An Assessment of the Relationship Between Critical Factors of Quality Management and Customer Perceptions of Service Quality

Saeed Motahari

A Thesis

in

The Faculty

of

Commerce and Administration

Presented in Partial Fulfillment of the Requirements
for the Degree of Master of Science at
Concordia University
Montreal, Quebec, Canada

February 1993

ISBN 0-315-84621-6

Canada

ABSTRACT

An Assessment of the Relationship Between Critical Factors of Quality Management and Customer Perceptions of Service Quality

Saeed Motahari

Three streams of research relevant to quality management were pulled together in this study. The primary objective of the study was to examine empirically the relationship between critical factors of quality management, organizational culture/transformational leadership, and quality performance as measured by customer perceptions of service quality. The secondary objectives were: to examine the validity and reliability of the SERVQUAL instrument; to determine the relative importance of the service quality dimensions in influencing customer satisfaction; and finally to compare financial and non-financial business units with respect to the dimensions of service quality and factors of quality management.

The Critical Factors of Quality Management were found to be significantly correlated with customer perceptions of service quality (r=.42) and with organizational quality culture (r=.44). However, no significant relationship was found between customer perceptions of service quality and transformational leadership nor between transformational leadership and the Critical Factors of Quality Management.

The SERVQUAL instrument was determined to be a highly reliable and valid measure of customer perceptions of service quality across a broad spectrum of service industries. The "Reliability" dimension of service quality was found to be the most significant factor influencing customer satisfaction. A significant difference was found between the 5 dimensions of service quality in financial and non-financial business units, with "Tangibles" being the most distinctive dimension separating the two groups However, no overall significant difference was found between these two groups with respect to factors of quality management.

ACKNOWLEDGEMENTS

I would like to thank my thesis supervisor, Professor Mohan Gopalakrishnan, for his concern and guidance and for being so accessible whenever I needed help to overcome an obstacle. I would also like to thank Professor David Waldman for his continuous guidance and direction throughout this endeavour and for the generous contribution of his time.

Furthermore, I am very grateful to Professors Jerry Tomberlin, Suresh Goyal, and Mick Carney for their support throughout the phases of my graduate studies. Thanks are also due to the administrative staff of Concordia University, particulary Johanne Hicks and Karen Fiedler, for being so friendly and helpful.

Finally, I would like to thank Dr. de Brentani for providing me with some useful references for the marketing aspect of this study, and my fiancé, Angela, for her understanding and patience.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

A REVIEW of SERVICE QUALITY

Chapter 1 discusses growth in the service industry and the increasing importance of service quality. A literature review of service quality delineates characteristics which distinguish services from goods and describes the SERVQUAL instrument to measure customer perceptions of service quality. Differences between financial and non-financial firms are discussed.

1.1 INTRODUCTION

The service industry has grown steadily over the last several years, and its contribution to the gross national product now accounts for 67% and 71% of the GNP of Canada and the United States respectively (Quinn, Baruch & Parquette, 1988). Of 12.6 million new jobs created in the U.S from 1982 to 1989, 85% have been in service industries as opposed to the goods-producing field (Koepp, 1987). During the last two decades, employment in services has increased by, on average, 2.1% during recessionary periods and 4.8% during expansion periods. In contrast, employment in the goods-producing sector has declined by an average of 8.3% and 3.8% during these same periods (Gronroos, 1990).

Reasons for this rapid growth are related to the nature of business; some are related to changes in society (technological changes, work patterns, affluence, etc.) and the attitudes of people. These factors are summarized by

Schoell & Ivy (1981) in Table 1.

Given this rapid growth in the service industry, improving service quality is one of the most critical challenges facing North American service companies today (Donthu, 1991). Providing high quality service is becoming increasingly recognized as a critical factor distinguishing successful service companies from others, a trend which should continue well into the future. In fact, the importance of providing high quality services is well-documented. According to a recent major publication based on PIMS (Profit Impact of Market Strategy) database, customer perceived quality is found to be of exceedingly great importance to success (Buzzell & Gale, 1987). The competitive advantage of the firm is said to depend on the quality of the goods and services provided (Gronroos, 1990).

Considering the importance of service quality, a lack of research is evident in academic journals (Kaplan, 1991). However, the research which is available reveals that improved quality can result in enhanced profitability, decreased cost, improved productivity, satisfied customers/clients, and strengthened competitive position due to increased market share (Philips, Chang & Buzzel, 1983; Ishikawa, 1985; Gale & Klavans, 1985; Bushe, 1988; Handfield, 1989; Farquhar & Johnson, 1990). Therefore, an

understanding of the nature of service quality, how it is achieved in organizations, and how it is to be measured have become important areas for research (Zeithaml, Berry & Parasuraman, 1988; Reicheld & Sasser, 1990).

1.2 NATURE OF SERVICES

A variety of definitions of "services" has emerged over the years. Most of these definitions attempt to capture one or another characteristic without encompassing all aspects of services. The most comprehensive definition is proposed by Gronroos (1990):

> "A service is an activity or series of activities of more or less intangible nature that normally, but not necessarily, take place in interactions between the customer and service employees and/or physical resources or goods and/or systems of the service provider, which are provided as solutions to customer problems" (p.27).

As this above definition implies, a number of unique characteristics distinguish services from tangible goods, and these characteristics create challenging problems for service marketers that are not faced by goods marketers and which require unique marketing strategies (Zeithaml, Parasuraman & Berry, 1985).

The critical goods-service distinction from which all

other differences emerge is the property of intangibility. That is, services are performances rather than objects, and it is therefore difficult for a firm to understand how consumers perceive their services and for the firm to evaluate service quality (Zeithaml, 1981). Also, since most services can't be counted, measured, inventoried, and verified in advance of sale, it can be more difficult for the firm to assure quality. Since a service does not have any tangible characteristics that can be marketed, sellers of services must concentrate on promoting the benefits derived from the service rather than emphasizing the service itself (Darmon, Laroche & Petrof, 1989).

The second characteristic unique to service industries is that services, especially those with a high labour content, are heterogeneous. Their performance is difficult to standardize and often varies from producer to producer, from customer to customer, and from day to day (Zeithaml et al., 1985). Uniform quality in the form of consistent behaviour of personnel is difficult to assure in most service establishments. This characteristic of services makes reputation of the seller and word-of-mouth advertising extremely important in service marketing.

The third critical characteristic distinguishing services from goods is the inseparability of production and

consumption of service. That is, whereas goods are first produced, then sold, and then consumed, services are first sold, then produced and consumed simultaneously (Regan, 1963). This means that the consumer comes into intimate contact with the production process and often affects the process. This interaction between client and contact person of the service firm means that quality occurs during service delivery, and the firm may have less managerial control over quality services. Centralized mass production of quality services is difficult to achieve.

The fourth critical distinguishing characteristic between services and goods is the perishability of services. This means that services cannot be saved or inventoried, sometimes making it difficult for a firm to synchronize supply and demand. If a service is not purchased when offered, it is lost forever. Service industries must be able to tolerate idle capacities during slack periods, to attempt to level demand by attracting new market segments or developing new uses for their services during slow periods, and to use other strategies to constantly cope with fluctuating demand.

1.3 EVALUATING SERVICE QUALITY

The literature suggests that each of these unique characteristics of services leads to specific problems in assuring the quality of these services. The intangibility, heterogeneity, inseparability, and perishability of services has made it difficult for researchers to establish a comprehensive model of service quality. However, a few systematic studies have been published that deal directly with service quality (c.f. Gronroos, 1982). Two important themes recur in all of these studies: Service quality is more difficult to evaluate than goods quality, for both the consumer and for the firms delivering services; and customers' evaluations of service quality result from a comparison of their expectations with their perceptions of actual service performance.

Whereas traditionally the quality of goods can be evaluated using technical specifications and enhanced by, for example, image strategy using status or lifestyle, services are intangibly experienced, and perception of the quality of these services is extremely complex. A model of service quality is needed in order to understand how services are evaluated by users and to identify how to manage and influence these services to produce the desired result of satisfying customers. This same model must also

specify how service quality can be measured in order to empirically test the foundations of this model and progress scientifically.

Quality perspectives developed in the manufacturing industry, while useful, do not provide a global model of these complex evaluations of service quality nor concrete ways of measuring service quality. For example, the Manufacturing-Based Approach, considering quality in terms of conformance to specification, focuses only on internal factors and not on customer-based evaluatiors of quality. The Value-Based Approach considers that the highest value to customers is represented by the most favourable combination of quality and price. However, it does not explain how customers judge the quality of a service, lacks well-defined limits, and is difficult to operationalize and apply. Other quality approaches include the User-Based Approach, wherein the concept of quality is based on the buyer's assessment of quality; the Product-Based Approach, in which quality is reflected by an attribute or ingredient of the product; and the Transcendent Approach, in which quality is viewed as a simple, unanalyzable property that people learn to recognize only through experience.

1.4 SERVQUAL: A MEASUREMENT INSTRUMENT OF CUSTOMER PERCEPTIONS OF SERVICE QUALITY

One model of service quality addresses all 5 definitions of quality discussed above while providing a concrete method to measure this quality (Craven, Holland, Lamb & Moncrief, 1988). This model, developed by Parasuraman, Zeithaml & Berry (1985) is an attempt to operationalize service quality in terms of customers' perceptions of quality versus their expectations. Based on executive and focus group interviews with representatives from four selected service categories (retail banking, credit card, securities brokerage and product repair and maintenance), the authors attempted to answer questions such as: What do managers of service firms perceive to be the key attributes of service quality, and what problems or procedures are involved in providing high service quality? What do consumers perceive to be the key attributes of quality in services, and are these the same as managers' perceptions?

Based on these interviews, the study initially identified four "gaps" occurring in organizations that can cause quality problems and affect customers' evaluations of service quality. These gaps are as follows:

Gap 1: The gap between consumer expectations and management perceptions of those expectations.

Gap 2: The gap between management perceptions of consumer expectations and the firm's service quality specifications.

Gap 3: The gap between service quality specifications and actual service delivery.

Gap 4: The gap between actual service delivery and external communications about the service.

Parasuraman et al. (1985) also proposed a fifth important gap --> the difference between customer expectations of service and customer perceptions of the service actually received. The authors define this difference as service quality. They also documented 10 different determinants of perceived service quality: access, communication, competence, courtesy, credibility, reliability, responsiveness, security, tangibles, and understanding/knowing the customer. These are explained in detail in Figure 1.

RELIABILITY	- Involves consistency of performance and dependability.
RESPONSIVENESS	- Concerns the willingness or readiness of employees to provide service.
COMPETENCE	- Possession of the required skills and knowledge to perform the service.
ACCESS	- Involves approachability and ease of contact.
COURTESY	- Involves politeness, respect, consideration, and friendliness of contact personnel.
COMMUNICATION	- Means keeping customers informed in language they can understand and listening to them.
CREDIBILITY	- Involves trustworthiness, believability, honesty. It involves having the customers' best interests at heart.
SECURITY	- Is the freedom from danger, risk, or doubt.
UNDERSTANDING/ KNOWING THE CUSTOMERS	- Involves making the effort to understand the customer's needs.
TANGIBLES	- Involves the physical evidence of the service, such as physical facilities and appearance of the personnel.

Figure 1: Determinants of Service Quality.
Source: Parasuraman, Zeithaml, & Berry (1985).

In follow-up studies, Parasuraman, Zeithaml & Berry (1986 & 1988) developed a 22-item scale, called SERVQUAL, to measure this fifth gap. The 10 determinants of service quality were refined to include five dimensions (three original and two combined dimensions) which compose the dimensions of the SERVQUAL questionnaire:

1. Tangibles - physical facilities, equipment, and appearance of personnel (4 items);
2. Reliability - ability to perform the promised service dependably and accurately (5 items);
3. Responsiveness - willingness to help customers and provide prompt service (4 items);
4. Assurance - knowledge and courtesy of employees and their ability to convey trust and confidence (4 items); and
5. Empathy - caring, individualized attention that the firm provides its customers (Parasuraman et al., 1988)(5 items).

The study also found that, regardless of the type of service, customers use essentially the above criteria in evaluating service quality. The last two dimensions (assurance and empathy) contain items representing seven original dimensions which did not remain distinct after scale purification: communication, credibility, security,

competence, courtesy, understanding/knowing customers, and access.

In summary, according to the Parasuraman et al. (1988) service quality model, expectations which are higher than perceptions of performance will result in lower levels of quality. Conversely, expectations which have been met or exceeded will result in higher quality levels. Differences in degree are also important, as modest discrepancies between expectations and perceptions will result in modest levels of perceived service quality (either positive or negative). Where large discrepancies in the measures exist, there will be more extreme evaluations of service quality, either favourable or unfavourable.

1.4.1 Previous Research on SERVQUAL

To our knowledge, few studies evaluating the reliability and validity of the dimensions of SERVQUAL have been published. The credibility of some of these studies can be questioned because of methodological flaws such as using a non-random subject group (eg. Levesque & McDougall, 1992, who surveyed only MBA students and their spouses) or administering only part of the questionnaire (eg. Carmen, 1990). Under these circumstances, it is not surprising that

the results reported by these studies contradicted those of the designers of SERVQUAL.

The most comprehensive of these studies is that of Carman (1990). Carman chose four service settings different from those used by Parasuraman et al.(1988): a dental school patient clinic, a business school placement center, a tire store, and an acute care hospital. However, in three of four settings, only the customer perceptions information was collected (in the fourth, both customer expectations and perceptions information was collected). Carman found that the "stability of the SERVQUAL dimensions is impressive" (p. 50), but the dimensions may not be completely generic. Carman recommended that items on seven or eight of the original ten dimensions be retained until <u>further replications</u> show them not to be unique.

