



# Revisiting the Service Quality Evaluating Models in Manufacturing Supply Chains of Indian SMEs

<sup>1</sup>Surjit Kumar Gandhi, <sup>2</sup>Divanshu Gupta, <sup>3</sup>Harmesh Lal

<sup>1</sup>Professor, <sup>2</sup>Assistant Professor, <sup>3</sup>Professor

Mechanical Engineering Department

PCTE Institute of Engineering and Technology, Ludhiana, India

**Abstract :** Service quality has been the subject of intense academic and business debate as organisations have increasingly paid more attention to the quality of services they deliver to the customers. Studies in a variety of disciplines have brought a substantial body of theory and research under the complex and dynamic nature of service quality. Service quality has become the most dominant theme in services marketing research. Rendering quality service has become a key for achieving success and gaining advantage over competitors. Recently, service quality has been extensively researched, as it has become vital for service firms to pay attention to it due to increased competition. Based on different definitions of service quality, researchers have put forward different models for evaluating service quality, making its operationalization further complex. The literature on service quality-related issues along the entire supply chain, particularly with respect to SMEs, is not much available. Though SERVQUAL has been a frequently used measure of service quality, of late, researchers have questioned aspects of its application and signaled caution in its use. In this paper, seven industry-specific models viz.: Technical and Functional Model (Grönroos 1984), GAP Model (PZB, 1988), Performance only model (Cronin and Tylor, 1992), The Three-Component Model (Rust and Oliver, 1994), PCP attributes model (Philip and Hazlett, 1997), Hierarchical Model (Brady and Cronin, 2001) and FAIRSERV Model (Carr, 2007) have been studied and their features have been described. The description provides helpful directions to researchers and practitioners in developing and utilizing new industry specific instruments.

**Key Words:** Service Quality, Service Quality Models, SMEs, SERVQUAL, SERVPERF, Hierarchical Model, FAIRSERV, SERVDIV

## I. INTRODUCTION

Service marketers have realized that competition can be well managed by differentiating through quality. A customer-minded corporate culture, an excellent service-system design, and effective use of technology and information are crucial to superior service quality. In this paper, an attempt has been made to bring out an industry specific model suitable for service quality measurement in Manufacturing Supply Chains of Indian SMEs. This paper briefly describes seven service quality models from the available literature and seeks guidelines for developing such a model.

## II. SERVICE QUALITY MODELS

During the past three decades, many researchers have presented measurement models on service quality but only some of them are specific to industrial units and more acceptable to supply chains of manufacturing SMEs. We will cover seven industry specific models of service quality in the foregoing discussion, which would be suitable for Indian SMEs.

### 2.1 [SQ 01]: Technical and Functional Service Quality Model (Grönroos, 1984)

Grönroos' model of service quality suggests that quality results from comparing perceived and expected service performance. Grönroos initially identified two dimensions of service quality: functional quality and technical quality. Functional quality represents how a service is delivered, and "how" the delivered service is evaluated during service delivery (Swartz & Brown, 1989). Technical quality, representing "what the service delivers," is evaluated after performance (Swartz & Brown, 1989). In addition, as customers frequently interact with the same service firm, the customers' image of the service provider was added as a third dimension in Grönroos' service quality model, to account for the "dynamic aspect" of the process of forming service quality perceptions (See Figure 1).

Grönroos (1984) found that it is reasonable to state that the perceived service quality (B) of a given service is the outcome of an evaluations process where a consumer compares his or her expectations (A) with the service; he or she perceives that he or she has received (C). In determining how service quality can be influenced Grönroos (1988) was first to identify that the experienced quality of service (C) has two dimensions; a technical or outcome dimensions (E), and a process or functional related dimensions (F). He suggested that consumers are also influenced by their view of a supplier, in other words, the corporate image (D). The consumer's positive image of the restaurant encourages consumers to find excuses for his or her negative experience. Similarly, a negative image may easily increase perceived problem with service quality. As far as service quality perception is concerned, the supplier's image can be regarded as a filter (Grönroos 1984, 1988).

