# Developing a deeper understanding of post-purchase perceived risk and behavioral intentions in a service setting

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Abstract Researchers and service providers have realized that a disproportionate share of a firm's sales and profits come from a relatively small number of loyal customers that repeatedly purchase the firm's services. In many service settings, such as health care, repeated interactions between the service provider and the client are necessary for service delivery. While service quality is certainly important, it is also important that customers' perceptions of perceived risk are taken into account and that customers perceive a degree of control over the services provided. We develop a conceptual model of linkages between the physical environment of the service, perceived control over the service and service quality and, demonstrate through two empirical studies, how these factors affect perceived risk and post-purchase behavioral intentions. Both studies were conducted in health care settings. In the first study, we collected data using a mail survey of 192 patients after their treatment from a regional hospital. In the second study, survey data were collected from 101 patients of a specialized clinic providing alternative therapies within a

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J. Gotlieb University of Western Kentucky, Bowling Green, KY, USA major hospital. Our results provide confirmation that the favorable physical environment of the service setting enhances perceived control and perceptions of service quality. Moreover, perceived control and perceived quality of the service provider reduces post-purchase perceived risk. Finally, post-purchase perceived risk reduces behavioral intentions, while perceived quality of the service provider enhances behavioral intentions.

**Keywords** Service quality · Post-purchase perceived risk · Behavioral intentions · Health care services

The importance of customer retention strategies in services cannot be underestimated, especially since several service industries (e.g., health care, financial services) rely on repeat customer patronage (Gummesson 2004). In recent times, academic researchers have emphasized strategies for identifying profitable customers and retaining them (Rust et al. 2000). Quality of service is one important factor that contributes to customer loyalty. Other key factors include the physical environment of the service location and the extent to which customers perceive that they have control over the service delivery process.

In services, the difficulties in consumer evaluation prior to purchase is compounded not only by the intangibility of services but also due to the enhanced perceived risks in decision making (Conchar et al. 2004; Grewal et al. 1994). In some service contexts, such as health care, the quality of the service or the outcome of the service cannot be easily evaluated by the customer. While factors such as the physical environment of the service delivery as well as indicators of credence and competence of the provider may enhance the quality of the service encounter, it is also important to reduce the customer's perceived risks before, during, and after the service delivery. Moreover, in health care service encounters, repeated interactions and patient cooperation may be needed before the outcome can be evaluated by the patient (Gummesson 2004).

In service contexts which require repeated interactions, pre-purchase risk is not completely reduced by the initial service encounter. The risk that remains between the consumer's initial service encounter and future encounters is known as "post-purchase risk." In other words, post-purchase risk is the probability distribution of uncertain outcomes *after* a purchase. In that sense, it is different from pre-purchase risk, which is the probability distribution of uncertain outcomes *prior* to a purchase. It is also different from post-purchase evaluation, which is simply a reflection on and analysis of the purchase, resulting possibly in an attitude towards future purchases. Post-purchase valuation may not necessarily result in an assessment of the probability of uncertain outcomes with similar future purchases.

In contexts where the service is not provided through one single transaction and repeated service interactions are either needed or expected, post-purchase risk has to be low in order obtain repeated interactions and cooperation. Customers who perceive that the level of post-purchase risk is low are also likely to be repeat users of the service and engage in positive word of mouth (Voss et al. 1998). Thus, it is important to understand the underpinnings of post-purchase perceived risk and behavioral intentions. Although there are models of pre-purchase perceived risk (Dowling and Staelin 1994; Mitchell 1999), the cognitive process that consumers use to judge post-purchase perceived risk of services is likely to be different (Gardial et al. 1994). In this research, we investigate how the physical environment, service quality, perceived control, and postpurchase perceived risk affect consumer behavioral intentions. The hypothesized linkages between these concepts are elaborated in the next section and tested in two

empirical studies in a health-care context. The first study is based on 192 completed mail surveys from patients of a regional hospital. The second study is based on 101 completed surveys from patients of a specialized clinic providing alternative therapies within a major hospital.