Levesque & McDougall (1992) surveyed students and their spouses to collect SERVQUAL data on their financial institutions. The authors concluded that "there are serious problems with the independence of the five anticipated dimensions of SERVQUAL" (p. 6). In this study, bank and trust company customers could discriminate only three dimensions: Tangibles, Contractual Performance (which closely parallels the Reliability dimension), and customer-employee relations (which incorporates most of the items in

the Responsiveness, Assurance, and Empathy dimensions).

Finn & Lamb (1991) used a telephone survey to collect SERVQUAL data on four different retail store types. A confirmatory factor analysis was used to examine how closely the data obtained fit the five anticipated dimensions. The authors concluded that the SERVQUAL measurement instrument was not appropriate in a retail setting.

All of these above studies are limited by one methodological factor or another. For example, Carman (1990) only reports on factor analysis of batteries of items regarding the perception of quality rather than factor analysis of difference scores suggested by Parasuraman et al.(1988). Levesque & McDougall (1992) only surveyed MBA students and their spouses, which can be considered to be a very select group not representative of the general population. Finn & Lamb (1991) used a telephone survey method to collect SERVQUAL data. One wonders, given the length of the SERVQUAL questions and the difficulty interpreting some of the negatively worded questions, whether this method is appropriate.

In summary, while all of the above studies contribute to the understanding of the limitations and possibilities of the SERVQUAL instrument, many questions remain unanswered.

The above authors argue that additional replications and testing of the SERVQUAL dimensions are necessary before accepting it as a valid generic measure of perceived quality that can be used in any service setting. Because service quality appears to be a integral component in determining a firm's success, it is important to ensure that its assessment is reliable and valid. According to the different results obtained in the studies above, further investigation of the SERVQUAL scale is clearly warranted.

In the present study, SERVQUAL measures were obtained across a spectrum of service industries, some of which have never been measured (to our knowledge) using the SERVQUAL scale, such as passenger rail transportation, postal services, and beauty/cosmetics services. In addition, the bilingual nature of Montreal adds an extra variable to be tested as to its importance in service quality: Do customers expect to be served in their language of preference (French/English), and is this an important component affecting customers' perceptions of service quality? In addition, previous studies on SERVQUAL did not investigate the relationship between the dimensions of service quality and customer evaluations of overall satisfaction with the services offered by a firm.

The above discussion on service quality research and

the SERVQUAL instrument leads to the following research question addressed in the current study: Does SERVQUAL fit the specified factor model proposed by Parasuraman et al (1988)? Also, according to Parasuraman et al (1985), unless the service provided is completely satisfactory, customer expectations will exceed their perceptions of the service actually delivered. Also, according to Janson (1989), service organizations have lost their initial customer service focus over the years as small companies grew into large impersonal conglomerates, as job duties became more fragmented, making employees feel less accountable for the end results of their work, as bureaucratization diminished the enthusiasm of direct-service personnel, and as "anti-client" attitudes developed within many companies with the prevailing opinion among employees being that the customer is a hinderance to efficient work processes. On the other hand, consumers have become increasingly aware of the quality of services because increasing competition and the prevalence of different companies offering the same services has made them aware that service quality is the distinguishing characteristic differentiating these companies. They are expecting more in terms of customized, more personal, and more efficient service while it appears that these expectations are not being fulfilled (Janson, 1989). Therefore, the above discussion leads to the following hypothesis:

H_1: Measures of customers' overall expectations will exceed measures of their perceptions of the business units' services.

1.4.2 FINANCIAL VERSUS NON-FINANCIAL BUSINESS UNITS

Differences may exist between customer expectations of services provided by financial institutions (ie. banks, trust companies, and insurance companies) and customer expectations of services offered by non-financial institutions. In fact, Parasuraman et al (1988) recognized that the relative importance of the five SERVQUAL dimensions in influencing customers' overall quality perceptions may vary according to the service sector surveyed. These differences may exist between financial and non-financial business units because of certain emerging trends in the financial services industry. Most notably, deregulation, fluctuating interest rates, and slow economic growth have dramatically changed the competitive environment within this industry (Janson, 1989). Financial companies can no longer survive merely by containing costs, or win and retain customers solely on the basis of product features or price because present financial products actually differ very little between firms. Only by developing extraordinary customer relations based on excellence in service delivery can any financial organization hope to stand out from the rest of the pack.

Consumers are becoming increasingly aware of the impact of this competitive environment on the quality of services they receive, and this is especially true in the financial services industry (Janson, 1989). According to Janson (1989), most banks and trust companies are "years away from developing and implementing service quality control programs because of the cost in time and manpower required"(p.76) despite the fact that the major reason bank customers leave a bank is poor service quality (Masonson, 1992). It should come as no surprise then that previous studies have shown that consumers believe that service quality has deteriorated in the financial industry (Janson, 1989).

The above discussion leads to two hypotheses concerning the differences between financial and non-financial business units:

> H_2: Customers of financial business units will have higher expectations and lower SERVQUAL scores (larger gaps) as compared to customers of non-financial business units.

> H_3: Customer overall satisfaction ratings of services offered by financial business units will be lower than that of satisfaction ratings of services offered by non-financial business units.

1.5 CONCLUSION

This chapter introduced the nature of the service

industry and the difficulties associated with measuring service quality. The SERVQUAL instrument used to evaluate customer perceptions of service quality was described, and it was explained how the current study applies this instrument. This chapter also provided the three hypotheses that are to be tested using the customer data. In the next chapter, the factors affecting service quality in a Total Quality Management setting are explained.

CHAPTER 2

FACTORS AFFECTING SERVICE QUALITY

In this chapter, the principles of Total Quality Management are outlined, and an instrument to measure 8 critical factors of quality management is described. In addition, two other factors thought to influence the implementation of TQM (and hence service quality) are discussed: Organizational culture and transformational leadership.

2.1 LITERATURE REVIEW OF TOTAL QUALITY MANAGEMENT

Total Quality Management (TQM) is a new and popular management paradigm that has been attracting the attention of North-American companies during the last decade. TQM is an integrated, customer-focused approach that organizations are adopting to improve the quality of their processes, products and services. TQM continually improves the work processes to achieve customer satisfaction by involving employees at all levels, from top management to front-line workers. TQM is not merely a "program", but rather an on-going process requiring a long-term commitment and full and active participation.

2.1.1 Elements of TQM

While many people emphasize the importance of TQM, few can articulate precisely what it is and how to implement it.

A review of the literature reveals that TQM encompasses a vast spectrum of topics, covering almost all aspects of managment. Quality gurus, from Crosby, Deming, and Taguchi to Ishikawa and Juran have all proposed distinctive approaches to quality improvement, emphasizing different factors based on their judgement and experience in working with different organizations as consultants, researchers, and/or managers. For example, Deming approaches quality from a statistical perspective, emphasizing the reduction of variance through statistical process control techniques. He also outlined 14 principles of TQM which include management commitment, process design and control, reducing barriers to employee participation, and continuous improvement (Deming, 1986). In contrast, Crosby focuses on people and organizational factors, emphasizing cultural change, training, management commitment to quality, and calculating quality costs (Crosby, 1979). Juran, on the other hand, stresses management and technical aspects of quality, including emphasis on planning and product design, audits, system vendor relations, manufacturing, delivery and service (Juran, 1989). Taguchi extended the quality improvement activities to include product and process design. His methods provide a system to develop specifications, design those specifications into a product and/or process, and produce products that continuously surpass said specifications by emphasizing the notion of off-line quality

rather than on traditional on-line quality control activities (Kackar, 1986).

Although each of the above quality gurus emphasize a different aspect of quality, there are certain basic underlying concepts which emerge (Commitment Plus, 1991): Quality is a cost-saving measure because there is less waste when producing a quality product or service; prevention of quality problems is better than detection and correction of them; statistical data should be used to measure quality progress; managers need to lead quality improvement processes; managers and employees need quality training; and companies need to develop a comprehensive quality management system.

Certain themes and principles which characterize the philosophy of TQM are evident in the literature. First of all, TQM is more than statistical process control, quality circles, or other tools developed and taught by originators of quality control techniques such as Deming. There are certain underlying basic concepts of TQM which distinguish it from a simple quality program composed only of a collection of tools and techniques. Laza & Wheaton (1990) summarize these concepts as follows:

First, quality is a <u>customer perceptions</u>. It is the

satisfaction of customer needs and/or desires for a product or service. Loss of quality results when customer dissatisfaction is caused by failure to meet customer requirements. Thus, one can see that the pervasive and persistent focus of TQM is on customers and what they want.

The second concept is that quality is dynamic. TQM means constantly staying attuned to the desires of customers and the actions of competitors, and altering course if necessary.

The third concept is that quality is process oriented. That is, the traditional North American approach of identifying and rejecting products and services after completion is no longer adequate. The TQM approach focuses on making quality improvements at each step in the process.

The fourth concept is that quality requires total involvement. TQM is not created by management or by a few select individuals providing training and awareness. It must involve all employees, and must be supported by management through the dedication of resources, the application of various analysis techniques and by providing leadership.

The above concepts underlying the philosophy of TQM

lead to the following definition:

> TQM means that the organization's culture is defined by and supports the constant attainment of customer satisfaction through an integrated system of tools, techniques, and training. This involves the continuous improvement of organizational processes, resulting in high quality products and services (Sashkin & Kiser, 1991).

In summary, the elements of TQM include the following (Waldman, in press):

1. upper management commitment to place quality as a top priority;
2. striving to continually improve work and system processes;
3. an emphasis on teamwork and cooperation between functional work units;
4. involvement of all organizational members in quality improvement efforts (not just quality control specialists);
5. a focus on quality throughout all phases of an organizational system, not just the end product;
6. attempts to get external suppliers and customers involved in TQM efforts;
7. frequent use of scientific and problem-solving techniques, including statistical process control; and
8. frequent use of employee/group recognition.

2.1.2 Impact of TQM on Quality Performance

Until recently, few systematic studies have been done to empirically evaluate the relationship between proposed factors of quality management and actual quality performance. The first systematic empirical study of quality practices and their impact on quality performance was conducted by Garvin (1986). Garvin studied the management practices of sixteen air conditioner manufacturing firms, and concluded that the factors differentiating high quality performers from low quality performers in Japan and the United States were strong management support for quality, the existence of a comprehensive goal-setting process, and a high level of participation and interaction between different functional units. The leading performers were also found to have superior quality information systems, with their managers receiving more timely and extensive quality data, and they were also found to emphasize defect-free output from workers, to promote quality-related training to employees, to have quality circles, and had few carefully-selected suppliers, chosen for high quality supplies rather than on the basis of cost, with long-term supplier relationships.

2.1.3 Instrument to Measure the Implementation of TQM

A further advancement in the operationalization of factors of quality management was achieved by Saraph, Benson & Schroeder (1989). These researchers presented a more comprehensive list of factors affecting quality by synthesizing the literature on quality. Their work resulted in the identification of eight separate critical factors (organizational and operational in nature) of quality management. An instrument to assess these factors was developed. Specific measures were derived based on data from a survey of 162 managers of 20 companies, both in service and manufacturing. Saraph et al (1989) proposed that these measures could be used **independently** or in combination to produce a profile of quality management practices. The eight critical factors identified were:

1. The role of management leadership and quality policy.
2. The role of the quality department.
3. Quality-related training.
4. Product/service design.
5. Supplier quality management.
6. Process management.
7. Quality data and reporting.
8. Employee relations.

Another application of this measurement tool might be to form a better understanding of the relationship between all or some of the critical factors of quality management and organizational quality performance. The quality performance measure used in this study was customer perceptions of service quality/customer satisfaction. The reason for selecting this external measure of quality performance rather than an internal quality measure (for example, number of defects or amount or rework) is that this external measure is consistent with the philosophy of TQM, in which the ultimate goal is customer satisfaction. The above discussion leads to the following hypothesis:

> H_4: High scores on the 8 Critical Factors of Quality Management will be associated with higher customer perceptions of service quality.

2.2 ORGANIZATIONAL CULTURE

As previously discussed, TQM goes far beyond the practices and philosophy of quality control and quality assurance. Successful implementation of TQM requires a hospitable organizational environment, and if the environment is not conducive to total quality, then the culture must be changed.

Culture is defined as a set of shared meanings (beliefs

and values) held by members of a group that affects their perceptions and interpretations of events and their actions (Geertz, 1973). Beliefs are assumptions about what is true, while values are assumptions about what is worthwhile (Linkow, 1989). These beliefs and values are defined and expressed by leaders who communicate them to the members of the organization, thereby shaping the behaviours, ideologies, and policies of the organization.

Certain values and beliefs are crucial to an organization in order to foster total quality behaviour. Bushe (1988) found that organizations successful at implementing TQM tended to have cultures which were conducive to learning about problems, sharing information, and had a holistic approach toward problem solving. This is in contrast to organizational cultures which promote finding quick fixes to problems, misuse of information (where information becomes a source of power and is not readily shared), and a segmented or compartmental approach toward problem-solving (Waldman, in press).

