

## SERVICE QUALITY MODELS FRAMEWORK—A CONCEPTUAL REVISIT

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### ABSTRACT

*Present article examines the framework and its related issues of different service quality models developed over time. It reexamines the literature in respect of service quality applicable to various industries and presents a comprehensive table indicating the varied dimensions been used in service quality models and conceptualized in different global contexts. It also outlines the implications of these standardized models to academia and service industry in particular and urges the practicing managers to respond to the current rising demand of service quality rather than being reactive. Finally suggests the future research directions so as to develop country and industry specific SQ models.*

### Introduction

The last two decades have witnessed great changes in the business environment, with quality consistently being considered as one of management's top-most competitive priorities and a prerequisite for sustenance and growth. The quest for quality improvement has become a highly desired objective in today's intensely competitive global market place. Quality management has been reckoned as the prime mover for enhanced business performance (Corbett et al., 1998). In today's world of fierce competition, rendering quality service is a key for subsistence and success (Parasuraman et al., 1985 & 1988; Reichheld & Sasser, 1990; Zeithaml et al., 1990. Cronin and Taylor (1992, 1994), Teas (1993, 1994), Berry et al.(1983,1985 & 1994) and Zeithaml et al. (1996) noted that the cardinal accent of both academia and business focused essentially on ascertaining the customers perceptions of service quality and subsequently contriving strategies to meet and surmount customer expectancies. Service companies are beginning to grasp the verities behind what their manufacturing counterparts learned in the past few decades-which quality does not improve unless it is measured.

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### **Service Quality Conceptual Underpinnings**

Service quality is the function of perceptions, expectations and performance. Early writing on the topic of service quality, defines service quality as a comparison of what customers feel a service provider should offer (i.e. their expectations) with how the provider actually performs (Gronroos 1982, Lehtinen and Lehtinen 1982, Sasser, Olsen, and Wyckoff 1978). According to Lewis and Booms (1983), "service quality is a measure of how well the service level delivered matches customer expectations. Delivering quality service means conforming to customer expectations on a consistent basis". Parasuraman et al, (1985) defines service quality as perceived by customers, as the degree and directions of discrepancy between customers' service perceptions and expectations. It is also defined as difference between "technical quality" (what is delivered) and "functional quality" (how it is delivered), and as "process quality" (judged during the service) and "output quality" (judged after the service) (Gronroos, 1983 and Lehtinen, 1983).

Importance of service Quality, direct relationship between service quality and profitability, helps in defensive and offensive marketing i.e. customer retention and increase of sales is done, striking a balance between customer perception and expectations, increasing purchases, free advertising through word of mouth. Too much newness can do more harm than good. Some of the problems are communication gap, service proliferation and complexity, improper selection and training of service workers, short-run view of the business. If a company gives a quality service, they can survive and run over any kind of crunch situation. For e.g. Singaporean Airlines in spite of various vicissitudes in airline industry still stands as a king. It is all because of the service they have provided which the customers, valued much.

The concept of liberalization and globalization opened the market to intense competition throughout the world. So, today the customers are not ready to buy a product based on its physical characteristics, brand name, or price alone. The purchase is made mostly on customer's perception of quality attached to a product (Clement, 2005). This customer focused definition of quality is said to have grown out of the service marketing literature (Gronroos, 1983, Parasuraman et al., 1985). By this, we can rightly say that quality is the vital aspect for a product. Everybody started to give quality product to survive in the intense competition. So there needs a change apart from product quality to have an edge over competitors, thereby came into existence the concept of service quality. Service quality is the function of perceptions, expectations and performance. Early writing on the topic of service quality, defines service quality as a comparison of what customers feel a service provider should offer (i.e. their expectations) with how the provider actually performs (Gronroos 1982, Lehtinen and Lehtinen

1982, Sasser, Olsen, and Wyckoff 1978) Parasuraman et al, (1985) defines service quality as perceived by customers, as the degree and directions of discrepancy between customers' service perceptions and expectations i.e. P-E (Performance–Expectations).

### **Service Quality Models Framework–Re-examination**

In the tough competitive milieu, measurement of service quality has increasingly created an interest among the service providers and the scholars alike. It is so because service quality is being used to position their respective products in the market place (Brown & Swartz 1989).

Imperative Service Quality Models in chronological order are as follows:

1. The Nordic Model (Gronroos 1984),
2. The SERVQUAL Model (Parasuraman, Zeithaml, and Berry 1985),
3. The SERVQUAL Model (Parasuraman, Zeithaml, and Berry 1988),
4. The SERVPERF Model (Cronin and Taylor 1992),
5. The Three-Component Model (Rust and Oliver 1994),
6. The CARTER Model (Othman and Owen 2001),
7. The Three-Order Factor Model (Brady & Cronin 2001) and
8. The Human-Societal Element Model (Sureshchandar et al., 2002).

