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# Exploring the Linkages between Quality System, Service Quality, and Performance Excellence: Service Providers' Perspectives

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*This study explores the linkages between quality system, employee service-quality culture, and performance excellence in the banking industry operating in a turbulent business environment. Properly conducted quality culture and strategic consensus assessment has the potential of informing a service organization of its current position and possible areas for improvement. The opinions, values, and practices of employees regarding quality are the fundamentals that define quality culture in many service organizations. Management must apply this knowledge to plan for the successful implementation of service-quality related activities. In an exploratory study the authors tested the linkages between quality system, service quality, and performance as perceived by the employees of a large banking institution in Hong Kong. Results of a detailed case study and empirical analysis show that employees perceive strong linkages between quality system, service quality, and performance measures.*

*Key words: case study, empirical research, performance excellence, quality improvement, service quality*

## INTRODUCTION

World-class market performance in delivering high quality and cost competitive service is essential for survival in today's business environment. Therefore, most business organizations turn to their customers for quality assessment either directly or indirectly via measuring customer satisfaction. Many research publications, including the 2001 Malcolm Baldrige National Quality Award (MBNQA) guidelines ([www.quality.nist.gov](http://www.quality.nist.gov)), also emphasize the customer-based nature of quality management (for example, Anderson, Cleveland, and Schroeder 1989; Flynn, Schroeder, and Sakakibara 1995; Hackman and Wageman 1995; Saraph, Benson, and Schroeder 1989; Zeithaml, Parasuraman, and Berry 1990).

At the same time, competitive companies must support customer preferences with effective operations management. While successful marketing offers a product-service package that appeals to the needs and desires of a particular segment of customers, this effort is futile without the ability to efficiently design, produce, support, and manage the distribution and delivery process. Therefore, in response to increased global pressures, many American firms have adopted practices such as total quality management (TQM), reengineering, benchmarking, and other improvement-oriented programs. The abundance of recent research on operations strategy has sought to explain how effective operations strategies facilitate the development of a competitive advantage in a variety of organizational settings.

While it is important for a firm to closely monitor and conform to the needs and preferences of its customers, it is equally essential to build a quality culture within the

organization. The responsibility of delivering high-quality service ultimately rests on front-line employees (and their managers), and, therefore, the success of market-focused initiatives also depends on employees' acceptance of quality culture (Heskett et al. 1994). Ultimately, the front-line service employees are the critical link to the customer. They are responsible for both understanding customer needs and interpreting customer requirements in real time. Often service employees *are the service*, and in all cases they represent the organization through the customers' eyes. Service employees impact the service quality perception primarily because of their influence on all five dimensions of service quality: reliability, responsiveness, assurance, empathy, and tangibles (Parasuraman, Zeithaml, and Berry 1988).

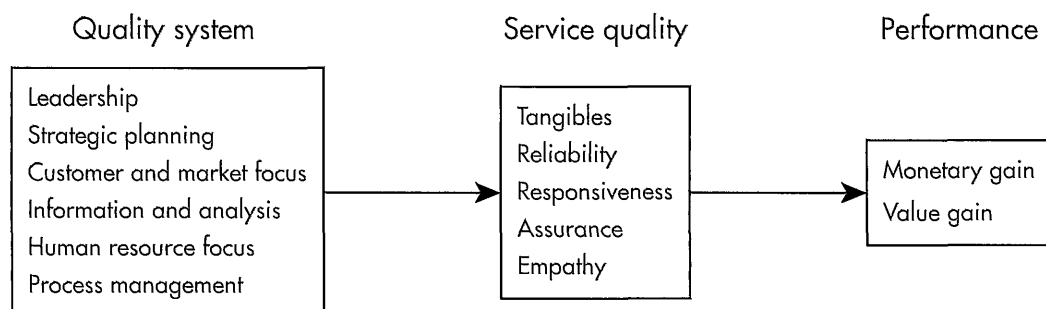
Building on the aforementioned ideas, this study explores the linkages between service employees' perceptions of the quality management system used in the organization; service quality delivered to the customers, and organizational performance outcomes. The conceptual framework for the authors' work is represented in Figure 1. The authors propose that employees' perceptions of the organization's quality system are linked to the determinants of service quality, which in turn is linked to both monetary and nonmonetary performance measures. Although the proposed framework can be readily applied to all business organizations, the authors' work specifically focuses on the services industry. The results presented in this article are based on a detailed case study and self-administered survey conducted in a banking organization located in Hong Kong. The results show support for the conceptual framework presented in Figure 1.

