"CLOUT" AND "VULNERABILITY" IN RETAIL CHOICE: MODELING COMPETITIVE EFFECTS OF PERFORMANCE PERCEPTION, SATISFACTION, AND INTENTION

James B. Wiley, Hong Kong University of Science and Technology
Paul D. Larson, University of Alberta

ABSTRACT

This paper provides a framework for the tactical use of service quality measures, especially in sectors where the actions of competitors may have as much impact on a firm as do its own actions. The research questions include: what criteria can guide selection of service quality attributes? How should measurement be accomplished? And, how can the resulting information be analyzed to gain competitive insight? Results from an exploratory study illustrating the model are provided.

INTRODUCTION

The potential advantage of a multi attribute conceptualization of "service quality" over a simpler "overall" judgement is that knowledge of the structure of service quality perceptions and expectations can aid diagnosis of the strengths and weaknesses of the firm's performance and suggest tactics for improving its competitive position. One problem with the multi attribute approach is that the number of attributes that might be considered is large, if not infinite. Managers need criteria to reduce the attributes considered to a practical number.

A previous paper in this journal argued that marketers need not consider all attributes potentially related to perceived service quality (Wiley and Larson, 1993). If service quality measures are to have impact on performance, managers must have motivation to use them: there must be economic consequences (benefits gained or costs avoided). Attention may be restricted therefore to a subset of all attributes consisting of those that a) may be manipulated by firms and b) will have economic consequences, especially those that increase the likelihood that customers will choose the firm rather than its competitors on a given occasion. Consequences that satisfy these criteria may be overt, such as trial, repeat, or switching; also they may be covert, such as change of purchase intention, attitude, or expectation.

Merely determining the firm's performance on critical attributes is not adequate, however, because the performance of competitors also will influence customers' actions. The firm is not equally vulnerable to the competitive actions of all competitors, of course; neither are the competitors equally vulnerable to the firm's actions, nor are the same attributes critical to all firms. In this paper we propose a model that links the following concepts:

- previous purchase (PrP),
- purchase (P),
- purchase intentions (PI),
- satisfaction (S),
- perceptions of performance on a set of attributes (PP).

The model includes both "own" effects and "cross effects." Own effects capture the impact of customers' predispositions toward a firm on their choice of the firm. Cross effects capture the impact of customers' predispositions toward *competitors* on their choice of the firm. The model is similar in intent to a multi attribute formulation proposed by Laroche and Brisoux (1981) and Howard (1994) to describe "competitive vulnerability." Both the Laroche and Brisoux model and the present one are formulated as a system of simultaneous equations.

This paper is organized into six sections. The following one describes the model. The next section discusses *i)* sources for identifying attributes and *ii)* criteria for determining which should be included in the study. Section four *i)* discusses strategies for measuring constructs and *ii)* describes an exploratory study. A system of equations describing the model is evaluated using customers' choice of fast food restaurants in a restricted environment; namely, the "food court" of a mall attached to classroom buildings of a major Canadian university. Section five presents the results of the study. The final section discusses

additional research suggested by the study.

A "CLOUT/VULNERABILITY" MODEL

The conceptual framework linking customers' action with service quality perceptions is presented in Figure 1. Three sets of simultaneous equations capture the relationships among the concepts. The first set expresses *purchase* (P) as a function of *purchase intention* (PI). There is an important distinction between purchase and purchase intention in studies where investigators observe choice at the individual level and the customer typically selects only a single alternative on a given choice occasion. Under these circumstances, choice alternatives are perfect substitutes since selection of one alternative precludes the possibility of selecting another. However, in many product/service categories, such as restaurants, competitors are not equal substitutes. For example, Italian and Pizza restaurants probably are closer substitutes for one another than either are with Chinese restaurants. Including the purchase intention construct allows differential substitution effects to be detected. The model posits that purchase depends on both intentions to purchase at the firm and at its competitors. This system of equations allows the manager to detect which competitors will be most influenced by a successful increase in the firm's average purchase intention (and therefore be the ones most likely to take retaliatory action). The system also suggests which competitors are likely to have impact upon the firm should they be the ones to initiate action.