There has been considerable progress, in the literature as to how service quality perceptions should be measured (e.g., Babakus and Boller 1992; Cronin and Taylor 1992; Parasuraman, Zeithaml, and Berry 1985, 1988, 1991, 1994; Teas 1993) but little advance as to what should be measured. Researchers generally have adopted one of two conceptualizations. The first is the "Nordic" perspective (Gronroos 1982, 1984), which defines that dimension of service quality in global terms as consisting of functional and technical quality. The second, the "American" perspective (Parasuraman, Zeithaml, and Berry 1998), uses terms that describe service encounter characteristics (i.e., reliability, responsiveness, empathy, assurance and tangibles). Although the later conceptualization dominates the literature, a consensus has not evolved as to which, if either, is the more appropriate approach. Moreover, no attempt has been made to consider how the differing conceptualization may be related.

The foundation of service quality theory lies in the product quality and customer satisfaction literature. Early conceptualizations (e.g., Gronroos 1984; Parasuraman, Zeithaml, and Berry 1985) are based on the disconfirmation paradigm employed in the physical goods literature (e.g.,

Cardozo 1965; Churchill and Surprenant 1983; Howard and Sheth 1969; Oliver 1977, 1980; Olshavsky and Miller 1972; Olson and Dover 1976). This suggests that quality results from a comparison of perceived with expected performance, as is reflected in Gronroos's (1984) seminal conceptualization of service quality that "puts the perceived service against the expected service" (Gronroos 1984, p. 37, emphasis in original). In addition to adapting the disconfirmation paradigm to the measurement of service quality, Gronroos (1982) identifies two service quality dimensions, one functional quality represents how the service is delivered; that is, it defines customers' perceptions of the interactions that take place during service delivery. The disconfirmation paradigm also is the basis for Parasuraman, Zeithaml, and Berry's (1985) SERVQUAL model which views service quality as the gap between the expected level of service and customer perceptions of the level received. Whereas Gronroos (1982) suggests two dimensions, Parasuraman, Zeithaml, and Berry (1988) propose firm: the reliability, responsiveness, assurances, empathy, and tangibility characteristics of the service experience.

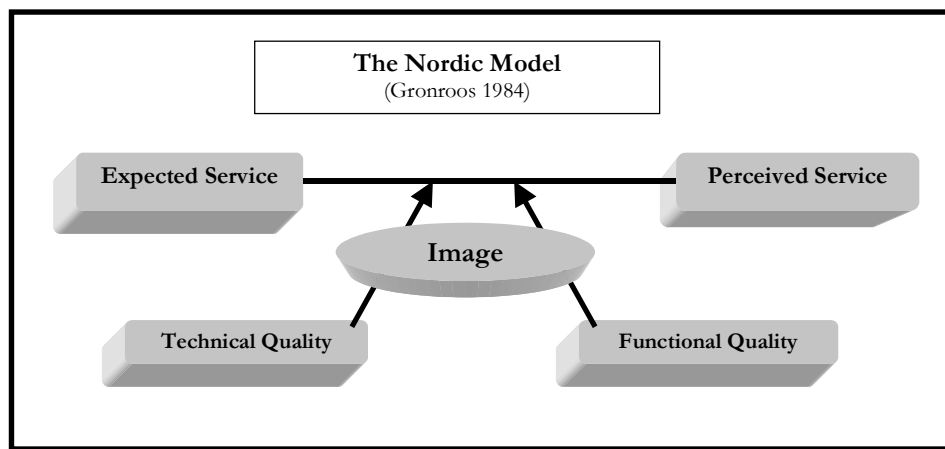
Three themes are evident in more recent work on service quality. First, several studies advance modified versions of the SERVQUAL model (e.g., Boulding et al. 1993; Cronin and Taylor 1992; DeSarbo et al. 1994; Parasuraman, Zeithaml, and Berry, 1991, 1994; Zeithaml, Berry, and Parasuraman 1996). These modifications drop expectations altogether (e.g., Cronin and Taylor 1992), and dimensions to the expectations portion of the model (such as "will" and "should" expectations; see Boulding et al. 1993), or employ alternative methods (such as conjoint analysis) to assess service quality perceptions (Carman 2000; DeSarbo et al. 1994). A second theme involves the heightened interest in the technical and functional quality dimensions Gronroos (1982, 1984) identifies. For example, Rust and Oliver (1994) offer a three-component model; the service product (i.e. technical quality), the service delivery (i.e. functional quality), and the service environment. Rust and Oliver do not test their conceptualization, but support has been found for similar models in retail banking (McDougall and Levesque 1994) and health care samples (McAlexander et al., 1994). The third theme relates to the structure of the service quality construct. Because of the reports of SERVQUAL's inconsistent factor structure, Dabholkar et al., (1996) identified and tested a hierarchical conceptualization of retail service quality that proposes three levels: (1) customers' overall perceptions of service quality, (2) primary dimensions, and (3) sub-dimensions. This multilevel model recognizes in the many facets and dimensions of service quality perceptions. In other words, retail service quality is viewed as a higher-order factor that is defined by two additional levels of attributes.