## BACKGROUND

The significance of services continues to increase with the evolution of global economic expansion (Chase 1981; Silvestro et al. 1992; Verma et al. 2002). Accordingly, service management research has moved beyond the initial classification/theory development stage to the theory validation stage (Chase 1996; Flynn et al. 1990; Meredith et al. 1989; Swamidass 1991; Roth, Chase, and Voss 1997; Voss and Johnston 1995).

Current research contends that to effectively compete in a competitive marketplace, service companies must develop a sound operations strategy (Ahmad, Montagno, and Firenze 1996; Vickery, Droge, and Markland 1993; 1997). Operations strategy generally provides a framework around which organizations coordinate their various operating decisions. There is general consensus regarding the composition of the key competitive priorities (cost, quality, flexibility, and delivery), which comprise the content of a corporation's operations strategy (Anderson, Cleveland, and Schroeder 1989; Leong, Snyder, and Ward 1990). Similarly, it is commonly agreed that the effectiveness of a company's operations strategy can be measured by assessing the degree of strategic consistency among the employees for the competitive priorities that are emphasized regarding the structural and infrastructural decisions (Leong, Snyder, and Ward 1990). Along similar lines, Smith and Reece (1999) presented a model linking service strategy, fit, productivity, and performance for individual branches of a large organization. In essence, the degree of fit between an organization's competitive priorities and its key decisions regarding structural and infrastructural

Figure 1 Conceptual framework.



investment provides the key to developing the full potential of operations as a competitive weapon.

The authors' work builds on and contributes to the aforementioned research stream by further exploring the strategic consistency in employees with respect to quality management system in the organization. They believe that properly conducted quality culture and strategic consensus assessment has the potential of informing an organization of its current position and possible areas for improvement. Over the past decade considerable emphasis and attention has been placed on the quality cultures of organizations (Gryna and Gryna 1999). The opinions, beliefs, values, and practices of employees regarding quality are the fundamental elements that define an organization's quality culture. Management must gain an understanding of the quality culture and apply this knowledge to plan for the successful implementation of quality-related activities.

## Service Employee Issues

The importance of employee variables in successful service organizations cannot be underestimated. Numerous studies have shown that the employees of an organization must be seen as a valuable resource for a company to successfully compete in the marketplace. There is ample evidence that satisfied employees make for satisfied customers. For example, Schneider and Bowen (1985) have shown that both a climate for service and a climate for employees' well-being are highly correlated with overall customer perceptions of service quality. They concur that both the service climate and human resource management experiences that employees have within their organization are reflected in how customers experience the service. Bowen and Lawler (1992) contend that motivated, empowered employees who have a clear vision of the importance of service quality to the firm will provide superior service. This superior service should result in greater customer satisfaction.

In an oft-cited study Heskett et al. (1994) introduced the concept of the service-profit chain. They examined the critical interaction of the front-line service employee and the customer and demonstrated that profitability and customer loyalty are closely related to employee productivity and motivation. They propose

that by understanding the relationships among the links in the "service profit chain" an organization can develop an effective competitive strategy. Building on research conducted by Heskett et al. (1994), Rucci, Kim, and Quinn (1997) studied Sears, Roebuck and Company's transformation process through the establishment of the employee-customer-profit chain model. The model evolved from management's belief that there was a chain of cause and effect from employee behavior to customer behavior to profits. A set of measures was devised based on organizational objectives in three categories: 1) a compelling place to work; 2) a compelling place to shop and; 3) a compelling place to invest to make the employee-customer-profit chain model operational. The employee-customer-profit chain allowed the organization to assess the bottom-line impact of behaviors across the chain.

