5ème colloque Etienne THIL

26 et 27 septembre 2002

Wait Expectations, Store Atmosphere and Gender Effects on

Store Patronage Intentions

Dhruv Grewal

Julie Baker

Michael Levy

Glenn Voss *

*** Dhruv Grewal is the Toyota Chair of Commerce and Electronic Business and Professor of Marketing, Babson College; Julie Baker is Associate Professor of Marketing, University of Texas at Arlington; Michael Levy is Charles Clarke Reynolds Professor of Marketing, Babson College; Glenn Voss is Associate Professor of Marketing, North Carolina State University.**
Dhruv Grewal and Michael Levy acknowledge the research support of Babson College. We appreciate the comments of the editor, the associate editor and the reviewers.

Abstract

Understanding why people buy, and why they don't, could possibly be the most important factor in developing a successful retail strategy. Many factors, both obvious and subtle, influence customers' patronage intentions. Using videotape technology, this study establishes the relative importance of number of customers, number of visible employees and the presence of classical music on perceived crowding, wait expectations, and store atmosphere. These constructs were found to be critical antecedents of store patronage intentions within the context of the jewelry store in which the model was tested. We also found support for the direct effects of gender on wait expectations and store atmosphere

Waiting for service in a retail store is an experience that can lead to consumer dissatisfaction (Katz, Larson and Larson 1991), which in turn can result in negative effects on store patronage behavior (Hui, Dubé and Chebat 1997). Previous studies on the effects of waiting have tended to focus on consumer responses to delays under conditions of actual or simulated waits (e.g., Chebat, Œlinas-Chebat and Filiatrault 1993; Hui, Dubé and Chebat 1997; Taylor 1994, 1995). In these studies, subjects actually experience a wait situation. However, before retail customers choose to wait, they are likely to estimate (quantitatively or qualitatively) how long that wait will be based on cues they observe in the store environment. If their observations lead to an *expectation* that the wait will be too long, they may not even enter the store, or stay long enough to experience a wait.

Expectations have been found to be an important component of customers' service quality evaluations (Parasuraman, Zeithaml and Berry 1988) and satisfaction (e.g., Oliver 1981; Wilton and Nicosia 1986). While understanding wait expectations (its antecedents and consequences) is critical to retailers, previous models of store patronage (e.g., Darden, Erdem and Darden 1983) do not include wait expectations. Furthermore, past research on waiting does not explore wait expectations, but rather consumer's responses to actual waits. We feel that it is important to understand the antecedents of wait expectations and the role of these expectations on patronage intentions.

Our study fills a gap in understanding store patronage decisions by integrating the literatures on waiting, environmental psychology, value and expectations. We explicitly manipulate three factors - number of visible employees, number of customers, and the presence (versus absence) of music. The number of customers should increase expectations of wait and crowding, a phenomenon that a number if retailers have to deal with on a daily basis. Two possible ways to combat the adverse effects of high expectations of wait and perceived crowding on patronage intentions are by having more employees and/or adding enhancing elements to the store environment (e.g., adding the presence of music). Zeithaml, Berry and Parasuraman (1993) suggest that service expectations are influenced by cues in the store environment. Music has been found to influence store patronage intentions (e.g., Baker, Parasuraman, Grewal and Voss 2000).

The setting for our study is a jewelry store. In retail stores that are mostly self-service, such as supermarkets or discount stores, customers may need service only at the point of conducting an actual purchase, but do not necessarily need help during the entire shopping process (including browsing, gathering product information, or trying on/out products). However, there are some retail venues in which customers must have help from salespeople throughout the shopping process. Customers purchasing cars, custom-designed products such as furniture or jewelry, require time and attention from employees. In a typical jewelry store, for example, customers cannot touch, try on, or even price jewelry without talking to a salesperson. In fact, jewelry is often custom-designed and fitted for individual customers. Therefore, jewelry store customers may require some time with salespeople, increasing the likelihood that other customers will have to wait. Thus, a specialty store that sells jewelry and expensive gifts is an appropriate setting for testing our model.

The structure of the paper is as follows. The hypotheses are presented within a conceptual framework based on inference theory. Then, an experiment utilizing videotapes of store scenarios is described, and results are presented. Drawing from the findings, we offer implications for retailers and propose avenues for future research.

