implications of using different standards in a retail setting.

The model of customer reaction to stock availability (Figure 1) considers that expectations, as designated by the Service Expectations construct, are based on experience-based norms originally conceptualized as part of a modified confirmation/disconfirmation process presented by Woodruff, Cadotte, and Jenkins (1983). Within the experience-based norms model, expectations are derived from a variety of personal experiences involving the personal use of a product, word-of-mouth endorsements and criticisms, as well as marketing efforts presented by companies. Woodruff, Cadotte, and Jenkins (1983) identified three different outputs resulting from this prior experience: expectations about the focal brand, experience-based performance norms, and brand attitudes.

Service expectations at a retail outlet as represented in Figure 1 are proposed to originate from previous experiences with the retail outlet. In service industries, much as with products, customers may have prior service experiences with

the primary company as well as other companies offering similar services, word-of-mouth endorsements and criticisms may be presented by others, and the service provider may be involved in marketing efforts that contribute toward customer beliefs about services offered. An interesting component of the experience-based norms model is the incorporation of cognitive as well as affective processes. Woodruff, Cadotte, and Jenkins (1983) posited that brand attitude is influenced indirectly by prior experience through the mediating variables of expectations and performance norms. In the model presented in Figure 1, this would affect attitudes toward the retailer if they were viewed as a brand name service provider.

Westbrook (1981) distinguished customer dis/satisfaction with retail establishments from product/service dis/satisfaction suggesting that dis/satisfaction with a retail establishment can be viewed as:

“an individual’s emotional reaction to his or her evaluation of the total set of experiences realized from patronizing that retailer. In contrast, product/service satisfaction refers to the consumer’s emotional response to his or her evaluation of experience obtained from the usage, consumption, and ownership of the specific good or service.”

By this he incorporated a diverse set of factors associated with the retail experience into a more global assessment of dis/satisfaction and attitude toward the retail outlet. Westbrook’s model also recognized the potential for changes in retail dis/satisfaction as a function of changes in the components of the experience. Stock level is proposed in Figure 1 as one component which may affect customer assessment of dis/satisfaction toward the retail outlet.

Based on a series of focus group interviews with customers of various service firms, Zeithaml, Berry, and Parasuraman (1993) conceptualized a framework which incorporated a zone of tolerance regarding customer expectations. The zone of tolerance, conceptualized as a zone of indifference in previous work by Miller (1977), is bounded by two standards of expectation; “desired service,”

which they defined as, "the level of service a customer hopes to receive," and, "adequate service," which they defined as, "the level of service the customer will accept."

Zeithaml, Berry, and Parasuraman (1993), suggested that the zone of tolerance represented a recognition and acceptance by customers of the heterogeneous nature of services. As a result, if perceived service falls within this range it is unlikely that the customer will experience any form of disconfirmation toward the service offering. If perceived service does not fall within the zone of tolerance, the customer will experience disconfirmation toward the service and will form an evaluation of satisfaction or dissatisfaction, depending on the circumstances. Figure 1 presumes a similar zone of tolerance in the assessment of disconfirmation toward the service provided by the retail outlet. In this case, if the level of stock availability is not adequate to meet the needs of the customer, (the product is completely out-of-stock, fewer items are available in stock than are needed by the customer, or perhaps an adequate number of items are available in stock, however they appear to be in poor physical condition), negative disconfirmation toward the service provider will result. On the other hand, if adequate stock is available, customer expectations are confirmed.

In addition to recognizing a zone of tolerance associated with customer assessments of disconfirmation, the framework presented by Zeithaml, Berry, and Parasuraman (1993) recognized two other specific factors affecting the assessment of service disconfirmation which are considered in the model in Figure 1. First, if interpreted as an *implicit service promise*, stock availability represents an antecedent of both desired and predicted service. Second, *perceived service alternatives*, such as service provided by alternative retail outlets, represent an antecedent to the formation of a level of adequate service.

The model presented in Figure 1 proposes that attitude toward the retail outlet may also be influenced by previous experiences with the primary retail outlet as well as competing retail outlets. The model also suggests that, in circumstances in which alternative products must be purchased as a result of an out of stock position on the original item, the attitude toward the retail

outlet can be influenced by an assessment of product dis/satisfaction.

For example, should the desired product be available, the likely scenario will result in the confirmation of expectations. Depending on the circumstances of the need and the nature of the product, such as a highly sought toy at Christmas, the customer may very well experience a level of positive disconfirmation associated with the product availability.

If, however, a desired product is in an out-of-stock inventory position when the customer arrives at the shelf location, the stockout condition in the retail outlet results in an initial assessment of negative disconfirmation toward the outlet, which contributes to the customer's attitude toward service quality and intentions toward patronage.