Hayes and Hill (1999; 2001) investigated the effects of employee motivation and vision and organizational learning on perceived service quality in a service organization. The results of their research showed that employee motivation, vision, and organizational learning positively affect perceived service quality. They also found that employee motivation and vision mediate the relationship between organizational learning and perceived service quality, resulting in evidence that both a valuable resource (employee motivation and vision) and a superior capability (organizational learning) can positively affect a distinctive competence (service quality) and that resources can mediate the relationship between capabilities and competencies.

## Quality Management System

Since its introduction in 1987, the MBNQA has become the most influential instrument for creating quality awareness throughout the world. The MBNQA program was created to identify and disseminate business practices worthy of emulation. Since the passage of the enabling legislation, the MBNQA program has become the most widely accepted model of performance excellence. The award's *Criteria for Performance Excellence* establishes a framework for integrating total quality principles and practices into any organization. Its principal focus is on promoting high-perfor-

mance management practices that lead to customer satisfaction and business results.

Black and Porter (1996) present a research methodology that can be used to improve self-assessment frameworks, such as the MBNQA, to better inform an organization in the development of its total quality system. The development of their questionnaire used the MBNQA as a baseline model. Their analysis resulted in identifying 10 critical factors of TQM. Saraph, Benson, and Schroeder (1989) and Ahire, Golhar, and Waller (1996) conducted similar studies of examining and identifying the critical factors of TQM. Samson and Terziovski (1999) examined the relationship between TQM practices and operations performance of manufacturing companies. Their study indicated that some, but not all, categories of TQM were strong predictors of operational performance. Wilson and Collier (2000) tested the theory and causal performance linkages implied by the MBNQA. They concluded that the underlying theory of the MBNQA supported the belief that leadership drives the system that causes business results. Curkovic et al. (2000) empirically test the assumption that the MBNQA adequately captures the major dimensions of TQM.

## Service Quality Measurement

Because of the intangible nature of services, service quality is inherently more difficult to measure than product quality. Service quality perception results from a comparison of customer expectations with actual service performance. In their seminal paper, Parasuraman, Zeithaml, and Berry (PZB) (1985) proposed a conceptual framework for service quality. The PZB model was based on the interpretation of qualitative data from extensive exploratory research (focus groups and in-depth executive interviews) performed in four service businesses. Their research revealed 10 dimensions transcending different types of services that customers use in forming expectations about and perceptions of services received. PZB also identified four distinct gaps on the service provider's side that potentially affect customer perception of service quality.

Since the introduction of the conceptual service quality model, PZB published the 22-item instrument

referred to as SERVQUAL (Parasuraman, Zeithaml, and Berry 1988). The intent of the instrument was to provide a tool for assessing customer perceptions of service quality in service and retailing organizations. Perceived service quality is the degree and direction of discrepancy between customers' perceptions and expectations. Customer perceptions are subjective assessments of actual service experiences. Customer expectations are the standards or reference points for performance against which service experiences are compared and are often formulated in terms of what the customer believes should happen. Their research found that customers consider five dimensions in their assessment of service quality, including:

**Reliability** The ability to perform promised service dependably and accurately

**Responsiveness** The willingness to help customers and provide prompt service

**Assurance** The employee's knowledge and courtesy and their ability to convey trust and confidence

**Empathy** The caring, individualized attention given to customers

**Tangibles** The appearance of the physical facilities, equipment, personnel, and written materials

The dimensions represent how the customers organize information about service quality in their minds. The number of dimensions that influence customer perceptions varies from service encounter to service encounter. Sometimes customers use all of the dimensions to determine service quality perceptions and other times consider a limited subset of the dimensions.

The SERVQUAL instrument prevails as one of the most widely used approaches to measure service quality. The instrument has been used in a variety of service scenarios across the world. However, it has also been the subject of much criticism. The dimensionality and reliability of SERVQUAL has been the subject of many subsequent studies (Carman 1990; Cronin and Taylor 1992; Babakus and Boller 1992; Cronin and Taylor 1994; Van Dyke, Prybutok, and Kappelman 1999). Since the inception of the original instrument, Parasuraman, Zeithaml, and Berry (1991;1994) and other researchers have published numerous refinements, reassessments, and rebuttals to criticisms.