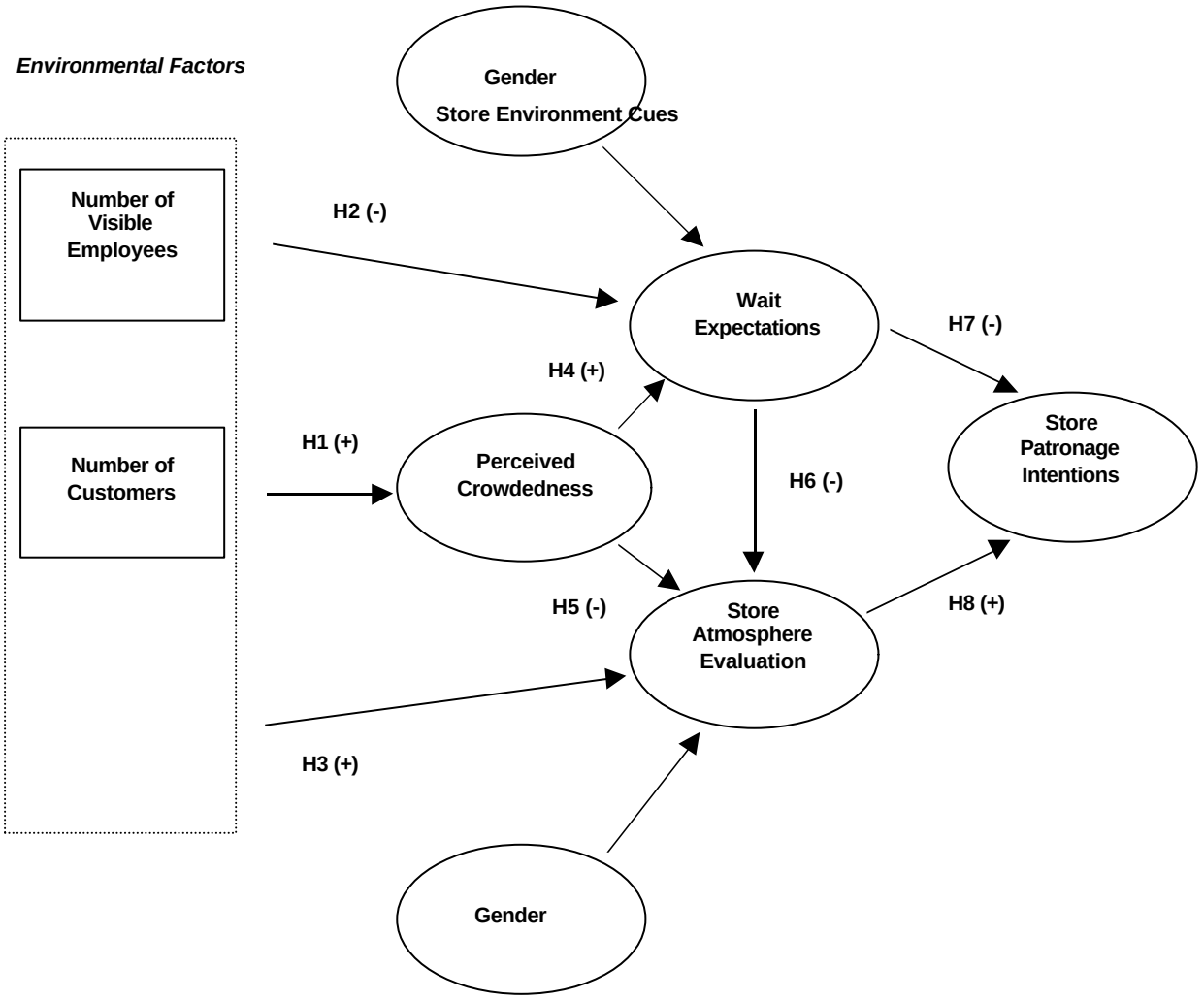
Conceptual Framework

Our model is couched in inference theory, which argues that people make inferences about the unknown based on information they receive from cues that are available to them (Huber and McCann 1982; Monroe and Krishnan 1985; Nisbett and Ross 1980). Past research has developed conceptual frameworks integrating the role of information cues on customers' affective and cognitive assessments, and patronage intentions. (e.g., Grewal, Monroe and Krishnan 1998; Compeau, Grewal and Monroe 1998; Zeithaml 1988).

Baker (1998) posits that the store environment offers a rich set of informational cues that consumers use to make inferences about products and service. For example, customers who see a store with marble floors and crystal chandeliers may expect merchandise quality to be high, and prices to be expensive. Several studies have empirically supported the notion that store environment cues lead to consumer inferences and expectations about a store's merchandise, service, prices and shopping experience costs (such as waiting time), which in turn influence store patronage intentions (Baker,

Parasuraman, Grewal and Voss 2000; Baker, Grewal and Parasuraman 1994; Chebat, Chebat-Gelinas, and Filiatrault 1993; Grewal and Baker 1994; Mazursky and Jacoby 1986).
We propose that consumers' decisions to stay and shop in a store where they need salespeople to help them through the shopping process (particularly in a store they have not previously patronized) are based on the cognitive inferences they make from in-store cues about waiting time and perceived crowding, and from how they feel about the overall atmosphere of the store. We next discuss the development of our conceptual framework, and present hypotheses for the linkages shown in Figure 1.

Figure 1
A Conceptual Model of the Prepurchase Process of Assessing a Retail Outlet Based on Environmental Cues



Kotler (1973) argued that a retail store offers a unique atmosphere that may influence the consumer's patronage decision. This influence is in part manifested through an inference-making process, whereby consumers make judgments about what they don't know (e.g., product quality, price) based upon what they can observe in the store's environment (Baker 1998). Specifically, we seek to determine if the number of customers in the store (perceived crowding), number of employees in the store, and presence (versus absence) of music, influence customer perceptions of crowding, expectations about waiting time, and their evaluation of the store's atmosphere, which, in turn, is proposed to influence customers perceptions of value and store patronage intentions.

Number of Customers. Crowding is a factor that affects shoppers' selections of retail stores (Herrington and Capella 1994). Crowding has been conceptualized to have two components (Stokols 1972): *Physical density* refers to the objective conditions associated with numbers of people per unit area, and *crowding*, refers to the negative psychological reactions to density (we address the psychological aspect of density in H6). Additionally, Machleit, Kellaris and Eroglu (1994) distinguished between human crowding and spatial crowding. In this study we are focusing on perceptions of human crowding, and therefore vary the human density of the store environment in order to verify that more customers within in a retail space result in higher perceptions of crowding. More formally stated:

H1: More customers in the store will result in higher perceptions of crowding.

Number of Visible Employees. In retail stores where service is a critical component, such as the jewelry store used in this study, it is essential to consider how employees may affect customers' impressions about the store (Solomon 1998). Zeithaml, Berry and Parasuraman (1993) proposed that implicit promises made by tangible cues (e.g., cues in the store environment) may influence customer expectations. One store cue that should influence customer wait expectations is how many employees they see on the sales floor.

Two theoretical frameworks support the proposed relationship between the number of visible store employees and wait expectations. "Undermanning" has been defined by Barker's (1965) theory of behavioral ecology as a condition that occurs when the number of people in a space is less than the setting needed to function properly. The undermanning framework would suggest that because more employees in a store should help a store function properly by shortening customer wait times, customers' wait expectations would be lowered if they can see more employees in the store.

Attribution theory also offers insight into how the number of employees may influence customers' wait expectations. While three dimensions of attribution – locus, controllability and stability - have been identified in the literature (Bitner 1990; Folkes 1984, 1988), we have focused here on controllability because consumers tend to believe that service failures are under the control of the provider (Folkes 1988; Richins 1985). Tom and Lucey (1995) found that consumers were least satisfied with a grocery store when the causal factors for a longer-than-expected wait were under the store's control. Similarly, Taylor (1995) discovered that performance evaluations of a service by customers who were delayed were influenced by whether the service provider was perceived to have control over the delay. Thus, not only the length of the wait, but also the reasons for the wait appears to be important in influencing customers' perceptions. Extending this logic to customer expectations, we would predict that if potential customers see a sufficient number of employees in the store, they may believe that the store has attempted to control for customer wait times, then customers should have lower wait expectations than if they see too few employees. Therefore, we hypothesize:

H2: More employees that are visible in a store will result in lower customer wait expectations.