Linkow (1989) reviewed 20 companies that are implementing total quality and derived 7 core values and beliefs of total quality. Some of these are addressed in Saraph et al.'s (1989) Critical Factors of Quality Management questionnaire (commitment to recruiting, training

and supporting a motivated work force; total involvement of employees at every level of the organization; and providing means for employees to speak openly and participate in decisions regarding the work processes). However, some others are not directly addressed in this questionnaire but are critical factors of quality management nevertheless. These are: a customer focus; teamwork; and a focus on continuous improvement of all work processes rather than only on the final outcome. These above factors compose the "culture" of the organization, and were addressed in this study in items 57 to 66 of the TQM questionnaire distributed to managers. It was hypothesized that an organizational culture conducive to the implementation of TQM would also involve the presence of greater TQM oriented practices. Therefore:

> H_5: There will be a positive relationship between business units' quality culture and managers' perceptions of the degree of implementation of critical factors of quality management.

2.3 TRANSFORMATIONAL LEADERSHIP

The importance of leadership in the successful implementation of Total Quality Management is proclaimed in much of the literature (c.f. Deming, 1986; Farquhar & Johnson, 1990; Juran, 1989; Oakland, 1989; W. dman, in press). In order to successfully implement TQM principles,

leaders are needed who can operate as change agents; establishing organizational objectives consistent with TQM, and inspiring, motivating and energising employees in order to reach these objectives. These leaders must be able to establish fundamental values and beliefs conducive to TQM and be able to transmit these cultural elements throughout the organization. However, according to Waldman (in press), little empirical research has been conducted to explore the linkage between leadership and TQM.

The type of leadership style generally believed to promote the development of a TQM culture is transformational leadership (Johnson, 1990; Waldman, in press). Transformational leaders in a TQM culture have a long-term focus, are willing to take risks, are able to foster a shared vision based on strongly-held values, and focus on products and customers rather than maintenance of internal control systems (as opposed to Transactional leaders who may be strong in directing and planning, but who focus on short-term productivity goals and maintaining current organizational objectives). That is, transformational leadership is characterized by providing the catalyst to encourage change, providing an inspiring vision of the change and probable outcomes, and to help people work through the discomfort that often accompanies change. Further, transformational leaders can largely be

character-zed as role models whose actions and symbolic behaviour serve to moderate followers to accept the validity of change.

The interest in examining the role of transformational leaders in influencing quality practices of their business units stems from the fact that the influence of transformational leaders on organizational performance is presently attracting a lot of attention. However, little empirical research has been conducted. Since the construct of transformational leadership was previously not directly related in the literature to quality management, this element was not included in Saraph et al.'s (1989) instrument measuring 8 critical factors of quality management. Therefore, this additional construct was added to the above instrument for the purposes of the present study.

Waldman (in press) has proposed a model in which (transformational) leadership is linked to organizational culture in a reciprocal nature, and both of these influence TQM policies and behaviours. That is, leadership gradually and continuously influences an organization's culture, and the culture in turn helps determine leadership policies and behaviour. Therefore, a business unit led by a strong transformational leader who has successfully embedded

cultural values consistent with TQM in the organization should be reflected in higher practices of TQM in the organization. According to Waldman's model, this in turn will result in TQM outcomes, particularly higher quality perceptions and customer satisfaction. As a result of the above discussion, the following hypothesis is proposed:

> H_6: Transformational leadership will be positively associated with:
>
> a: business units' total scores on the 8 critical factors of quality management.
>
> b: customer perceptions of service quality.

2.4 CONCLUSION

This chapter provided information on the critical aspects of quality management that affect service quality. An instrument to capture these factors was discussed. The relationship between two additional factors, transformational leadership and quality culture, on service quality was also addressed. The next chapter provides a detailed explanation of the procedures used in data collection to test the above hypotheses.

The following is a summary of the hypotheses to be tested in this study.

HYPOTHESIS 1	Measures of customers' overall expectations will exceed measures of their perceptions of a business units services.
HYPOTHESIS 2	Customers of financial business units will have higher expectations and lower SERVQUAL scores (larger gaps) as compared to customers of non-financial business units.
HYPOTHESIS 3	Customer overall satisfaction ratings of services offered by financial business units will be lower than that of satisfaction ratings of services offered by non-financial business units.
HYPOTHESIS 4	High scores on the 8 Critical Factors of Quality Management will be associated with higher customer perceptions of service quality.
HYPOTHESIS 5	There will be a positive relationship between business units' quality culture and managers' perceptions of the degree of implementation of critical factors of quality management.
HYPOTHESIS 6	Transformational leadership will be positively associated with: a) business units' total scores on the 8 critical factors of quality management. b) customer perceptions of service quality.

CHAPTER 3

METHODS

Sampling procedures to obtain customer data using the SERVQUAL instrument and to obtain managers' responses on the Critical Factors of Quality Management questionnaire are described, as well as response rates, general characteristics of respondents, and the nature of the 14 participating business units. Customization of the SERVQUAL and Critical Factors of Quality Management instruments is described.

3.1 SAMPLE AND PROCEDURES

In order to test the hypotheses outlined in the current study, data had to be collected from two sources. First, data were required from managers of organizations regarding their perceptions of the degree of implementation of the critical factors of quality management. This served as the organizations' TQM scores. Second, data were required from customers of these organizations regarding their perceptions and expectations of service quality. This provided measures of the degree of service quality delivered by each organization.

Approximately 75 potential participating companies were chosen by searching through the Canadian Key Business Directory, Principles Enterprises/Major firms - Ile de Montreal, and the Financial Post Directory of Directors. Participating service companies in the Montreal region were

chosen from among these companies. As much as possible, companies to be contacted were chosen to represent all major sectors of the service industry (banking and financial, passenger transportation, health care services, courier and postal services, service stations, telephone and communications, hotels, fast-food restaurants, etc.).

The primary unit of analysis for this project was a business unit, which is defined as a segment of the firm with separate managers and non-overlapping customers. This means that, in some cases, an entire company can be a business unit because the same customers use all of the company's services (ie. they overlap, such as in the case of passenger rail transportation). In other companies, such as banks and trust companies, each branch can be treated as a business unit.

Contact people for each of the potential participating companies were selected next. This was done by identifying the quality manager of those firms having a quality department, or by identifying the Vice Presidents of Public Relations, Marketing, and Human Resources of those companies without quality departments. This information was available through the three sources listed above.

In some cases, members of the Concordia University

executive and professional MBA alumni were also contacted if they held a position at a chosen service firm. The intention was to solicit participation in the study by professionals who were sympathetic to Concordia University.

Initial contact was made by a letter sent directly to the potential participants in three separate mailings: five months, four months and three and a half months before the projected project deadline. The letter contained information on the purpose of the study and ensured confidentiality as well as provided the names and telephone numbers of the project supervisors and coordinator. A copy of the letter is provided in Appendix A.

Ten days to two weeks after sending the letter, all targeted participants were contacted by the project coordinator over the telephone. However, a few companies had already contacted the project coordinator to express interest in the study. The purpose of the telephone contact was to provide more detailed information on the project and to make an appointment to meet in person with companies expressing interest. At this point, some companies declined participation for various reasons (lack of time or priority, internal crises which coincided with the project, etc.).

For a few companies, a meeting was arranged with the

company contact person. This served several purposes. The first was that it provided the opportunity to explain the project and participation requirements in more detail. The second was to show the questionnaires designed for managers and customers. At this stage, some of the companies which committed to participate indicated that they preferred to distribute the questionnaires themselves provided that they were given clear instructions on the distribution procedure. No company was prepared to provide a list of customers to whom the questionnaires could be mailed. Therefore, a second method of distribution was used (with the permission of the companies): Customer questionnaires were distributed randomly by the project coordinator at the premises of the business units. All questionnaires were distributed with a pre-stamped return envelope.

Distribution of the managerial questionnaires was done by the contact person of the respective participating company. It was left to this person's discretion to chose at least three managers who were most familiar with the quality practices of the business unit to complete the questionnaires. A total of 125 managerial questionnaires were distributed, and 43 were completed and returned, constituting a response rate of 34.4%. However, only 35 managers' responses were retained since 8 managers responses came from three business units for which we could not obtain

customer responses. Of these, 21 respondents were males and 14 were females. Managers occupied their present positions for from 4 months to 18 years, with a mean of 5 years.

A total of 355 customer questionnaires were distributed, and 74 were completed and returned (response rate of 21%). The respondents included 43 males and 31 females, with ages ranging from 20 to 76 years old and with a mean age of 41. Customers were all recent consumers of the services of the business units they evaluated, and had been clients for periods ranging from 1 to 58 years, with a mean of 12.4 years. Thirty customer respondents evaluated financial business units (a total of five separate firms), and 44 evaluated non-financial business units (a total of seven separate firms).

Based on these responses, our final sample was composed of 14 business units from various service sectors: Financial and banking (7), passenger rail transportation (1), telecommunications (1), postal and courier services (1), service stations (2), cosmetics distributor (1), and hospital (1). Business units were retained for the purposes of the study if the responses of at least 5 customers could be obtained, and at least 2 managers.

3.2 MEASURES

A customized version of SERVQUAL (Parasuraman et al., 1988) was used to collect customer data from all business units. The modifications included minor alterations of the wording of some questions in order to make them more easily understood. In addition, the questionnaire was produced in both French and English in order to increase the response rate. An additional item was added to evaluate the impact of the language of service delivery on customer perceptions of service quality. A final section was added to collect demographic data on respondents. The last question asked respondents to rate their overall satisfaction with the firm's service (1= very satisfied, 2= satisfied, 3= neutral, 4= dissatisfied, 5= very dissatisfied). This last item was added in order to test the convergent validity of SERVQUAL and was also added in order to be used as a dependent variable to assess the relative importance of the dimensions of service quality in predicting customer satisfaction. A copy of the questionnaire is provided in Appendix B.

SERVQUAL is a 22-item questionnaire designed to obtain customers' evaluations of service quality based on the differences between customers' expectations and perceptions. Each item is rated on a 7-point Likert scale, with #1 corresponding to Strongly Disagree and #7 corresponding to

Strongly Agree. There are no intermediate descriptors for numbers 2 through 6.

The SERVQUAL questionnaire is divided into two sections. Part I asks about a customer's expectations of firms delivering a specified service in general. Part II asks the customer to rate the services of a particular firm (perceptions). The creators of the SERVQUAL questionnaire have demonstrated that it is highly reliable and valid, as well as applicable across a wide range of service industries.

3.2.1 Managerial TQM Questionnaire

Saraph, Benson & Schroeder (1989) developed a 67-item instrument to measure managers' perceptions of eight critical organizational and operational factors of quality management. The degree of extent of each quality practice (each item) by the business unit was rated by managers using a 5-point interval rating scale (1= very low, 2= low, 3= medium, 4= high, 5= very high). The authors claim that each of these eight factors can be used together or independently to examine any particular aspect of a business unit's quality practices.

Certain modifications were made to the questionnaires. A copy of this questionnaire is provided in Appendix C. Some items were deleted from the original questionnaire in order to make it less lengthy and to increase the likelihood that managers would respond. Those items which were deleted were either very similar to other items in the same scale or they were not relevant to the study (eg. Items 52, 53, and 54 in the original questionnaire asked about the amount of incoming, in-process and final inspection, review and checking of products. In the service industry, the distinction between inspection, review and checking at the three above stages is less clear since, in many situations, services are produced and consumed simultaneously. Therefore, these items were combined to ask about inspection, review and checking of <u>work</u>). The customized questionnaire contained 56 items measuring: top management commitment and quality policy (items 1 to 11); role of quality department (items 12 to 16); training (items 17 to 24); service design (items 25 to 30); supplier quality management (items 31 to 36); process management/operating procedures (items 37 to 42); quality data and reporting (items 43 to 48); and employee relations (items 49 to 56).

In addition to the eight critical factors measured, two additional constructs were added: Organizational quality culture (items 57 to 66) and transformational leadership

(items 71 to 81), adopted from Bass & Avolio (1990). These two constructs were rated on the following 5-point scale: 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, 5=strongly agree.

3.3 CONCLUSION

This chapter provided the details of the procedures used in data collection and explained certain modifications made to the research instruments. In the next chapter, the results of the data analysis are presented and discussed.

CHAPTER 4

RESULTS AND DISCUSSION

Results of factor analysis of the SERVQUAL dimensions and regression analysis using customer ratings of overall satisfaction as the dependent measure are discussed. Implications in terms of the validity, reliability, and generic properties of the SERVQUAL instrument are reviewed, and the relative importance of the SERVQUAL dimensions in financial and non-financial business units are addressed. The relationships between critical factors of quality management, organizational culture, transformational leadership, and customer perceptions of service quality are examined.

4.1 SERVQUAL's FACTOR STRUCTURE

The data obtained from the customers were subjected to factor analysis in order to identify the underlying dimensions of service quality. For each item, a difference score (D) was obtained by subtracting customer expectations from perceptions (D = P-E). Factor analysis was conducted on the difference scores. The idea of using difference scores for factor analysis is not new. Other researchers (c.f. Ford, Walker & Churchill, 1975) have used such methods to measure constructs.

In the first step of analysis, all customer data from different business units were pooled together. This pooling of data is appropriate because the developers of SERVQUAL designed the questionnaire to be generic (ie. applicable

across a broad spectrum of services). This pooling was done in order to test the reliability and validity of SERVQUAL and to test the claim that it is generic.

SPSS-X statistical software was used for data analysis. The missing values were treated using pair-wise deletion. Although all extraction procedures of factor analysis available on SPSS were used with both orthogonal and oblique rotational techniques, only two methods of extraction produced relatively clear patterns of factor loading. The purpose of using the above procedures was to obtain clear factors from customer data and to compare these to the anticipated SERVQUAL dimensions as shown by Parasuraman et al. (1988).