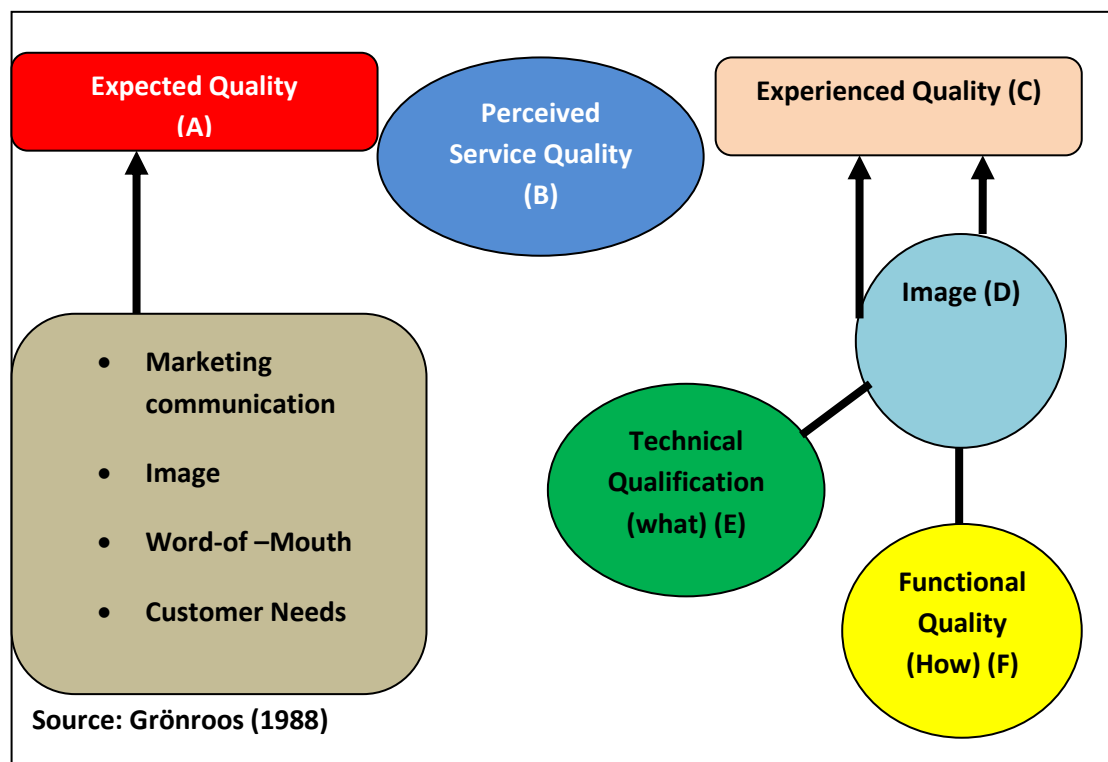


Figure 1: Technical and Functional Service Quality Model

## 2.2 [SQ 02]: GAP Model (Parasuraman et al., 1988)

Parasuraman, Zeithaml and Berry (1985) utilized the disconfirmation paradigm to design the SERVQUAL instrument. In this model, perceived service quality was viewed as the gap between the expected level of service and the customers' perception of the level of service received. The SERVQUAL model has primarily focused on the service delivery process (i.e. the functional quality dimension). Earlier, Parasuraman, Zeithaml and Berry (1985) identified ten dimensions of Service Quality: reliability, responsiveness, competence, access, courtesy, communication, credibility, security, understanding the customer, and tangibles. However, later on, they scaled these down to five dimensions due to the overlap across the ten criteria. The new dimensions are: tangibles, reliability, responsiveness, assurance (competence, courtesy, credibility, security), and empathy (access, communication, understanding of the customer). Tangibles focus on the physical facilities, equipment and appearance of personnel. Reliability is defined as the organisation's ability to perform the promised service dependably and accurately. Responsiveness is described as willingness to help customers and provide prompt service. Assurance is the knowledge and courtesy of employees and their ability to inspire trust and confidence. Finally, empathy refers to the caring, individualized attention the firm provides to its customers.