## Operations Performance Measures

According to the production-line approach put forth in the early works of Levitt (1972; 1976) cost should be the most important objective for the service factories. Increased competition and the market-driven nature, however, require all services to also constantly upgrade their quality, delivery, and flexibility performance (Hayes and Wheelwright 1984). In addition, service-marketing literature emphasizes that operational objectives should include both market and financial-based measures (Rust, Zahorik, and Keiningham 1995; Kordupleski, Rust, and Zahorik 1993; Karmarkar and Pitbladdo 1995; Verma and Young 2000). The authors conceptualize operations performance according to two dimensions, first relating to financial/monetary gain (for example, profit and market share enhancement and/or cost reduction) and the second relating to non-financial value gain (for example, product/service quality enhancement, delivery performance, customer and employee satisfaction, and community impact).

## EMPIRICAL WORK

The empirical data for this study were collected from the service employees of a large banking organization in Hong Kong. In addition to collecting survey data, detailed qualitative information about the organization and the business environment in Hong Kong was collected. The case study examined presents issues within the context of the banking industry in Hong Kong. During the last few years, the banking industry in Hong Kong has experienced significant pressure from market forces due to changes in the government structure. Hence, this organization provided a unique opportunity to assess quality culture, strategic consensus, and their impact on performance in a turbulent business environment. In this section, the authors describe the case study background, and then they present the results of the survey research.

## Case Study Background

The banking organization studied provides a wide range of financial services through a network of 28

retail branches situated at strategic locations around Hong Kong Island, Kowloon, and the New Territories. As a medium-sized retail and commercial bank, the organization's business focus consists of expanding core consumer banking through new strategic locations, gathering low cost deposits, and generating a steady stream of interest income from their mortgage portfolios. Retail banking functions as the core of the organization by providing support to the growth of the bank with respect to the infrastructure, customer base, and funding. The infrastructure consists of the distribution channels, including branches, ATM, and the phone-banking center. The customer base consists of depositors, loan customers, and account holders. Funding includes deposits, both fixed and cartel.

The banking industry in Hong Kong is not a level playing field. Organizations must operate in a very competitive environment. There are two primary banking groups that occupy approximately 70 percent of the market. In addition, there are about 10 family-owned banking groups of similar size to the case study organization that also target a similar customer base. The market is served by 80 of the world's top 100 banks, wholesale and retail, investment, or purely capital ventures.

Facing new competitive threats, senior management believes that building strong relationships with their customers would gain an enduring competitive advantage. While products can be copied, customer service takes years to develop and sustain. It is essential that the organization provide the highest quality service with innovative products that are profitably delivered and exceed the customers' expectations. To address the service mission the organization implemented a comprehensive program to improve service quality. The intent was to set the tone for a quality culture to exist within the organization. Senior management has been supporting and communicating this objective throughout the organization to help foster the cultural change.

Capital and resources have been invested in the retail network in order to position the organization as an innovative retail bank. Previously, its competitive position was based on offering superior products at a competitive price. Recently, it has seen a diminishing gap between financial service products. An innovative product can only lead the marketplace for a short time

as competitors quickly introduce similar products. Customers are becoming more sophisticated, and they are less loyal to a particular institution. They are willing to switch for better service or lower price.

The banking organization studied has experienced three significant changes in recent years. First, it has attempted to transform the retail culture from operations oriented to sales and service oriented. Second, it has modernized the infrastructure, both hardware and software, to help improve productivity and efficiency. Finally, it has undertaken several initiatives to help improve the organization's corporate image.

The organization's first step to enable the transformation to a sales- and service-oriented culture was to focus on the retail branch employees. It created a climate for nurturing the sales and service culture through proper staffing training, staff benefits, and provided incentives to foster a sense of belonging. A minimum annual training requirement for each staff member was enacted to upgrade the employees' product knowledge and service skills. To help improve front-line service standards, counter supervisor trainees with teller functions were also recruited. To reinforce the importance of quality, daily briefing sessions and regular branch, zone, and regional meetings were conducted. Business targets were assigned to branch and individual staff for performance measurement in conjunction with a reward system. They also established work teams (procedure simplifications committee, new product committee, and service quality committee) to streamline procedures, develop new products, and enhance service standards. Finally, a regional concept was implemented with senior staff members assigned to each of the three regions. The senior staff members are responsible for accelerating decision making, maintaining closer understanding of market conditions, and reviewing customer and staff needs.