Presence of Music. Music has been shown to affect consumers' responses to retail environments, typically in a positive manner (e.g., Baker, Grewal and Levy 1992). In fact, Hui, Dube and Chebat (1997, p. 90) note that "playing music in the (service) environment is like adding a favorable feature to a product, and the outcome is a more positive evaluation of the environment." A number of studies have focused on testing the effects of music characteristics, such as tempo (e.g., Milliman 1982), and style (Hui et al. 1997; Baker et al. 2000).

We are interested in exploring the effects of the *mere presence* of music, simultaneously with number of visible employees and number of customers, in accordance with a suggestion by Machleit, Kellaris and Eroglu (1994) that music may affect the impact of in-store social factors (i.e., people sharing the store's environment). In particular, we compare store environments playing classical music with those not playing any music. Classical music was chosen because it "fits" the context (Areni and Kim 1993; MacInnis and Park 1991) of luxury goods (i.e., jewelry). Our music hypotheses are stated in terms of a specific combination of music style and store type (classical music played in a jewelry store),

because using the more general terms "music" and "retail store" could result in any number of relationships depending on what the combinations were used (e.g., bluegrass or country-western music played in a jewelry store; classical music played in a Wal-Mart), and thus may lead to a different set of inferences than we wish to test in this study.

Prior studies also suggest that music will have an affective influence (e.g., Bruner 1990; Hui, Dube and Chebat 1997) that may be manifested in consumers' evaluations of the overall store atmosphere. Specifically, the use of classical music in a store selling luxury products (such as jewelry) creates a "fit" between music and product category, which should lead to more positive evaluations of the store's atmosphere (Areni and Kim 1993; MacInnis and Park 1991). Herrington and Capella (1994) suggest that negative evaluations of the store atmosphere due to perceived crowding may be lessened by an offsetting increase in affect (e.g., with music), which should then lead to more positive patronage intentions. We hypothesize:

H3: The presence of classical music in a jewelry store (versus no music) will result in a more positive evaluation of a store's atmosphere.

Wait Expectations and Store Environment Perceptions

A recent study by Kumar, Kalwani and Dada (1997) found that wait length expectations influenced satisfaction with the waiting experience. It is also important to understand how consumer expectations of a wait influence their store patronage decisions, and what store environment cues may influence those expectations.[1] Along with the effects of number of visible store employees discussed earlier, our model proposes that overall store atmosphere evaluations and perceived crowding also influence wait expectations.

Inference theory would suggest that if potential customers perceive a store as being crowded, crowding would be a cue that would lead them to expect to wait longer to receive service than if the store was not perceived as crowded.

H4: The higher the perceptions of crowding, the longer the wait expectations.

To explore the psychological aspect of crowding, we examine how perceptions of crowding influence consumer evaluations of the overall store atmosphere. Environmental psychologists argue that a critical role of the physical environment is its ability to facilitate or hinder the goals of individuals within that environment (Canter 1983; Darley and Gilbert 1985). Consumers who perceive that a store is crowded may believe their shopping goals would be more difficult to achieve, which in turn could be translated into a negative response to the store environment. Machleit et al. (1994) found that crowding can have a negative influence on satisfaction with the shopping experience. The Mehrabian-Russell (1974) stimulus-organism-response (SOR) model, which has been supported in past store environment research (e.g., Baker, Grewal and Levy 1992; Darden and Babin 1994; Donovan and Rossiter 1982, Donovan, Rossiter, Marcoolyn and Nesdale 1994), posits that the physical environment influences an individual's emotional response to that environment. Thus, past research suggests that consumers who perceive a store as crowded will evaluate the store atmosphere more negatively.

H5: The higher the perceptions of crowding, the more negative the evaluation of the overall store atmosphere.

Hui, Dube and Chebat (1997) found that consumers who experienced a simulated wait perceived the physical environment more negatively. We expect this relationship to also be evident for customer expectations of waiting. Therefore, we hypothesize:

H6: The higher the wait expectations, the lower the evaluation of the store's atmosphere.

Store Patronage Intentions

The poverty of time perspective (e.g., Berry and Cooper 1992), control theory (e.g., Haynes 1990; Hui and Bateson 1991) and studies on consumer responses to waiting (e.g., Hui et al. 1997; Taylor 1994; 1995) all suggest that when consumers have little time to shop, they do not want to spend extra time waiting for service. Time-pressed consumers may therefore decline to patronize stores in which they expect to have to wait a long time. Customers may be least tolerant of a wait in stores that offer expensive products (Davis1991), such as the jewelry merchandise that is the context of our study. Stated more formally:

H7: The higher the wait expectations, the more negative the store patronage intentions.

[1] We recognize wait expectations are also influenced by factors such as past experience with the retailer, or season (e.g., Christmas), but the focus of our study is on the effects of store environment cues on wait expectations.

The retail store atmosphere has been shown to have a positive influence on consumers' patronage intentions (e.g., Baker, Grewal and Levy 1992; Darden, Erdem and Darden 1983; Donovan and Rossiter 1982; Hui et al. 1997;Van Kehove and Desumaux 1997). We expect this linkage in our study as well, thus:

H8: The higher the overall store atmosphere evaluation, the more positive the store patronage intentions.

Gender effects on wait expectations

While we found no academic studies that directly examined gender effects on wait expectations, two frameworks indirectly support this relationship. First, there is evidence in the literature of gender differences in time perception. Research has found that men estimate short time intervals more accurately than women (Rammsayer and Lustnauer 1989), and that females tend to underestimate time intervals compared to males (Krishnan and Saxena 1984). These results might be explained using a socialization framework. Men's social and work experiences, which have historically involved structured scheduling and time-pressure, may socialize them to be more time-conscious than women (Kellaris and Mantel 1994). The second perspective, proposed by Otnes and McGrath (2001), is that men are achievement oriented in the marketplace, and "shop to win." Consequently, when their ability to achieve (in terms of shopping) is thwarted, they become bored and irritated.