**Factors Affecting Customer Loyalty.** Bolton and Drew (1991) pointed out that when frequently repeated transactions are evaluated, the distinction between satisfaction and a broader attitude toward the service provider becomes "blurred." Oliver (1980) applied adaptation level theory to assess the impact of post usage ratings on attitude and expanded the model to include future purchase intentions. His findings suggested that dis/satisfaction outcomes can influence post purchase attitude as well as future purchase intentions. While the model presented by Oliver is directed at product dis/satisfaction, its applicability to service breakdowns as suggested in Figure 1 may influence future patronage decisions in two ways. First, as a direct adaptation to current attitudes toward the original retail outlet and, second, in circumstances where the service breakdown leads to an experience with an alternative retail outlet, dis/satisfaction associated with that experience may also influence expectations toward the primary retail outlet.

Schary and Christopher (1979) noted customer reactions to stockouts may be affected by brand loyalty, store loyalty, and lack of expressed loyalty. In addition they recognized that while a stockout may weaken a customer's bond to a store, the stockout must first be observed by the customer. Such an observation may be affected by customer shopping behavior. Customers using a pre-planned shopping list are likely to observe a stockout while others, who may use the store as a

devise to remind them of product needs, may not realize the out of stock position.

Investigating the impact of service improvement and customer satisfaction, Bolton and Drew (1991, p.2) noted the following relationship between dis/satisfaction and attitude:

“Researchers distinguish between two constructs, customer satisfaction and attitude. Customer *satisfaction* refers to a customer’s evaluation of a *specific transaction*. In contrast, a customer’s *attitude* corresponds to a *global* evaluation of the product/service, rather than to an evaluation of a specific transaction.”

They presented a model to explain the impact of service dis/satisfaction on attitude. The equations presented recognized the formation of a feedback loop from the primary service provider that affects attitude and future purchase intentions based on the service dis/satisfaction. The model in Figure 1 recognizes such a feedback loop leading from customer purchase behaviors to the “Service Expectations” and “Attitude Toward the Retail Outlet” constructs.

### Customer Reactions to Retail Stock Availability

Actions customers may take in response to variations in retail stock availability incorporate the development of behavioral intentions, followed by one of four alternative behaviors as indicated in Figure 1. If the desired product is in stock at the retail outlet at the time of the customer’s visit, the customer will buy the product. If the desired product is not in stock from the retail outlet at the time of the customer’s visit, the customer may decide not to purchase the product at the present time, may decide to purchase a substitute product considering alternative sizes or brands, or the customer may decide to visit an alternative retail outlet in the hope of obtaining the product originally desired.

**Behavioral Intentions Regarding Stockout Conditions.** Zeithaml, Berry, and Parasuraman (1996) recognized that changes in customer dis/satisfaction lead to behavioral intentions. The central intention addressed in their model involved

the potential for customer defection. Highlighting the implications of dissatisfaction on financial performance, their model hypothesized alternative types and levels of behavioral intentions based on the customer’s perception of service quality performance. Their model considered service quality outcomes where customers do and do not experience problems with service as well as when service problems are resolved. Examples of resulting behavioral intentions included favorable intentions such as saying positive things about the company, remaining loyal to the company, spending more money with the company, as well as unfavorable intentions such as negative word-of-mouth, switching to another company, reducing the amount of business conducted with the company, and so forth. Results of a study conducted with customers of four different types of service firms, including a retail chain, suggested that maintaining service quality within the zone of tolerance sustains the customer’s favorable intentions toward patronage. However, companies must reach the customers’ desired level of service quality if they wish to raise favorable behavioral intentions toward patronage.

Their findings also suggested that under conditions of service recovery it is unlikely that customer behavioral intentions will remain at previous levels. Within a retail circumstance, an example may be if an out of stock is experienced by a customer and the retail outlet arranges for a special delivery of the product or provides for an attractive discount on a demonstration model. Results of their study suggested that service failures may weaken the customer-company bond even with satisfactory problem resolution as described above.

**Decisions and Behaviors Resulting From Out of Stock Circumstances.** A number of researchers have investigated customer reactions to retail stockout conditions, focusing on the choice alternatives considered and the decision made when experiencing a stockout condition.

Schary and Christopher (1979) identified five different stockout behaviors including options to go to a different store, canceling the purchase, delaying purchase, buying an alternate brand, or buying an alternate size.

Emmelhainz, Stock, and Emmelhainz (1991a)



manipulated out of stock conditions on selected products in a grocery store and identified 15 different possible behavioral reactions to stockouts involving decisions whether or not to purchase at the store, to go elsewhere, or to select alternative brands, sizes, or varieties of product. An important finding of their study identified three factors which contributed to the decision whether or not to substitute items: perceived product risk, intended product usage, and urgency of need.