In summary, scholars have advanced modified versions of either Parasuraman, Zeithaml, and Berry's (1988) five factor American model or Gronroos's (1982) two-factor Nordic conceptualization (Rust and Oliver 1994). That is, service quality is defined by either or all of a customer's perception regarding (1) an organization's technical and functional quality; (2) the service product, service delivery, and service environment; or (3) the reliability, responsiveness, empathy, assurances, and tangibles associated with a service experience.

### Important Dimensions Deployed in Service Quality Models

A comprehensive table (Table 1) is presented for easy understanding of various dimensions used by different authors in their attempt to posit a service quality (SQ) model. Early contributions towards the literature of service quality model have been developed by Gronroos in 1984, called as the Nordic Model and it has conceptualized the measurement of service quality as customers' perception regarding an organizations' technical and functional quality, which is also depicted in figure 1. The Nordic model of measuring service quality is critiqued on the following, it gives only the generalized picture of service quality not in detail for e.g. it does not talk much about social responsibility and service tangibles. It does not used more terms to describe about service encounter as it was mentioned in SERVQUAL to determine a quality service encounter.

Figure 1



As seen in figure 2 and 3, the authors Parasuraman, Zeithaml, and Berry 1985, 1988, have coined the concept of measuring 'service quality' very



Figure 2

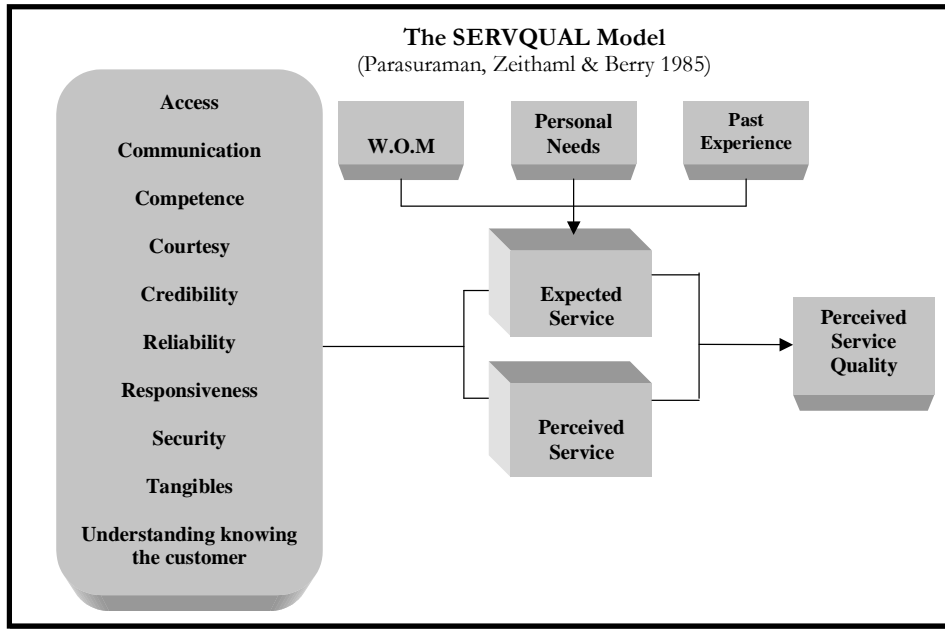
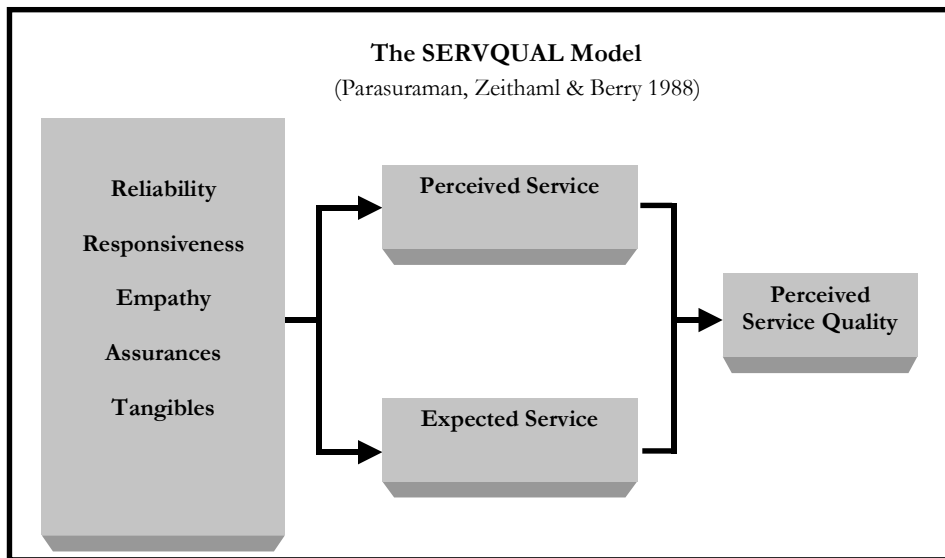