The two extraction methods which produced relatively clear patterns of factor loading were: principle component (PC) with VARIMAX rotation, and principle axis factoring (PAF) with OBLIMIN rotation. When using PC, the factors are based upon the total variance (unities are used in diagonal of the correlation matrix), which computationally implies that all of the variance is common or shared. However, PAF differs from PC in such a way that estimates of commonality instead of unities are placed in diagonal of the correlation matrix. That is, the factors are based only on common variance with specific and error variance excluded

(Kleinbaum, Kuppre & Muller, 1988).

The two above extraction methods were used in combination with orthogonal (VARIMAX) and oblique (OBLIMIN) rotation procedures. The purpose of using rotation procedures is that many direct unrotated solutions are not sufficient. That is, in most cases, rotation will improve the interpretations by reducing some of the ambiguities that often accompany the preliminary analysis and will therefore simplify the interpretation of the factor structure (Maxwell, 1977). Orthogonal factor solutions are used when it is thought that each factor is independent of, or orthogonal from, all other factors (ie. the correlation between factors is arbitrarily determined to be zero). Oblique factor solutions are used when the relationship between factors may or may not be orthogonal (Johnson & Wichern,1988). Obviously, oblique factor rotation is theoretically and empirically more realistic.

4.1.1 Results of Factor Analysis:

The PC method extracted six factors with eigen values greater than 1 that accounted for 72% of the total variance (see Table 2). All of the six factors were examined against the five factors specified by Parasuraman et al (1988). The

criteria used to identify and interpret factors were that a given item should load .5 or higher on a specific factor and have a loading no higher than .35 on other factors. These criteria are consistent with previous research done by Igbaria, Greenhaus & Parasuraman (1981).

Although there was some clear correspondence between our factor structure and the anticipated factor structure using the PC method with VARIMAX rotation (see Table 3), we obtained a sixth factor, and several items did not meet the above criteria. For example, items 7, 12, 16, 17 and 18 had loadings which were higher than .35 on two factors.

PAF extraction with OBLIMIN (oblique) rotation was used by the developers of SERVQUAL because they anticipated some degree of overlap among the dimensions, and when they used orthogonal rotation, no clear patterns emerged. To some extent, this held true in the present study. When PAF extraction was used with OBLIMIN rotation, five clear factors with eigen values greater than one emerged (see Table 4) which accounted for 59.2% of the total variance. The resulting factors were identical or corresponded closely to the five factors outlined by Parasuraman et al (1988) (see Table 5). Factors 2 (Tangibility) and 3 (Responsiveness) were identical to Parasuraman et al's (1988) results. However, some minor discrepancies were

observed: Item 17 loaded on Factor 1 (Reliability) rather than on the anticipated factor (Factor 4 - Assurance). One can clearly see that intuitively, item 17 ("Employees should/do get adequate support from their company to do their job well") could as easily be associated with Reliability ("ability to perform the promised service dependably and accurately") as it could with Assurance ("knowledge and courtesy of employees and their ability to inspire trust and confidence"). Support in work-related tasks would be seen to cause dependable and accurate work more easily than to influence "courtesy or knowledge" of employees, which can be perceived more as a personality characteristic. Therefore, this result is not surprising. Also, item 16 loaded significantly on Factor 5 (Empathy) rather than on Factor 4 (Assurance). Item 16 ("Employees should be/are polite") is again intuitively more or as closely associated with empathy ("caring, individualized attention") than the dimension of assurance.

Item 22 did not load highly on any factor. This item concerned hours of operation ("They should/do have operating hours convenient to all of their customers"). There are several plausible explanations for this finding. First of all, the wording of the question is unrealistic, meaning it asks if operating hours should be convenient to **all** of its customers. Perhaps "all" is too strong a word - customers

know that it is unrealistic for a firm to meet the needs of all of their customers regarding operating hours. This word could be replaced by the word "most".

Secondly, it must be considered that this question was irrelevant to some of the non-financial business units surveyed, such as the telephone company, gas stations, and hospital which operate 24 hours a day for most services. Also, all of the financial business units surveyed had almost identical hours of operation, including one evening a week and saturdays, and also provided customers with access to automatic teller machines 24 hours a day. Therefore, the importance of convenient operating hours to the business units surveyed in this study may not have been an important factor influencing customers' perceptions of service quality.

4.1.2 Validity of SERVQUAL

Three types of validity were examined to evaluate SERVQUAL: Construct validity, discriminant validity, and convergent validity. Construct validity is indicated if the same items that constitute a factor in Parasuraman et al's (1988) factor analysis load on that same factor in the present study. Results of factor analysis confirm that the

same items (with minor justifiable discrepancies) loaded on the same factors in both studies (see Table 5).

Discriminant validity is indicated if the factors and their items are truly different from one another. A correlation matrix was computed to show intercorrelations between the five factors obtained in the present study using the PAF extraction method with OBLIMIN rotation (see Table 6). The correlations obtained between the five factors are low or moderate, which further supports the distinctiveness of the five factors obtained in this study. Levesque & McDougall (1992) found serious problems with the independence of the five dimensions of SERVQUAL. However, the present study did not support this finding. In fact, the present study confirms that SERVQUAL has reasonably high discriminant validity.

Convergent validity was also found to be very high by the existence of a high correlation (r= -.56) between the SERVQUAL scores and customer overall satisfaction (Note: The higher customer satisfaction is, the lower the gap between perceptions and expectations will be). The SERVQUAL score for each customer was calculated by averaging the five dimensions of service quality. Measures of convergent validity are used to indicate whether a score is correlated with an alternative measure intended to tap the same

construct. Therefore, the question on overall customer satisfaction was added to the questionnaire, since it is highly related to customer perceptions of service quality, in order to test the convergent validity.

4.1.3 Reliability of SERVQUAL

The homogeneity of the resulting items within each factor was established further by computing their internal consistency reliability coefficient (coefficient alpha) recommended by Cronbach (1951). This coefficient is widely used as a measure of internal consistency and represents a conservative estimate of the reliability of the scale (Armor, 1974). The computed alpha for the SERVQUAL dimensions (SERVQUAL scores are computed as the difference between perceptions and expectations) are listed in Table 7. The range of alpha is .74 to .89. These high reliabilities are consistent with reports of Parasuraman et al (1988).

In addition to calculating reliability coefficients for SERVQUAL dimensions, these were also computed for the five dimensions on the expectations portion of the questionnaire and the perceptions portion separately (see Table 7). The reliability coefficients of both portions of the questionnaire were consistently high. Analyzing both parts

of the questionnaire separately was done since Parasuraman et al (1988) claim that each portion can be used independently.

Furthermore, the internal reliability of the five dimensions was examined by calculating the correlations between items loading on the same factor obtained in Table 5. These correlations were relatively high and are provided in Table 8. For example, the average pair-wise correlation for the "Tangibles" dimension is .54; for "Reliability" it is .52; for "Responsiveness" it is .43; for "Assurance" it is .59; and for "Empathy" it is .43.

In summary, an assessment of the factor structure, validity and reliability of the SERVQUAL data obtained in the present study are consistent with results obtained by Parasuraman et al. (1988). That is, the SERVQUAL data collected in this study fit the specified (anticipated) factor model proposed by Parasuraman et al. (1988), with minor justifiable discrepancies, and the instrument has high validity and reliability. Based on these conclusions establishing SERVQUAL as a credible instrument to measure customer perceptions of service quality, a solid foundation for further analysis was established.

4.2 ANALYSIS OF DIFFERENCES BETWEEN EXPECTATIONS AND PERCEPTIONS

A summary of customers' ratings for expectations, perceptions, and SERVQUAL (differences between expectations and perceptions) for the five dimensions obtained in this study is provided in Table 9. The highest means on the expectations portion of the questionnaire were obtained for the Reliability dimension (Mean = 6.7 on a 7-point scale) followed by Assurance (Mean = 6.5). Tangibles and Empathy followed (Mean = 6.1 in both cases), and the mean for Responsiveness was 5.8. Customers' ratings on perceptions indicated that Assurance has the highest mean (Mean = 5.6) followed by Tangibles (Mean = 5.3), Reliability and Empathy (Mean = 5.1) and Responsiveness (Mean = 4.9). The largest gaps as measured by SERVQUAL were observed in Reliability (Mean = -1.6) followed by Empathy (Mean = -1.0), Responsiveness and Assurance (Mean = -.9), and Tangibles (Mean = -.8). A t-test for dependent measures was performed in order to test Hypothesis 1. In order to do the above t-test, a total perceptions score was calculated by averaging the perceptions score on each of the five dimensions of service quality. The same was done for the expectations scores. The results of this test showed that perceptions were significantly different from expectations (t = 7.54,

$p<.001$), supporting Hypothesis 1. The implications of this are that none of the business units surveyed met customers' expectations, and the gap between expectations and perceptions was large enough to merit further analysis.

The item regarding receiving service in customers' language of preference (French or English) had no impact on customer perceptions of service quality ($r=.09$). Furthermore, only 10 respondents chose to answer the questionnaire in French. Subsequent analysis revealed no significant differences between French and English respondents with regard to mean SERVQUAL scores.

Although the size of the gap for each dimension can provide business units with some insights as to which elements of service delivery to emphasize, this does not mean that the largest gap should be prioritorized. For example, the largest gap was found in the Reliability dimension. This by itself does not mean that Reliability is the most important dimension determining customer perceptions of service quality. This only indicates that this is an area which has perhaps been neglected in service delivery. In order to determine the relative importance of each dimension in determining service quality and subsequently to provide suggestions of areas to be emphasized in order to reduce the gap, further analysis was

necessary.

4.3 REGRESSION ANALYSIS OF SERVQUAL DIMENSIONS

To determine the influence of the actual five dimensions of service quality obtained in the present study on customers' ratings of overall satisfaction with a firm's services, step-wise regression was applied with satisfaction as the dependent measure and the five dimensions of SERVQUAL as the independent variables. The probability of F-to-enter (PIN) was set at 10%. The independent variables were calculated using factor scores. A factor score is a specific value of a factor calculated for a particular sampling unit and is formed as a weighted sum of values of the variables for that sampling unit (Johnson & Wichern, 1988). In other words, factor scores are composites of all of the original variables that were important in making the new factor. Most factor analysis computer programs compute factor scores to be utilized in subsequent analysis such as regression.

The results of the regression analysis suggest that reliability is the most important dimension influencing customer satisfaction, with assurance and empathy following.

Regression model:

Satisfaction = 2.18 -.51 (Reliability) - .15 (Assurance) - .13 (Empathy)

The adjusted R^2 = .47, and it is statistically significant. This value of R^2 implies that 47% of the variation in customers overall satisfaction can be explained by the variation in the independent variables. The regression model was highly significant, $p_f<.001$. The significance levels of the variables not entering into the equation for the regression model (tangibles and responsiveness) are shown in Table 10.

Since Reliability was both the most important dimension influencing customer satisfaction, and it also had the largest gap between customer expectations and perceptions, it is very evident that the business units surveyed need to place Reliability as a priority. The items making up the Reliability dimension include providing services dependably and accurately when promised, and being sympathetic and reassuring when customers have problems.

A microanalysis of the gaps within each item making up the Reliability dimension indicated that item 6 has the

on making sure personnel who are in direct contact with clients are sympathetic and reassuring when customers have problems. The same rationale can be applied to rate the other items in terms of importance: items 17 (D = -1.68), 5 (D = -1.64), 7 (D = -1.41), 8 (D = -1.35) and 9 (D = -1.01) follow respectively.

4.4 ANALYSIS OF DIFFERENCES BETWEEN FINANCIAL AND NON-FINANCIAL BUSINESS UNITS

4.4.1 Multivariate Analysis of Variance (MANOVA)

MANOVA was applied to test the hypothesis that financial and non-financial business units would differ with respect to the five dimensions of service quality (H_2). Seven financial and seven non-financial business units participated in our study. The results confirmed that there was an overall difference among the 5 dimensions of SERVQUAL between financial and non-financial business units (Wilks lambda= .297, F = 3.783, $p<.05$). After concluding that the group means were not equivalent, a standard ANOVA F-statistic was calculated to test any group differences on each specific dimension of service quality (see Tables 11 and 12). The Tangibles dimension was the only dimension which differed significantly between the two groups (F =

21.50, p<.01), with the gap being larger for non-financial business units (Mean = -1.270) than for financial business units (Mean = -0.050).

The above statistical procedures were repeated for the expectations and perceptions portions of the SERVQUAL questionnaire separately, with similar results. That is, customers expectations of tangibles was higher for non-financial business units than for financial business units but the perceptions for this dimension were higher for financial business units than for non-financial business units . This is contrary to Hypothesis 2 which predicted that customers of financial business units will have higher expectations and hence lower SERVQUAL scores.

A t-test confirmed that there was a significant difference on customers' overall satisfaction with services offered by financial and non-financial business units (t = 1.82, p <.03), lending support to Hypothesis 3. The means for financial and non-financial business units were 2.36 and 2.0 respectively. Thus, in accordance with Hypothesis 3, customers were more satisfied with services offered by non-financial business units that those offered by financial business units. Although on the surface this finding appears to contradict the MANOVA results, several authors (cf. Parasuraman et al., 1988; Campos & Cain, 1991)

differentiate between global judgements of service quality and the transaction-specific nature of satisfaction, stating that the two are closely related but distinct constructs. The correlation between these dependent variables was found to be -.56 in the present study (note: higher satisfaction was associated with a smaller gap between perceptions and expectations).