Walter and Grabner (1975) identified six potential reactions to a stockout condition at a liquor store. The six factors included decisions to return later, patronize another store, or substitute another item considering either size, brand, or cost.

The model of customer reaction to stock availability summarizes alternatives into the three resulting behaviors associated with a stockout condition. One option illustrated in Figure 1 is to buy a substitute item from the same retail outlet. This item may be the same brand in a different size or variety, a different brand and so forth. Under this scenario the model indicates that a subsequent dis/satisfaction process would be entered. This process would focus on an assessment of dis/satisfaction with the alternative product.

Rather than buy a substitute, the customer may choose to patronize an alternate retail outlet. Such a move may lead to the purchase of the desired product and confirmation regarding product performance, however the stockout circumstance at the original retail outlet creates an opportunity for customer exposure to service at the alternate outlet. As with the alternate product loop, it is proposed that the initial out of stock position contributes to a level of dissatisfaction with the original service provider, as well as modifying service expectations and maybe more importantly, a shift in customer attitude toward the service provider.

The third behavior is a decision not to buy the product at this time. This is proposed not to affect expectations or changes in attitude other than that associated with the initial level of disconfirmation.

### **Product Impact on Service Expectations and Attitude**

While the model does not explicitly detail the disconfirmation process associated with an evaluation of product dis/satisfaction, the "Product Dis/satisfaction" construct represents a second area of the model where the disconfirmation paradigm is applied. In this case disconfirmation presents a means to evaluate product dis/satisfaction. This application of the dis/satisfaction model is more traditional and, as with the service disconfirmation illustrated in the top level of the model, this level of dis/satisfaction evaluation is also associated with the model of experience-based norms presented by Woodruff, Cadotte, and Jenkins (1983).

The role of the Product Dis/Satisfaction construct within the overall model is to suggest possible alternative outcomes based on the customer's assessment of dis/satisfaction associated with the product purchased. The model proposed that the outcome of the product evaluation may influence expectations and attitudes associated with the service provided by the retail outlet. For example, under circumstances where the product to be purchased is the original product desired by the customer, the outcome from the product dis/satisfaction model is likely to be an assessment of dis/satisfaction with only the product. If, however, the product is an alternate product than that originally desired, the outcome can have an extended impact on expectations of service quality as well as loyalty toward the retail outlet. Should the alternate product perform in a manner that results in positive disconfirmation, the possibility exists that the customer will attribute some of their good fortune to the retail outlet service. This attribution may affect the customer's general attitude toward the outlet but will likely not affect expectation toward stock availability. This affect is represented by the path leading from the "Product Dis/Satisfaction" construct to the "Attitude Toward Retail Outlet" construct.

If, on the other hand, the evaluation of product dis/satisfaction results in an assessment of poor performance compared to product expectations and an associated negative disconfirmation, there is the possibility that the customer will, in this case, attribute some of their misfortune to the retail outlet, leading to a decrease in overall loyalty and

a shift in service expectations.

To summarize the impact of alternative product selection, it is proposed that the dis/satisfaction experienced as a result of the alternate product may have a secondary effect on customer expectations and attitude toward the product. If the product experience results in a positive disconfirmation evaluation, the customer may in fact increase their satisfaction with, and loyalty toward, the retail outlet. A negative disconfirmation evaluation, on the other hand, may lead to dissatisfaction with, and a reduction in loyalty toward, the retail outlet.

#### **Alternate Retail Outlet Impact on Service Expectations and Attitude**

Alternate retail outlets offer customers a basis for comparison regarding service expectations (Zeithaml, Berry, and Parasuraman 1996), as well as an alternative source for desired products. Obviously, for the primary retail outlet, an alternate outlet represents a threat to future revenues.

Within the framework of the model, the level of dis/satisfaction with an alternate retailer helps to establish the base of "adequate service" within the construct of "Service Expectations" used in making a comparison judgment. As a result, any exposure to alternate retail outlets providing the same products and service presents a mechanism by which customers may alter expectation of the primary outlet. The process associated with the behavior of a customer going to an alternate retail outlet mirrors the overall model presented in Figure 1.

If the customer experiences positive disconfirmation with the shopping experience at the alternate outlet, it is proposed that the experience will trigger a secondary assessment which may contribute to a negative attitude toward the primary outlet as a result of the original stockout. This affect is represented by the path leading from the "Alternate Retail Outlet" construct to the "Attitude Toward Retail Outlet" construct. On the other hand, an alternative may, in fact, enhance the assessment of service provided by the primary retail outlet. Under one possible scenario, the secondary retail outlet is also out of the item, suggesting a general shortage and

reduction in dissatisfaction with the primary retail outlet.