Figure 3



popularly referred to as SERVQUAL Model. They have started the unending journey of conceptualizing the measurement of service quality on 1985 with ten service quality dimensions, later on the customer's perception and expectation regarding the service was filtered and refined to five major service quality dimensions, as follows; tangibles, reliability, responsiveness, assurance and empathy. Again the five major service quality dimensions were refined further and fine tuned by changing the statements to get more reliable and valid results but same criteria is used to check the psychometric properties of the SERVQUAL scale. All new models and any new theories will always prone to criticisms similarly the SERVQUAL model also widely criticized on different times by different authors. It is limited to one sector say banking alone; the score is biased because of wrong terminology used in the statements (During 1988). Mostly it has preoccupied the psychometric and methodological soundness of scales. Cronin and Taylor 1992 commented on, that it is unnecessary to measure customer expectations in service quality research. They contended that measuring perceptions is sufficient they contend. SERVQUAL model is based on Disconfirmation Paradigm, which is not suitable for services and Teas (1993) commented on interpretation and operationalization of the expectations standard.

As depicted in figure 4, the strong critiques of SERVQUAL model were Cronin and Taylor; they had developed a new model in 1992, and was popularly called as SERVPERF model. Their conceptualization of service quality model is, based on the performance component alone. They proposed what is popularly referred to as the 'SERVPERF' scale. It is a single item scale. They have developed their model based on Performance Model Satisfaction over the Disconfirmation Paradigm used by the SERVQUAL scale. They have reduced the number of items to be measured but they have used the same service quality dimensions of SERVQUAL viz., tangibles, reliability, responsiveness, assurance and empathy. The critique of this SERVPERF model is, it is preoccupied with psychometric and methodological soundness of scales. It is used and tested only in developed nations.

As seen in figure 5, during 1994, Rust and Oliver have modified and extended the Nordic model into Three-Component Model of measuring service quality and they have conceptualized the measurement of service quality as customers' perception regarding an organizations' service product, service delivery and the service environment. The Rust and Oliver's Three-Component Model of measuring service quality is critiqued on the following, it gives only the generalized picture of service quality not in detail for e.g. it does not talk much about social responsibility, service encounter and service tangibles.



Figure 4

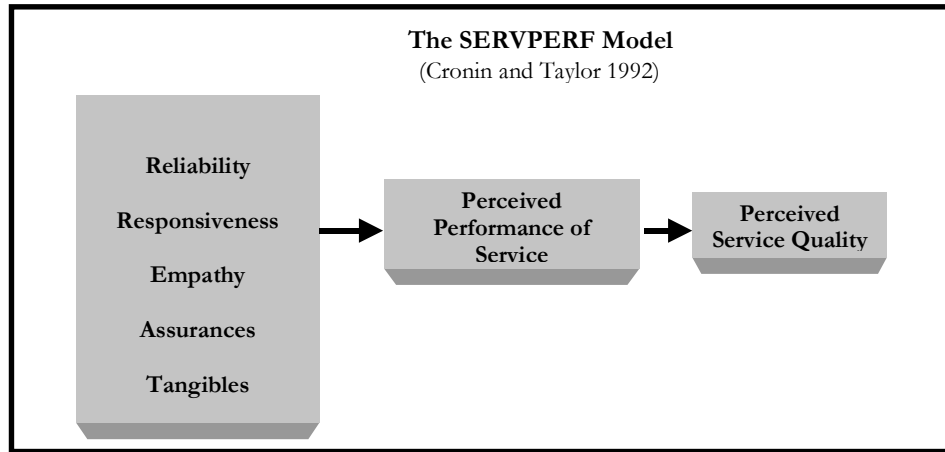
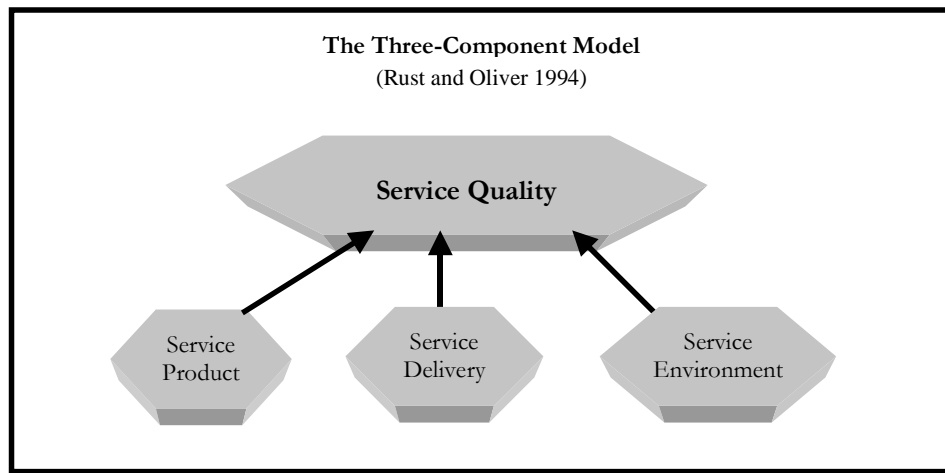