4.5 ASSESSMENT OF THE RELATIONSHIP BETWEEN TQM FACTORS AND SERVICE QUALITY.

4.5.1 Calculation of Scores for all Variables

A mean was obtained for each business unit on each of the eight critical factors of quality management by averaging managers responses on that factor. A total score for t. critical factors of quality management was then obtained for each business unit by adding up the average score on each of the eight factors and then dividing by eight. For the Transformational Leadership and Organizational Quality Culture scales, a score for each business unit was calculated by averaging managers responses for that business unit.

Measures of customer evaluation of service quality were obtained for each individual customer by calculating the customer's average score on each of the five dimensions, and these were then added together and divided by 5 to obtain the total individual's SERVQUAL score. The SERVQUAL scores for each business unit were obtained by averaging the individual customer SERVQUAL scores for that business unit.

4.5.2 Comparison of Means of Each Variable

Table 13 summarizes the means, standard deviations, and alpha reliability coefficients for all 8 critical factors of quality management, organizational culture, transformational leadership, and customer perceptions of service quality. The alpha reliabilities are consistently high for all 11 variables, ranging from .72 to .94, indicating high internal consistencies for all factors on the TQM questionnaire designed for managers and for the SERVQUAL instrument designed for customers.

Overall, management leadership and quality policy was perceived by managers to be the most highly implemented element of the eight critical factors of quality management (Mean = 3.27 on a scale of 5). This factor includes commitment of management to quality and to long-term quality improvement, the extent to which management considers quality a priority over cost and schedule objectives, and the comprehensiveness, exactness, understanding, and communication of the organization's quality plan. This indicates that there is a positive trend towards implementing TQM in the business units surveyed since TQM implementation begins with management commitment to quality and organizational policies which are conducive to quality improvement.

Quality data and reporting was perceived by managers to be the least implemented of the 8 critical factors of quality management in their business units (Mean = 2.59 on a scale of 5). This factor includes availability of quality data and extent of timely quality data collection, feedback of quality data to employees and managers for problem solving, and evaluation of managers and employees based on quality performance. It is not surprising that the use quality data has not advanced in service industries as it has in the manufacturing industries since the intangible, heterogeneous nature of services makes measuring service quality very difficult. Therefore, collecting accurate data on quality is largely avoided despite the fact that collection of data about the process variables could be an important step towards identification of common and assignable causes of service variation in order to meet customers' needs.

An examination of the overall mean on the organizational quality culture factor (Mean = 3.66) indicates that managers of the business units surveyed tend to agree that their organizational culture leans towards being conducive to the implementation of TQM principles. This implies that, generally, managers and employees are customer focused and feel a sense of urgency to increase the quality of their services.

Overall, managers of business units were more likely to rate their leaders as being moderately high on the transformational leadership scale, with a mean of 3.78, than to be lacking in transformational leadership qualities. The scale for transformational leadership included the qualities of inspiring confidence, making people feel good around him/her, communicating high performance expectations and a vision of the organizations' future, overcoming obstacles, and transmitting a sense of mission.

4.5.3 Critical Factors of Quality Management and SERVQUAL

The intercorrelation among the 8 critical factors of quality management, transformational leadership, organizational quality culture, and customer perceptions of service quality (as measured by the differences between customer perceptions and expectations) are shown in Table 14. Of the 8 critical factors of quality management, the most highly correlated factors with customer perceptions of service quality were found to be: management leadership and quality policies ($r=.45$, $p<.1$) and process management ($r=.44$, $p<.1$). The intercorrelation revealed little relationship between quality data/reporting and service design with customer perceptions of service quality. These results are consistent with the explanation above regarding

the importance of management commitment to service quality and the lack of quality data collection in the service industry. Organizational quality culture and transformational leadership did not yield any significant relationships with customer perceptions of service quality.

A second correlation matrix was obtained using the combined (total) score on the 8 Critical Factors of Quality Management for each business unit, transformational leadership, organizational quality culture, and customer perceptions of service quality (see Table 15). A significant relationship was found between the total score on the Critical Factors of Quality Management and customer perceptions of service quality ($r=.42$, $p<.1$). This provides preliminary support for Hypothesis 4 by showing that implementation of quality practices by business units is positively associated with customer perceptions of service quality. It appears that, to some extent, the implementation of the quality factors isolated by Saraph et al. (1989) are indeed associated with customer perceptions of service quality and hence customer satisfaction. This relationship was proven to be significant at $p<.05$ when five of the 8 factors with correlations greater than .3 with customer perceptions of service quality were used to construct a new score of quality management factors for each

business unit (r=.49). These five factors were: management leadership and quality policy, process management, employee relations, quality department, and supplier management.

Simple regression was applied in order to predict customer perceptions of service quality (the dependent variable, as measured by the differences between customer perceptions and expectations) using the total score of factors of quality management of the business units as the predictor variable (independent variable). The overall regression model was found to be significant ($F = 3.33$, $p<.1$) lending support to Hypothesis 4. The R^2 was found to equal .24, implying that 24% of variation in customer perceptions of service quality can be explained by the variability in the independent variable (total score on Critical Factors of Quality Management). The regression model is shown below,

$$Y = -2.98 + .11 \text{ (TTQM)}$$

where TTQM is the total score on the Critical Factors of Quality Management.

It should be noted that the sample size of 14 business units was not enough in the present study to do a sound multiple regression with 8 independent variables. However,

it should be considered in future research with a larger sample size that some of these 8 variables can be dropped because there was a high degree of intercorrelation between the majority of the independent variables (see Table 14), implying that there is a possible multicollinearity of the explanatory variables (eg. Process Management and Employee Relations, r=.90; Service Design and Role of Quality Department, r=.85; Quality Department and Employee Relations, r=.80). The multicollinearity was also indicated by the that the fact average variance inflationary factor (VIF) for all explanatory variables was larger than 1 (average VIF=2.75) which according to Pfaffenberger & Patterson (1987) is an indicator of severe multicollineraity.

Organizational quality culture was found to be significantly correlated with the Critical Factors of Quality Management (r=.44, p<.1). This shows that certain values and beliefs which are thought to be important precursors fostering the implementation of TQM principles are indeed associated with a greater degree of implementation of TQM practices and principles. This provides support for Hypothesis 5, which states that there would be a positive relationship between business units' quality culture and managers' perceptions of the

degree of implementation of critical factors of quality management. There was no significant relationship between transformational leadership and the Critical Factors of Quality Management, nor between transformational leadership and customer perceptions of service quality. Therefore, no basis was found for confirming Hypothesis 6. However, it should be noted that transformational leadership was assessed at the level of business unit general manager. Perhaps the required leadership for quality must emanate from top management in the form of vision, commitment to quality, and the implementation of quality policies. In fact, it has been previously recognized (cf. Waldman, in press) that the relationship between leadership and TQM behaviour (and the outcomes) may vary at different management levels, with leadership behaviour at lower levels having less of an impact on TQM as compared to higher levels of management.

4.6 TQM Factors in Financial and Non-Financial Business Units

An examination of the differences between financial and non-financial business units with respect to the five dimensions of SERVQUAL revealed

that there was an overall difference among the dimensions of service quality. However, this was not in the direction predicted (see section 4.4). Rather than financial business units being perceived as providing inferior service quality as predicted by Janson (1989), they were perceived as providing higher quality services than non-financial business units. Perhaps the reason for this is evident when the degree of implementation of TQM factors is compared between these two groups. MANOVA did not reveal any overall significant differences in the degree of implementation of the 8 critical factors of quality management between these groups (Wilks' lambda=.19, F=1.51, p=.40). However, an examination of the means of each factor for both groups indicates that, with only one exception, the degree of implementation of TQM factors was higher in financial business units (see Table 16).

A final cautionary note, we should recognize that the sample size in the current study was relatively small and thus these results must remain preliminary. Nevertheless, our findings were largely as predicted and should prove useful for future research.

4.7 CONCLUSION

In this chapter, the results of data analysis were presented and discussed. In the next chapter, the general implications of these results and suggestions for future research will be addressed.

CHAPTER 5

CONCLUSION

Implications of the results found in this study on producing high quality services are discussed. Suggestions are made regarding future areas of research in TQM and service quality.

This was an exploratory study to assess the relationship between business units' quality management practices and customer perceptions of service quality, and to provide a direction for future research on the impact of TQM practices on customer satisfaction. The impact of two additional factors, transformational leadership and quality culture, on customer perceptions of service quality was also considered. In addition, collecting customer data allowed for an examination of the reliability and validity of SERVQUAL and to assess the relative importance of the five dimensions of service quality in explaining customer satisfaction. Furthermore, a comparison was made between financial and non-financial business units with respect to the five dimensions of service quality, customer satisfaction, and the degree of implementation of critical factors of quality management.

In this study, SERVQUAL was proven to be highly reliable and valid, despite the fact that previous studies questioned the independence of the five dimensions of SERVQUAL and the stability of SERVQUAL's factor structure

(cf. Carman, 1990; Levesque & McDougall, 1992). Perhaps, as previously discussed, this is because certain methodological flaws present in previous studies were avoided in the current study. This allowed us to conclude that the SERVQUAL questionnaire can be used as a research tool to better understand the service expectations and perceptions of consumers, and hence to improve service quality.

Analysis of the SERVQUAL data collected showed that, not only are the largest gaps between customer expectations and perceptions found to be on the Reliability, Empathy and Assurance dimensions respectively, but these are the same dimensions which were determined to be the most predictive of customer satisfaction. This is hardly surprising since these three dimensions comprise the human interaction elements of service encounters.

Human interaction in the service encounter refers to the person-to-person contact between customer and service firm employee which is a major element of the total service offering. This interaction is particularly important in the service industry as opposed to goods-producing industries since the tangible product attributes are small or inexistent. Several studies support the proposal that the human interaction component of service delivery is essential to the determination of customer satisfaction. Crosby and

Stephens (1987) found that, in the life insurance industry, clients' satisfaction with their contact person (or agent) was a significant predictor of overall satisfaction with the service. This has also been found to be the case in professional services, medical services, retail outlets, and a variety of other service delivery firms (Bitner et al, 1990). This implies that service firms concerned with delivering high quality services must seek out and develop employees who are courteous, sympathetic and reassuring, who inspire trust and confidence, who project concern for the customers' well-being, and who act in the customers' interests. These were the most critical elements of high service quality in the present study, in both financial and non-financial business units.

For the first time (to our knowledge) an empirical study has confirmed that the implementation of TQM practices is positively associated with customer perceptions of service quality (as was measured by SERVQUAL).

Of the eight critical factors of quality management measured, the ones most highly correlated with customer evaluation of service quality are top management leadership and quality policy and process management. These results confirm the importance of top management commitment to quality (cf. Deming, 1986; Farquhar & Johnson, 1990; Juran, 1989) and demonstrates the potential connection between

internal continuous improvement processes and external customer perceptions.

The two factors with low correlation with service quality were Service Design and Quality Data Collection and Reporting. These two factors are traditionally manufacturing concepts which have not been fully implemented in service industries. For example, Taguchi's design principles are almost exclusively implemented by engineers in a manufacturing setting, and the relevance of Taguchi's principles to service design is only recently being explored. Quality data collection and reporting has not advanced much in service industries because the intangible nature of services has made collecting accurate data on quality difficult - especially given the fact that these data must be collected from customers, who are sometimes reluctant to be hounded by a firm to give up their time to fill out a questionnaire.

In conclusion, this study only examined internal quality management factors to evaluate their impact on customer perceptions of service quality. However, many external factors might influence customer expectations and perceptions, such as income, level of education, and advertising and marketing strategies. Perhaps future research should consider the impact of these external

factors on customer expectations. In addition, TQM outcomes were measured in terms of customer perceptions of service quality. However, alternative measures could be used in conjunction with SERVQUAL to evaluate organizational performance, such as net profit margin (NPM), return on assets (ROA), or market share\growth indices to give a more complete indication of the success or failure of TQM implementation.

Table 1 - Reasons for growth in service industries

1. Increasing affluence	Greater demand for services that consumers used to provide for themselves (eg. lawn care, house cleaning).
2. More leisure time	Greater demand for travel agencies, travel resorts, adult education.
3. Higher percentage of women in the labour force	Greater demand for day care, maid service, away-from-home meals.
4. Greater life expectancy	Greater demand for nursing homes and health care services.
5. Greater complexity of products	Greater demand for skilled specialists to provide maintenance for such complex products as cars and home computers.
6. Increasing complexity of life	Greater demand for income tax preparers, marriage counsellors, legal advisors, employment services.
7. Greater concern about ecology and scarcity of resources	Greater demand for purchased or leased services, such as door-to-door bus service and car rental instead of car ownership.
8. Increasing number of new products.	The computer-sparked development of such service industries as programming, repair, and time sharing.

Table 2 - Final statistics of factor analysis for SERVQUAL (principle component).

FACTOR	EIGEN VALUE	PCT OF VAR	CUM PCT
1	7.03	31.9	31.9
2	2.72	20.4	44.3
3	2.11	9.6	53.9
4	1.53	6.9	60.9
5	1.36	6.2	67.0
6	1.08	4.9	72.0

Table 3 - Factor loading matrix of SERVQUAL items (principle component).

EXTRACTION = PRINCIPLE COMPONENT; ROTATION = VARIMAX

Item	F1	F2	F3	F4	F5	F6
D1		73				
D2		88				
D3		75				
D4		79				
D5	82					
D6	69					
D7	83		36			
D8	87					
D9	74		35			43
D10				71		
D11				74		
D12			39	53		
D13				67		
D14					82	
D15					88	
D16		38	64			43
D17	57	43				43
D18			68	38		
D19			76			
D20			65			
D21			60			50
D22						50

Table 4 - Final statistics of factor analysis for SERVQUAL (principle axis factoring).