Furthermore, a recent trade study by America's Research Group reported that 91% of men, compared to 83% of women, said long lines prompted them to stop patronizing a particular store (Nelson 2000). Taken together, the evidence suggests that men would have less tolerance for waiting than women. Therefore, given the same visual cues (employees and customers within a store setting), men would have higher expectations of waiting than would women.

H9: Men will have higher wait expectations than women.

Gender effects on store atmosphere

Otnes and McGrath (2001) suggest that because males are achievement oriented in their marketplace transactions, managers need to enable men to be in control of their interaction with the merchandise. Furthermore, they note that it is important to make males feel comfortable in retail settings that have traditionally been designed for females. Jewelry stores in general, as was the one in our study, are retail settings that violate both of these parameters. In jewelry stores, customers cannot control their interactions with the merchandise because it is locked in cases, or in vaults in the back of the store. Jewelry stores also are typically more feminine than masculine in decor and atmosphere.

H10: Men will have lower store atmosphere evaluations than women.

The Study

To test the conceptual model, we used videotapes to simulate a store environment experience. This method has proven to be an effective medium for environmental representation (e.g., Baker, Grewal and Levy 1992; Baker, Grewal and Parasuraman 1994; Bateson and Hui 1992; Chebat, Gélinas-Chebat and Filiatrault 1993; Voss, Parasuraman, and Grewal 1998). Because we wanted to examine the influence of the store environment in the context of luxury goods, the research setting was a jewelry store located in a southeastern U.S. city.

To ensure that the store was unfamiliar to respondents, the subjects were 213 graduate business students at a large southwestern U.S. university. Fifty-three percent were male; 88% were between 20 and 35 years old and 12% were over 35; 71% reported household income greater than $26,000; and 77% of the respondents indicated that they had visited a jewelry store in the past year to shop or purchase gifts or jewelry.

Subjects viewed a five-minute videotape that visually "walked" them through the store environment, simulating a shopping or browsing experience. Near the end of the video, a salesperson addresses the camera, saying that he would be with the "customer" (respondent) in a minute. Subjects then completed a questionnaire that contained items measuring the model constructs. To provide realistic store settings and create variation in the environmental stimuli, 8 videotapes were created and manipulated using three environmental components in a 2 x 2 x 2 between-subjects, full factorial design. Specifically, number of customers (1 versus many), number of employees (1 versus 3), and the presence of classical music versus the absence of music were manipulated across treatments.

Each latent construct in the proposed model was measured with multiple-item scales. The literature provided the basis for developing multi-item scales to measure respondents' perceptions of: (1)

perceived crowdedness (Hui and Bateson 1991), (2) overall store atmosphere (Baker, Grewal and Parasuraman 1994), and (3) store patronage intentions (Dodds et al. 1991).
The items for wait expectations were developed specifically for this study. Respondents were first instructed to estimate how long (in minutes) they would expect to wait for service in the store seen in the video. Because the same wait time may seem short to one person, and long to the next person, we were interested in measuring *subjective* expectations of the wait. Thus, the respondents were asked how short/long the estimated wait would feel, and if the expected wait would be reasonable in the store seen in the video.
Following Anderson and Gerbing (1988), we conducted confirmatory factor analysis to assess the reliability and validity of the multiple-item scales. This analysis indicated satisfactory model fit, and all of the individual scales exceeded recommended minimum standards proposed by Bagozzi and Yi (1988) in terms of construct reliability (i.e., greater than .60) and the percentage of variance extracted by the latent construct (greater than .50). The Appendix provides descriptions of the scale items and the results of the confirmatory factor analysis, including additional evidence supporting the discriminant validity of our measures.

Analysis and Results

We used Maximum-Likelihood simultaneous estimation procedures (LISREL-VIII: Jöreskog and Sörbom 1996) to test the model depicted in Figure 1. Standardized estimates for the hypothesized paths are presented in Table 1. The various goodness-of-fit indexes suggested that the structural model fit the data well and each of the predicted relationships was statistically significant ($p < .10$) in the hypothesized direction.

Standardized Coefficients and Fit Statistics for the Structural Model

	Hypothesized paths	Expected Sign	Structural Coefficients
H1	**Customers → Perceived crowdedness**	**+**	**.34[a]**
H2	**Employees → Wait expectations**	**-**	**-.14[b]**
H3	**Music → Store atmosphere evaluations**	**+**	**.15[a]**
H4	**Perceived crowdedness → Wait expectations**	**+**	**.10[c]**
H5	**Perceived crowdedness → Store atmosphere evaluations**	**-**	**-.26[a]**
H6	**Wait expectations → Store atmosphere evaluations**	**-**	**-.29[a]**
H7	**Wait expectations → Store patronage intentions**	**-**	**-.20[a]**
H8	**Store atmosphere evaluations → Store patronage intentions**	**+**	**.40[a]**
H9	**Gender (Male=1) → Wait expectations**	**+**	**.22[a]**
H10	**Gender (Male=1) → Store atmosphere evaluations**	**-**	**-.14[b]**
	Fit statistics		
	Df		15
	c2		19.15
	Goodness of fit index		.98
	Adjusted goodness of fit index		**.95**
	Non-normed fit index		**.96**
	Comparative fit index		**.98**
	Standardized root mean square residual		**.05**

Notes:
[a] significant at $p < .01$; [b] significant at $p < .05$; [c] significant at $p < .10$ (one-tail tests).

Next, we examined the predictive validity of the conceptual model and the relative contribution of each of the predictor variables in explaining variations in the key criterion variable: store patronage intentions. The results of this analysis are presented in Table 2.