Figure 5



The CARTER Model (figure 6) of measuring service quality was developed by Othman and Owen, in 2001. CARTER's dimensions conceptualized a proposed framework for measuring quality of services in Islamic Banks the dimensions are: Compliance, Assurance, Reliability, Tangibility, Empathy and Responsiveness. The CARTER model provides the following benefits to the Islamic banks: It is the first approach to add and mix the customer's religious beliefs and cultural values with other quality dimensions, It provides for multi-faced analysis of customer satisfaction, It links quality with customer's satisfaction and service encounter, It provides

information at several levels, already organized into meaningful groupings, It is a proven approach, which results in usable answers to meet customer's needs and It is empirically grounded, systematic and well documented.

Figure 6

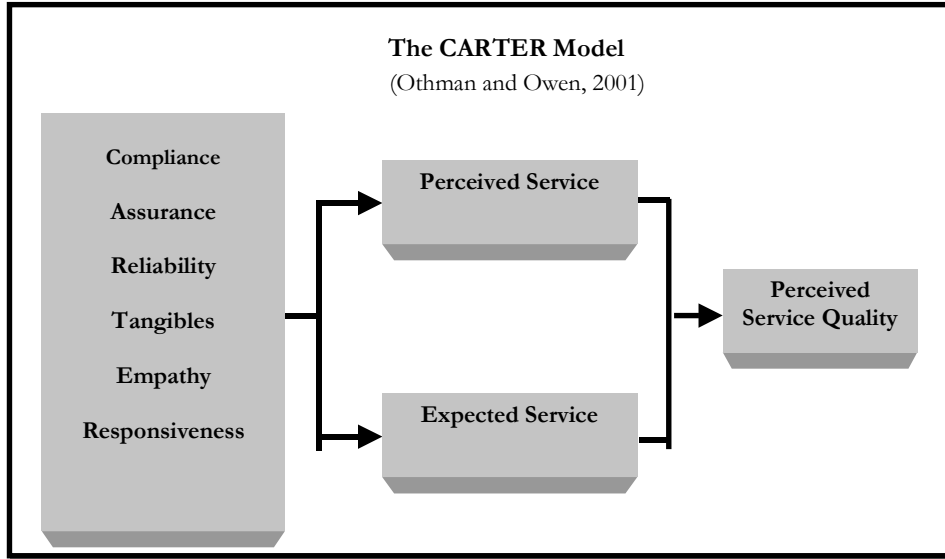
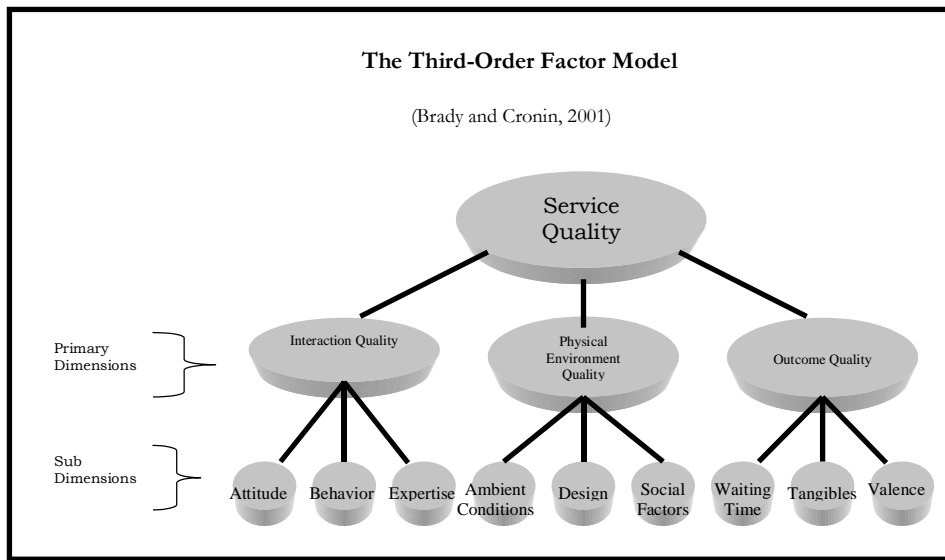


