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# A preliminary investigation of the relationships between employee motivation/vision, service learning, and perceived service quality

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## Abstract

Most experts agree that a learning organization whose employees have a clear vision of the importance of service quality and are motivated to provide that quality will achieve superior service quality. We develop a theoretical framework and conduct a cross-sectional empirical study to investigate the inter-relationships among these constructs. The results indicate that higher levels of both employees' motivation/vision and organizational learning positively affect perceived service quality (PSQ). Additionally, employees' motivation/vision was found to mediate the relationship between organizational learning and PSQ. These results highlight the importance of employees' motivation/vision in both the service process and the learning process. © 2000 Elsevier Science B.V. All rights reserved.

*Keywords:* Empirical research; Human resources/OM interface; Quality; Service operations

## 1. Introduction

Many firms have been able to achieve significant competitive advantage by offering superior service quality (Albrecht and Zemke, 1985; Collier, 1994; Lovelock, 1994; Schmenner, 1995; Zeithaml et al., 1990). However, assuring quality in services is, in some ways, a more difficult proposition than assuring quality in manufacturing. Two factors, in particular, contribute to this difficulty. The 'production process' of services involves the interaction of employees and customers, making it difficult to insure consistency and reliability in the service process and resulting 'product'. Additionally, quality judgments of an intan-

gible service are determined by individual customer's perceptions and expectations, making it difficult to discover and correct service failures. Thus, both the employees and the learning ability of the firm are thought to play a critical role in achieving superior service quality.

Most experts agree that a learning organization whose employees have a clear vision of the importance of service quality to the organization and are motivated to provide that quality will achieve superior service quality. As Albrecht and Zemke (1985) assert, "excellent service companies: have a strong vision, ... market service internally, measure service and publish results". In other words, both employee motivation/vision (EMV) and organizational learning are thought to positively affect perceived service quality (PSQ). However, little research has been conducted to determine the mag-

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### **Research scope**

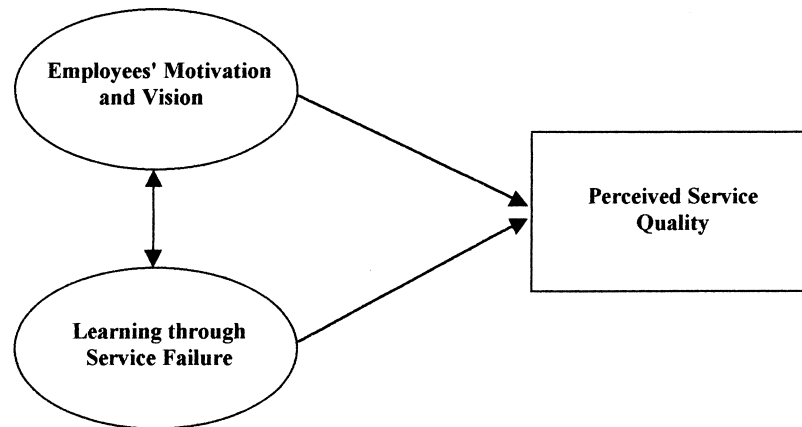


Fig. 1. Research scope.

nitude of those effects. Additionally, the nature of the relationship between organizational learning and EMV is not well understood. Some experts posit that the motivation and vision of employees is positively affected by organizational learning, while other experts posit that organizational learning is positively affected by the motivation and vision of employees. The lack of theory-driven, systematic, empirical research leaves both academics and practitioners in doubt as to both why and how these constructs affect service quality.

Although, there are many factors that can influence evaluations of service quality (Parasuraman et al., 1988; Zeithaml et al., 1988, 1990, 1993), this research is aimed at investigating the relationships between EMV, learning through service failure (LTSF) and PSQ. The empirical study uses survey data obtained from customers, management employees, and front-line employees of a multinational hotel firm to measure the constructs of EMV, LTSF and PSQ as well as to investigate the nature of the inter-relationships among those constructs. Fig. 1 illustrates the scope of this research. We first review the relevant literature and develop the theoretical foundation of this research. We then present the research methodology followed by an analysis of the results obtained from the empirical study. We conclude the paper with a discussion of the implications of this research.

## **2. Literature review and theory development**

### *2.1. Perceived service quality*

Quality is an important predictor of both market share and profitability in many markets (Buzzell and Gale, 1987; Capon et al., 1990; Phillips et al., 1983). The importance of customer satisfaction and service quality to service firms is evident (Jones and Sasser, 1995; Oh and Parks, 1997; Sasser et al., 1978; Zeithaml et al., 1993). Although evaluations of service quality are based on many factors, it is generally accepted that attributes associated with a service firm's personnel play a key role in the determination of customer satisfaction and customer perceptions of service quality. However, almost all of the study done in this area has been focused either outside or inside the organization; based on customer perceptions of employee attributes rather than employee perceptions (see for example, Mohr and Bitner, 1995 or Zeithaml et al., 1988) or based on employee perceptions of external outcomes (see for example, Voss et al., 1996). Schneider (Schneider, 1980; Schneider et al., 1980, 1996; Schneider and Bowen, 1985) is one of the few who has attempted to relate internal employee perceptions to external customer perceptions. In contrast to Schneider et al. (1996), who focus on a specific strategic initiative, this study focuses on cultural aspects of individual outlets. This study represents an

important attempt to relate internal drivers of service quality to external customer perceptions of service quality.