Examining Indirect, Direct and Total Effects of Predictor Variables on Store Patronage Intentions

	Store Patronage Intentions		
Predictor Variables	**Indirect Effect**	**Direct Effect**	**Total Effect**
Music	**.06[b] (2.31)**		**.06[b] (2.31)**
Employees	**.05[b] (1.90)**		**.05[b] (1.90)**
Customers	**-.05[a] (-2.97)**		**-.05[a] (-2.97)**
Gender	**-.13[a] (-3.47)**		**-.13[a] (-3.47)**
Wait Expectations	**-.12[a] (-3.60)**	**-.20 (-3.03)**	**-.32[a] (-4.75)**
Perceived Crowdedness	**-.14[a] (-3.63)**		**-.14[a] (-3.63)**
Store Atmosphere Evaluations		**.40[a] (5.94)**	**.40[a] (5.94)**
Squared Multiple Correlation			**.26**

Standardized path coefficients are reported with t-values in parentheses.

[a] Coefficient significant at $p < .01$; [b] significant at $p < .05$ (one-tail tests).

The model explained a substantial percentage of the variation in store patronage intentions (26%). The two strongest predictors of store patronage intentions were store atmosphere perceptions (.40) and wait expectations (-.32), which had both direct and indirect effects. Perceived crowdedness (-.14) and gender (-.13, indicating that men were less likely to patronize the jewelry store) had indirect effects on store patronage, as did each of the experimental manipulation: presence of music (.06), number of employees (.05) and number of customers (-.05).

Discussion

Early retail patronage studies focused on general atmospheric constructs such as the physical attractiveness of the store, while more recent studies have examined how specific store environment elements (e.g., music or crowding) impact customers' attitudes toward a store, one element at a time. Although each of these previous studies is a contribution in its own right, this study examines the simultaneous impact of several interrelated store environmental elements on store patronage intentions. We empirically establish the relative importance of number of customers, number of visible employees and presence of classical music on wait expectations, store atmosphere and value expectations. These constructs were found to be critical antecedents of store patronage intentions within the context of the jewelry store in which the model was tested. We now discuss specific findings pertaining to the impact of store environmental cues and the managerial implications of those findings.

Influences on Patronage Intentions

Retailers have a certain amount of control over factors that influence consumers' patronage decisions. Clearly, having a desirable product assortment where and when the customer wants it, and priced at what they are expecting to pay is fundamental to any retail strategy. Yet, other, less obvious factors can influence customers' purchase intentions. In this study we examined the impact of several interrelated factors that we expected would influence purchase intentions. We did so at the point of patronage, i.e., while customers are in the store, but not yet purchased merchandise. This is a critical phase of any purchase decision. Retailers can spend millions of dollars getting potential customers to visit a store, only to be foiled by in-store issues. Stories abound about customers terminating the purchase process because check-out lines are too long or sales assistance is inadequate.

Specifically, we examined the relationships between three in-store cues (number of customers, number of employees and the presence/absence of music) and wait expectations, overall store atmosphere evaluation and merchandise value perceptions. The results of this study are fairly robust. Our objective was to determine factors that increase behavioral intentions to patronize a retail store. We found that customers are more likely to shop at a store and recommend it to friends if they like the store's atmosphere (H8) and do not have to wait (H7). Taking a step back, then, what are some of the factors that influence customers' perceptions of waiting time, and store atmosphere?

Wait Expectations

On the issue of waiting, we found that when customers perceive that there are a lot of employees in the store, they will not have to wait (H2). Customers believe that the employees will help them through the buying and checkout process. Customers also expect to wait longer if they think the store is crowded (H4). Third, Men expected to wait longer than women (H9). Finally, customers' wait expectations have a negative effect on their evaluations of the store's atmosphere (H6). Clearly, in the eyes of customers, there is nothing positive about having to wait. Interestingly, there are serious profit implications to both sides of the waiting issue.

Wait expectations are a key determinant of store patronage. They have both a negative indirect and negative total effect on patronage intentions. It is important that store patronage models include wait expectations. There are three ways to reduce wait expectations. The first is to have sufficient sales and customer service employees on the sales floor, visible to customers, particularly when the store is crowded. Of course, employees are relatively expensive, and in many geographic regions difficult to attract and retain. The second way to reduce waiting is to invest in technology such as efficient checkout equipment and kiosks to provide customer information. The final method is to reduce the perception of waiting, without necessarily reducing the actual wait.

Managing time expectations may be situation specific. It may actually be disadvantageous for some retailers, such as a fancy restaurant, a spa, or a high involvement sporting goods store like REI, to bulk up the sales and service personnel to “improve” customers wait expectations. Promotions illustrating a relaxed atmosphere in which customers can linger and experiment with the merchandise may actually be beneficial in these situations. The key is to proactively manage those expectations. For instance, customers may not expect to wait more than three to five minutes at McDonald’s, but are willing to and even expect to have a longer wait at Burger King because they know their burger will be made “their way.”

Store Atmosphere

One comparatively inexpensive alternative for enhancing patronage intentions is to enhance the store’s atmosphere. Atmospherics can make customers less aware of their wait because they are either distracted and/or entertained. Retailers have an arsenal of available alternatives in this regard (Levy and Weitz 2001). Stores can creatively utilize a store’s layout or methods of displaying merchandise to alter customers’ perceptions of the atmosphere. Additionally, they can enhance the store’s atmospherics through visual communications (signs and graphics), lighting, colors, and even scents. An important component of atmospherics is music—the element chosen for study here. It is less expensive to pipe appropriate music into a store to entertain and distract, than it is to hire more service people.

In this study, classical music had a positive effect on store atmosphere evaluations (H3). Perceived crowdedness had a negative effect on store atmosphere (H5) and men perceived the store atmosphere to be lower than women (H10). It is also possible that various types of music would have a differential effect on value in other types of stores. For instance, Country-Western music might contribute positively to the perception of a Wal-Mart store. In the future, researchers should look at the effect of other types of music in different retail formats as well as the impact of different atmospheric issues on store patronage intentions.

Directions for Future Research

Like any research, this study has some limitations. Coupled with the new insights we have outlined from this research, we offer an agenda for research on how store environment affects customers’ patronage intentions.