The second system of equations expresses *purchase intention* (PI) as a function of *satisfaction* (S) and *previous purchases* at the firm (PrP). The two components of this system of equations are not conceived to be the only factors that influence purchase intent. For example, awareness and other "ability to buy" attributes probably influence purchase intent. The previous purchase (PrP) variable is included in this system of equations as a surrogate for the effect on purchase intent of these other effects. Satisfaction is conceived to be a surrogate measure also, specifically for the effects on purchase intent of marketing mix variables related to service quality. This system of equations can suggest answers to key questions, such as: Purchase intentions for which competitors are vulnerable to a successful increase in a firm's customer satisfaction? To which competitors is the firm vulnerable should these competitors initiate action?

The third system of equations expresses the relationship between *satisfaction* (S) and *perceptions of performance* (PP). This system of equations allows the manager to determine a) which attributes(s) to focus on in order to increase customer *satisfaction*, b) which attribute(s) competitors are likely to use if they retaliate, and c) which attribute(s) competitors are likely to select if they initiate action?

The relationship between the concepts and the interpretations of the variables is discussed in greater detail in the following sections.

The Relationship Between Performance Perceptions and Satisfaction

It is hypothesized that satisfaction varies with customers' perceptions of the store's performance on service attributes. The hypothesized relationship for two stores and four attributes has the following form:

$$S_{\text{Store 1}} = \gamma_{11} PP_{\text{Attribute 1}} + \gamma_{12} PP_{\text{Attribute 2}} + \gamma_{13} PP_{\text{Attribute 3}} + \gamma_{14} PP_{\text{Attribute 4}} \quad (1a)$$

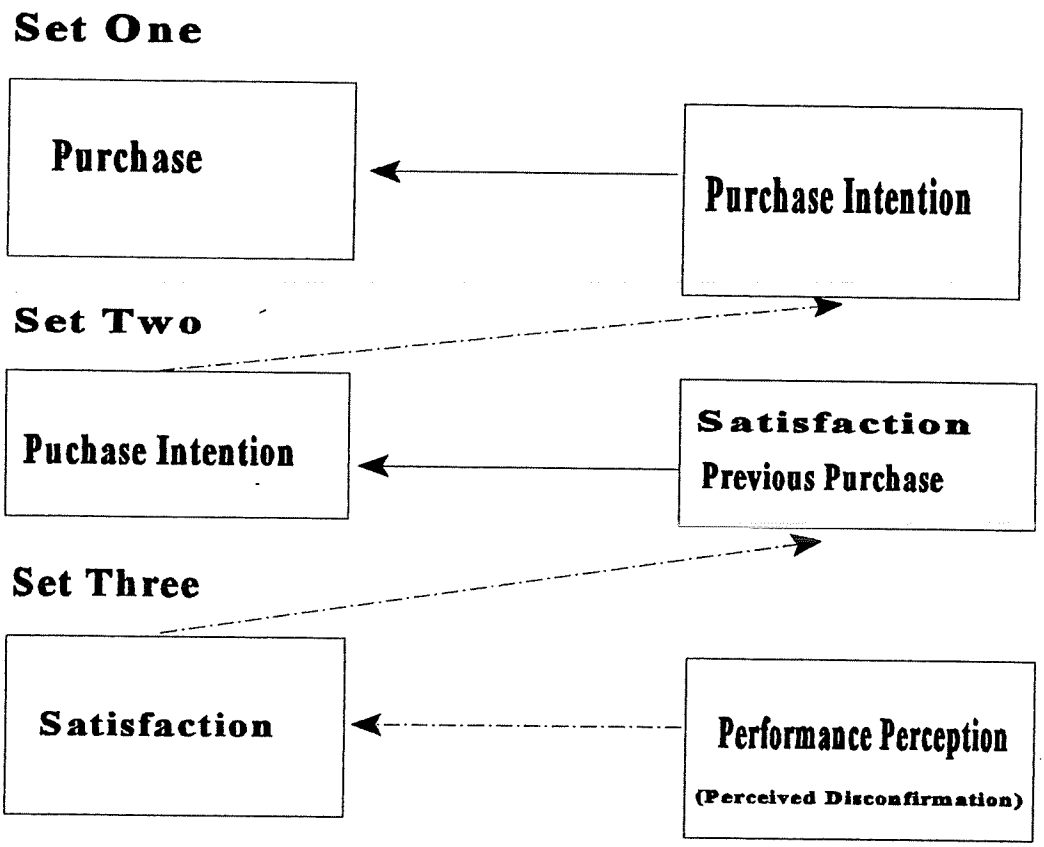
$$S_{\text{Store 2}} = \gamma_{21} PP_{\text{Attribute 1}} + \gamma_{22} PP_{\text{Attribute 2}} + \gamma_{23} PP_{\text{Attribute 3}} + \gamma_{24} PP_{\text{Attribute 4}} \quad (1b)$$