Although, this empirical study is focused on investigating the effect of EMV and LTSF on customer perceptions of service quality, it also has strong implications for the business performance of the firm. Customer perceptions of superior quality have been found to relate to increased customer satisfaction, which in turn leads to increased customer retention and results in positive economic outcomes for the firm (Anderson et al., 1994; Fornell, 1992; Fornell et al., 1996; Ittner and Larcker, 1996; Johnson and Fornell, 1991). Thus, if EMV and organizational learning are positively related to PSQ, they should also positively affect the financial performance of the firm.

## 2.2. *The effect of employee motivation/vision on perceived service quality*

The service literature highlights the importance of employees, particularly the motivation and vision of those employees, in successful service firms (Love-lock, 1994). Some experts emphasize the importance of ‘commitment’ (Farber and Wycoff, 1991), others emphasize the importance of ‘culture’ (Collier, 1994), and still others emphasize ‘climate’ (Schneider, 1980). They are all in agreement with Hostage (1975), who states, “service quality begins with people”.

The courtesy, empathy, and responsiveness of service employees all combine to influence quality perceptions of customers (Parasuraman et al., 1988). Czepiel et al. (1985) argue that, “employees not only deliver and create the service, but are actually part of the service in the customers’ view”. Process theories of motivation (Porter and Lawler, 1968; Vroom, 1964) generally predict increased performance with increased motivation. Locke’s goal-setting model (Locke and Latham, 1984), in particular, predicts that both performance and motivation will be increased when individuals have clear goals. Motivated employees who have a clear vision of the importance of service quality to the firm should provide superior service (Bowen and Lawler, 1992). Therefore, we hypothesize:

- H1: higher levels of EMV will have a positive effect on PSQ.

## 2.3. *The effect of learning through service failure on perceived service quality*

The ability to learn efficiently from both employees and customers is thought, by some experts, to be necessary for organizational success and survival (Marquardt and Reynolds, 1994). Senge (1990) goes so far as to argue, “the rate at which organizations learn may become the only sustainable source of competitive advantage”.

Quality control is one of the primary ways in which organizations learn. Indeed, Argyris and Schon (1978) even define organizational learning as “the detection and correction of errors”, which could also be a definition of quality control. In order to survive in an increasingly competitive and dynamic service economy, firms need the ability to quickly learn from their failures. Because of the intangible nature of services, customer complaints are an important means of detecting service failures and can provide a significant opportunity for organizational learning (Fornell, 1976). Although organizations can learn in many ways, this study is focused on LTSF.

Perceptions of service quality are shaped by customer expectations. Because customer expectations and perceptions change from customer to customer, as well as over time, organizational learning is needed to achieve and maintain superior service quality. We believe that firms with a greater ability to learn from service failures will offer higher levels of service quality. Therefore, we hypothesize:

- H2: higher levels of LTSF will have a positive effect on PSQ.

## 2.4. *The relationship between employee motivation/vision and learning through service failure*

Employee motivation/vision is thought to be an essential ingredient of learning organizations (Marquardt and Reynolds, 1994). Senge (1990), who popularized the concept of learning organizations, states:

... one cannot have a learning organization without shared vision. Without a pull toward some goal which people truly want to achieve, the forces in support of the status quo can be overwhelming. Vision establishes an overarching goal. The loftiness of the target compels new ways of thinking and acting. A shared vision also provides a rudder to keep

the learning process on course when stresses develop . . . shared vision fosters risk taking and experimentation.

Thus, service learning could be posited to depend on the motivation and vision of the firm's employees, where higher levels of motivation and vision positively influence learning.

An opposite perspective is taken by some behaviorists. Hackman and Oldham (1980) believe that a job's motivating potential can be enhanced by increasing the level of feedback from job and/or knowledge of results (Oldham, 1996). Control theory (Carver and Scheier, 1981), goal-setting theory (Locke and Latham, 1990), and social cognitive theory (Bandura, 1986) all agree that feedback regulates action by stimulating a reaction to a feedback-standard discrepancy. The theories differ in their explanation of people's reaction to this discrepancy. Control theory is in agreement with Wirtz (1998), who asserts that the negative feedback employees obtain from service failure may have a demotivating effect, rather than a motivating effect. Goal-setting theory (Locke, 1982) advances the premise that motivation increases with feedback discrepancy.

Thus, EMV could be posited to depend on learning, through feedback and knowledge of results, where learning could either positively or negatively influence EMV. Alternately, EMV and LTSF could independently affect PSQ. In this case, learning would not have an effect on EMV nor would EMV have an effect on learning. They could, however, interact in their effect on PSQ.

Although, there is theoretical support for the positive effect of EMV and LTSF on PSQ, little empirical evidence exists to support these relationships. Additionally, the nature of the relationship between EMV and LTSF is ambiguous in the literature. This study is aimed at resolving this ambiguity. Assuming that H1 and H2 are supported in this study leads to the following competing hypotheses concerning the nature of their relationship and their subsequent effect on PSQ. We hypothesize:

- H3A: EMV and LTSF are not related to each other.
- H3B: LTSF moderates the relationship between EMV and PSQ.
- H3C: EMV moderates the relationship between LTSF and PSQ.
- H3D: LTSF mediates the relationship between EMV and PSQ.

- H3E: EMV mediates the relationship between LTSF and PSQ.
- H3F: EMV and LTSF are non-recursively related to each other and both affect PSQ.

These hypothesized relationships are illustrated in Fig. 2.

### 3. Research methodology

#### 3.1. Data collection

Data was collected via a mail survey sent to a sample of 25 North American hotel outlets of a multinational hotel corporation. The hotels included in this sample represented a wide variety of hotel types (with and without suites, vacation and business, franchised and owned); locations (urban, suburban, and resort across the USA and Canada); sizes (111–759 rooms) and ages (on-line from 1970 to the beginning of the study).