#### Conceptual model and hypotheses

The conceptual model outlines the relationships between the physical environment, service quality, perceived control, post-purchase risk, and behavioral intentions. It is summarized in Fig. 1.

Effects of the physical environment on perceived service quality

Service researchers have argued that the physical environment can affect consumers' perceptions of other variables in a service encounter (Zeithaml and Bitner 2003). The physical environment is defined as everything that is visible and/or touchable (Baker et al. 2002). Bitner (1990) argued that the physical environment is an important background variable that affects the perception of service personnel. For example, she found that the physical appearance of a travel agent's office affects consumers' perception of that service provider.

Recently, it has been argued that consumers are affected by various clues in the service business, including clues emitted by things, or mechanics, and clues emitted by people, or humanics (Berry et al. 2002). Clues from the physical environment of the service are an important component of consumer evaluations of quality of the service provider. Perceived quality of the service provider is defined as the consumers' assessment of the overall



Figure 1 Conceptual model.

excellence or superiority of the people providing the service (Gotlieb et al. 1994). Using research from the Mayo Clinic, Berry and Bendapudi (2003) argued that tangible environment clues in hospital settings as well as the task competence and patient orientation of a hospital's personnel are indicators of quality for patients. These clues reinforce the patient-first philosophy at the Mayo Clinic and thus, contribute to the favorable evaluation of the service provider.

The rationale behind how the physical environment would affect consumer perceptions of the service provider can be drawn from adaptation level theory. This theory maintains that the perception of contextual stimuli can affect their perception of other stimuli because the context can determine the internal standard by which a characteristic is evaluated (Helson 1964). Adaptation level theory makes a distinction between two types of variablesbackground variables and focal variables (Helson 1964). Background variables provide the background for the perception of focal variables. Focal variables are defined as variables of particular importance to consumers. Background variables can affect focal variables because they can affect the internal standard from which focal variables are judged (Adaval and Monroe 2002; Helson 1964). Given the adaptation level theory's emphasis on contextual and focal stimuli, and our own emphasis on the links between the physical environment (a context variable) and service quality (the focal variable), we can posit from this theory that service quality would be affected by the physical environment.

A favorable physical environment would positively affect consumers' perceptions of the characteristics or attributes of the service. In addition, since people who deliver the service (i.e., service providers) constitute one of the most important characteristics of the service encounter (Babin and Boles 1998; Zeithaml and Bitner 2003), the physical environment would affect the consumer's perceived quality of the service provider. Therefore, we propose that:

H<sub>1</sub>: As consumers' perceptions of physical environment become more favorable, consumers will perceive service quality to be higher.

Effects of the physical environment on perceived control

Perceived control is defined as the consumers' belief that they have the means to control the outcomes of a situation (Thompson 1981). Perceptions of control have been shown to be critical not only to the evaluation of the quality of the service encounter, but also to behavioral and emotional outcomes (Hui and Bateson 1991). Perceived control itself could be comprised of several dimensions, including availability of responses, predictability, and choice in the selection of outcomes or goals (Averill 1973). Evidence on the extent to which the tangible elements of the service context contribute to perceived control is only just emerging (Berry and Bendapudi 2003; Berry et al. 2002).

In the context of health care, Berry and Bendapudi (2003) argue that the tangible elements of the service context, especially in hospitals and clinics, are important visual clues that enable the customer to evaluate if the environmental context fits their needs. Therefore, consumers' perceived control over the service encounter is positively influenced by the extent to which the clues provided by the tangible context tell a favorable story about service quality and delivery aspects, their perceptions of control over service delivery, and the extent to which the physical environment enables the consumer to predict the service quality and allows choice in the selection of outcomes. Therefore, we offer the hypothesis that:

H<sub>2</sub>: As consumers' perceptions of physical environment become more favorable, consumers will perceive control to be higher.