where the γ_{ik}'s are the effects of performance perception regarding store i on attribute k and satisfaction with store i. The *a priori* expectation is that the signs of the γ_{ik}'s should be positive or zero. For "important" attributes, an increase in perceived performance of a store on an attribute should be associated with increased satisfaction with the store. However, an increase in perceived performance may not affect satisfaction for "unimportant" attributes.

Relationship Between Purchase Intentions and Satisfaction

The second set of equations models purchase intention as a function of customer satisfaction with the store and its competitors. The relationship between purchase intentions and satisfaction for

Figure 1
Relationship Among Concepts



two of the firms in a four firm market has the form:

$$PI_{Store\ 1} = \beta_{11} S_{Store\ 1} + \beta_{12} S_{Store\ 2} + \beta_{13} S_{Store\ 3} + \beta_{14} S_{Store\ 4} + \theta_{11} PrP_{Store\ 1} \quad (2a)$$

$$PI_{Store\ 2} = \beta_{21} S_{Store\ 1} + \beta_{22} S_{Store\ 2} + \beta_{23} S_{Store\ 3} + \beta_{24} S_{Store\ 4} + \theta_{22} PrP_{Store\ 2} \quad (2b)$$

where β_{ij}, $i = j$ are the "own effects" of customers' satisfaction with a store on their purchase intent. It would be expected that the signs of these parameters should be positive. Previous purchase (PrP) is included as a surrogate for other factors that might affect purchase intent, such as awareness, ability-to-buy, and store loyalty. It would be expected that the sign of these parameters should be positive.

The β_{ij}, $i \neq j$ are the "cross effects" of satisfaction *with other stores* on purchase intent for store i. For example, the coefficient β_{12} is the effect that satisfaction with store 2 has on purchase intention for store 1. A negative sign for a β_{ij} suggests that store i is a substitute for store j, i.e., that an increase in satisfaction with store j is associated with a *decrease* in purchase intent at store i. A positive sign for a β_{ij} suggests that store i is a complement for store j, i.e., that an increase in satisfaction with store j is associated with an *increase* in purchase intent at store i. The sign for a β_{ij} also may be zero, suggesting that purchase intent at a store i is unrelated to satisfaction with store j.

"Own" and "cross effects" can be organized as follows:

$$V_2 = \begin{bmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \delta_{11} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} & \delta_{22} \\ \beta_{31} & \beta_{32} & \beta_{33} & \beta_{34} & \delta_{33} \\ \beta_{41} & \beta_{42} & \beta_{43} & \beta_{44} & \delta_{44} \end{bmatrix} .$$

The parameters along the main diagonal are the "own effects." The parameters in a row i (excluding β_{ii} and δ_{ii}) are called "vulnerabilities." They capture the effects that satisfaction with competing stores has on purchase intention for store i. The parameters in the column j (excluding β_{jj} and δ_{jj}) indicate a store j's "clout." They capture the effect that satisfaction with store j has on purchase intention for competing stores. In the Laroche and Brisoux (1981) and Howard (1994) model, the dependent variable is purchase intent and the independent variables are attitudes toward the respective firms in a market. With this formulation, the diagonal elements of (V_2) are regression coefficients relating attitude toward firm i and purchase intentions for the firm. The ith row contains regression coefficients relating attitudes toward competitors to purchase intention for firm i. The jth column shows the effects of attitude toward firm j on purchase intentions for its competitors.