FACTOR	EIGEN VALUE	PCT OF VAR	CUM PCT
1	6.7	30.4	30.4
2	2.4	11.0	41.4
3	1.7	7.8	49.2
4	1.2	5.4	54.6
5	1.0	4.6	59.2
6	0.7	3.1	62.3

TABLE 5 - Factor loading matrix of SERVQUAL items (principle axis).

EXTRACTION = PAF; ROTATION = OBLIMIN

Item	F1	F2	F3	F4	F5
D1		69			
D2		86			
D3		69			
D4		79			
D5	77				
D6	55				
D7	83				
D8	88				
D9	59				
D10			51		
D11			72		
D12			50		
D13			64		
D14				-80	
D15				-84	
D16					-82
D17	41				
D18					-59
D19					-56
D20					-43
D21					-30
D22					

Table 6 - Correlation matrix of SERVQUAL dimensions.

	Tang.	Reli.	Resp.	Assu.	Empa.
Tang.	1.00				
Reli.	0.30*	1.00			
Resp.	0.16	0.38**	1.00		
Assu.	0.16	0.44**	0.30*	1.00	
Empa.	0.34**	0.48**	0.57**	0.43**	1.00

* - Signif. LE .05 ** - Signif. LE .01 (2-tailed)

Table 7 - Reliability coefficients of SERVQUAL dimensions.

Scale	Items	Expectations Reliability (Alpha)	Perceptions Reliability (Alpha)	SERVQUAL Reliability (Alpha)
Tangibility	4	.72	.83	.82
Reliability	6	.76	.91	.89
Responsive	4	.67	.84	.75
Assurance	2	.89	.66	.74
Empathy	5	.63	.85	.80

Table 8 - Correlation matrices of SERVQUAL items.

Tangibles dimension:

	D1	D2	D3	D4
D1	1.00			
D2	0.56**	1.00		
D3	0.40**	0.65**	1.00	
D4	0.45**	0.66**	0.52**	1.00

* - Signif. LE .05 ** - Signif. LE . 01 (2-tailed)

Reliability dimension:

	D5	D6	D7	D8	D9	D17
D5	1.00					
D6	0.57**	1.00				
D7	0.62**	0.76**	1.00			
D8	0.70**	0.62**	0.78**	1.00		
D9	0.46**	0.50**	0.39**	0.55**	1.00	
D17	0.24	0.45**	0.47**	0.35**	0.36**	1.00

* - Signif. LE .05 ** - Signif. LE . 01 (2-tailed)

Responsiveness dimension:

	D10	D11	D12	D13
D10	1.00			
D11	0.31**	1.00		
D12	0.39**	0.52**	1.00	
D13	0.30*	0.59**	0.48**	1.00

* - Signif. LE .05 ** - Signif. LE . 01 (2-tailed)

Table 8 Cont.
Assurance dimension:

	D14	D15
D14	1.00	
D15	0.59**	1.00

* - Signif. LE .05 ** - Signif. LE . 01 (2-tailed)

Empathy dimension:

	D16	D18	D19	D20	D21
D16	1.00				
D18	0.52**	1.00			
D19	0.42**	0.42**	1.00		
D20	0.42**	0.41**	0.52**	1.00	
D21	0.29*	0.36**	0.38**	0.51**	1.00

* - Signif. LE .05 ** - Signif. LE . 01 (2-tailed)

Table 9 - Descriptive statistics (means and standard deviations) of SERVQUAL dimensions.

		Expectations		Perceptions		SERVQUAL (Per-Exp)	
Dimension	Items	Mean	SD	Mean	SD	Mean	SD
Tangibles	4	6.1	0.8	5.3	1.1	-0.8	1.3
Reliability	6	6.7	0.4	5.1	1.2	-1.6	1.2
Responsiveness	4	5.8	1.2	4.9	1.4	-0.9	1.7
Assurance	2	6.5	0.9	5.6	1.2	-0.9	1.3
Empathy	4	6.1	0.9	5.1	1.2	-1.0	1.4

Table 10 - Dimensions of service quality not influencing customer overall satisfaction.

Dimension	t-value	signif. t
Tangibility	-0.430	0.669
Responsiveness	0.147	0.883

Table 11 - Means of five dimensions of SERVQUAL for financial and non-financial business units.

Dimension	Financial	Non-financial
Tangibles	-0.050	-1.270
Reliability	-1.853	-1.482
Responsiveness	-1.251	-0.916
Assurance	-1.305	-1.072
Empathy	-2.166	-1.235

Table 12 - ANOVA for five dimensions of SERVQUAL in financial versus non-financial business units.

Variable	F	Sig. of F
Tangibles	21.504	.001
Reliability	0.942	.351
Responsiveness	0.511	.488
Assurance	0.307	.589
Empathy	0.619	.447

Univariate F-tests with (1,67) D. F.

Table 13 - Descriptive statistics (means, standard deviations) and reliability coefficients of factors of quality management.

Factors	Mean	S.D.	Alpha
Management leadership and quality policy	3.27	0.69	.94
Quality department	3.20	0.62	.79
Training	3.06	0.60	.90
Design	3.22	0.57	.87
Supplier	2.95	0.39	.78
Process management	3.17	0.57	.74
Quality data	2.59	0.89	.90
Employee relations	3.17	0.76	.90
Transformation leadership	3.78	0.45	.87
Organizational Culture	3.66	0.44	.73
Customer Perceptions of Service Quality (SERVQUAL)	-1.21	0.56	.72

Table 14 - Correlation matrix of factors of quality management, organizational culture, transformational leadership, and customer perception of service quality.

	TOPM	PROC	DATA	TRN	RELA	QDEP	DESI	SUPP	TLDR	CULT	SERQ
TOPM	1 00										
PROC	61**	1 00									
DATA	65**	43*	1 00								
TRN	66***	58**	71***	1 00							
RELA	68***	90***	75***	77***	1 00						
QDEP	81***	72***	69***	71***	80***	1 00					
DESI	79***	55*	68***	79***	67***	85***	1 00				
SUPP	50*	72***	42*	49*	66**	36	30	1 00			
TLDR	26	08	32	04	05	08	13	- 12	1 00		
CULT	60*	20	51*	65*	52*	56**	75***	02	01	1 00	
SERQ	15	44	08	22	33	36	17	35	09	09	1 00

* signif LE 1 ** signif LE 05 signif LE 01
N - 14

TOPM = management leadership and quality policy
PROC = process management
DATA = quality data and reporting
TRN = training
RELA = employee relations
QDEP = quality department
DESI = service design
SUPP = supplier quality management
TLDR = transformational leadership
CULT = organizational quality culture
SERQ = customer perception of service quality

Table 15 - Correlation matrix of combined score of quality management, transformational leadership, and organizational culture, and customer perceptions of service quality.

	Customer perceptions of service quality	Transformational leadership	Quality management factors	Quality culture
Customer perceptions of service quality	1.00			
Transformational leadership	-.09	1.00		
Quality management factors	.42*	.09	1.00	
Quality culture	.09	.01	.44*	1.00

* = signif. LE .1

Table 16 - Means of 8 critical factors of TQM in financial and non-financial business units.

Critical Factors of TQM	Financial	Non-financial
Management leadership and quality policy	3.26	2.99
Process management	3.50	2.86
Quality data and reporting	2.77	2.30
Training	2.98	2.95
Employee relations	3.51	2.77
Quality department	3.31	2.85
Service design	3.11	3.16
Supplier quality management	3.12	2.78

REFERENCES

Argyris, C. (1982). The executive mind and double-loop learning. Organizational Dynamics, 11, 5-22.

Armor, D.J. (1974). Theta reliability and factor scaling in sociological methodology. San Francisco, CA: Jossey-Bass.

Bass, B.M., & Avolio, B.J. (1990). The Multifactor Leadership Questionnaire. Palo Alto, CA: Consulting Psychologists Press.

Bate, P. (1984). The impact of organizational culture on approaches to organizational problem solving. Organizational Studies, 5, 43-66.

Bitner, M.J, Booms, B.H., & Stanfield Tetreault, M. (1990). The service encounter: Diagnosing favourable and unfavourable incidents. Journal of Marketing, 54, 71-84.

Bushe, G.R. (1988). Cultural contradictions of statistical process control in America Manufacturing organization. Journal of Management, 14, 19-31.

Buzzell, R.D. & Gale, B.T. (1987). The PIMS Principles. Linking Strategy to Performance. New York, NY: The Free Press.

Carman, J.M. (1990). Consumer perceptions of service quality: An assessment of the SERVQUAL dimensions. Journal of Retailing, 66, 33-55.

Commitment Plus (1991). TQM 101: The basics of total quality management. Newsletter of the Quality & Productivity Management Association, 4 (November).

Cravens, D.W., Holland, C.W., Lamb, C.W., & Moncrief, W.C. (1988). Marketing's role in product and service quality. Industrial Marketing Management, 17, 285-304.

Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. Psychometrica, 16, 297-334.

Crosby, P. (1979). Quality is Free. New York: New American Library.

Crosby, L.A. & Stephens, N.J. (1987). Effects of relationship marketing on satisfaction, retention and prices in the life insurance industry. Journal of Marketing Research, 24(November), 404-411.

Darmon, R., Laroche, M., & Petrof, J. (1989). Marketing in Canada: A Management Perspective (3rd ed.). Montreal, Quebec: McGraw-Hill Ryerson.

Deming, W.E. (1986). Out of Crisis. Cambridge, Mass; MIT Center for Advanced Engineering.

Donthu, N. (1991). Quality control in services industry. Journal of Professional Services Marketing, 7(1), 31-55.

Farquhar, C.R., & Johnson, C.G. (1990, October). Total quality management: A competitive imperative. Ottawa, Ontario: The Conference Board of Canada.

Finn, D.W., & Lamb, C.W., Jr. (1991). An evaluation of the SERVQUAL scales in a retail setting. In R. H. Holmand & M. C. Soloman (Eds.), Advances in Consumer Research, (pp. 483-489).

Ford, N.M., Walker, O.C., & Churchill, G.A. (1975). Expectation-specific measures of the intersender conflict and role ambiguity experienced by industrial salesmen. Journal of Business Research, 3 (April), 95-112.

Gale, B.T. & Klavans, R. (1985). Formulating a quality improvement strategy. Journal of Business Strategy, (winter), 21-33.

Garvin, D.A. (1986). Quality problems, policies, and attitudes in the United States and Japan: An exploratory study. Academy of Management Journal, 29, 653-673.

Geertz, C. (1973). The interpretation of cultures. New York: Basic Books.

Gronroos, C. (1982). Strategic management and marketing in the service sector. Helsingfors: Swedish School of Economics and Business Administration.

Gronroos, C. (1990). Service management and marketing. Lexington,

Mass: Lexington Books, D.C. Health and co.

Handfield, R. (1989). Quality management in Japan versus United States: Production and Inventory Management, (Second Quarter), 79-84.

Igbaria, M., Greenhaus, J.H., & Parasuraman, S. (1991). Career orientations of MIS employees: AN empirical analysis. MIS Quarterly, (June), 151-167.

Ishikawa, K. (1985). What is Total Quality Control? Englewood Cliffs, NJ: Prentice-Hall.

Janson, R. (1989). Achieving service excellence in the financial services industry. National Productivity Review, 8(2), 129-144.

Johnson, J.G. (1990). Successful TQM is a question of leadership. Journal for Quality and Participation, (June), 16-19.

Johnson, R.A., & Wichern, D.W. (1988). Applied Multivariate Statistical Analysis. Englewood Cliffs, New Jersey: Prentice Hall.

Juran, J.M. (1989). Juran on leadership for quality: An executive handbook. Wilson, CT: Juran Institute, Inc..

Kackar, R.N. (1986). Taguchi's quality philosophy: Analysis and commentary. An introduction to and interpretation of Taguchi's ideas. Quality Progress, (December).

Kaplan, R.S. (1991). The topic of quality in business school education and research. Selections, 13-21.

Kleinbaum, D.G., Kuppre, L.L., & Muller, K.E. (1988). Applied regression analysis and other multivariable methods (2nd ed.). Boston, Massachusetts: Pws-Kent.

Koepp, S. (1987, February 2). Pul-eeze! Will somebody help me? Time.

Laza, R.W. & Wheaton, P.L. (1990). Recognizing the pitfalls of total quality management. Public Utilities Fortnightly, 17-21.

Levesque, T., & McDougall, G.H. (1992). Measuring service quality: An assessment of the SERVQUAL scale. Quebec, Quebec: ASAC.

Linkow, P. (1989). Is your culture ready for total quality? Quality Progress, (November), 4-6.

Masonson, L.N. (1992). Ensuring high-quality banking services. Healthcare Financial Management, 46(3), 76.

Maxwell, A.E. (1977). Multivariate analysis in behavioral research. London: Chapman and Hall.

Oakland, J.S. (ed). (1989). Total Quality Management. Proceedings of the 2nd International Conference. Oxford: Cotswold Press.

Parasuraman, A., Zeithaml, V.A., & Berry, L.L. (1985). A conceptual model of service quality and its implications for future research. Journal of Marketing, 49, 41-50.

_____(1986). SERVQUAL: A Multiple-item scale for measuring consumer perceptions of service quality. Report No. 86-108. Cambridge, MA: Marketing Science Institute.

_____(1988). SERVQUAL: A Multiple-item scale for measuring consumer perceptions of service quality. Journal of Retailing, 64, 12-37.

Pfaffenberger, R.C., & Patterson, J.H. (1987). Statistical Methods for Business and Economics (3rd ed.). Homewood, Illinois: Irwin.