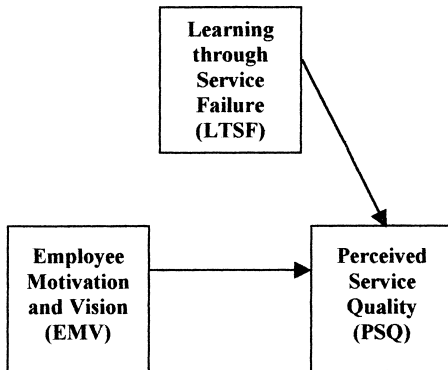
Both management and front-line personnel perceptions of EMV, and LTSF were surveyed. Management personnel surveyed ranged from the hotel general manager, to the food and beverage manager, to the front office manager. Front-line personnel surveyed included receptionists, concierges, desk clerks, and housekeeping staff. Only one hotel did not respond (a response rate of 96%) and over 250 individual responses (174 management and 102 front-line). The corporation also provided their monthly and yearly PSQ data for most of these hotels.

This is a theory building cross-sectional design for studying a variance theory. The unit of observation for PSQ is the hotel customer as an informant. The unit of observation for both the EMV construct and the LTSF construct is the hotel employee as an informant. However, the unit of theoretical analysis is the individual hotel.

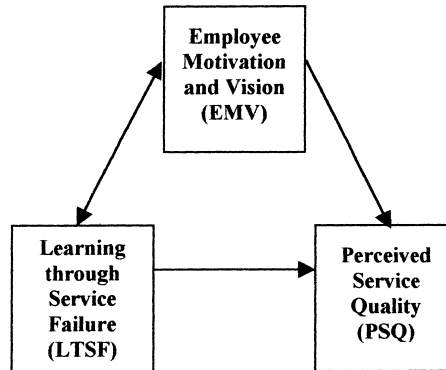
The research design reflects an attempt to balance the threats to construct, internal, statistical, and external validity, given the availability of data. Construct and internal validity should result from careful definition of constructs and relationships as well as the design of the survey instrument and the use of multiple types of respondents and multiple measures for this survey (Yin, 1989). Construct validity of the dependent measure is obtained partly by using the firm's customer response data. This measure should be both

**Hypotheses**

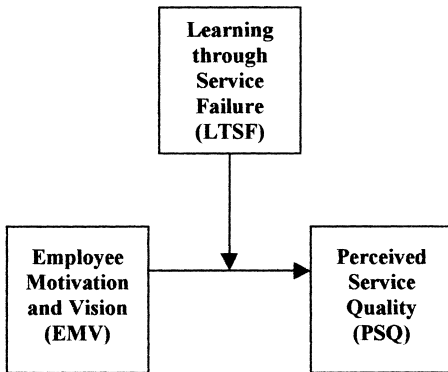
**Hypothesis 3A: EMV and LTSF are not related to each other**



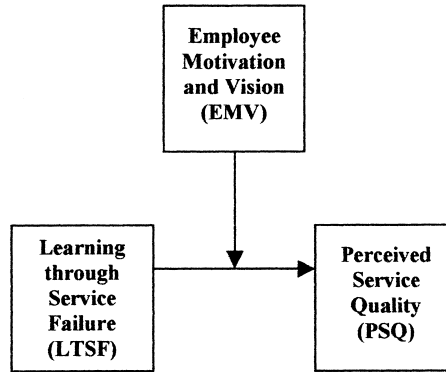
**Hypothesis 3F: EMV and LTSF are non-recursively related to each other and both affect PSQ**



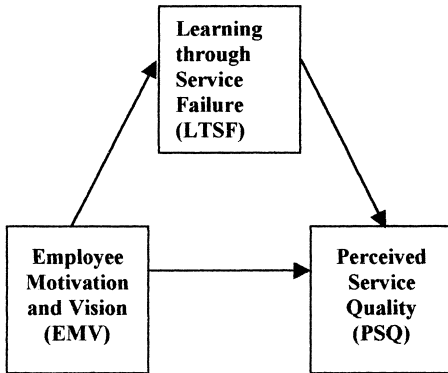
**Hypothesis 3B: LTSF moderates the relationship between EMV and PSQ**



**Hypothesis 3C: EMV moderates the relationship between LTSF and PSQ**



**Hypothesis 3D: LTSF mediates the relationship between EMV and PSQ**



**Hypothesis 3E: EMV mediates the relationship between LTSF and PSQ**

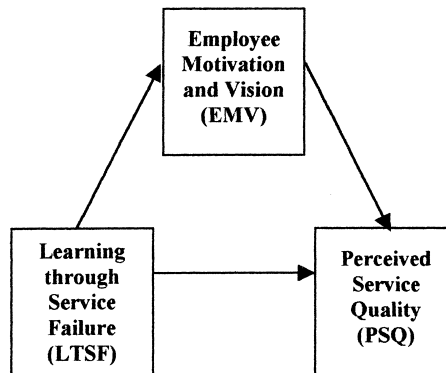


Fig. 2. Hypotheses.

more reliable and more valid than other commonly employed measures such as employees' ratings of the quality of their service offering. Some statistical and practical validity should result from the regression analyses, as well as the other statistical analyses. Statistical validity is also increased through our choice of sampling frame, multiple outlets of a single firm. Random irrelevancies in experimental settings (the units of theoretical analysis are subject to various environmental factors and systematic influences) are reduced by limiting the study to a single firm. However, limiting the study to a single firm reduces external validity and larger studies are planned for the future to address this problem.