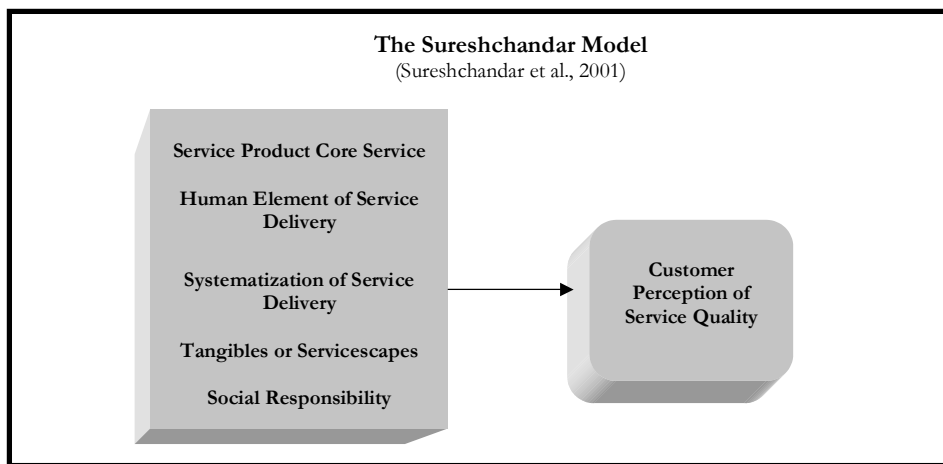
Figure 7



The Third-Order Factor Model (figure 7) was developed by Brady & Cronin; 2001. This model Conceptualized the measurement of service quality, based on three main dimension, which is taken from the Nordic Model (Gronroos 1994), and the Three Component Model of Rust and Oliver (1994) and it also have nine sub-dimension and three descriptors taken from SERVQUAL scale. First the three main dimensions of service quality are Interaction Quality, Physical Environment Quality and Outcome Quality; secondly the nine sub-dimensions are Attitude, Behavior, Expertise, Ambient conditions, Design, Social factors, waiting time, Tangibles and Valence and the three descriptors are Reliability, Responsiveness and Empathy. The critiques of this model are that the four services tested account for only a small portion of service industries, the 12-month interval in data collection may have influenced the variance in responses and the concept is intended as a global view of service quality.

As found in figure-8, The Human-Societal Element Model (Sureshchandar et al., 2001 & 2002) was developed with a view to overcome the drawbacks of SERVQUAL scale as the SERVQUAL Instrument does not address certain important constituents of service quality, like service product or core service and systematization/standardization of service delivery. This model conceptualizes customer-perceived serviced quality based on the following five service quality dimensions they are; Core service or Service Product, Human element of Service Delivery, Systematization of Service Delivery, Tangibles of Service and Social Responsibility. The criticisms of this model are as follows; due to time constraints and practical difficulties, the study has been confined to banking sector and the instrument has been

Figure 8



validated by collecting data from customers of banks in a developing economy and not vis-à-vis developed economy.

### **Discussion and Implications**

The reexamination of the service quality models framework suggest that service quality is positively associated with the perception of the customers of service sectors, and the relationship between service quality and performance of the company and the consequent loyalty that could be developed out of the quality deliverance is quite strong at the interpersonal level. An explanation for this might be that customers perceive the service quality as the basic ingredient for satisfaction and the positive feelings toward the service organization; this in turn spurs the performance output of the firm. This underlying aspect has been reinforced by this conceptual study as it reexamined the various models developed by different authors using umpteen numbers of dimensions each contributing to the service quality perception of the consumers and performance of the companies.

Given the influence of service quality on various performance dimension of the organization, it is important that the services managers be concerned with whether or not customers develop positive feelings towards the quality of service delivered through the employees of the firm. An unsatisfactory service encountered or 'moment of truth' can obviously lead to a lost sale or diminished customer loyalty. This emphasized the importance of good communication and human resource training to employees of service organizations at all levels especially for the people who are in direct contact with the customers. This further suggests that the management can play a critical role in enhancing contact employee's service delivery process by setting high performance standards and appraising and rewarding them fittingly.