On the foundations of model proposed by Gronroos, Parasuraman et al., (1985) developed the gap model (figure 2) to measure the elements of service quality. The various gaps envisaged in this Parasuraman et al., (1985) model (figure 2) are:

### ***2.2.1. Gap 1: Customer Expectations –Management Perception Gap***

The management may have inaccurate perceptions of what customers actually expect, that, is discrepancies between executive perceptions (I) and consumer expectations (D). If the management does not receive feedback about poor service quality, then it may believe that it is meeting customer expectations. This gap indicates a lack of proper customer focus. It requires appropriate management processes, market analysis, and attitudes.

### ***2.2.2. Gap 2: Management Perception –Service Quality Specification Gap.***

Managers usually set specifications for service quality based on what they believe are required by consumers. If this is not set accurately, it may reflect inability on the part of the management to translate its perceptions of consumer expectations (I) into service quality specifications (H). This gap relates to resources constraints, Market conditions, and/or management indifferences.

### ***2.2.3. Gap 3: Service Quality Specifications- Service Delivery Gap***

This is mostly seen to be important for such services in which the delivery system relies heavily on people. The gap between service quality specifications (H) and actual service delivery (F) will affect service quality from customer's point of view, which may be due to lack of sufficient support from the frontline staff, process problems, or contact staff performance variability.

### ***2.2.4 Gap 4: Service Delivery –External Communication Gap***

This gap results from inadequate communication by the service provider. Discrepancies between service delivery (F) and external communications (G) in the form of exaggerated promises and /or absence of information about service delivery affect customer's perception of service quality.

### ***2.2.5 Gap 5: Expected Service- Perceived Service Gap***

The quality that a customer perceives in the service is the function of the magnitude and direction of the gap between expected service (D) and perceived service (E). Parasuraman et al., (1985) argue that there is a relationship between Gap 5 and the first four gaps, and that Gap 5 can be regarded as a function of the first four gaps as shown in Figure 2.