Philips, L.W., Chang, D.R., & Buzzell, R.D. (1983). Product quality, cost position and business performance: A test of some key hypotheses. Journal of Marketing, (spring), 26-43.

Quinn, J.B., Baruch, J.J., & Paquette, P.C. (1988). Exploiting the manufacturing-services interface. Sloan Management, (summer), 45-56.

Regan, W.J. (1963). The service revolution. Journal of Marketing, 47(July), 57-62.

Reichheld, F.F., & Sasser, W.E., Jr. (1990). Zero defections: Quality comes to services. Harvard Business Review, (Sept-October), 105-111.

Saraph, V., Benson, P.G., & Schroeder, R.G. (1989). An instrument for measuring the critical factors of quality management. Decision Sciences, 20, 810-829.

Sashkin, M., & Kiser, K.J. (1991). Total Quality Management. Seabrook,

MD: Ducochon Press.

Schoell, W.F., & Ivy, J.T. (1981). Marketing: Contemporary Concepts and Practices. Boston, Mass.: Allyn and Bacon.

Waldman, D.A. (in press). A theoretical consideration of leadership and total quality management. Leadership quarterly.

Zeithaml, V.A. (1981). How consumer evaluation processes differ between goods and services. In J.H. Donnelly & W.R. George (Eds.), Marketing of services (pp. 186-190). Chicago, Ill: American Marketing.

Zeithaml, V.A., Parasuraman, A., & Berry, L. (1985). Problems and strategies in services marketing. Journal of Marketing, 49, 33-46.

Zeithaml, V.A., Berry, L., & Parasuraman, A. (1988). Communication and control processes in the delivery of service quality. Marketing, 52, 35-47.

Appendix A

Pre-letter Sent to Potential Participating Companies

Dear Sir\Madam,

The departments of Management and Decision Sciences\Management Information Systems at Concordia University are currently conducting a joint study on Total Quality Management (TQM) in service industries. The focus of this study is to understand the importance of various organizational and operational factors in relation to customers' perceptions of service quality. In other words, we hope to uncover different aspects of TQM that are associated with the satisfaction of customers. Participating companies will benefit from the results of this study in that it will help management pinpoint the impact of various quality-oriented practices on customer satisfaction.

We are presently engaged in identifying potential participating companies. We hope that you will consider taking part in our study. To do so, time requirements on your part will be minimal. In addition, all information obtained will be kept strictly confidential.

A member of our research team will be contacting you by telephone in the near future to provide you with more details. If, in the meantime, you would like additional information, please feel free to contact the project coordinator at the telephone number listed below.

Appendix B

Customized SERVQUAL Questionnaire

Université Concordia
Faculté d'administration
Questionnaire sur la qualité des services

I. Ce questionnaire comporte 3 parties. La première partie concerne votre opinion sur les organisations qui offrent les services de _____. Veuillez s'il vous plaît indiquer à quel degré d'après vous, ces organisations devraient posséder les caractéristiques mentionnées dans chacune des phrases suivantes. Il s'agit de choisir un chiffre de 1 à 7. Si vous pensez que l'organisation doit avoir une certaine caractéristique, veuillez marquer le chiffre 7 dans l'espace indiqué. Si au contraire vous pensez que l'organisation ne doit pas posséder cette caractéristique, veuillez marquer le chiffre 1. Vous pouvez nuancer votre réponse en choisissant 2,3,4,5, ou 6. Il n'y a ni bonne, ni mauvaise réponse. Nous ne portons d'intérêt qu'à votre évaluation.

1 2 3 4 5 6 7

Désaccord — Accord

1 ___L'équipement doit être moderne

2 ___Les installations doivent être attrayantes

3 ___Bonne présentation du personnel

4 ___Installations compatibles avec les services offerts par les organisations

5 ___Respect des délais impartis par les organisations

6 ___Amabilité requise face à la clientèle pour tout problème

7 ___Crédibilité des organisations.

8 ___Services rendus dans les délais impartis

Concordia University
Faculty of Commerce
Service Quality Survey

I. This part of the survey deals with your opinions of firms offering _____ services. Please show the extent to which you think firms offering these services should possess the features described by each statement. Do this by picking one of the seven numbers. If you strongly disagree that firms offering these services should possess a feature, write 1 in the space provided beside each question. If you strongly agree that these firms should possess a feature, write 7. If your feelings are not strong, choose one of the numbers in the middle. There are no right or wrong answers - all we are interested in is an assessment of your expectations.

1 2 3 4 5 6 7

Strongly Disagree — Strongly Agree

1 ___They should have up-to-date equipment

2 ___Their physical facilities should be visually appealing

3 ___Their employees should be well dressed and appear neat

4. ___The appearance of the physical facilities of these firms should be in keeping with the type of services provided

5 ___When these firms promise to do something by a certain time, they should do so

6. ___When customers have problems, these firms should be sympathetic and reassuring

7. ___These firms should be dependable

8 ___They should provide their services at the time they promise to do so.

1 2 3 4 5 6 7

Désaccord — Accord

9 __ Tenue convenable des dossiers et registres

10 __ On ne s'attend pas à ce que les organisations donnent à la clientèle des dates précises, quant aux services à rendre

11 __ La clientèle ne doit pas s'attendre à un service rapide de la part du personnel

12 __ La clientèle ne doit pas s'attendre à une attention personnelle

13 __ La clientèle doit comprendre que les organisations ne peuvent répondre à leur attente s'ils sont trop occupés

14 __ Les clients devraient pouvoir faire confiance au personnel

15 __ La clientèle devrait se sentir à l'aise dans toute transaction avec le personnel

16 __ Politesse du personnel exigée envers la clientèle

17. __ Les organisations soutiennent le personnel dans l'exécution de leurs tâches

18 __ Le personnel n'est pas toujours tenu de venir en aide au client

19 __ Le personnel n'est pas tenu de donner une attention personnelle au client.

20 __ Il n'est pas réaliste de s'attendre à ce que le personnel connaisse la nature des besoins des clients

21 __ Il n'est pas réaliste de s'attendre à ce que les organisations tiennent à coeur les intérêts de leurs clients

22 __ On ne devrait pas s'attendre à ce que ces organisations aient des heures d'ouvertures qui conviennent à tous leurs clients

23 __ Ces organisations devraient prendre en considération les préférences linguistiques (français ou anglais) de leurs clients

1 2 3 4 5 6 7

Strongly Disagree — Strongly Agree

9 __ They should keep their records accurately

10 __ They should not be expected to tell customers exactly when services will be performed

11 __ It is not realistic for customers to expect prompt service from employees of these firms

12 __ These firms should not be expected to give customers individual attention

13 __ It is okay if they are too busy to respond to customer requests promptly

14 __ Customers should be able to trust employees of these firms

15 __ Customers should be able to feel safe in their transactions with these firms' employees

16 __ Their employees should be polite

17 __ Their employees should get adequate support from these firms to do their jobs well

18 __ Their employees do not always have to be willing to help customers

19 __ Employees of these firms cannot be expected to give customers personal attention

20 __ It is unrealistic to expect employees to know what the needs of their customers are

21 __ It is unrealistic to expect these firms to have their customers' best interests at heart

22 __ They should not be expected to have operating hours convenient to all their customers

23 __ Employees of these firms should consider customers' language preferences (French or English)

II. Les phrases suivantes concernent votre opinion sur _____ _____ _____. Veuillez s'il vous plaît indiquer à quel degré d'après vous, ces organisations devraient posséder les caractéristiques mentionnées dans chacune des phrases suivantes. Il s'agit de choisir un chiffre de 1 à 7. Si vous pensez que l'organisation doit avoir une certaine caractéristique, veuillez marquer le chiffre 7 dans l'espace indiqué. Si au contraire vous pensez que l'organisation ne doit pas posseder cette caractéristique, veuillez marquer le chiffre 1. Vous pouvez nuancer votre réponse en choisissant 2,3,4,5 ou 6. Il n'y a ni bonne, ni mauvaise réponse. Nous ne portons d'intérêt qu'à votre évaluation.

1 2 3 4 5 6 7

Désaccord — Accord

1 ___ Possède un équipement moderne

2 ___ A des installations attrayantes

3 ___ Le personnel se présente bien

4 ___ Les installations sont compatibles avec les services offerts par les organisations

5 ___ Les organisations respectent les délais donnés

6 ___ Face à vos problèmes, l'organisation répondra avec bienveillance et sympathie à vos difficultés

7 ___ Fiabilité assurée

8 ___ Services rendus en temps voulu

9 ___ Tenue convenable des dossiers et registres

10 ___ N'informe pas la clientèle de la date des services à rendre

11 ___ Pas de service rapide de la part du personnel

12 ___ Ne vous offre pas un service personnalisé

13 ___ Le personnel est trop occupé pour répondre rapidement aux demandes de la clientèle

II. This part of the survey relates to your feelings about _____. For each statement, please show the extent to which you believe this firm has the features described by the statement. Once again, choosing 1 means that you strongly disagree, and choosing 7 means that you strongly agree. You may also select any of the numbers in the middle that show how strong your feelings are. There are no right or wrong answers - all we are interested in is a number that best reflects your perceptions of the services this firm offers.

1 2 3 4 5 6 7

Strongly Disagree — Strongly Agree

1 ___ Has up-to-date equipment

2 ___ Has physical facilities that are visually appealing

3. ___ Has employees that are well dressed and appear neat

4 ___ The appearance of the physical facilities of the above firm is in keeping with the type of services provided

5 ___ When the above firm promises to do something by a certain time, it does so

6 ___ When you have problems, the above firm is sympathetic and reassuring

7 ___ Is dependable.

8 ___ Provides its services at the time they promise to do so

9 ___ Keeps its records accurately

10 ___ Does not tell customers exactly when services will be performed

11. ___ You do not receive prompt service from the above firm's employees

12 ___ Does not give you individual attention

13 ___ Employees of the above firm are too busy to respond to customer requests promptly

1 2 3 4 5 6 7

Désaccord — Accord

14 __ Les clients doivent pouvoir faire confiance au personnel

15. __ La clientèle se sent à l'aise dans toute transaction avec le personnel.

16 __ Politesse du personnel

17 __ Les organisations soutiennent le personnel dans l'exécution de leurs tâches

18 __ Le personnel ne vient pas toujours en aide au client

19 __ Le personnel ne donne pas toujours une attention personnelle au client.

20 __ Le personnel ne connait pas la nature de vos besoins

21 __ Le personnel ne tient pas à coeur vos intérêts

22 __ N'a pas d'heures d'ouvertures qui conviennent à tous leurs clients.

23 __ Le personnel prend en considération les préférences linguistiques (français ou anglais) de leurs clients

III. Veuillez s.v.p. répondre aux questions suivantes:

1 Sexe ___M ___F

2. Quel âge avez-vous? ___

3 Depuis combien de temps êtes vous client de l'organisation mentionnée ci-dessus?
___années ___mois

4 Comment jugez-vous les services rendus par l'organisation mentionnée ci-dessus?

___Très satisfait ___Satisfait ___Neutre
___Insatisfait ___Très insatisfait

MERCI POUR VOTRE COLLABORATION!

1 2 3 4 5 6 7

Strongly Disagree — Strongly Agree

14 __ You can trust employees of the above firm

15 __ You feel safe in your transactions with the above firm's employees

16 __ Employees of the above firm are polite

17 __ Employees get adequate support from the above firm to do their jobs well

18 __ Employees of the above firm are not always willing to help customers

19 __ Employees of the above firm do not give you personal attention

20 __ Employees of the above firm do not know what your needs are

21 __ Does not have your best interests at heart

22 __ The above firm does not have operating hours convenient to all of their customers

23 __ Employees of the above firm consider customers' language preference (French or English) when dealing with them

III. Please answer the following questions:

1 Gender ___M ___F

2 What is your age? ___

3 How long have you been a client of the above firm?

___ years ___months

4 In general, how satisfied are you with the services offered by the above firm?

___Very Satisfied ___Satisfied ___Neutral
___Dissatisfied ___Very Dissatisfied

THANK YOU FOR YOUR COOPERATION!

Appendix C

Customized Managerial TQM Questionnaire

Université Concordia
Faculté d'administration
Questionnaire sur le management de la qualité

Veuillez S.V.P. indiquer à quel degré votre département ou votre unité pratique les activités suivantes. Si l'activité n'est pas applicable à votre situation, veuillez laisser l'espace libre.

1 2 3 4 5

Très Bas — Bas — Moyen — Haut — Très Haut

1 __ Acceptation, de la part des chefs de département de la responsabilité du niveau de qualité de l'organisation

2 __ Niveau d'évaluation pour qualité de rendement des cadres supérieurs (directeurs et chefs de département)

3 __ Degré auquel les directeurs soutiennent une amélioration de la qualité de rendement

4 __ Degré auquel les chefs de département participent à l'amélioration de la qualité

5 __ Degré auquel la direction a fixé le niveau de la qualité de rendement

6 __ Spécificité des objectifs de qualité à l'intérieur de l'organisation

7. __ Degré de compréhension des objectifs et des politiques de la qualité de la part de l'organisation

8 __ Importance attachée à la qualité par les directeurs en fonction des coûts et des horaires

9 __ Durée du conseil d'administration sur les questions de qualité

10 __ Degré auquel la direction perçoit l'amélioration du rendement comme facteur d'augmentation des bénéfices

11. __ Degré de compréhension du programme de qualité au sein de la compagnie

12.__ Visibilité du département de la qualité

Concordia University
Faculty of Commerce
Total Quality Management Survey

Please indicate the degree or extent of practice of each item by your organization. Leave an item blank if you feel it is not applicable.