Effects of perceived control on perceived quality

In many service encounters, consumers' evaluation of their perceived control over the service process, including service delivery is positively related to their evaluation of the perceived quality of the service. For example, the use of self-service technologies in various sectors (e.g., banking and retailing) is motivated by the fact that customers obtain greater control over the service delivery when they use such technologies (Bitner et al. 2000).

In the context of health care, consumer participation is integral to service design and delivery. These interactions between the physician and the patient are extremely important for diagnosis, prescriptions, and interventions. The participation of the patient elevates the patient from merely being a "party" to a "partner" in the service delivery (Gummesson 2004). The greater the customer interactions with service providers, the greater the consumers perceive that they are "in charge" or in control of the service delivery. Personnel delivering the service can either help or hinder the consumer's quest for control over the service process. When consumers achieve their desired level of control, they are likely to regard the quality of the service personnel highly. This is because the service personnel had facilitated the consumers' achievement of an important goal. Favorable consumers' perception of control contributes to a positive evaluation of service quality especially in service contexts where interactions between the service provider and the consumer are essential for customized service design and delivery. Therefore, we offer that:

H<sub>3</sub>: As consumers' perceptions of control become more favorable, consumers will perceive service quality to be higher.

Effects of consumers' perceptions of control over the service process

Adaptation level theory suggests that focal stimuli are likely to affect judgments and/or decisions (Brown and Reich 1971). Consequently, perceived control, a focal stimulus, might affect several parts of the cognitive process by which consumers judge post-purchase perceived risk and will therefore affect their post-purchase behavioral intentions (i.e., more likely to use the service again). Research suggests that control over the service process is likely to have important effects on cognition (Thompson et al. 1993). For example, Folkman (1984) argued that a person's belief about his or her control over a process can sometimes change his or her belief about the threat (e.g., perceived risk) associated with an encounter with other persons. In particular, if a person believes he or she has greater control over a process, he or she is likely to associate less perceived risk with that process. Langer and Rodin (1976) found that, in a natural setting, subjects given greater control were happier and more willing to participate in activities.

Perceived control can have other effects on consumers' perceptions of a service encounter. For example, Hui and Bateson (1991) found that enhanced control increases the pleasure that consumers associate with a service. An increase in pleasure should put consumers in a happier mood and allow them to access mood-congruent information more easily. That is, consumers in a happy mood are more likely to experience happy thoughts, which should have at least two effects on those consumers' cognitions. First, they are less likely to believe that they will experience negative consequences from purchasing a service, resulting in a reduction in their perception of post-purchase perceived risk. Second, a positive mood may have a positive effect on consumers' perceptions of the people who are delivering the service, increasing their perception of the quality of the people who are delivering the service. The service employees would be perceived as assisting the consumer in reaching an important desire (i.e., the desired level of control over the service encounter).

Consumers of services may desire a high level of control over a service encounter. For example, Langeard et al. (1981) found that an important reason why consumers were willing to engage in "do it yourself" services was that they felt that it gave them more control over the situation. When the personnel delivering the service to the consumers are perceived as facilitating the achievement of the consumer's desire (i.e., the desired level of control), those personnel are likely to be perceived as higher quality service people.

Past research found that there is a strong, positive relationship between the perception of control and optimistic bias (Klein and Helweg-Larsen 2002). That is, people are more optimistic about an outcome if they believe they have greater control over that outcome (e.g., a service encounter). Consequently, increased control increases optimistic bias, which may lead to a decrease in the postpurchase perceived risk and an increase in postpurchase behavioral intentions. We hypothesize that

- H<sub>4</sub>: As consumers' perceptions of control become more favorable, consumers will perceive postpurchase risk to be lower.
- H<sub>5</sub>: As consumers' perceptions of control become more favorable, their behavioral intentions will be higher.

Effects of perceived quality of the service provider

In a service setting, it is the service providers that represent the organization and provide a representation of the firm (Berry and Bendapudi 2003). Because service failures are often perceived as being the fault of the service providers, the best service providers empower their employees to correct service failures. For example, Ritz-Carlton has authorized its employees to spend \$2,000 on "behalf of the customer to solve a problem" and this "encourages employees to be responsive" (Zeithaml and Bitner 2003, pp. 202–3).