It is time that academia also take note of the important contributions extended to this service quality marketing literature and educate the business management students to get prepared and meet the standards for which the bar levels are ever getting raised. In the current content, the model postulated by Sureshchander et al., seems to be an all encompassing one as it takes into account the imperatives of the societal element. This cannot be deemed as the best model developed yet, but again the literature re look this Human-Societal Element Model fits the bill as the most contemporary one. However, this conceptual framework honestly acknowledges the limitations of the effort as it is only a revisit of the existing literature in service quality models and no specific effort is made to check the applicability of any of these models in a developing economy like India. Therefore the authors urge the researchers to take up this mantle of finding out the applicability and

thereby developing an industry specific as well as economy specific service quality model suiting the current requirements of the service sectors.

### **Conclusion**

The issues addressed in this study suggest that the SQ models concept can be conceptualized and understood further through comprehensive SQ model and the managers may need to emphasize customer satisfaction program and strategies centering SQ model. Perhaps consumers do not buy the highest quality service (Cronin & Taylor, 1994); convenience, price and availability may enhance satisfaction while not actually affecting consumer's perceptions of service quality. SQ model has emphasized the need for developing strategy addressing these critical issues. In this way, service marketers armed with a more complete and holistic view of service quality will be better able to focus service enhancement, planning and resource allocation. Nevertheless, none of the service quality model dealt with in this article is an all encompassing one as many authors suggest. In other words, further research exploration in service quality models is clearly necessary and appropriate.

### **REFERENCES**

- Ahmad K. Elshennawy (2004), "Quality in the New Age and the Body of Knowledge for Quality Engineers", *Total Quality Management* Vol. 15, July-August: pp. 603-614.
- Brown, Stephen W. and Teresa A. Swartz (1989), "A Gap Analysis of Professional Service Quality," *Journal of Marketing*, 53 (April), 92-98.
- Boulding, William, Ajay Kalra, Richard Staelin, and Valarie A. Zeithaml (1993), "A Dynamic Process Model of Service Quality: From Expectations to Behavioral Intentions," *Journal of Marketing Research*, 30 (February), 7-27.
- Babakus, E. and Boller, G.W. (1992), "An Empirical Assessment of the SERVQUAL Scale", *Journal of Business Research*, Vol. 24, pp. 253-68.
- Cardozo, R. (1965), "An Experimental Study of Customer Effort, Expectation and Satisfaction," *Journal of Marketing Research*, 2 (August), 244-49.
- Churchill, Gilbert A. and Carol Suprenant (1982), "An Investigation Into the Determinants of Customer Satisfaction," *Journal of Marketing Research*, 19 (November), 491-504.
- Christopher H. Lovelock (2001), *Services Marketing People, Technology, Strategy*, Pearson Education, Inc., pp. 3 & 363.
- Clement Sudhahar J; "Service Quality Gap Models, A Re-Examination and Extension", *SMART Journal of Business Management Studies*, Vol.1, No. 2, July-December 2005.

- Corbett, L.M. Adam, E.E., J.R., Harrison, N.J., Lee, T.S., Rho, B.H. & Samson, D. (1998) A Study of Quality Management Practices And Performance in Asia and The South Pacific, *International Journal of Production Research*, 36, pp. 2597-2607.
- Cronin, J.J. & Taylor, S.A. (1992) Measuring Service Quality: A Re-Examination and Extension, *Journal of Marketing*, 56, pp. 33-55.
- Cronin, J.J. & Taylor, S.A. (1994) SERVPERF versus SERVQUAL: Reconciling Performance-Based and Perceptions-Minus-Expectations Measurement of Service Quality, *Journal of Marketing*, 58, pp. 125-131.
- Crosby, Philip B. 1979, *Quality Is Free*, New York: McGraw-Hill.
- DeSarbo, W., L. Huff, M. Romandeli and J. Choi (1994), 'On the Measurement of Perceived Service Quality', in R. Rust, and R. Oliver (Eds.), *Service Quality*, London: Sage, Ch. 9.
- Gronroos, C. (1982), *Strategic Management and Marketing in the Service Sector*, Swedish School of Economics and Business Administration, Helsingfors.
- Gronroos, C. (1984), "A Service Quality Model and Its Marketing Implications", *European Journal of Marketing*, Vol. 18, pp. 36-44.
- Howard, John A. and Jagdish N. Sheth (1969), *the Theory of Buyer Behavior*, New York: John Wiley & Sons.
- James M. Carman, (1990) "Consumer Perceptions of Service Quality: An Assessment of the Servqual Dimensions," *Journal of Retailing Spring*.
- Lehtinen, Uolevi and Jarmo R. Lehtinen (1982), "Service Quality: A Study of Quality Dimensions," Unpublished Working Paper. Helsinki, Finland: Service Management Institute.
- McAlexander, James H., Dennis O., Kaldenberg, and Harold F. Koeing (1994), "Service Quality Measurement," *Journal of Health Care Marketing*, 3 (Fall), 34-40.
- McDougall, Gordon H.G. and Terrence J. Levesque (1994), "A Revised View of Service Quality Dimensions: An Empirical Investigation," *Journal of Professional Services Marketing*, 11 (1), 189-209.
- Othman, A. and Owen L. (2001), "Developing an Instrument to Measure Customer Service Quality (SQ) In Islamic Banking", *International Journal of Islamic Financial Services*, Vol. 3 (1), pp. 1-26.
- Parasuraman A., Valarie A. Zeithaml, & Leonard L. Berry (1985), "A Conceptual Model of Service Quality and Its Implications for Future Research", *Journal of Marketing*, Vol. 49, 41-50.
- Parasuraman A, Valarie A. Zeithaml, and Leonard. L. Berry (1988), "A Multiple-Item Scale for Measuring Consumer Perceptions of Service Quality," *Journal of Retailing* Vol. 64 Number 1 spring.
- Parasuraman A, Leonard L. Berry And Valarie A. Zeithaml (1990), "Guidelines For Conducting Service Quality Research," *Marketing Research*, December.
- Parasuraman A, Leonard L. Berry, and Valarie A. Zeithaml (1991), "Perceived Service Quality As A Customer-Based Performance Measure: An Empirical Examination