The second significant change was to modernize the infrastructure of both hardware and software. Branches were reconfigured to improve the counter area to enhance the interaction with customers. The organization also increased the customer service waiting area and updated the general branch premises. The bank made a significant investment to upgrade its computer systems. It installed new technology via the new retail banking system to automate the majority of

the operational procedures. The third significant initiative was to improve the bank's image. It created a regional advisory council to help understand the voice of the customer and the marketplace. Selected community leaders act as advisors to individual branches by providing regular feedback on products, delivery, and service standards. To communicate a clear corporate image throughout the network, a new bank logo with a coordinated design and color yielding a higher marketing profile for the bank was introduced. The organization redesigned, repackaged, and reprinted all of the customer statements, product information, and promotional material. The branch staff uniforms were redesigned with high-quality materials to make the employees proud to wear their uniforms. Finally, it established a corporate communications department to enhance the relationship with media and public.

## Survey Data Collection

Empirical data for this study were collected from the organization's network of 28 retail branches. The survey was administered to every front-line employee at each retail location. The executive vice president of consumer banking sent a letter to the three regional managers requesting the entire retail branch locations participate in the study. Each location received copies of the survey instrument and a forwarding letter from the researchers explaining the purpose of the survey. To ensure confidentiality, the participants were provided with confidential return envelopes. The participants were assured that bank employees would not open their responses. The surveys were collected and couriered to the authors for analysis. A total of 147 surveys were returned, with the effective response rate of 97.35 percent. The response rate for this study was considerably higher than that of typical surveys due to top management's personal endorsement of the study.

## Results

The survey instrument was based on a compilation of previous research assessing customer's service quality perceptions and expectations (Parasuraman, Zeithaml, and Berry 1988), the relationship between TQM and opera-

tions performance (Samson and Terziovski 1999), and critical factors of TQM (Black and Porter 1996). Each of the constructs described were measured by a seven-point likert-type scale. Survey questions corresponding to each research construct are included in the Appendix.

Multiple item measures were used to assess the employee perceptions for the six dimensions (except business results) of quality system, which form the basis of MBNQA criteria (see Figure 1). The items used to measure the quality management constructs have been previously used in published empirical studies such as Ahire, Golhar, and Waller (1996); Samson and Terziovski (1999); and Black and Porter (1996). Therefore, the authors have built their analysis on the assumption that the scales have been tested and validated in earlier studies. The purpose of their work is to demonstrate the exploratory linkages between the selected constructs (Figure 1) from service employees' point of view and not to develop a new theory. Therefore, the authors have not undertaken a detailed validation analysis of their survey instrument. They did, however, conduct a reliability analysis of the scales to ensure that the inter-item correlations are indeed acceptable. The reliability coefficients for each of the six quality system dimensions (leadership, strategic planning, customer and market focus, information and analysis, human resources focus, and process management) were found to be greater than 0.8 (see Table 1 and Appendix I). Therefore, the authors concluded that the multi-items scales were reliable measures and used them for subsequent analysis presented later in this article.

**Table 1** Reliability coefficients for quality system dimensions.

Construct	Cronbach's $\alpha$
Leadership	0.8456
Strategic planning	0.8359
Customer and market focus	0.8581
Information and analysis	0.8802
Human resources focus	0.8595
Process management	0.8576

**Table 2** Reliability coefficients for quality system dimensions.

Construct	Cronbach's $\alpha$
Tangibles	0.8655
Reliability	0.8760
Responsiveness	0.8946
Assurance	0.8680
Empathy	0.8843

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Employee perceptions of service quality were measured using the standard 22-item SERVQUAL scale developed by Parasuraman, Zeithaml, and Berry. Although SERVQUAL has been used in numerous studies, to the authors' knowledge, it has not been used to assess employee perceptions of service quality provided to consumers. In this study they used the perceived measures of each of the five SERVQUAL constructs (tangibles, reliability, responsiveness, assurance, and empathy) to test the relationship between quality system, perceived service quality, and performance measures. As shown in Table 2, reliability coefficients for each of the five SERVQUAL scales were higher than 0.85, suggesting an extremely high degree of robustness.