### 3.2. Independent constructs

#### 3.2.1. Definition and operationalization of constructs

Academics and practitioners were consulted and the literature was reviewed to define the constructs of EMV and service learning and to identify the dimensions of these constructs. Additionally, the literature was searched for existing valid and reliable measurement instruments/items (Hackman and Lawler, 1971; Lawler and Hall, 1970; Oldham, 1996; Price, 1972). Although, none of the existing measurement instruments/items was felt to be appropriate for this study, some of the underlying concepts were applied in the design of the items.

Motivation can be defined as the desire to achieve some goal. Vision is described by Mellander (1993) as "a concordant view of the company's activities and goals, and of the direction of future trends". The EMV construct reflects employee motivation to provide high quality service and the existence of a company-wide, all encompassing vision of the importance of high quality service. This construct is defined as:

The degree to which a firm's employees have a desire to provide high quality service and have a clear vision of the role that service quality plays in the company's overall strategy.

The two dimensions associated with this construct are defined as:

1. Motivation: The degree to which a firm's employees have a desire to provide high quality service.
2. Vision: The degree to which management has communicated priorities clearly and the firm's employees (managers through front-line workers) have an

awareness of the key role that service quality plays in the company's strategy.

Huber (1991) relates organizational learning to knowledge acquisition, information distribution, information interpretation, and organizational memory. Nevis et al. (1995) condenses these dimensions to knowledge acquisition, dissemination, and utilization. Although organizations can learn in many ways, this study was focused on LTSE. Therefore, this construct is defined as:

The efficiency with which a firm is able to learn from its customers by discovering dissatisfied customers, collecting information from these customers, and improving their systems based on the information collected in order to improve the quality of its offerings.

Three dimensions were identified for this construct. They are defined as:

1. Discovery: The degree to which a firm is able to detect service failures.
2. Data: The degree to which a firm collects and communicates information on service failures.
3. Improvement: The degree to which a firm uses the failure information to improve quality.

The identified dimensions of the EMV and LTSE constructs were operationalized with specific items (Table 1). Following Schneider et al. (1996), we focus on employee perceptions of practices within the organization, rather than individual employee attitudes. The responses were seven-point, anchored, agree–disagree, Likert scales. The items were evaluated by experts, subjected to a small-scale pilot test, and revised where necessary. The small-scale pilot test was administered to a sample of local business managers and front-line personnel over a wide variety of service companies and revealed that respondents had difficulty with reverse-scaled items. Therefore, all items in the mail survey were positively worded. Items were randomized on the actual survey form.

#### 3.2.2. Factor analysis

3.2.2.1. *Suitability.* Exploratory factor analysis was used to assess both convergent and discriminant construct validity. Factor analysis requires an approximate ratio of respondents/items of 10:1 (Tinsley and Tinsley, 1987). With over 250 respondents and 16 items, this requirement is met.

Table 1  
Constructs, dimensions, and items

Dimension	Motivation
Construct: employee motivation and vision	
EMVM1	Our employees always make customer satisfaction their top goal
EMVM2	Our employees go out of their way to listen when customers complain
EMVM3	Our employees try very hard to fix customer problems when they know about them
EMVM4	Our employees feel a strong sense of accountability and ownership for service quality
EMVM5 <sup>a</sup>	Customer satisfaction is an extremely important part of my job
Vision	
EMVV1 <sup>a</sup>	Our service quality priorities are always clear to our employees
EMVV2	Our employees have a clear understanding of the role that service quality plays in helping our company compete in our market
EMVV3	We have very well-defined standards for service quality
Discovery	
Construct: learning through service failure	
LTSFDIS1	When a service problem occurs, we are almost always aware of the problem
LTSFDIS2	Our employees are very aware of customer complaints and why they occur
LTSFDIS3 <sup>a</sup>	Customers with a service problem almost always complain to us
Data	
LTSFDATA1	We have accurate information on how many complaints we receive
LTSFDATA2	We have accurate information on why our customers complain
LTSFDATA3	Information on customer satisfaction trends is communicated to all of our employees
Improvement	
LTSFIMP1 <sup>a</sup>	Collecting customer feedback helps us to regularly improve our service quality
LTSFIMP2 <sup>a</sup>	We have improved our service quality over the past year based on customer complaint information

<sup>a</sup> The exploratory factor analysis resulted in elimination of these items from the final analysis.

The suitability of the data for factor analysis was assessed with various tests. Bartlett's test of sphericity was significant at the 0.001 level. The overall measure of sampling adequacy was 0.893 and individual measures were all above 0.8. All anti-image correlations were less than 0.3. Thus, this data meets the fundamental requirements for factor analysis (Hair et al., 1998). The results reported here were obtained using principal components as the means of extraction and varimax as the method of rotation.

*3.2.2.2. Outliers, standardization and purification.* Although, exploratory factor analysis does not require that the responses follow a normal distribution, departures from normality reduce the correlations between items. Therefore, for the factor analysis, responses for each item were transformed to obtain distributions that were closer to normal distributions (generally, most responses were squared). The responses were

standardized and examined for outliers. A few outliers were eliminated. Items were purified before being factor analyzed, as recommended by Churchill (1979), to improve the interpretation of results. Four items (EMVM5, LTSFDIS3, LTSFIMP1, and LTSFIMP2) were eliminated from the subsequent analysis because their corrected item-total correlation was below 0.45.