Greatorex and Mitchell (1994) argued that consumers use trial and/or demonstrations (i.e., evaluations of service and product quality) to reduce prepurchase perceived risk, and salespeople try to use trial and demonstrations to reduce risk and enhance assessments of a product or service. We expect consumers' beliefs about the perceived quality of the service provider to affect their postpurchase perceived risk. Information pertaining to the prior performance of service providers could be captured by measuring consumers' perception of service quality. For example, the extent to which service providers were responsive, reliable, empathetic and provided assurance to consumers in the past would be important indicators of performance in the future. The perceived quality of the service provider is likely to affect the level of risk perceptions associated with future service encounters. Service providers that are perceived as very high quality are likely to reduce postpurchase perceived risk. Therefore.

H<sub>6</sub>: As consumers' perceptions of service quality become more favorable, consumers will perceive postpurchase risk to be lower. Several studies find a positive correlation between the perceived quality of the service provider and postpurchase behavioral intentions (see Boulding et al. 1993; Cronin and Taylor 1992; Parasuraman et al. 1991; Woodside et al. 1989). Therefore,

H<sub>7</sub>: As consumers' perceptions of service quality become more favorable, their behavioral intentions will be higher.

## Postpurchase perceived risk

Bauer (1960) introduced the concept of prepurchase perceived risk in marketing over 40 years ago. Perceived risk is the consumer's belief about the probability that he or she might suffer negative consequences from initially purchasing a specific good or service. Research on the prepurchase perceived risk for products lends some credence to the contention that postpurchase perceived risk will affect behavioral intentions. For example, Alhakami and Slovic (1994) found a negative correlation between the perceived risks and benefits of 33 goods and services. This finding is consistent with other research that has generally found that prepurchase perceived risk has an effect on product preferences (Dowling 1986).

Postpurchase perceived risk has been treated in the product marketing literature (e.g., Mitchell and Boustani 1994), and the construct is expected to be strongly related to the behavioral intentions of future purchases of a service. When consumers are disappointed with their purchase of a product, they generally blame the product. When there is disappointment in a service, however, part of the blame may be shared by the customer (Zeithaml and Bitner 2003). For example, a physical therapist's success requires the active participation of the patient. Furthermore, manufacturers and retailers of products can develop concrete warrantees and service contracts. In the case of a service failure, however, the development and application of warranty policies are not as straightforward. Nonetheless, leaders in various service industries have developed extensive warranties designed to reduce postpurchase perceived risk and increase purchase intentions. For example, Marriott and other hotels give a free night's lodging to dissatisfied customers, and Federal Express guarantees deliveries.

Postpurchase perceived risk is a judgment that is likely to affect decisions. A significant portion of the value of a service depends on reducing the risk associated with that service (Groth 1995). Thus, the postpurchase perceived risk associated with a service is likely to have a negative impact on repeat behavioral intentions.

H<sub>8</sub>: As consumers' perceptions of postpurchase risk increase, their behavioral intentions will be lower.

#### Materials and methods

#### Measures

All constructs in the study were measured using multi-item scales. The scales for the constructs and the associated reliabilities are provided in Table 1. The questionnaire was constructed using scales from prior empirical sources and administered in two different contexts identified as "Study 1" and "Study 2" hereinafter. Both were health care settings, with the Study 1 context being a regional hospital and the Study 2 context being a specialized clinic providing alternative therapies within a major hospital. In Study 1, a two-item scale was used to measure the physical environment (Gotlieb et al. 1994). A three-item scale was used to measure control (Netemeyer et al. 1991). An eight-item scale was used to measure the perceived quality of the service provider (Parasuraman et al. 1991). A three-item scale was used to assess perceived risk (Slovic et al. 1989). Finally, a two-item behavior intention scale was used to measure usage intentions (Fishbein and Ajzen 1975). As noted later, minor adaptations were made to some of the measures to fit the study contexts in each study.