Finally, multi-item scales were used to measure operational performance along the two dimensions: monetary gain and value gain. *Monetary gain* was measured by employee perceptions of profit, market share gain, and cost performance with respect to the organizations' competitors. *Value gain* comprises product/service quality, delivery, and flexibility (variety) performance, along with customer and employee satisfaction, and the organization's contribution to the community. As shown in Table 3, both performance measures showed an extremely high degree of reliability (close to 0.9 and higher).

**Table 3** Reliability coefficients for quality system dimensions.

Construct	Cronbach's $\alpha$
Monetary gain	0.8936
Value gain	0.9100

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**Table 4** Stepwise regression results for quality management system (independent variable) and service quality (dependent variable) dimensions.

Dependent variable	Independent variables	Beta values (p-value)	R <sup>2</sup> / Adj. R <sup>2</sup>	F-statistic
Tangibles	Intercept Market focus Leadership	1.765 * 0.399 * 0.247 *	0.291 & 0.280	26.822 *
Reliability	Intercept Process mgt. Leadership	1.898 * 0.423 * 0.268 *	0.345 & 0.335	34.766 *
Responsiveness	Intercept Leadership Market focus	1.891 * 0.383 * 0.334 *	0.371 & 0.361	38.885 *
Assurance	Intercept Process mgt. Leadership	1.840 * 0.378 * 0.352 *	0.373 & 0.363	39.228 *
Empathy	Intercept Strategic planning Market focus	2.090 * 0.321 * 0.331 *	0.407 & 0.398	45.223 *

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\* significant at p&lt;0.05

After assuring that the scales used in this study are reliable, the authors conducted a series of stepwise regression analyses to test the relationships proposed in Figure 1. Advanced multivariate techniques such as structural equation modeling can be used to test the entire framework proposed in Figure 1. However, the intent of this study was exploratory and, therefore, at this point the authors have chosen to test the relationships between a series of independent variable and a specific dependent variable, one at a time.

The first series of stepwise regressions explored the relationships between the seven quality management system constructs with employee perceptions of service quality delivered to the customers. As shown in Table 4, each of the five regression models was found to be statistically significant at the 5 percent level with adjusted R<sup>2</sup> values ranging from 0.28 to 0.4. *Tangibles* was found to be significantly related to *market focus* and *leadership*; *reliability* was found to be significantly related to *process management* and *leadership*; *responsiveness* was found

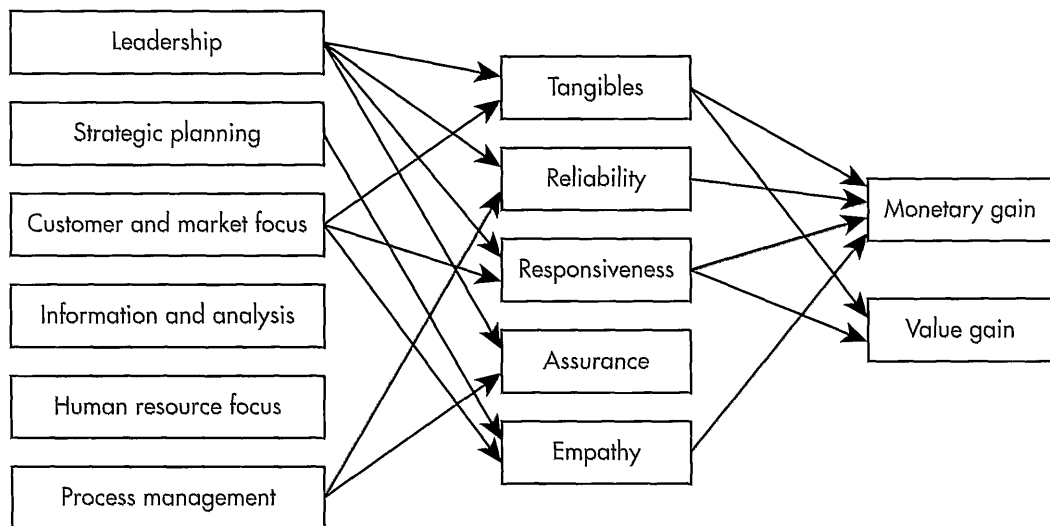
**Table 5** Stepwise regression results for service quality (independent variable) and performance (dependent variable) dimensions.