*3.2.2.3. Convergent and discriminant validity.* An exploratory factor analysis was conducted on the 12 items that remained after purification. Two factors with eigenvalues greater than one (Nunnally, 1978) were identified. All of these items loaded on their theoretically predicted factor to a greater extent than they cross-loaded on the other factor. However, removal of the item EMVV1 resulted in a 'cleaner' solution with all items loading on their theoretical construct at greater than 0.5 and cross-loadings of less than 0.5. Therefore, to increase discriminant validity, this item

Table 2  
Factor loadings and Cronbach's alphas<sup>a</sup>

Item	Rotated component matrices for all items				Component matrix for individual scales		
	Initial analysis		Final analysis		Management and front-line	Management only	Front-line only
	Factor 1	Factor 2	Factor 1	Factor 2			
<b>EMV</b>							
EMVM1	<b>0.79</b>	0.19	<b>0.79</b>	0.20	0.81	0.79	0.82
EMVM2	<b>0.73</b>	0.26	<b>0.73</b>	0.27	0.80	0.77	0.83
EMVM3	<b>0.78</b>	0.03	<b>0.79</b>	0.04	0.77	0.72	0.81
EMVM4	<b>0.60</b>	0.30	<b>0.61</b>	0.30	0.69	0.66	0.75
EMVV1	<b>0.54</b>	0.47					
EMVV2	<b>0.70</b>	0.18	<b>0.70</b>	0.17	0.71	0.66	0.78
EMVV3	<b>0.70</b>	0.26	<b>0.69</b>	0.24	0.74	0.73	0.74
Eigenvalue					3.4	3.2	3.7
Cronbach's alpha					0.84	0.82	0.85
<b>LTSF</b>							
LTSFDIS1	0.20	<b>0.69</b>	0.21	<b>0.71</b>	0.73	0.72	0.76
LTSFDIS2	0.41	0.49	0.42	<b>0.50</b>	0.68	0.66	0.69
LTSFDATA1	0.12	<b>0.76</b>	0.12	<b>0.75</b>	0.71	0.68	0.78
LTSFDATA2	0.10	<b>0.78</b>	0.10	<b>0.79</b>	0.75	0.72	0.80
LTSFDATA3	0.43	<b>0.55</b>	0.42	<b>0.53</b>	0.69	0.59	0.81
Eigenvalue					2.6	2.3	3.0
Cronbach's alpha					0.75	0.71	0.80
Cumulative variance (%)	31.8	54.4	32.2	55.2			

<sup>a</sup> Bold numbers highlights factor loadings >0.50.

was removed from further analysis. Additionally, the cumulative percent of variance explained was greater when this item was removed (see Table 2).

Convergent validity was tested by factor analyzing the individual constructs to determine whether all items in that construct load on a single factor, again using the eigenvalue greater than one rule (Nunnally, 1978). Table 2 contains the loadings for individual constructs for the entire data set, as well as management only and front-line only data sets. Both constructs exhibited convergent validity.

**3.2.2.4. Measurement bias.** Factor analysis was also used to test for common respondent (all respondents are from a single firm), common method, and percept–percept bias. Podsakoff and Organ (1986) suggest that if a single factor explains most of the variance in the data when a factor analysis is performed on items with common respondents and/or common methods, the threat of bias is high. However, if a single factor does not explain a large portion of the variance, the threat of bias is small. The above factor analysis identified more than a single

factor, indicating that the threat of these biases is small.

The high response rate of 96% allows us to assume that non-respondent bias is not an issue in this study. The use of multiple types of respondents eliminates common respondent bias within the organization.

### 3.2.3. Reliability

The reliability of both scales was evaluated with Cronbach's alpha. Alpha of 0.70 or greater (Nunnally, 1978) should insure reliability. Both scales had alpha values of 0.70 or greater for the entire data set, as well as the management and front-line subsets (Table 2).

Reliability was also evaluated by comparing management responses to front-line personnel responses. A multivariate analysis of the responses found significant differences between hotels and personnel type. However, a profile analysis indicated there were no significant interactions between hotels and personnel type (hotelling's trace = 0.50,  $P \geq 0.10$ ). In other words, the response lines for management and front-line personnel were parallel. This indicates reliability across different types of respondents.

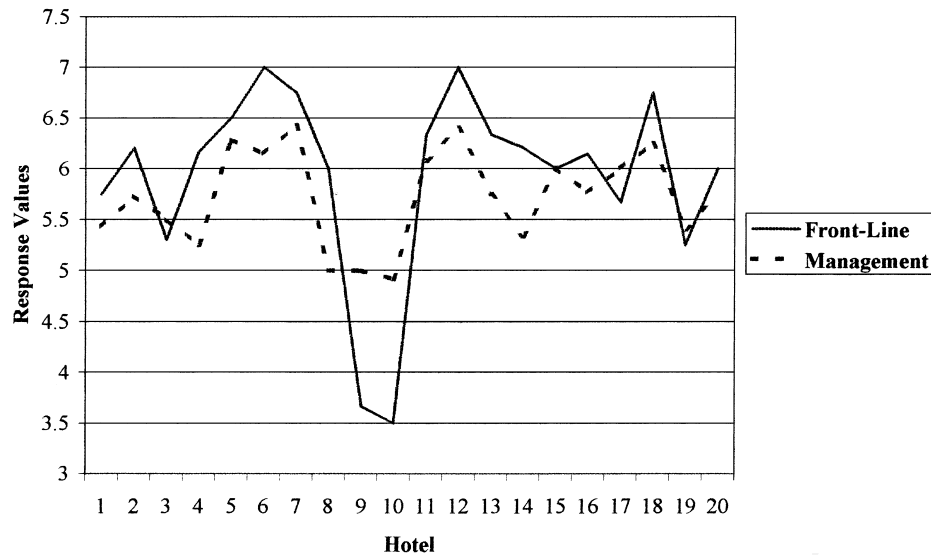


Fig. 3. Profile plot for EMVM1.