First, this study examines three specific store environment dimensions using videotaped scenarios. Although we believe our findings are exciting and significant, there is a need to test the robustness of

our findings using store environment scenarios with alternative factors within the treatments (e.g., classical versus rock music) or different treatments altogether (e.g. friendliness of salespeople). It is also important to determine if our findings are the same in a different store context, such as a discount store instead of a jewelry store.

Second, our research was based on perceptual and intention measures provided by respondents after they finished viewing the videotaped scenarios. Other alternative methodologies such as qualitative and observational techniques could provide additional insights. We might gain a richer understanding of how consumers attend to environmental cues and what interpretations do they draw from them?

Third, we believe the use of videotape-based methodology is a huge improvement over verbal descriptions used in some previous research in this area. It might be interesting, however, to explore atmospheric issues using CAD (computer-aided design) technology. Potential shoppers could take a virtual tour of a store while perched at a computer terminal. Programs are readily available and are currently being utilized for making store design decisions. Since changing the scenarios using CAD is so easy, more complicated experimental designs could be utilized. CAD, however, does not portray the environment as realistically as videotape or a real store visit. So, researchers should limit CAD applications to store environmental issues that would be less sensitive to the nuances of a real store visit.

Finally, although one of the differentiating contributions of this research has been its breadth of inquiry, future research may utilize the videotape-based methodology to take a deeper look at any one of the issues examined in this study. For instance, the issue of crowding, in terms of both people and fixtures, has become a fairly litigious issue in the last few years. Consumer groups have brought suit against many national retailers for alleged violation of the Americans with Disability Act (ADA). They argue that people with disabilities, particularly those in wheel chairs, do not have access to stores because fixtures are too closely placed. Some retailers retort that their customers expect and enjoy the "crowdedness" because of the excitement and the perception of "getting a good deal," it brings. A carefully crafted study examining this specific issue would be a significant contribution to settling this debate.

Appendix

Scale Items to Measure the Constructs

The scale items that measured each construct in the model are presented in Table A1 along with confirmatory factor analysis results, which indicated that all of the scales were unidimensional with satisfactory psychometric properties. The wait expectations and crowdedness items were measured on seven-point semantic differential scales. All other items were measured using seven point-scales anchored by "Strongly Agree" and "Strongly Disagree."

Table A1

Scale Items and Confirmatory Factor Analysis Results

	Lambda Loadings	Construct Reliability	Variance Extracted
1. Wait Expectations		.81	.68
How short/long would this amount of time feel?	.85		
Would this amount of time be reasonable to wait for service in this store? [R]	.79		
2. Perceived Crowdedness		.92	.79
Cramped/Not Cramped	.80		
Restricted/Free to Move	.93		
Confined/Spacious	.93		
3. Store Atmosphere Evaluations		.90	.75

The store would be a pleasant place to shop.	**.87**		
The store had a pleasing atmosphere.	**.93**		
The store was attractive.	**.79**		
4. Store Patronage Intentions		**.88**	**.70**
The likelihood that I would shop in this store is very high.	**.78**		
I would be willing to buy merchandise at this store.	**.80**		
I would be willing to recommend this store to my friends.	**.93**		
Fit statistics			
w/38 df	**72.17**		
Goodness-of-fit index	**.94**		
Adjusted goodness-of-fit index	**.90**		
Non-normed fit index	**.97**		
Comparative fit index	**.98**		
Standardized root mean square residual	**.05**		

R Reverse coded

We assessed whether the measurement model satisfied three conditions that are commonly considered as evidence of discriminant validity: (1) for each pair of constructs the squared correlation between the two constructs is less than the variance extracted for each construct; (2) the confidence interval for each pairwise correlation estimate (i.e., +/- two standard errors) does not include the value of one; and (3) for every pair of factors, the $\chi 2$ value for a measurement model that constrains their correlation to equal one is significantly greater than the $\chi 2$ value for the model that does not impose such a constraint. All of these tests supported the discriminant validity of our constructs. Table A2 provides means and standard deviations for each construct along the diagonal and construct correlation estimates along with standard errors in the off-diagonal.

Table A2

Construct Means (with Standard Deviations) and Correlations (with Standard Errors)*

		1	2	3	4
1	**Wait expectations**	**4.76**			
		(1.67)			
2	**Perceived crowdedness**	**.12**	**2.44**		
		(.08)	**(1.28)**		
3	**Store atmosphere evaluations**	**-.43**	**-.32**	**4.47**	
		(.07)	**(.07)**	**(1.48)**	
4	**Store patronage intentions**	**-.43**	**-.16**	**.57**	**3.32**
		(.07)	**(.07)**	**(.05)**	(1.36)

* Construct means (with standard deviations) are presented on the diagonal and construct correlations (with standard errors) are presented on the off-diagonal.

REFERENCES

Anderson, James C. and David W. Gerbing (1988), "Structural Equation Modeling in Practice: A Review and Recommended Two-Step Approach," *Psychological Bulletin*, 103 (3), 411-23.

Areni, Charles S. and David Kim (1993), “The Influence of Background Music in Shopping Behavior: Classical versus Top 40 Music in a Wine Store,” *Advances in Consumer Research*, 20, pp. 336-40.

Bagozzi, Richard P. and Youjae Yi (1988), "On the Evaluation of Structural Equation Models," *Journal of the Academy of Marketing Science*, 16 (Spring), 74-94.

Baker, Julie (1998), “Examining the Informational Value of Store Environments,” in *Servicescapes: The Concept of Place in Contemporary Markets*, ed. John F. Sherry, Jr., NTC Publishing Group, 55-80.

-----, Dhruv Grewal and Michael Levy (1992), “An Experimental Approach to Making Retail Store Environmental Decisions,” *Journal of Retailing*, 68 (Winter), 445-460.

-----, Dhruv Grewal and A. Parasuraman (1994), "The Influence of Store Environment on Quality Inferences and Store Image," *Journal of the Academy of Marketing Science*, 22 (4), 328-339.

-----, A. Parasuraman, Dhruv Grewal and Glenn Voss (2002), "The Influence of Multiple Store Environment Cues on Perceived Merchandise Value and Patronage Intentions," *Journal of Marketing*, 66 (April), 120-141.