#### **IMPLICATIONS FOR RESEARCH AND PRACTICE**

The model of customer reactions to stock availability developed in this paper offers an explanation of the role that retail inventories can play in supporting customer satisfaction and retention. The model combines theoretical perspectives associated with customer assessments of service quality, satisfaction, and attitude toward the retail organization, along with the development of intentions and behaviors as a result of stock conditions, and the assessments of satisfaction with alternative products and service providers. This paper is intended to fill a gap in the literature by considering not only the immediate impact of stock availability on the customer's satisfaction with the retail outlet, but, in cases when a stockout situation is realized, the potential for a further assessment of satisfaction toward the retail outlet based on the performance of a substitute product or experience with an alternate retailer.

For practitioners, the model provides a conceptual framework to consider a broader set of implications resulting from stocking policies in the retail environment. Previous research regarding stock conditions has centered on immediate behaviors exhibited by customers who experience a retail stockout condition. By understanding the role of stock conditions in the development of attitude toward the retail outlet, merchandising, marketing, and inventory managers can better establish a cost of service to incorporate into alternative marketing and merchandising strategies. If, for example, a relationship between stock availability and customer attitudes toward patronage can be quantified as suggested by the results from the Schary and Christopher study, the model of customer reactions to stock availability offers a means to establish more effective in-stock service objectives that optimize the cost of holding retail inventories, the cost of immediate lost sales from out-of-stock inventory positions, as well as the potential cost of future lost sales due to lost patronage.

Rather than considering inventory manipulation as a sole means to control customer

service, retail organizations may be able to address service issues by more effectively managing customer expectations of stock availability in the development of their marketing and service strategies. Such expectations may consider factors such as an assessment of stock availability provided by competitors, the availability of alternative products, and the messages presented to current and potential customers through various forms of communication.

Stock availability includes breadth as well as depth, and by understanding customer behavior toward stock selection and loyalty, merchandise managers will be able to consider short and longer term implications of adding and deleting product brands, variety, and sizes.

From a research perspective, a number of opportunities for future investigation regarding the impact of stock availability on customer satisfaction and retention can be identified. An important next step will begin to incorporate methods which will be useful in measuring the relationships identified in the model. The ability to establish and apply objective measures of service and satisfaction has been demonstrated by Rust and Zahorik's (1993) approach in assessing the contribution of attributes of customer dis/satisfaction to improved retention, market share, and profitability in the banking industry. The retail context considered in this model adds some complexity to the development of measures because of the relative freedom retail customers have for brand switching compared to that found in the banking industry.

The role of stock availability as a basis for customer expectations regarding service is not clearly understood. If merchandising is incorporated into the set of store characteristics which impact retail customer satisfaction (Westbrook 1981), how much of that impact can be attributed to stock availability based on inventory levels rather than breadth of selection?

As stated previously, the model presented in Figure 1 applies the concept of experienced based norms in the establishment of service expectations (Woodruff, Cadotte, and Jenkins 1983). Within the retail environment, further investigation is needed to assess the influence of various sources on the development of such norms. Potential sources include direct experience with the retail

outlet as well as mechanisms used by the retailer to define service capabilities for customers, and experience with competing retail outlets in establishing expectations for stock availability.

The model also points to an opportunity to investigate links involving secondary feedback loops between customer satisfaction with alternative retail outlet service or customer satisfaction with a substitute product, and its influence on attitude toward the primary retail outlet.

Rather than focusing on research questions associated with components of the model, additional research may address the applicability of the model under different retail conditions. For instance, it would be interesting to investigate the applicability of the model in a specialty goods retail environment. The nature of the customer clientele may be different as well as their behavior toward stockout conditions. Hansen and Deutscher (1977) in their investigation of retail store image found no significant difference in the measure of important attributes between grocery and department store image. This suggests that while the application of this model is centered on general merchandise retailers, it may also be applicable under specialized merchandise retail scenarios. However, a distinguishing factor which may prevail in a specialty goods retail environment concerns the role of product involvement in the assessment of retail satisfaction. Does the level of product involvement affect service expectations and attitude toward the retail outlet when stockout conditions are experienced by the customer? Higher involvement specialty products may limit the number of substitute products or alternate retail outlets.

Finally, while the model is developed based on stock availability as a central phenomenon, its applicability may extend to other individual or groups of measures associated with evaluating customer reactions to service criteria identified with the retail environments.

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**Send correspondence regarding this article to:**

Carlo D. Smith, Doctoral Student  
 Department of Marketing, Logistics, and Transportation  
 The University of Tennessee  
 310 Stokely Management Center  
 Knoxville, TN 37996-0530 USA