- of Organizational Barriers Using An Extended Service Quality Model," *Human Resource Management*, Vol. 30, Number 3, pp. 335-364.
- Parasuraman A, Leonard L. Berry, and Valerie A. Zeithaml (1991), "Refinement and Reassessment of the SERVQUAL Scale," *Journal of Retailing*, Vol 67 Number 4 winter.
- Parasuraman A., Leonard L. Berry and Valerie A. Zeithaml (1993), "Research Note: More on Improving Service Quality Measurement," *Journal of Retailing*, Vol. 69 No. 1 Spring.
- Parasuraman A., Valerie A. Zeithaml, and Leonard L. Berry (1994a), "Alternative Scales for Measuring Service Quality: A Comparative Assessment Based on Psychometric and Diagnostic Criteria," *Journal of Retailing*, Vol. 70, No. 3, pp 201-230, ISSN 0022-4359 Copyright By New York University.
- Rust, Ronald T. and Richard L. Oliver (1994), "Service Quality: Insights and Managerial Implications from the Frontier," in *Service Quality: New Directions in Theory and Practice*, Ronald T. Rust and Richard L. Oliver, Eds. Thousand Oaks, CA: Sage Publications, 1-19.
- Reichheld, F. & Sasser, W.E., JR (1990) Zero Defections: Quality Comes to Services, *Harvard Business Review*, 68, pp. 105-111.
- Sasser, W. Earl, Jr., R. Paul Olsen, and D. Daryl Wyckoff (1978), "Understanding Service Operations," In *Management of Service Operations*. Boston: Allyn and Bacon.
- Sureshchandar G.S., Chandrasekharan Rajendran & T.J. Kamalanabhan (2001a), "Customer Perceptions of Service Quality A Critique," *Total Quality Management*, Vol. 12, No. 1, 111-124.
- Sureshchandar G.S., Chandrasekharan Rajendran and R.N. Anantharaman (2001b), "A Holistic Model for Total Quality Service", *International Journal of Service Industry Management*, Vol. 12, No. 4, pp. 378-412 MCB University Press.
- Sureshchandar G.S., Chandrasekharan Rajendran & R.N. Anantharaman (2002), "The Relationship Between Management's Perception of Total Quality Service And Customer Perceptions of Service Quality," *Total Quality Management*; Vol. 13, No. 1, 69-88.
- Sureshchandar G.S., Chandrasekharan Rajendran and R.N. Anantharaman (2002), "Determinants of Customer-Perceived Service Quality: A Confirmatory Factor Analysis Approach," *Journal of Services Marketing*, Vol. 16, No. 1, pp. 9-34.
- Teas, R.K. (1993a) Expectations, as a Comparison Standard in Measuring Service Quality: An Assessment and Reassessment, *Journal of Marketing*, January, pp. 132-139.
- Zeithaml V.A., Leonard L. Berry, & A. Parasuraman (1988), "Communication and Control Processes in the Delivery of Service Quality", *Journal of Marketing*, Vol. 52, 35-48.
- Zeithaml V.A. and Mary Jo Bitner (1996), *Services Marketing*, The McGraw-Hill Companies, INC., pp. 5.
- Zeithaml V.A., Parasuraman, A. and Berry, L.L. (1990), *Delivering Quality Service: Balancing Customer Perceptions and Expectations*, Free Press, New York, NY.



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