Relationship Between Purchase and Purchase Intentions

It is to be expected that purchase and purchase intentions are related. A simple model of the relationship might take the form: $P_{store\ a} = f(PI_{store\ a})$. However, it is likely that customers' intentions to purchase at competitors influence purchase at a store also. If this is the case, then the relationships between purchase and purchase intention for two stores takes the following form:

$$P_{Store\ 1} = \alpha_{11} PI_{Store\ 1} + \alpha_{12} PI_{Store\ 2} + \alpha_{13} PI_{Store\ 3} + \alpha_{14} PI_{Store\ 4} \quad (3a)$$

$$P_{Store\ 2} = \alpha_{21} PI_{Store\ 1} + \alpha_{22} PI_{Store\ 2} + \alpha_{23} PI_{Store\ 3} + \alpha_{24} PI_{Store\ 4} \quad (3b)$$

where α_{ij}, $i = j$, are the effects of purchase intention toward a store on purchase at the store. It is expected that the signs of these coefficients should be positive since there should be a positive relationship between purchase intention for a store and purchase.

The α_{ij}, $i \neq j$ are the effects of purchase intentions for other stores on purchase at store i. The coefficient α_{12} is the effect that purchase intentions toward store 2 has on store 1 purchases. The α_{ij}'s, $i \neq j$ should be negative or zero. Since purchase from one store precludes purchase from another, increases in variables that are positively associated with a store's sales should be negatively associated with purchases from competing stores. All stores are substitutes, or unrelated. However, the degree to which they are substitutes may vary.

"Own" and "cross effects" can be organized as follows:

$$V_1 = \begin{bmatrix} \alpha_{11} & \alpha_{12} & \alpha_{13} & \alpha_{14} \\ \alpha_{21} & \alpha_{22} & \alpha_{23} & \alpha_{24} \\ \alpha_{31} & \alpha_{32} & \alpha_{33} & \alpha_{34} \\ \alpha_{41} & \alpha_{42} & \alpha_{43} & \alpha_{44} \end{bmatrix} .$$

The parameters along the main diagonal are the "own effects." The parameters in row i (excluding α_{ii}) are the purchase intention "cross effects." They capture the effects of increased purchase intention for competing stores on purchases at store i. The cross effects in column j (excluding α_{jj}) indicate the effects of increased purchase intention at store j on purchases at competing stores. Cooper and Nakanishi (1988) discuss own and cross effect parameters extensively and show how coefficients having the structure of V_1 can be presented graphically to provide insights into the competitive structure of a market.

IDENTIFYING CRITICAL ATTRIBUTES

Critical service quality attributes are those that are actionable (can be influenced by management) and of managerial significance (valued by consumers). The notion of critical attributes is related to Alpert's (1971) notion of determinant attributes. Determinant attributes are ones the respondent values *and* believes vary from firm to

firm. Critical attributes are ones that consumers value and managers *can* cause to vary. Critical attributes may be identified from a variety of sources, such as: customer focus groups; interviews with managers; secondary sources, e.g., trade journals (e.g., *Restaurant Business, Restaurants & Institutions*) or customer comment cards; and academic journals. For example, SERVQUAL, a widely used instrument for measuring service quality, was developed from extensive focus group interviews (Parasuraman, et. al., 1985, 1988). For the present study, a search for critical attributes was based on a customer survey, comment cards, literature reviews, and interviews with firms.

Attributes Derived from Customer Survey

In a preliminary study, thirty-four students in a marketing course were asked to suggest up to ten attributes of service quality important to them in considering restaurants in the food court of a mall attached to the business school building. Eleven attributes were mentioned by at least ten respondents. These eleven attributes, in turn, can be placed into four groups:

- Food Related: Fresh Food, Nutritious Food, Tasty Food, and Size of Portions;
- Service Related: Fast Service, Friendly Service, and Short Waiting Lines;
- Facility Related: Availability of Seating, Cleanliness, and Menu Variety;
- Price Related: Competitive Prices.