Barker, Roger G. (1965), “Explorations in Ecological Psychology,” *American Psychologist*, 20, 1-14.

Bateson, John E.G. and Michael K.M. Hui (1992), "The Ecological Validity of Photographic Slides and Videotapes in Simulating the Service Setting," *Journal of Consumer Research*, 19, (September), 271-281.

Berry, Leonard L. and Linda R. Cooper (1992), “Competing with Time-Saving Service,” in *Managing Services*, Christopher Lovelock ed.. Englewood Cliffs, NJ: Prentice-Hall, 169-175.

Bitner, Mary Jo (1990), “Evaluating Service Encounters: The Effects of Physical Surroundings and Employee Responses,” *Journal of Marketing*, 54 (April), 69-82.

Bruner, Gordon C. (1990), “Music, Mood and Marketing,” *Journal of Marketing*, 54 (October), 94-104.

Canter, David (1983), “The Purposive Evaluation of Places,” *Environment and Behavior*, 15 (3), 659-698.

Chebat, Jean-Charles, Claire Gelinas-Chebat and Pierre Filiatrault (1993), "Interactive Effects of Musical and Visual Cues on Time Perception: An Application to Waiting Lines in Banks," *Perceptual and Motor Skills*, 77, 995-1020.

Compeau, Larry D., Dhruv Grewal and Kent B. Monroe (1998), "The Role of Prior Affect and Sensory Cues on Consumers' Affective and Cognitive Responses and Overall Perceptions of Quality," *Journal of Business Research*.

Darden, William R., and Barry J. Babin (1994), “Exploring the Concept of Affective Quality: Expanding the Concept of Retail Personality, *Journal of Business Research*, 29 (February), 101-110.

-----, Orhan Erdem and Donna K. Darden (1983), “A Comparison and Test of Three Casual Models of Patronage Intentions,” in *Patronage Behavior and Retail Management*, William R. Darden and Robert F. Lusch, eds., New York: North-Holland, 29-43.

Darley, John M. and Daniel T. Gilbert (1985), “Social Psychological Aspects of Environmental Psychology," in *The Handbook of Social Psychology*, Gardner Lindsey and Elliot Aronson eds., New York: Random House, 949-991.

Davis, Mark (1991), “How Long Should a Customer Wait for Service?” *Decision Sciences*, 22, 421-434.

Dodds, William B. Kent B. Monroe and Dhruv Grewal (1991), “The Effects of Price, Brand, and Store Information on Buyers’ Product Evaluations,” *Journal of Marketing Research*, 28 (August), 307-19.

Donovan, Robert J. and John R. Rossiter (1982), “Store Atmosphere: An Environmental Psychology Approach,” *Journal of Retailing*, 58 (Spring), 34-57.

-----, Gilian Marcoolyn and Andrew Nesdale (1994), “Store Atmosphere and Purchasing Behavior,” *Journal of Retailing*, 70 (3), 283-294.

Folkes, Valarie (1984), “Consumer Reactions to Product Failure: An Attributional Approach,” *Journal of Consumer Research*, 10 (March), 398-409.

----- (1988), “Recent Attribution Research in Consumer Behavior: A Review and New Direction, *Journal of Consumer Research*, 14 (March), 548-65.

Gardner, Meryl P. and George J. Somkos (1985), “Toward a Methodology for Assessing Effects of In-Store Atmospherics,” in *Advances in Consumer Research*, Richard Lutz ed., Chicago, IL: Association for Consumer Research, 27-31.

Grewal, Dhruv and Julie Baker (1994), “Do Retail Store Environmental Factors Affect Consumers’ Price Acceptability? An Empirical Examination, *International Journal of Research in Marketin g,* 11, 107-115.

-----, R. Krishnan, Julie Baker and Norm Borin (1998), “The Effect of Store Name, Brand Name and Price Discounts on Consumers’ Evaluations and Purchase Intentions,” *Journal of Retailing*, (Fall)

-----, Kent B. Monroe and R. Krishnan (1998), “The Effects of Price Comparison Advertising on Buyers’ Perceptions of Acquisition Value, Transaction Value, and Behavioral Intentions,” *Journal of Marketing*, 62 (April), 46-59.

Haynes, Paula J. (1990), “Hating to Wait: Managing the Final Service Encounter,” *Journal of Services Marketing,* 4 (4), 20-26.

Herrington, J. Duncan and Louis M. Capella (1994), “Toward an Explanatory Model of Retail Crowding,” in *Developments in Marketing Science*, eds., Elizabeth J. Wilson and William C. Black, Academy of Marketing Science, 133-138.

Huber, Joel and John McCann (1982), "The Impact of Inferential Beliefs on Product Evaluations," *Journal of Marketing Research*, XIX (August), 324-333.

Hui, Michael K, and John E. G. Bateson (1991), “Perceived Control and the Effects of Crowding and Consumer Choice on the Service Experience,” *Journal of Consumer Research*, 18 (September), 174-184.

Hui, Michale K., Laurette Dube and Jean-Charles Chebat (1997), “The Impact of Music on Consumers’ Reactions to Waiting for Services,” *Journal of Retailing*, 73 (1), 87-104.

Jöreskog, Karl G. and Dag Sörbom (1996), *LISREL 8 User's Reference Guide*. Chicago: Scientific Software International.

Katz, Karen, Blaire M. Larson and Richard C. Larson (1991), “Prescription for the Waiting-in-Line Blues: Enlighten, Entertain, and Engage,” *Sloan Management Review*, 32, 44-53.

Kellaris, James J. and Susan Powell Mantel (1994), "The influence of Mood and Gender on Consumers' Time Perceptions," in *Advances in Consumer Research*, Vol. 21, Chris T. Allen and Deborah Roedder John, eds., Provo, UT: Association for Consumer Research, 514-518.

Kerin, Roger, Ambuj Jain and Daniel J. Howard (1992), “Store Shopping Experience and Consumer Price-Quality-Value Perceptions,” *Journal of Retailing*, 68 (4), 376-97.

Kotler, Phillip (1973), “Atmospherics as a Marketing Tool,” *Journal of Retailing*, 49 (Winter), 48-64.