Dependent variable	Independent variables	Beta values (p-value)	R <sup>2</sup> / Adj. R <sup>2</sup>	F-statistic
Monetary gain	Intercept Empathy Tangibles Reliability Responsiveness	1.003 * 0.411 * 0.469 * -0.550 * 0.366 *	0.387 & 0.369	21.744 *
Value gain	Intercept Tangibles Responsiveness	1.805 * 0.301 * 0.287 *	0.307 & 0.298	31.073 *

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\* significant at 5% level



**Figure 2** Summary statistically significant stepwise regression results.

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to be significantly related to *leadership* and *market focus*; *assurance* was found to be significantly related to *process management* and *leadership*; and, finally, *empathy* was found to be significantly related to *strategic planning* and *market focus*. Relative regression coefficients and goodness-of-fit statistics are presented in Table 4. Following the guidelines proposed by Verma and Goodale (1995), all results presented in this article are based on p-value of 0.05 to ensure high statistical power.

The results presented in Table 4 demonstrate that an overall employee perception of quality management system in the organization is related to the service quality delivered to the customers. Among the seven quality management system constructs, *leadership* was found to be related to four, and *market focus* was found to be related to three SERVQUAL dimensions.

Next the authors conducted a series of stepwise regression analyses to test the relationships between employee perceptions of service quality and operational performance. The results presented in Table 5 show that both regression models are statistically significant at the 5 percent level with adjusted  $R^2$  values ranging from 0.3 to 0.37. Hence, they conclude that employee perceptions of service quality are related to operations performance.

*Monetary gain* was found to be significantly related to *four SERVQUAL dimensions* except *assurance*, but *value gain* was found to be statistically related to only *tangibles*

and *responsiveness*. It is interesting to note that *responsiveness* is the only SERVQUAL dimension related to both *monetary* and *value-gain* performance measures. Additionally, *assurance* was the only SERVQUAL dimension not found to be related to any of the two performance measures. Figure 2 summarizes these regression results.

## CONCLUDING REMARKS

The purpose of this exploratory study was to assess the service employees' perceptions of an organization's quality management system on service quality and on operations performance. As discussed in the case study and shown by the survey results, the proposed relationships seem to hold true for a large service organization operating in a turbulent business environment. To survive and become successful in a highly competitive environment, it is essential that the organization's service employees understand the interrelationships between internal quality system and its impact on service quality provided to the customers. It is equally essential to understand that superior service quality can lead to higher levels of operational performance.

The results show that according to the perceptions of the bank's front-line employees studied quality system impacts service quality that in turn is related to firm performance. The authors can conclude from these results

that this organization is doing a good job of stressing the importance of quality management in the successful operation of the entire company to its front-line staff. Specifically, for example, the MBNQA performance excellence criteria propose that the leadership triad (leadership, strategic planning, and customer and market focus) drives the organization. The authors' research highlights the importance of the leadership triad in a turbulent and competitive market such as the banking industry in Hong Kong. The organizations top management was integral to formulating and identifying new strategies to compete in the marketplace, which evolved into more effective service systems and strategies leading to strong quality-oriented attitude from the front-line employees.

This research also demonstrates that employee's perception of delivery service quality (tangibles, reliability, responsiveness, and empathy) impact firm performance as measured by both monetary gain and value gain. The authors' results are consistent with arguments proposed with "service profit chain" cited earlier in this article. The banking organization studied has been attempting to transform the culture to customer-service oriented, which seems to be communicated well to the front-line employees. In addition, the organization modernized the infrastructure, both hardware and software, to help improve productivity and efficiency, which the authors believe seems to impact performance (for example, significant linkages between *tangibles* and *monetary* or *value gain*).