Health-care services, and particularly hospital settings, were chosen for two reasons. First, studies of perceived risk should use services (or products) that have moderate or high involvement (Dowling and Staelin 1994). Second, the service should be a credence item (i.e., a service that is difficult to judge even after the service experience) because it fits more with the context of our proposed model than if we use a service that can be judged easily through the service experience.

In each context, hospital administrators, including physicians, examined the questionnaire and suggested minor changes that would render the questionnaire more applicable to their context. Prior to Study 1, the questionnaire was pre-tested among a group of patients from the target hospital.

## Study 1

In Study 1, the questionnaire was sent by mail to 814 former patients of a major hospital in a Midwestern U.S. town. A total of 211 responses were received (initial response rate of 26%), but only 192 were usable (final response rate of about 24%). The sample consists of 62% female respondents, and 61% of the sample had attended some college or graduated from college. Other demographic information was not collected due to privacy restrictions imposed by the hospital.

#### Table 1 Standardized loadings (SL), variance extracted (VE) and construct reliabilities (CR)

	STUDY 1		STUDY 2			
	SL	VE	CR	SL	VE	CR
Physical environment		0.78	0.88		0.79	0.88
("Worse than expected"-"Better than expected")						
I would rate overall physical appearance of the hospital as	0.85			0.92		
I would rate the physical appearance of my room as	0.91			_		
I would rate the physical appearance of facilities as				0.85		
Perceived control		0.74	0.89		0.85	0.95
If I wanted to, I could easily control the care that I receive from (named) hospital (Completely disagree–Completely agree)		0.74			.86	
How much control did you feel you had over your care when you were a patient at (named) hospital (Very little control–Complete control)	0.92			0.94		
For me, to control the care I received at (named) hospital was (Very difficult-Very easy)	0.91			0.97		
Perceived quality of service provider		0.78	0.96		0.75	0.96
Overall, I would rate (named hospital) as:						
Very unreliable/Very reliable	0.92			0.86		
Not responsive to my needs/Very responsive to my needs	0.91			0.91		
Very incompetent/Very competent	0.87			0.90		
Not courteous/Very courteous	0.86			0.91		
Not credible/Very credible	0.90			0.94		
Difficult to contact/Easy to contact	0.84			0.56		
Not understanding of patient needs/Understanding of patient needs	0.92			0.93		
Communicates poorly with me/Communicates very well with me	0.82			0.86		
Post-purchase perceived risk		0.89	0.96		0.74	0.85
(Not risky–Risky)						
Overall, I would rate being at (named) hospital as:	0.97			0.82		
If I were to tell a friend about (named) hospital, I would describe the hospital as:	0.98			0.90		
To what extent would you say that people who become patients at (named) hospital are at risk of	0.87			-		
personal narm?		0.00	0.04		0.07	0.00
Behavioral intentions		0.89	0.94		0.97	0.99
you needed to go to the hospital again						
Unlikely/Likely	0.96			-		
Impossible/Possible	0.93			-		
If I had to do it again, I would make the same decision				0.99		
The choice of this was a right decision				0.98		

# Study 1 results

All indicators loaded on their respective latent constructs in a confirmative factor analysis (CFA) model, and all the loadings of the indicators on their latent constructs exceeded 0.7. The construct reliabilities ranged from a low of 0.88 for the physical environment to a high of 0.96 each for perceived quality of the service provider and post-purchase perceived risk (Bagozzi and Yi 1988). The measurement items, standardized factor loadings, variance extracted and estimated reliabilities are provided in Table 1.

The overall model fit was acceptable, as indicated by the absolute fit and incremental fit indices. The Chi-Square was 418.91 with 125 degrees of freedom, the value for Root Mean Square Residual (RMSR) was 0.07, the Comparative Fit Index was 0.98 and the Normed Fit Index (NFI) was 0.96. The model fit results in terms of absolute fit indices (RMSR), and incremental fit indices (NFI and CFI) were at acceptable levels.