### 3.2.4. Formation of summated factor scores

Simple summated factor scores for each construct (EMV, service learning through failure) were formed from the items identified by this analysis. Although, both the factor and reliability analysis identified identical constructs for both management and front-line personnel, a multivariate analysis found significant differences between management and front-line perceptions (see Fig. 3 for a typical profile plot). In general, management evaluations of EMV were lower than front-line evaluations and management evaluations of LTSF were higher than front-line evaluations. Therefore, the mean of each item for both management and front-line personnel was calculated for every hotel. The mean management score and the mean front-line score were averaged to form an average item score for each hotel. The item scores were then summed and standardized to form two simple factor scores (one for each construct) for each hotel. The EMV factor score was obtained from the following items: EMVM1, EMVM2, EMVM3, EMVM4, EMVV2, and EMVV3. The LTSF construct was formed from the following items: LTSFDIS1, LTSFDIS2, LTSFDATA1, LTSFDATA2, and LTSFDATA3. These summated factor scores were used in the subsequent test of the research hypotheses.

### 3.3. Dependent variable

The PSQ data provided by the organization was obtained from customer comment cards placed in hotel rooms. It is based on customer response to the following question, “how willing are you to return to a *brand* hotel?” The response is a five-point anchored scale with: (1) not at all willing; (3) neutral and (5) definitely willing.

This is certainly a measure of intent to repurchase. However, in anything other than a monopoly situation, it can be argued that customer loyalty (or intent to repurchase) is a measure of customer satisfaction and/or PSQ. Jones and Sasser (1995) argue that, “levels of satisfaction . . . are a good indicator of the level of quality . . . that they (customers) are receiving”. They extend this argument by asserting that only completely satisfied customers are loyal customers. Additionally, a customer’s perception of superior service quality results in increased customer satisfaction, which in turn leads to increased customer retention (Anderson et al., 1994; Fornell, 1992; Fornell et al., 1996; Johnson and Fornell, 1991). Viewed from the opposite perspective, this implies that customers who are “definitely willing to return” are very satisfied and perceive that the firm offers a high level of the service quality.

Although, this is not a perfect measure of PSQ, it is certainly an adequate measure. As Hensley (1999) argues, “. . . if the research is focused on an OM measure that is available from the organization, then the obvious choice should be to use the measure already developed by the organization”. For this study, PSQ data was provided by the organization.

The PSQ construct was operationalized as the proportion of customers in the “definitely willing to return” category in the year prior to employee data collection. A multivariate analysis of all response categories revealed that both EMV and LTSF had significant positive effects on only this category and negative effects on the other categories.

Data was available for 22 of the hotels in the year prior to the data collection period for EMV and LTSF. The number of customer respondents for each hotel in each month ranged from 20 to 700 with an average of 230.

#### 4. Results

Regression analyses and path analyses were conducted to analyze the relationships among the constructs.

##### 4.1. Regression analyses

A series of regressions were used to test most of the hypotheses. For clarity, we summarize the hypotheses presented earlier.

- H1: higher levels of EMV will have a positive effect on PSQ.
- H2: higher levels of LTSF will have a positive effect on PSQ.
- H3A: EMV and LTSF are not related to each other.
- H3B: LTSF moderates the relationship between EMV and PSQ.
- H3C: EMV moderates the relationship between LTSF and PSQ.
- H3D: LTSF mediates the relationship between EMV and PSQ.
- H3E: EMV mediates the relationship between LTSF and PSQ.
- H3F: EMV and LTSF are non-recursively related to each other and both affect PSQ.

Regressions were estimated using the following linear models.

proportion of customers choosing “definitely willing to return” =  $Y = \beta Z + \varepsilon$

$$Y = \beta_1 Z_{EMV} + \varepsilon \quad (1)$$

$$Y = \beta_2 Z_{LTSF} + \varepsilon \quad (2)$$

where  $Z_{EMV}$  and  $Z_{LTSF}$  are the standardized observations for EMV and LTSF, respectively;  $\beta_1$  and  $\beta_2$  the standardized regression coefficients and  $\varepsilon$  the error term. Table 3 contains the relevant data for all the regressions. EMV was found to have a significant effect on PSQ ( $P \leq 0.05$ ). LTSF was found to have a significant effect on PSQ ( $P \leq 0.10$ ).

It is important to note that 25% of the variance in the proportion of customers who are definitely willing to return can be explained by the motivation and vision of the employees. While perceptions of service quality are affected by many things other than the motivation and vision of employees, this result highlights the magnitude of the effect of EMV on PSQ.

Hypotheses H3A, H3D, H3E, and H3F are competing hypotheses, i.e. accepting hypothesis H3A would force us to reject hypotheses H3D, H3E, and H3F. To test hypothesis H3A the following standardized regression equation was estimated.

$$Z_{EMV} = \beta_3 Z_{LTSF} + \varepsilon \quad (3)$$

where  $Z_{EMV}$  and  $Z_{LTSF}$  are the standardized observations for EMV and LTSF, respectively;  $\beta_3$  the standardized regression coefficient and  $\varepsilon$  the error term.

Table 3  
Regression statistics

Dependent variable (equation number)	Standardized $\beta_i$		F	$R^2$
	EMV	LTSF <sup>a</sup> EMV*, LTSF		
PSQ (1)	0.50*		6.73**	0.25
PSQ (2)		0.36*	3.04*	0.13
EMV (3)		0.70**	-5.42	18.96***
PSQ (4)	3.03	3.35	2.52*	0.30
PSQ (5)	0.48*	0.03	3.21*	0.25

<sup>a</sup>  $N = 22$ .