The four most frequently mentioned attributes were the following: competitive prices (mentioned by 32 respondents), fast service (30), nutritious food (26), and friendly service (22).

Attributes Derived from Comment Cards

Comment cards in use by retailers are another source of critical attributes. Exhibit 1 summarizes the attributes found on the customer comment cards of eight restaurants in the market region. Consistent with preliminary results, the attributes pertain to food, service, and facilities. It is interesting that five of the eight cards ask for global ratings of food quality -- rather than more specific attributes, such as taste, temperature, appearance or portion size. Similarly, two of the eight cards ask only about "service quality" -- while the other six address more specific attributes, such as friendliness and speed/efficiency of service.It is notable that "cleanliness" emerges as the most frequently collected pieces of information on the comment cards. Cleanliness was not included in the present study because the mall provided cleaning services to the restaurants and, so, the restaurants should be equal in cleanliness.

Attributes Derived from the Literature

Based on interviews with three restaurant industry experts, Stephenson (1994) offers several customer-attracting attributes: big portions, cheap (prices), lots of options, good tasting food, and healthy food. Bell (1993) reports that Generation X people (18 to 29) eat fast food 15 to 16 times a month, and prefer: cheap food, unusual menus, exciting environments, and giant portions. In a study of American restaurant chains, Ghaudhry (1992 a,b) finds the following attributes to be related to customer satisfaction: food quality, menu variety, atmosphere, and cleanliness. Dube, Renaghan and Miller (1994) identify seven attributes (food tastiness, food consistency, menu variety, wait for seating, attentiveness, helpfulness, and atmosphere) for a small, independent, up-scale restaurant. Tasty food is the attribute most significantly linked to repeat purchase intentions.

Richard and Allaway (1993) study quality of home-delivery pizza service, using 28 attributes of service quality. Drawing on Gronroos (1984), they present two categories of attributes: (1) outcome or technical, and (2) process or functional. The outcome attributes are tangibles, what was delivered. One the other hand, process attributes describe how it was delivered. They add six outcome items -- delicious, nutritious, flavourful sauce, crust, a generous amount of toppings, and superior ingredients -- to a larger set of process attributes, namely the twenty-two SERVQUAL items.

Exhibit 1
Attributes Derived From Comment Cards

Attributes	Restaurant							
	Arby's	A&W	Boston Pizza	Embers	Red Lobster	Subway	Taco Time	Wendy's
Food Quality		x	x			x	x	x
Taste	x			x	x			
Temperature	x			x	x			
Portion Size	x		x	x	x			
Appearance	x				x			
Price					x			
Service Quality			x			x		
Friendly	x	x		x	x		x	
Helpful	x							
Speed	x	x		x	x		x	x
Knowledgeable	x							
Accuracy		x			x			x
Appearance				x				
Attentive				x	x			
Courtesy								x
Restaurant Quality						x		
Atmosphere	x							
Cleanliness	x	x	x	x			x	x
Music	x							
Decor	x							
Overall	x	x		x	x		x	x

Attributes Derived from Managers

As a last step, several managers of the restaurants included in the study were interviewed. The managers emphasized quality of food and portion size as critical attributes. It is interesting that managers did not consider menu variety to be a critical attribute because it was not actionable. The mall leasing arrangements dictate what types of food could and could not be offered by individual restaurants. For example, the Italian restaurant was precluded from offering pizza and the Pizza restaurant could not offer other Italian food. Likewise, seating was not a critical attribute because the leased location had it, or did not, and there was no possibility for the restaurant to change once the manager signed a lease.

Critical Attributes for Fast food Restaurants

Based on the above findings the following attributes where included in the exploratory study discussed below: Nutritious Food, Friendly Service, Tasty Food, Fresh Food, Size of Portions, and Availability of Seating. Availability of seating was included because though they could not change it, its impact on satisfaction and store choice was relevant to negotiations with mall management on other matters.