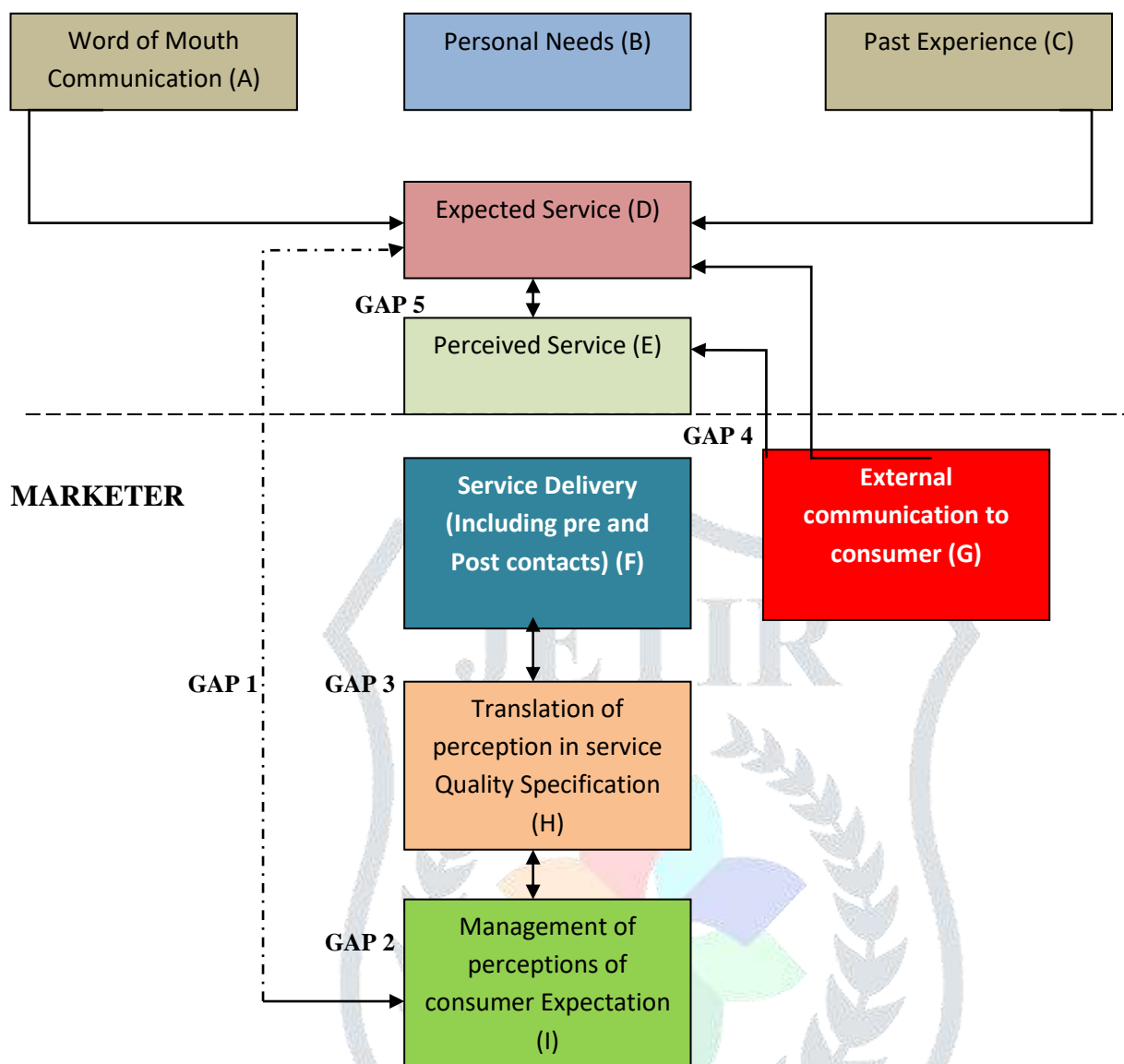
**CONSUMER**

Figure 2: Gap Model –Identification of Gaps

**2.3 [SQ 03]: PERFORMANCE ONLY MODEL (CRONIN AND TAYLOR, 1992)**

Cronin and Taylor (1992) in their study on service quality in the banking, pest control, dry cleaning, and fast food industry, found that the five-dimensions structures of the SERVQUAL scale was not confirmed in any of their samples. They view that perceived service quality is best conceptualized as an attitude of the client with regards to the current performance of the service offered by a specific service provider.

They agree with Parasuraman et al., (1985) that service quality construct is adequately defined by different determinants, however, they argue that these determinants are unidimensional and cannot be fitted into five factors as Reliability, Assurance, Tangibility, Empathy, and Responsiveness (RATER factor). Notably, *Convergent validity* and *discriminant validity* are important considerations in the measurement of second-order constructs such as SERVQUAL. Cronin and Taylor (1992) bring to light a high level of convergent validity with a high level of inter-correlations between the items selected to measure a single RATER factor. Furthermore, a