\*  $P \leq 0.10$ .

\*\*  $P \leq 0.05$ .

\*\*\*  $P \leq 0.01$ .

**Path analyses**

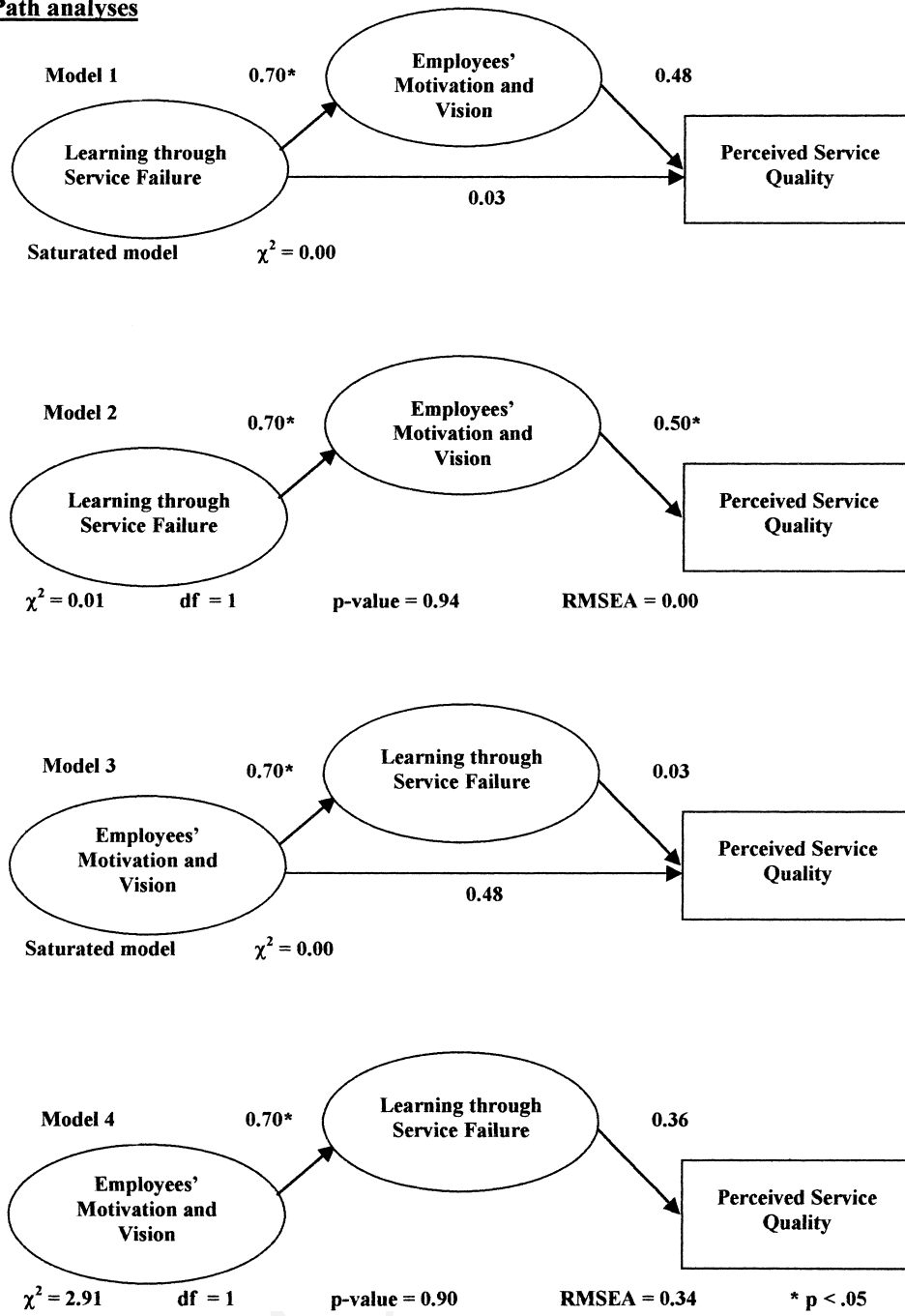


Fig. 4. Path analyses.

LTSF was found to have a significant positive effect on EMV, thus hypothesis H3A was rejected and the remaining hypotheses could be tested.

Evidence of moderation is provided when there is a significant interaction between two predictor variables (Baron and Kenny, 1986). To test hypotheses H3B and H3C, the following standardized regression equation was estimated.

proportion of customers choosing “definitely willing to return” =  $Z\beta + \varepsilon$

$$Y = Z_{EMV}\beta_{1A} + Z_{LTSF}\beta_{2A} + Z_{EMV,LTSF}\beta_4 + \varepsilon \quad (4)$$

where  $Z_{EMV}$  and  $Z_{LTSF}$  are the standardized observations for EMV and LTSF, respectively;  $\beta_{1A}$  and  $\beta_{2A}$  the standardized regression coefficients;  $Z_{EMV,LTSF}$  the standardized observations for the interaction;  $\beta_4$  the standardized regression coefficient for the interaction and  $\varepsilon$  the error term. There is no significant interaction between EMV and LTSF ( $P \geq 0.10$ ), thus hypotheses H3B and H3C were rejected.