AN ILLUSTRATIVE STUDY

Results of an exploratory study are reported to illustrate the "Clout/Vulnerability" model. Four Faculty of Business classes (a total of 208 students) completed a seven-page survey. Respondents were given a two-dollar coupon that they could redeem at any of four restaurants. This redemption value corresponded to about half the typical cost of a lunch at the participating restaurants. Purchase Intent, Satisfaction, and Prior Purchase information was collected for the six most frequented restaurants as indicated by the preliminary study. For administrative reasons, the coupon redemptions were limited to the four most frequented of this set of six restaurants. To keep the questionnaire at manageable length, perceived performance information was collected only for the four restaurants at which coupons could be redeemed. The coupons and questionnaires were coded so that redeemed coupons could be matched with questionnaires. Respondents were given three weeks to redeem the coupons. The concepts were operationalized and missing data were coded in the following manner.

Performance Perceptions

The satisfaction literature suggests that consumer satisfaction occurs when the perceived outcome of a transaction meets or exceeds the consumer's expectations. Expectations are predictions of the nature and level of performance that the consumer will (or should) receive. Dissatisfaction occurs when perceived performance fails to meet expectations (Oliver, 1979). Expectations in this view can be based on direct or indirect experiences. They are provider specific, but they may differ with usage context. For example, a user's expectations regarding a bank's services may depend on whether he or she is making a deposit/withdrawal or seeking a mortgage renewal. The integration of expectations-performance judgments is conceived to be compensatory in nature, i.e., unsatisfactory performance on one attribute can be compensated for by satisfactory performance on another attribute.

The so-called self explication approach is the most widely used approach to operationalize the gap between perceptions and expectations. Respondents give direct judgements of the two constructs and the difference is taken. Many authors have identified problems with this approach. Wall and Payne (1973) show that calculating difference scores masks the true relationship between variables, even when the true relationship involves a difference. Peterson and Wilson (1992) discuss problems with the self explication approach in consumer satisfaction research.

In the present work, the perceived disconfirmation approach is used to operationalize the performance perception construct (Rogers, Peyton and Berl, 1992). Respondents make a single, direct judgement of the perceived difference between performance and expectations. This approach offers the potential benefit of avoiding some controversy surrounding the way expectations should be defined by enabling the

respondent to use their own standard in arriving at their judgement. Tse and Wilton (1988) and others (Anderson, 1973; Churchill and Surprenant, 1982) have shown the approach gives good results in comparison with the self explication approach. The perceived disconfirmation questions were taken from Wiley and Larson (1993). Table 1 (3 = "Greatly Exceeds Expectations," 0 = "Exactly Matches Expectations," -3 = "Greatly Falls Sort of Expectations"). Missing data on this variable was coded as 0 ("Exactly Matches Expectations").

Purchase

The measure of Purchase involved coupon redemption. If a coupon was redeemed at a restaurant, the purchase variable for the restaurant was coded as 1 for the respondent and the remaining restaurants were coded as 0. Hence, a responded who redeemed a coupon had a 1 recorded for one restaurant and 0's for the remaining restaurants. Respondents who did not exercise their coupon had 0's recorded for all restaurants. Therefore, the parameters in Equation 3 are interpreted as the effect of purchase intentions on exercising the coupon at a restaurant versus not exercising the coupon *at that restaurant*. Enforcing that respondents -- and not others -- redeemed coupons was not possible. However, it is felt that most respondents exercised their own coupons.

Satisfaction

Satisfaction was operationalized using the Westbrook (1980) "Terrible-Delighted" scale. Missing data was, a) set equal to mean of individuals' ratings for other stores, provided the respondent provided ratings for other stores, or b) if the respondent provided no satisfaction ratings, he or she was eliminated from the sample. Ten respondents were eliminated.