through reading of the literature by Cronin and Taylor (1994) suggested that the inclusion of importance weights does not enhance the predictive ability of attitude models because their reference does not appear appropriate. Their contention is that the five factor dimensionality is problematic; therefore, interpretability is enhanced by asking respondents to assign weights to each measure. Cronin and Taylor (1994) recognize that the SERVQUAL and SERVPERF scales are tools designed for the long- term performance- based attitude measurement of service quality at a single point in time. They represent a theoretical development involving a LISREL based empirical assessment of the service quality construct and its relation to consumer satisfaction and purchase intension in their study. This work calls into question the traditional conceptualization of the construct by demonstrating the efficacy of performance-only measures and supports the traditional paradigm suggesting that perceived service quality is a causal antecedent to satisfaction. Based on a multi-industry sample of consumer data, they assessed which of four competing models nested within the SERVQUAL instrument most effectively predicted consumers' overall perceptions of service quality: un-weighted SERVQUAL, importance-weighted SERVQUAL, the un-weighted performance sub-scale of the SERVQUAL scale (SERVPERF) and importance –weighted SERVPERF. The result of their study indicated that the un-weighted performance- only measures (SERVPERF) consistently outperformed any of the other competing models in service environments. That is, the SERVPERF scale explained more of the variation in consumer perceptions of service quality than the other models. SERVPERF can provide managers with a summed overall service quality score that can be plotted relative to time and specific consumer subgroup (eg. demographic categories, individual constituencies). Cronin and Taylor (1994) stand by their original position because disconfirmation and consumer satisfaction judgment are both process constructs that share a similar reliance on the consumer experiencing a service encounter, whereas performance perceptions are not constrained to actual consumer experiences.

#### **2.4 [SQ 04]: The Three-Component Model (Rust and Oliver, 1994)**

Rust and Oliver (1994) developed the two dimensions, namely functional and technical quality further into a three-component model:

- the service product (the service as it is designed to be delivered – similar to technical quality);
- the service delivery (the sequence of events and service provider role expectations – similar to functional quality); and
- the service environment (physical ambience of the service setting).

Grönroos's (1984, 1988) functional quality incorporates both tangibles (environment) and the service delivery, but tangibles are identified by Rust and Oliver (1994) as a dimension on its

own (Figure 3).

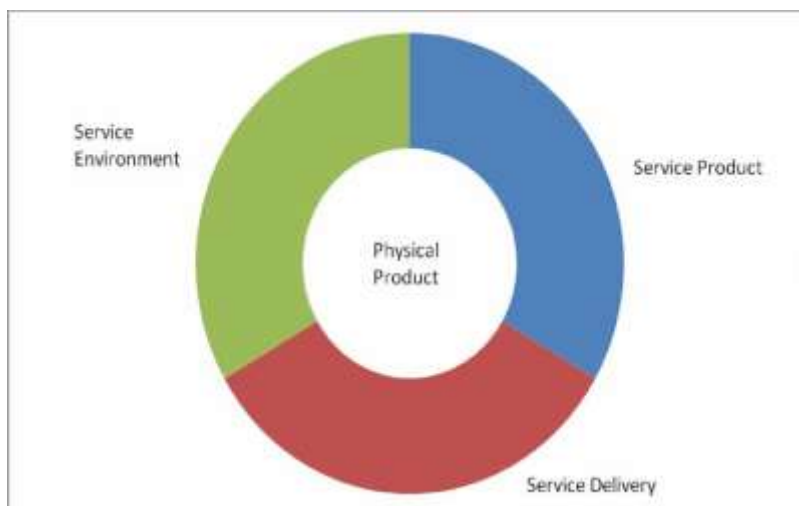


Figure 3: The Three-component model

**2.5 [SQ 05]: PCP Attributes Model (Philip and Hazlett, 1997):** The authors propose a model that takes the form of a hierarchical structure- based on three main classes of attributers – Pivotal, Core and Peripheral. According to the model (Figure 4), every service consists of three overlapping areas where the vast majority of the dimensions and concepts which have thus far been used to define service quality