Krishnan, Lila and Neelaksh Kumar Saxena (1984), "Perceived Time: Its Relationship with Locus of Control, Filled Versus Unfilled Time Intervals, and Perceiver's Sex," *The Journal of General Psychology*, 110, 275-281.

Kumar, Piyush, Manohar U. Kalwani and Maqbool Dada (1997), "The Impact of Waiting Time Guarantees on Customers' Waiting Experiences," *Marketing Science* 16 (4), 295-314.

Levy, Michael and Barton A. Weitz (2001), *Retailing Management*, Burr Ridge Il.: McGraw-Hill/Irwin.

Machleit, Karen A., James J. Kellaris and Sevgin A. Eroglu (1994), "Human Versus Spatial Dimensions of Crowding Perceptions in Retail Environments: A Note on Their Measurement and Effect on Shopper Satisfaction," *Marketing Letters* 5 (2), 183-194.

MacInnis, Deborah J. and C. Whan Park (1991), "The Differential Role of Characteristics of Music on High- and Low-Involvement Consumers' Processing of Ads," *Journal of Consumer Research*, 18, 161-173.

Mazursky, David and Jacob Jacoby (1986), “Exploring the Development of Store Images,” *Journal of Retailing,* 62 (Summer), 145-65.

Mehrabian, Albert and James A. Russell (1974), *An Approach to Environmental Psychology*, Cambridge, MA: M.I.T. Press.

Milliman, Ronald E. (1982), “Using Background Music to Affect the Behavior of Supermarket Shoppers,” *Journal of Marketing*, 46 (Summer), 86-91.

Monroe, Kent B. and R. Krishnan (1985), “The Effect of Price on Subjective Product Evaluation,” in *Perceived Quality*, J. Jacoby and J. Olson eds., Lexington, MA: Lexington Books, 209-232.

Nelson, Emily (2000), "Mass-Market Retailers Look to Bring Checkout Lines Into the 21st Century," *The Wall Street Journal Interactive Edition*, March 13, http://interactive.wsj.com.

Nisbett, Richard E. and Lee Ross (1980), *Human Inference: Strategies and Shortcomings of Social Judgment*, Englewood Cliffs, NJ: Prentice Hall.

Oliver, Richard. L. (1981), "Measurement and Evaluation of Satisfaction Processes in Retail Settings," *Journal of Retailing*, 57 (Fall), 25-48.

Otnes, Cele and Mary Ann McGrath (2001), "Perceptions and Realities of Male Shopping Behavior," *Journal of Retailing*, 77, 111-137.

Parasuraman, A., Valarie A. Zeithaml and Leonard L. Berry(1988), "SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing*, 64 (Spring), 12-40.

Rammsayer, Thomas and Sebastian Lustnauer (9189), "Sex Differences in Time Perception," *Perceptual and Motor Skills*, 68, 195-198.

Rao, Akshay R. and Kent B. Monroe (1988), “The Effect of Price, Brand Name, and Store Name on Buyers’ Subjective Product Assessments: An Integrative Review,” *Journal of Marketing Research*, 26 (August), 351-57.

Ritchins, Marsha L. (1985), “The Role of Product Importance in Complaint Initiation,” in *Consumer Satisfaction/Dissatisfaction and Complaining Behavior*, eds. H. Keith Hunt and Ralph L. Day, Bloomington: Indianan University School of Business, 50-53.

Sherry, John F., Jr., and Mary Ann McGrath (1988), "Unpacking the Holiday Presence: A Comparative Ethnography of Two Gift Stores," in I*nterpretive Consumer Behavior*, Elizabeth Hirschman, ed., Provo, UT: Association for Consumer Research, 148-167.

Sirohi, Niren, Edward W. McLaughlin and Dick R. Wittink (1998), “A Model of Consumer Perceptions and Store Loyalty Intentions for a Supermarket,” *Journal of Retailing*, 74 (2), 223-45.

Solomon, Michael R. (1998), “Dressing for the Part: The Role of Costume in the Staging of the Servicescape,” in *Servicescapes: The Concept of Place in Contemporary Markets*, ed. John F. Sherry, Jr., NTC Publishing Group,

Stokols, Daniel (1972), “On the Distinction Between Density and Crowding: Some Implications for Future Research,” *Psychological Review*, 79 (3), 275-277.

Taylor, Shirley (1994), “Waiting for Service: The Relationship Between Delays and the Evaluation of Service,” *Journal of Marketing,* 58 (April), 56-69.

Taylor, Shirley (1995), “The Effects of Filled Waiting Time and Service Provider Control Over the Delay on Evaluation of Service,” *Journal of the Academy of Marketing Science*, 23 (1), 38-48.

Tom, Gail and Scott Lucey (1995), “Waiting Time Delays and Customer Satisfaction in Supermarkets,” *Journal of Services Marketing*, 9 (5), 20-29.

Van Kenhove, Patrick and Patrick Desumaux (1997), “The Relationship Between Emotional States and Approach or Avoidance Responses in a Retail Environment,” *The International Review of Retail, Distribution and Consumer Research,* 7 (October), 351-368.

Voss, Glenn B., A. Parasuraman, and Dhruv Grewal (1998), "The Roles of Price, Performance, and Expectations in Determining Satisfaction in Service Exchanges," *Journal of Marketing*, 62 (October), 46-61.

Wilton, P. and F.M. Nicosia (1986), "Emerging Paradigms for the Study of Consumer Satisfaction," *European Research*, 14 (January), 4-11.

_____ (1993), "Using Store Music for Retail Zoning: A Field Experiment," in *Advances in Consumer Research*, 20, 632-636.

Zeithaml, Valarie A. (1988), “Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence,” *Journal of Marketing*, 52 (July), 2-22.

-----, Leonard L. Berry and A. Parasuraman (1996), “The Behavioral Consequences of Service Quality,” *Journal of Marketing*, 60 (April), 31-46.

-----, ----- and ----- (1993), “The Nature and Determinants of Customer Expectations of Service,” *Journal of the Academy of Marketing Science*, 21 (1), 1-12.