Purchase Intent, Previous Purchase

Purchase Intent was operationalized with the question "How likely is it that you will buy food from each of the HUB Mall restaurants during the next month" (7 = Very Likely, 1 = Very Unlikely). Previous Purchase was operationalized with the question "Approximately how many times during *this semester* have you bought food at these Hub Mall restaurants" (0, 1-3, 4-6, 7-9, 10+). Missing data for Purchase Intent was set to 1 (Very Unlikely). Missing data for Previous Purchase was set to 0.

RESULTS

Three stage least squares (3SLS) estimation was used to gain consistent estimates of model coefficients. It should be noted that the dependent variable in the purchase/purchase intention set of equations was coded 0/1 and probit/logit procedures were not used to estimate these equations. To do so would have entailed a mixed estimation procedure using logit/probit for one set of equations and a standard linear model structure for the remaining equations of the simultaneous system. The primary purpose of the present research is to illustrate the "clout/vulnerability" model. The focus of the illustration is on the appropriateness (or inappropriateness) of the signs of estimated coefficients (and not on prediction). The three-stage least squares approach is adequate for this task.

The presence of an entry in the following tables indicates that the coefficient is significant at beyond the .05 level. Absence of an entry indicates that the coefficient was not significant at the .05 level.

The Relationship Between Intentions to Purchase and Coupon Usage.

The shaded cells on the diagonal of Table 1 present the coefficients between purchase intent and purchase at restaurant *i*. The expectation is that the coefficients should be positive. They all have the expected sign.

The off-diagonal cells present the coefficients between purchase intent for one restaurant and purchase at another. Expectation for the signs of the coefficients is that significant ones should be negative, i.e., that high purchase intent at one restaurant would be negatively associated with purchase at another. If a coupon was exercised at a restaurant with higher intentions, it could not be exercised elsewhere. All significant coefficients are of the expected sign.

Table 1
The Relationship Between Purchase Intentions and Purchase

Independent Variable: Purchase intent at ⇓	**Dependent Variable**: Actual Purchase at ⇓			
	Pizza	Burger	Italian	Submarine
Pizza	0.06		-0.02	-0.03
Burger		0.04		-0.03
Italian		-0.05	0.07	
Submarine			-0.02	0.10
Constant		0.27		

All non-blank entries significant beyond the .05 level.

Table 2
The Relationship Between Satisfaction/Previous Usage and Purchase Intention

Independent Variable: Satisfaction with ⇓	**Dependent Variable**: Purchase intent at ⇓			
	Pizza	Burger	Italian	Submarine
Pizza	0.43			
Burger		0.44	-0.19	
Italian	0.22		0.57	
Submarine				0.47
Coffee/Deli	-0.27			
Chinese			-0.12	
Previous Usage	1.32	1.14	1.20	1.19
Constant				

All non-blank entries significant beyond the .05 level.

The Relationship Between Satisfaction/ Previous Usage and Purchase Intention

The shaded cells on the diagonal of Table 2 present the relationship between satisfaction with a restaurant and purchase intention. The expectation is that the relationship should be positive and it always is.

The shaded row at the bottom of Table 2 presents the coefficients relating previous purchases at the restaurant to purchase intention. The expectation is that the coefficients will be positive. All of the coefficients have the expected positive sign.

The off-diagonal cells present the relationships between satisfaction with a restaurant and purchase intent at another restaurant. The relationship could be in either direction: positive for complements, negative for substitutes, or zero for neutral competitors.

The Relationship Between Satisfaction and Perceived Performance

Table 3 presents regression coefficients between perceived performance ratings and satisfaction with a restaurant. It is expected that the coefficients would be positive or zero, which they are for the most part. The results for tasty food agree with the results of Dube, Renaghan and Miller (1994).

However, two coefficients are negative. The nutritious rating for the Sub restaurant is negative, perhaps suggesting a confounding with perception that submarine sandwiches are not healthy. The negative sign for the Italian restaurant may suggest that it has relative limited seating and can get quite contested, especially at lunch time.

CONCLUSION

A "clout/vulnerability" model linking firm actions that influence service quality with store choice is proposed and illustrated with an exploratory study. The system of simultaneous equations of the model has 68 coefficients, excluding the constants.