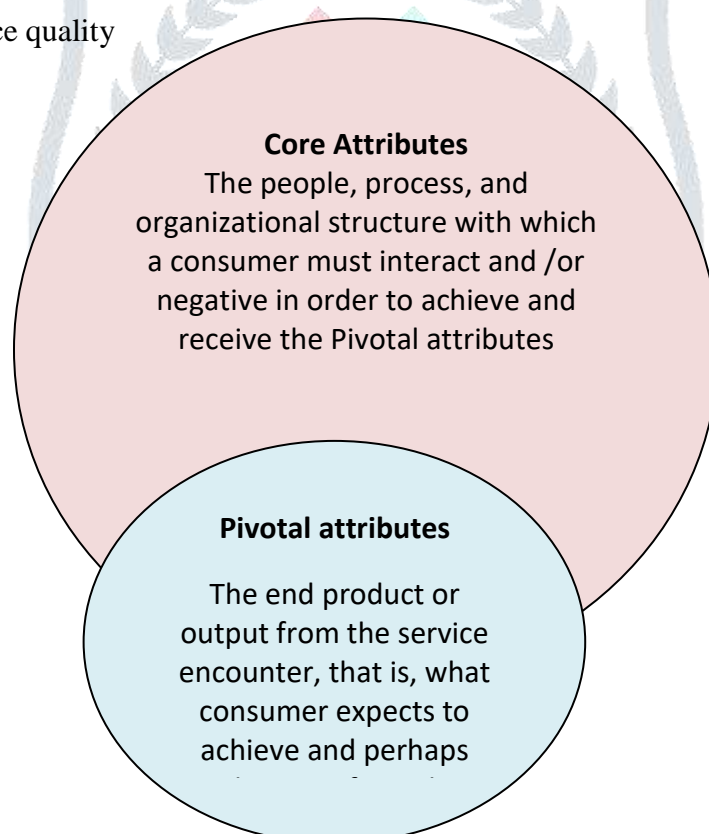


Figure 4: PCP Attribute Model

These ranked levels are defined as- Pivotal (outputs), Core and Peripheral (jointly representing inputs and processes). The Pivotal attributes, located at the core, are considered collectively to be the single most determining influence on why the consumer decided to approach a particular organization and exert the greatest influence on the satisfaction levels. They are defined as the “end product” or “output” from the service encounter; in other words, what the consumer

expects to achieve and receive, perhaps even “take away”, when the service process is duly completed. Core attributes, centered on the pivotal attributes, can be best be described as the amalgamation of the people, processes and the service organizational structure through which consumers must interact and/or negotiate so that they can achieve/receive the pivotal attribute. The third level of the model focuses on the peripheral attributes which can be defined as the “incidental extras” or frills designed to add “roundness” to the service encounter and make the whole experience for the consumer a complete delight. When a consumer makes an evaluation of any service encounter, he is satisfied if the Pivotal attributes are achieved, but as the service is used more frequently the Core and Peripheral attributes may have begun to gain importance. The SERVQUAL and PCP dimensions were outlined to the providers and users of a cancer information support service after initial interview and using two different focus groups (Philip and Stewart, 1999). When the researchers had listened to all the parties, it became obvious to them the information and advice provided by the service (the output or pivotal attributes) were as important as (and may be more important than) the personal qualities (the SERVQUAL dimensions) of the staff involved in the delivery of the service (Philip and Stewart 1999). Philip and Stewart (1999) plotted the SERVQUAL dimensions on the PCP model (see Figure 4). The PCP model is therefore, clearly a combination of SERVQUAL, which represents the core and the peripheral grouping; plus the pivotal grouping, which is the technical quality of the services advocated by Grönroos (1984). The basic premise of PCP model is that there is a need to develop service-specific dimensions or determinants, as the determinants in SERVQUAL. In addition, Philip and Stewart (1999) acknowledge that perceived services are differences between the expected service and the performed service; therefore, they argue that a combined (single) scale should be used to measure the gap between expectation and perceptions, rather than two separate scales (Philip and Hazlett 1997).