#### Study 1 hypotheses tests

The overall model fit measures for the structural model were also acceptable as indicated by the fit statistics reported in Table 2. Table 2 also provides the results associated with the various hypothesized paths. H<sub>1</sub> suggested that as consumers' physical environment perceptions are more favorable, consumers perceived service quality is higher. The standardized path coefficient between the physical environment and perceived quality is statistically significant, in support of H<sub>1</sub> (0.32, t=4.59, p<0.05). H<sub>2</sub>, which indicated that there should be a positive relationship between consumers' perceptions of the physical environment and their perceptions of control, was also supported

## Table 2 Structural model results

РАТН	Study 1 (n=192)		Study 2 (n=101)			
	Standardized		Standardized			
	Estimate	<i>t</i> -value	Estimate	<i>t</i> -value		
H1: Environment $\rightarrow$ Quality	0.32	4.59*	0.47	5.76*		
H2: Environment $\rightarrow$ Control	0.69	7.66*	0.44	2.44*		
H3: Control $\rightarrow$ Quality	0.41	6.02*	0.02	0.60		
H4: Control $\rightarrow$ Risk	-0.34	-5.31*	-0.32	-5.20*		
H5: Control $\rightarrow$ Intentions	0.11	1.16	-0.04	-0.72		
H6: Quality $\rightarrow$ Risk	-0.66	-9.03*	-0.38	-3.08*		
H7: Quality $\rightarrow$ Intentions	0.33	2.74*	0.08	0.82		
H8: Risk $\rightarrow$ Intentions	-0.60	-5.13*	-0.80	-7.16*		
Goodness-of-fit statistics						
Chi-square (degrees of freedom)	429.73 (127)		290.38 (111)			
Comparative Fit Index (CFI)	0.97		0.94			
Root Mean Square Residual (RMSR)	0.07		0.04			

\*(*p*<0.05)

(0.69, t=7.66, p<0.05). H<sub>3</sub>, which stated that as perceived control increased, perceived quality of the service provider also increased, was supported. The standardized path coefficient between the two constructs is statistically significant (0.41, t=6.02, p<0.05). H<sub>4</sub> suggested that as perceived control increases, post-purchase perceived risk decreases. The standardized path coefficient between these two constructs was significant, in support of H<sub>4</sub> (-0.34, t=-5.31, p<0.05). However, H<sub>5</sub>, which stated that as perceived control increases, behavioral intentions increase, was not supported (0.11, t=1.16, n.s.).

 $H_6$  suggested that as perceived quality increases, postpurchase perceived risk decreases. The standardized path coefficient between these two constructs was significant and supported  $H_6$  (-0.66, t=-9.03, p<0.05). In  $H_7$ , the perceived quality of the service provider was hypothesized to positively affect behavioral intentions. This relationship was also found to be significant (0.33, t=2.74, p<0.05). Finally,  $H_8$  suggests that as perceived risk decreases, behavioral intentions should increase. The standardized path coefficient between these two constructs was statistically significant and in the appropriate direction, in support of  $H_8$  (-0.60, t=-5.13, p<0.05).

## Study 2

In Study 2, the questionnaire was modified slightly to account for the minor differences in the service context. Minor adaptations were made to some of the measures to fit the study context of alternative therapy. Some of the adaptations were requested by the administrators of the alternative therapy institution. In terms of the indicators used to measure the constructs of interest, behavioral intentions measures in Study 2 were different from those used in Study 1, physical environment was measured by a three-item scale in Study 2 as compared to a two-item scale in Study 1, and post-purchase perceived risk was measured by a two-item scale in Study 2 as compared to a three-item scale in Study 1.

Instead of a mail survey, the questionnaire was administered in a specialized clinic of a major hospital located in a large Eastern U.S. city among patients who were coming back for therapy. A total of 200 surveys were handed out and 101 were returned. In the sample, 82% of respondents were female, and approximately 90% had attended some college or had graduated from college. The difference in respondent characteristics in the two studies could be due to the urban location of Study 2, as compared to Study 1.