- The *a priori* expectation for 12 coefficients -- eight associated with the "own effects" and 4 associated with prior usage -- is that they should have a positive sign. All 12 coefficients have the expected sign.

- The *a priori* expectation for 12 coefficients -- those for the "cross effects" of purchase intent and purchase -- is that they should be negative or zero. All 12 coefficients have the expected sign.

- The expectation for 24 coefficients -- those for the effect of performance perception with satisfaction -- is that the signs should be positive or zero. Twenty-two of the coefficients have the expected sign. Two coefficients have the wrong sign. Anecdotal observations suggest plausible explanations for these signs, but the results suggest possible difficulty with the wording of the perceived disconfirmation measure.

Table 3
The Relationship between Satisfaction and Perceived Disconfirmations

Independent Variable: Disconfirmation on Attribute ⇓	**Dependent** Variable: Satisfaction With ⇓			
	Pizza	Burger	Italian	Submarine
Nutritious Food				-0.19
Friendly Service	0.23		0.18	
Avail. of Seating			-0.18	
Tasty Food	0.24	0.33	0.34	0.57
Fresh Food		0.12		0.26
Size of Portions	0.20			
Constant	4.58	3.97	4.57	4.16

All non-blank entries significant beyond the .05 level.

- Twenty coefficients -- those for the effects of satisfaction with store *j* with purchase intention at store *i* -- may be positive, negative, or zero depending on whether the stores are complements, substitutes, or neutral. Overall, the signs of the coefficients are plausible in the sense that they indicate that the Italian and Pizza restaurants are complements while the remaining restaurants are substitutes or neutral.

This study focuses on evaluating the face validity of the model through the mechanism of testing the appropriateness of the signs on coefficients. The results support the face validity of the model and suggest that it may have utility in suggesting which service quality attributes a firm should focus on if it wants to affect actions by its customers.

Further Research

Several areas for additional work are suggested by the present work. These include data analysis, missing data, measures, and methodology.

Data Analysis. The model does not address the issue of how difficult affecting performance perceptions would be or whether doing so would be profitable. To answer the latter question, making predictions of the impact that a change in performance perception would have on market share would be very useful. To do this, an estimation procedure is needed that predicts market share. This remains a direction for further research.

Missing Data. One problem in developing an estimation procedure that predicts market shares is that missing data has a major impact on the consistency of estimates. Missing data will be common with this kind research because respondents inevitably will not be familiar with all stores. Future research will be necessary to deal with this problem. One characteristic of data, however, potentially makes known missing data approaches applicable. It generally will be the case that if respondents have one characteristic -- being unfamiliar with a store -- then they will have missing data on all other variables relating to it. As a result, missing data will have a patterned structure. Procedures for estimating consistent covariance matrices in these situations are known. Future research should explore the use of such approaches in an otherwise standard estimation procedure, such as LISREL or the three-stage least squares procedure used here.

Measures. Two measurement issues are suggested by the present study. The first concerns the measure of satisfaction. Satisfaction is a central construct in the system of equations. Future work should include multiple measures of this construct to increase the reliability with which it is measured. Secondly, the present research, and other research by the authors using the perceived disconfirmation measure, suggests that alternative wording of the performance perception question may be more intelligible to respondents and yet have the diagnostic value of the self explicated or the perceived disconfirmation approaches. A study currently is in progress that compares the perceived disconfirmation approach with direct judgements by respondents of their satisfaction/dissatisfaction with stores' performance on critical attributes.

Longitudinal Methodology. The present study used a cross-sectional methodology -- as did the Laroche and Brisoux (1981) study. A more appropriate methodology would be to track changes in performance perception, satisfaction, purchase intention, and purchase over time. The study mentioned in the above paragraph is a longitudinal study that will track changes in purchase, purchase intention, satisfaction, and performance perception over multiple periods. Multiple indicators are used for the satisfaction and performance perception constructs and estimation will be conducted using LISREL.

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Send correspondence regarding this article to:
Paul D. Larson
Department of Marketing and Economic Analysis
School of Business
University of Alberta
Edmonton, Alberta T6G 2R6 CANADA