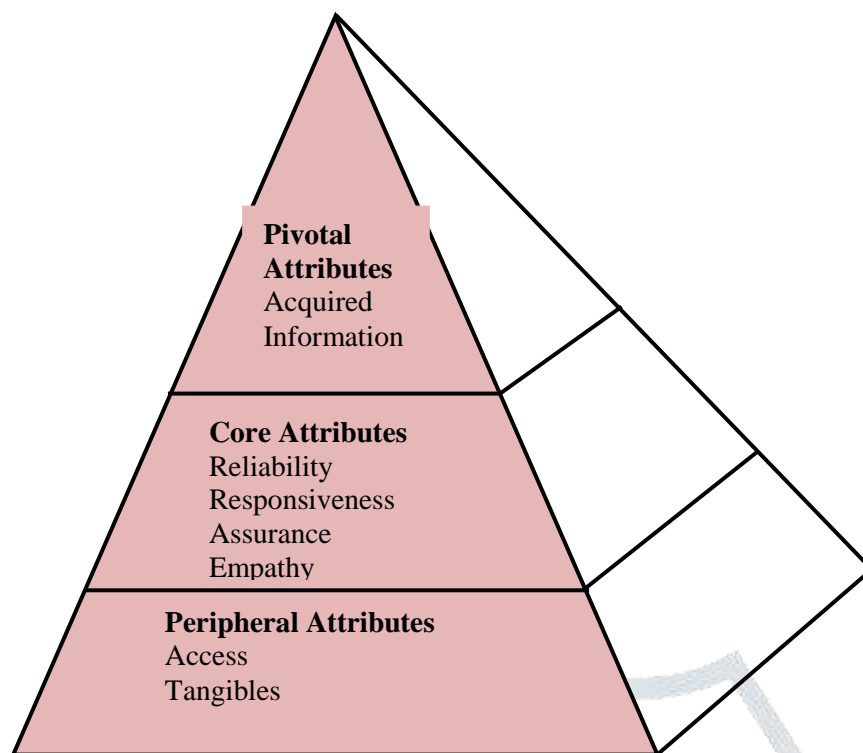


Figure 5: PCP Service Attributes Model of Service Quality

## 2.6 [SQ 06]: The Hierarchical approach of Brady and Cronin (Brady and Cronin, 2001)

Brady and Cronin have developed a combination model of Dabholkar et al. (1996), i.e., the multilevel model and Rust and Oliver's (1994) three component model. The primary dimensions of this combination model are interaction quality, outcome quality, and physical environment quality. Each dimension has three sub- dimensions. Interaction quality includes attitude, behavior, and expertise; Outcome quality includes waiting time, tangibles and valence; and Physical environment quality includes ambience, design and social factors. Brady and Cronin (2001) further find that the three primary dimensions, namely interaction, environment and outcome have three sub-dimensions. Customers will first make an assessment of the three corresponding sub-dimensions before they evaluate the primary dimensions. The customers' assessment of the sub-dimensions will therefore influence their evaluation of the primary dimensions and these perceptions will lead to an overall service quality perception (Brady & Cronin, 2001). Based on these findings, a hierarchical conceptualization of service quality seems appropriate (Brady & Cronin, 2001). Brady and Cronin's (2001) results further show that the three dimensions of reliability, responsiveness and empathy, as suggested by the American school (Parasuraman *et al.*, 1985; 1988) are important for the provision of superior service quality. Brady and Cronin (2001) however, argue that these three dimensions are only modifiers of the sub-dimensions and not direct determinants of service quality. The implication of this is that these "modifiers" represent how each sub-dimension is evaluated (reliable or not, responsive or not, and so on), whereas the sub-dimensions would answer the actual question as to what about the service should be reliable, responsive and empathetic.