1 2 3 4 5

Very Low — Low — Medium — High — Very High

1 __ Acceptance of responsibility for quality by major department heads within the organization

2 __ Degree to which the organization's top management (top executives and major department heads) is evaluated for quality performance

3 __ Extent to which the organization's top management supports long -term quality improvement processes

4 __ Degree of participation by major department heads in quality improvement process

5 __ Extent to which top management has objectives for quality performance

6 __ Specificity of quality goals within the organization

7 __ Extent to which quality goals and policies are understood within the organization

8 __ Importance attached to quality by the organization's top management in relation to cost and schedule objectives

9 __ Amount of review of quality issues in the company's top management meeting

10 __ Degree to which the organization's top management considers quality improvement as a way to increase profits

11 __ Degree of comprehensiveness of the quality plan within the organization

12.__ Visibility of the quality department

1	2	3	4	5
Très Bas	Bas	Moyen	Haut	Très Haut

13 ___ Accès du département de la qualité à la direction.

14 ___ Autonomie du département de la qualité

15 ___ Degré de coordination entre le département de la qualité et les autres départements

16 ___ Efficacité du département de qualité dans l'amélioration de la qualité

17 ___ Entrainement spécifique (technique et professionnel) donné au personnel de l'organisation

18 ___ Entrainement qualité donné au personnel de l' organisation

19 ___ Entrainement-qualité donné aux cadres de l'organisation

20 ___ Entrainement-qualité totale (une manière de dire que la compagnie est entièrement responsable de la qualité)

21 ___ Entrainement dans les techniques statistiques de base (histogrammes et chartes de cOntrole) dans l' organisation.

22 ___ Entrainement dans les techniques statistiques avancées (projets d'expériences et analyses de régression) dans l'organisation

23 ___ Engagement de la part de la direction à la formation du personnel

24 ___ Accès aux ressources pour la formation du personnel dans l'organisation

25 ___ Révision et évaluation complète des nouveaux services avant de les offrir au public

26 ___ Coordination entre les différents départements impliqués dans le développement des services

27 ___ Priorité à la qualité des nouveaux services en fonction du coût et du temps

28 ___ La précision dans les spécifications des services et des procédures

1	2	3	4	5
Very Low	Low	Medium	High	Very High

13 ___ Quality department's access to the top management

14 ___ Autonomy of the quality department

15 ___ Amount of coordination between the quality department and other departments

16 ___ Effectiveness of the quality department in improving quality.

17 ___ Specific work-skills training(technical and vocational) given to employees throughout the organization

18 ___ Quality-related training given to employees throughout the organization

19 ___ Quality-related training given to supervisors throughout the organization

20 ___ Training in the "total quality concept" (i e. a philosophy of company-wide responsibility for quality) throughout the organization.

21 ___ Training in the basic statistical techniques (such as histograms and control charts) in the organization.

22 ___ Training in advanced statistical techniques (such as design of experiments and regression analysis) in the organization.

23 ___ Commitment of the top management to employee training

24 ___ Availability of resources for employee training in the organization

25 ___ Thoroughness of new service design reviews before the service is produced and marketed.

26 ___ Coordination among affected departments in the service development process.

27 ___ Quality of new services emphasized in relation to cost or schedule objectives.

28 ___ Clarity of services specifications and procedures.

1 2 3 4 5

Très Bas | Bas | Moyen | Haut | Très Haut

29. ___ Degré auquel l'exécution et la productivité entrent en ligne de compte dans le développement des services

30 ___ L'importance accordée à la qualité à travers les ventes, le service aux clients, le marketing et les relations publiques

31 ___ Degré auquel les fournisseurs sont selectionnés d'après la qualité et non d'après le prix et le délai

32 ___ Ne traiter qu'avec un nombre réduit de fournisseurs

33. ___ Formation donnée par l'organisation aux fournisseurs

34 ___ Assistance technique donné aux fournisseurs

35 ___ Degré de relations à long terme offertes aux fournisseurs

36 ___ La précision des specifications offerte aux fournisseurs

37 ___ Le nombre d'entretiens préventifs prévu pour l'équipement

38 ___ Degré auquel l'inspection, la revision ou la vérification du travail est automatisée

39 ___ Le nombre d'inspections, de révisions ou de vérifications du travail

40 ___ Degré auquel la procédure est automatisée

41 ___ Degré auquel les modèles de procédure sont "à toute épreuve" et réduisent les possibilités d'erreurs de la part du personnel

42 ___ Donner au personnel des instructions précises quant au travail et à la manière de procéder

43 ___ Disponibilité de données sur la qualité (taux d'erreurs, de défectuosités, etc)

44 ___ Degré auquel les données sur la qualité (coûts de la qualité, défectuosités, erreurs, etc.) sont utilisées comme outils dans le management de la qualité.

45 ___ Degré auquel les données sur la qualité sont mises à la disposition du personnel.

1 2 3 4 5

Very Low | Low | Medium | High | Very High

29 ___ Extent to which implementation\producibility is considered in the service design process

30 ___ Quality emphasis by sales, customer service, marketing, and PR personnel

31 ___ Extent to which suppliers are selected based on quality rather than price or schedule

32 ___ Reliance on reasonably few dependable suppliers

33 ___ Amount of education of suppliers by the organization

34 ___ Technical assistance provided to the suppliers

35 ___ Extent to which longer term relationships are offered to suppliers

36 ___ Clarity of specifications provided to suppliers

37 ___ Amount of preventive maintenance for equipment

38 ___ Extent to which inspection, review, or checking of work is automated

39. ___ Amount of inspection, review, or checking of work

40 ___ Degree of automation of process

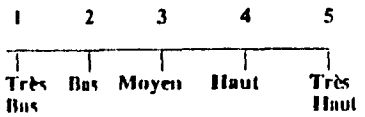
41 ___ Extent to which process design is "fool proof" and minimizes the chances of employee errors

42 ___ Clarity of work or process instruction given to employees

43 ___ Availability of quality data (error rates, defect rates, scrap, defects, etc)

44 ___ Extent to which quality data (cost of quality, defects, errors, scraps, etc,) are used as tools to manage quality.

45. ___ Extent to which quality data are available to employees



46 ___ Degré auquel les données sur la qualité sont mises à la disposition des cadres supérieurs.

47 ___ Degré auquel les données sur la qualité sont utilisées dans l'évaluation du rendement des cadres supérieurs.

48 ___ Degré auquel les données sur la qualité, les graphiques de contrôle, etc. sont exposées dans les stations de travail du personnel

49 ___ Degré auquel des programmes tels que "quality circle" ou "engagement du personnel" sont mis en oeuvre dans l'organisation

50 ___ L'efficacité de ces mêmes programmes (voir n° 49).

51 ___ Degré auquel le personnel est tenu à un rendement sans erreurs

52 ___ La quantité de "feedback" donné au personnel sur la qualité de leur rendement.

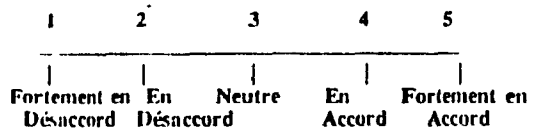
53 ___ La participation aux décisions de qualité par le personnel non-salarié.

54 ___ Degré auquel une information constante sur la qualité se fait chez le personnel

55 ___ Degré auquel le personnel est reconnu pour son rendement de qualité supérieur

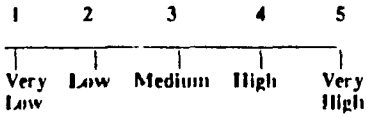
56 ___ L'efficacité des cadres supérieurs à résoudre les problèmes et les points controversés

Veuillez s.v.p. évaluer les articles suivants en utilisant l'échelle qui suit:



57 ___ Le personnel dans cette compagnie se sent très concerné par la qualité des services offerts.

58 ___ Les directeurs dans cette compagnie se sentent très concernés par la qualité des services offerts



46 ___ Extent to which quality data are available to managers and supervisors.

47.___ Extent to which quality data are used to evaluate supervisor and managerial performance.

48 ___ Extent to which quality data, control charts, etc., are displayed at employee work station

49 ___ Extent to which quality circle or employee involvement type programs are implemented in the organization

50 ___ Effectiveness of quality circle or employee involvement type programs in the organization.

51 ___ Extent to which employees are held responsible for error-free output.

52 ___ Amount of feedback provided to employees on their quality performance.

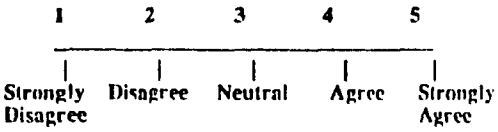
53.___ Degree of participation in quality decisions by nonsupervisory employees.

54.___ Extent to which quality awareness building among employees is ongoing

55.___ Extent to which employees are recognized for superior quality performance

56.___ Effectiveness of supervisors in solving problems\issues.

Please rate the following items using the scale below:



57.___ Employees in this company care a great deal about service quality

58.___ Managers in this company care a great deal about service quality

1	2	3	4	5
Fortement en Désaccord	En Désaccord	Neutre	En Accord	Fortement en Accord

59 ___ Les divers groupes ou départements coopérent bien dans cette compagnie

60 ___ Ici, le travail de groupe se pratique en tout temps

61 ___ Nous prenons le temps d'étudier nos procédures pour y apporter des améliorations éventuelles.

62 ___ La pression se fait sentir pour augmenter la qualité dans nos services.

63 ___ Le respect des délais est primordial ici

64 ___ Offrir des services de hautes qualité est très important ici.

65 ___ Les divers groupes et employés de cette organisation se considèrent plutôt comme clients et fournisseurs.

66.___ L'amélioration dans la productivité est très important ici.

Les articles 67-70 traitent du milieu externe de la compagnie. Lors de cette évaluation, veuillez s.v.p. tenir compte des divers aspects tels que les facteurs sociaux, économiques, politiques et technologiques du milieu.

67.___ Très dynamique et se transformant rapidement au niveau technique, économique et culturel.

68 ___ Très aléatoire; un faux pas peut entrainer la perte de la compagnie.

69 ___ En expansion rapide dans les marchés connus et ceux en développement.

70 ___ Très stressant, taxant et hostile; rendant la survie de la compagnie très difficile.

Les articles 71-81 concernent le directeur-général de votre unité de travail. Classez votre réponse de 1 à 5 pour le décrire.

71.___ Il\elle fait preuve de détermination en réalisant ses objectifs.

72 ___ J'ai une confiance absolue en lui\elle

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

59 ___ Various groups or departments cooperate well in this organization

60 ___ Teamwork is the norm around here

61.___ We take the time to study our processes so that improvement can be made.

62 ___ We are feeling pressure to increase the quality of our company's services

63 ___ Meeting schedules is important around here

64.___ Providing high-quality services to customers is important around here

65 ___ People and groups tend to treat each other as internal customers and suppliers in this organization

66 ___ Improving employee productivity is important around here.

Items 67-70 pertain to the external environment within which your company functions. In rating your environment, where relevant, please consider not only the economic but also the social, political, and technological aspects of the environment.

67 ___ Very dynamic, changing rapidly in technical, economic, and cultural dimensions

68 ___ Very risky; one false step can mean the company's undoing

69 ___ Very rapidly expanding through the expansion of old markets and the emergence of new ones

70.___ Very stressful, exacting, hostile, hard to keep afloat

Items 71-81 pertain to the general manager of your business unit. To what extent does each of the following statements characterize this individual?

71 ___ Shows determination when accomplishing goals

72 ___ I have complete confidence in him\her

1	2	3	4	5
Fortement en Désaccord	En Désaccord	Neutre	En Accord	Fortement en Accord

73 ___ Les gens se sentent bien autour de lui\elle

74 ___ Il\elle transmet ses aspirations de haut rendement

75 ___ Il\elle encourage la mise en pratique de nouvelles idées

76 ___ Il\elle projette une vision positive de l'avenir

77 ___ Il\elle encourage ses employés à trouver des solutions par le biais du raisonnement et de la logique

78 ___ Insiste sur l'importance de trouver des solutions aux problèmes avant de passer à l'action

79 ___ Donne la possibilité de concevoir de nouvelles solutions à de vieux problèmes

80 ___ Se montre capable de surmonter tout obstacle

81 ___Communique un sens de mission

III. Veuillez s.v.p. répondre aux questions suivantes:

1 Sexe ___M ___F

2 Votre nom _____
(Facultatif - Ne répondre que si vous souhaitez avoir les résultats de cette étude)

3 Votre titre ou poste _____

4 Depuis combien de temps occupez-vous ce poste?
___années ___mois

5 Depuis combien de temps votre directeur\directrice (à qui vous vous êtes référé pour répondre aux questions 71-81) occupe t-il\elle son poste? ___années ___mois

MERCI POUR VOTRE COLLABORATION!

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

73 ___ Makes people feel good to around him\her.

74 ___ Communicates high performance expectations.

75 ___ Encourages people to try new ideas

76. ___ Provides a vision of what lies head

77 ___ Gets people to use reasoning and evidence when solving problems

78 ___ Places strong emphasis on careful problem-solving before taking action.

79 ___ Enables people to think about old problems in new ways.

80 ___ Has the ability to overcome any obstacle

81.___Transmits a sense of mission

III. Please answer the following questions:

1 Your gender ___Male ___Female

2 Your name _____
(optional - Please complete if you wish to receive a summary of the study results)

3 Your title or position _____

4 How long have you been in your current position?
___years ___months

5 How long has the general manager (to whom you referred in questions 71-81) been in his\her position?
___years ___months_

THANK YOU FOR YOUR COOPERATION!