#### Study 2 results

As shown in Table 2, the indicators loaded on the expected constructs and except for one measure of service quality, all loadings were greater than 0.5 and the variance extracted was 0.70 or more. The construct reliabilities were quite good and greater than the recommended threshold levels. Overall model fit for the CFA was acceptable given the low sample size (Chi-square 289.10 with 109 degrees of freedom; CFI=0.94 and RMSR=0.04).

#### Study 2 hypotheses tests

As indicated in Table 2, the structural model for Study 2 produced acceptable fit measures (Chi-square 290.38 with 111 degrees of freedom; CFI=0.94 and RMSR=0.04). Study 2 provided support for hypotheses on the effects of

physical context: H<sub>1</sub> (favorable physical environment results in greater perceived quality of the service provider, 0.47, t=5.76, p<0.05) and H<sub>2</sub> (favorable physical environment results in greater perceived control, 0.44, t=2.44, p < 0.05). H<sub>3</sub> (positive effect of perceived control on the perceived quality of the service provider) was not supported (0.02, t=0.60, n.s.) while H<sub>4</sub> (greater perceived control reduces perceived risk) was supported (-0.32, t=-5.20, p < 0.05). Similar to Study 1, the positive effect of perceived control on behavioral intentions, H<sub>5</sub>, was not supported (-0.04, t=-0.72, n.s.). H<sub>6</sub> or the negative effect of perceived quality on post-purchase perceived risk was supported (-0.38, t=-3.08, p<0.05) as it was in Study 1. However, contrary to Study 1 results, the positive effect of perceived quality on behavioral intentions, H<sub>7</sub>, was not supported (0.08, t=0.82, n.s.). H<sub>8</sub>, or the negative effect of post-purchase risk on behavioral intentions, was supported (-0.80, t=-7.16, p<0.05).

In summary, all hypotheses are supported in Study 1 except  $H_5$ , the effect of perceived control on behavioral intentions.  $H_5$  is also not supported in study 2, nor is  $H_3$  or  $H_7$ .

#### Discussion

The model developed from adaptation level theory was particularly useful for examining the influences of postpurchase perceived risk and behavioral intentions in a service setting. By understanding how consumers develop their perception of post-purchase perceived risk, managers can develop strategies to increase the probability that consumers will continue to use their services. Reducing post-purchase perceived risk may be an important element in building relationships with consumers.

Managers should also focus on the physical environment (contextual stimuli). Past research identifies the physical environment of a service as an important tangible background stimulus, and the results of this study support such identification. Therefore, managers should develop information systems that monitor both consumers' expectations and their perceptions of the physical environment.

It is important that managers identify the effects of perceived control over the service process. Offering choices to consumers (e.g., customized services) and allowing them to participate in the decision-making process will strengthen their positive perceptions of control over the service encounter and, ultimately, of the service received. Service providers may be able to use technology to enhance customers' control over the service encounter, such as FedEx's practice of enabling customers to access FedEx order-taking, package tracking, information storage and billing information online. In our attempt to develop a parsimonious model that identifies the clear effects on post-perceived risks and behavioral intentions, we did not include a comprehensive set of antecedent and consequent variables. Omitted variables need to be addressed in future research. For example, it has been shown that repurchase intentions could be influenced by satisfactions with current service transactions. Also, repurchase intentions are part of the behavioral dimension of loyalty, which in turn, could be affected by a myriad of factors, including satisfaction. Similarly, the literature on services points to a host of antecedents to service quality apart from the physical environment, some of which are firm controlled, such as employee behaviors and interactions, promises, guarantees, and service design and delivery.

An examination of post-purchase perceived risk for services, particularly if those services will be repeated, is important if service providers are to garner loyal customers. This study establishes a clear link between the physical context of the service, the perceived control the consumer, or in this case the patient, has over the services provided and the consumer's perceived risk and post-purchase behavioral intentions of the service. We hope this study encourages service providers to pay particular attention to these antecedent variables and encourages researchers to examine additional constructs and situations. Such studies will increase our understanding of the impact of postpurchase perceived risk on purchase behavior.

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