To establish mediation, the following criterion must be met (Judd and Kenny, 1981; Baron and Kenny, 1986): (1) the independent variable must have a significant effect on the mediator, when regressing the mediator on the independent variable; (2) the independent variable must have a significant effect on the dependent variable when regressing the dependent variable on the independent variable and (3) the mediator must have a significant effect on the dependent variable when regressing the dependent variable on both the independent variable and the mediator. If these conditions all hold in the predicted directions and the effect of the independent variable on the dependent variable is less in the third regression than the second regression, the mediation hypothesis is supported.

The test of hypothesis H3D utilized regression equations: Eq. (3) (criterion 1), Eq. (1) (criterion 2) and the following standardized regression equation: Eq. (5) (criterion 3).

proportion customers choosing “definitely willing to return” =  $Y = Z\beta + \varepsilon$

$$Y = Z_{EMV}\beta_{1B} + Z_{LTSF}\beta_{2B} + \varepsilon \quad (5)$$

where  $Z_{EMV}$  and  $Z_{LTSF}$  are the standardized observations for EMV and LTSF, respectively;  $\beta_{1B}$  and  $\beta_{2B}$

the standardized regression coefficients and  $\varepsilon$  the error term. While EMV was found to have a significant effect on LTSF and EMV was found to have a significant effect on PSQ, the effect of EMV on PSQ was not significantly reduced when the effect of LTSF was added. Thus, hypothesis H3D is rejected.

The test of hypothesis H3E used regression equations: Eq. (3) (criterion 1), Eq. (2) (criterion 2) and Eq. (5) (criterion 3). LTSF was found to have a significant positive effect on EMV and LTSF was found to have a significant positive effect on PSQ. And finally, when we account for the effect of EMV, the effect of LTSF on PSQ essentially disappears ( $P \geq 0.10$ ). Thus, supporting our hypothesis (H3E) shows that EMV mediates the effect of LTSF on PSQ.

#### 4.2. Path analyses

Structural equation modeling can be used to identify a nonrecursive relationship such as the one proposed by H3F. However, at least one predictor for each of the variables involved in the nonrecursive relationship must be unique (Marcoulides and Hershberger, 1997). The small sample size of this study poses an additional problem; a maximum of only four parameters can reasonably be estimated. This makes the identification of a nonrecursive relationship impossible in this case. However, path models can be used to assess the plausibility of hypothesis H3E by examining the level of fit obtained.

Fig. 4 illustrates the path models that were estimated. Comparison of all the models shows that only in Model 2, where EMV completely mediates the relationship between learning and quality, does LTSF significantly affect (directly or indirectly) PSQ. Because, there is a strong theoretical basis for predicting that learning will significantly affect quality, only Model 2 is acceptable (Marcoulides and Hershberger, 1997). Additionally, Model 2 evidences a high level of fit. Thus, the path analyses provide considerable support for accepting hypothesis H3E, EMV mediates the effect of LTSF on PSQ.

#### 5. Conclusions

Learning through service failure was found to have a significant positive effect on PSQ, highlighting the

importance of customer complaints to service firms. This study illustrates the importance of complaints as a means of learning and improving service quality. In many firms, customer complaints are viewed in a negative manner, as a reflection of poor service quality and the goal is to reduce or eliminate customer complaints. However, this study shows that complaints can provide an important avenue for learning and improving PSQ. The goal should not be to eliminate customer complaints, but to eliminate the service failures that cause those complaints. Service firms would be wise to implement systems and procedures that not only encourage customer complaints, but also capture and employ the information contained in those complaints. Service firms with a greater ability to learn from their service failures will be able to achieve higher levels of service quality than their competitors.

Employee motivation/vision was found to have a significant positive effect on PSQ. Particularly in service firms, because of the interaction of customers and employees in the service process, the motivation and vision of employees drives PSQ. This research provides important empirical verification for both the effect of EMV on service quality and the magnitude of that effect.

Additionally, this research provides strong support for the mediating effect of EMV in the relationship of LTSF to PSQ. Not only do service firms need to insure that their employees know the importance of service quality to the firm and are motivated to provide that quality in order to provide superior quality, the motivation and vision of the firm's employees also affects learning.

As firms strive to become 'learning organizations', new systems and procedures are designed and put into place in an attempt to achieve this goal. Managers need to be aware that the best systems and procedures are not enough. The motivation and vision of the firm's employees affect the success of procedures and systems designed to insure learning. Learning will not happen without motivation and vision.

Academics need to be aware of and account for the effects of EMV in any studies of organizational learning and/or service quality that they conduct. If EMV is lacking, the effectiveness of any intervention designed to increase learning will be reduced. Practitioners and managers need to insure that continuing attention is paid to insuring that employees are motivated and have

a clear vision of the importance of service quality to the firm, both to increase the effectiveness of organizational learning and to achieve high levels of PSQ.

Although, this study offers important insights for both academics and practitioners, it is limited in size, scope and focus. The study is based on a limited sample from a single firm and, although we believe these results have general applicability across other types of service firms, we do not have any proof that they will. Future study will be aimed at increasing validity by continuing this study with larger samples across a range of firms and service types.

While, we have shown that both EMV and LTSF are important determinants of service quality, there are many other factors, not mentioned here, that can also have a significant impact on service quality. Services are comprised of people, processes, and accompanying tangible physical goods. For example, the age and condition of a hotel building will affect customer evaluations of service quality. We minimized the effect of these differences through our sampling frame with a wide variety of multiple outlets from a single firm.

Finally, we plan to investigate interventions that we believe will have positive effects on EMV, service learning through failure and PSQ. One intervention that has been hypothesized to positively affect both EMV and LTSF is the service guarantee (Hill, 1995; Hart, 1993). Future research is planned to investigate the effect of service guarantees on the constructs introduced here.

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