Methodologically the authors undertook a combination of a detailed case study and survey research approach to explore the theories of interest to them. During recent years, leading researchers in operations management have recommended the use of such in-depth case analyses in combination with quantitative techniques for exploring the research questions beyond what can be observed on the surface. The authors consider their study to be exploratory and therefore have resisted the use of advanced statistical analysis. They would like to go back to the organization during 2002 (two years after the current data collection exercise) to collect longitudinal data. The authors hope to present the additional results shortly thereafter. Meanwhile, they believe that it is worthwhile to consider the impact of quality from the service providers' point of view.

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## APPENDIX

Survey Questions Organized by Scale

(Note: *this company*—pseudo name for a banking organization in Hong Kong)

### A. QUALITY SYSTEM

Scale anchors:

Strongly disagree (1)

Neither agree nor disagree (4)

Strongly agree (7)

### Leadership

1. Senior managers actively encourage change and implement a culture of trust, involvement, and commitment in moving toward best practices.

2. *This company* proactively pursues continuous improvement rather than reacting to crisis' "fire-fighting."
3. There is a high degree of unity of purpose throughout *this company*, and it has eliminated barriers between individuals and departments.
4. Senior managers display commitment through involvement in quality activities and communication of quality values.

### Strategic Planning

5. *This company* has a mission statement that has been communicated throughout the company and is supported by its employees.
6. *This company* has a comprehensive and structured planning process that regularly sets and reviews short- and long-term goals.
7. *This company* considers its operational capabilities, customer requirements, and the community needs when developing retail banking plans, policies, and objectives.
8. Retail branch operations are effectively aligned with the overall business mission at *this company*.

### Customer and Market Focus

9. *This company* knows its customers' current and future requirements for product/service offerings.
10. *This company's* customer requirements are communicated and understood throughout the work force.
11. *This company* has a process for resolving retail banking customers' complaints.
12. *This company* uses customer satisfaction as a method to initiate improvements in current retail banking processes.
13. *This company* regularly measures customer satisfaction in retail banking.

### Information and Analysis

14. *This company* analyzes direct retail banking competitors product/service offerings to help improve its own product/service offerings.

15. *This company* collects data and information to support performance improvement efforts.
16. *This company* analyzes operational performance, cost and financial data to support the development of priorities for improvement in retail banking.
17. *This company* has procedures to ensure the reliability, consistency, and improvement of the data gathering process for retail banking operations.

#### **Human Resource Focus**

18. *This company* has an organizationwide training and development process, including career path planning, for all employees.
19. *This company* has effective "top-down" and "bottom-up" communication processes.
20. Employee satisfaction is formally and regularly measured at *this company*.
21. All employees at *this company* believe that quality is their responsibility.
22. Employees at *this company* are recognized for their contribution to support quality and performance objectives.
23. *This company's* education and training programs are in line with *this company's* quality and performance plans.

#### **Process Management**

24. *This company* has well-established methods to measure the quality of products and services.
25. *This company* retail banking operations have standardized and documented operating procedures.
26. *This company* incorporates changing customer/market requirements into its retail banking product/service offerings.

27. *This company* incorporates new technologies into its retail banking product/service offerings.
28. *This company's* processes to deliver retail banking product/service offerings meet performance requirements.

#### **B. SERVICE QUALITY**

(Details in Parasuraman, Zeithaml, and Berry 1988)

#### **C. PERFORMANCE**

Scale anchors:

Below average (1)

Average (4)

Excellent (7)

#### **Monetary Gain**

1. Financial performance in retail banking (for example, net income, profits, and profit margins)
2. Market performance in retail banking (for example, increase market share, sales volume)
3. Operating costs and efficiency of retail banking operations

#### **Value Gain**

4. Quality of product and service offerings in retail banking
5. Delivery of product and service offerings retail banking
6. Variety of product and service offerings in retail banking
7. Customer satisfaction
8. Employee satisfaction
9. Community involvement