## 2.7 [SQ 07]: Carr's FAIRSERV Model (Carr, 2007)

Carr (2007) indicated an important limitation of GAP model that it does not include equity theory for measurement of service quality, even if previous experiences indicate that equity (fairness) is often evaluated in service encounters. Carr (2007) opined that customers evaluate not only, the quality of the service encounter, but also the equity thereof. Although a customer may feel that the service was of high quality, he/she may feel cheated if the service is compared with what another customer may have received. Carr's FAIRSERV posits that an important set of service evaluations results from a comparison of services against norms of fairness and the treatment of similar customers (comparison others). For example, service consumers compare how service resources (i.e., time, effort, expertise, and materials) are distributed among the various consumers and feel cheated if they receive fewer resources than others. Service consumers are also interested in the procedures used to distribute service resources. They want the procedures to be unbiased and consistently applied, not unduly favoring any one person or group. Service consumers also want to be treated with civility and politeness. And finally, service consumers want to be given information about the services in which they are involved. Future research is needed to test the validity and reliability of FAIRSERV in a wide variety of manufacturing industries.

### III. Conclusions

Service quality is a critical determinant of competitiveness for establishing and sustaining satisfying relationships with customers. It can be concluded that:

- i. there is considerable debate in the literature about the conceptualization and operationalization of the service quality and its relationship with key variables,
- ii. in order to create customer satisfaction, SMEs should try their best to inculcate a feeling of trust and keep their customers loyal and committed.
- iii. a combination of SERVPERF and FAIRSERV model will be best suited to measure service quality at various dyads of the supply chains of manufacturing SMEs in India.

Future research is needed to test the validity and reliability of combined SERVPERF and FAIRSERV service quality models, to check their suitability for measuring the perceived service quality in industrial units.

### REFERENCES

- [1] Brady, M. K., & Cronin, J. J. (2001), "Some new thoughts on conceptualizing perceived service quality: A hierarchical approach". *Journal of Marketing*, 65(3), 34-49.
- [2] Carr, C.L. (2007), "The FAIRSERV model: customer reactions to services based on a multidimensional evaluation of service fairness". *Decision Sciences*, 38(1), 107-130.

- [3] Cronin, J.J. & Taylor, S.A. (1992), "Measuring service quality: a re-examination and extension". *Journal of Marketing*, 56, 55-68.
- [4] Cronin, J.J., and Taylor, S.A. (1994), "SERVPERF versus SERVQUAL: Reconciling Performance- based and Perceptions-minus-expectations Measurement of Service Quality". *Journal of Marketing*, 58(1), 125-131
- [5] Dabholkar, P.A. (1996), "Consumer evaluations in new technology-based self-service options: an investigation of alternative models of service quality". *International Journal of Research in Marketing*, 13 (1), 29-51.
- [6] Grönroos, C. (1982), *Strategic Management and marketing in the service sector*: Helsingfors: Swedish school of Economics and Business Administration.
- [7] Grönroos, C. (1984), "A service Quality model and its marketing implications". *European Journal of Marketing*, 18(4), 36-44.
- [8] Kelkar, M. (2010), "SERVDIV: a Vedic approach to measurement of service quality". *Services Marketing Quarterly*, 31(4), 420-433.
- [9] 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(4), 41-50.
- [10] Parasuraman, A., Zeithaml, V.A. & Berry, L.L. (1988), SERVQUAL: a multiple scale for measuring customer perceptions of service quality. *Journal of Retailing*, 64(1), 12-37.
- [11] Philip, G. & Hazlett, S. (1997), "The measurement of service quality: a new P-C-P attributes model". *International Journal of Quality and Reliability Management*, 14(3), 260-286.
- [12] Philip, G. & Stewart, J. (1999), "Assessment of the service quality of a cancer information service using a new P-C-P attributes model". *Managing Service Quality*, 9(3), 167-179.
- [13] Rust, R.T. & Oliver, R.L. (1994), "Service quality: insights and managerial implications from the frontier". In: Rust, R.T. & Oliver, R.L. (eds.) *Service quality: new directions in theory and practice*. Thousand Oaks, CA: Sage.
- [14] Seth, N., Deshmukh, S. G., & Vrat, P. (2005), "Service quality models: a review". *International Journal of Quality & Reliability Management*, 22(9), 913-949.
- [15] Swartz, T.A., & Brown, S.W. (1989), "Consumer and provider expectations and experiences in evaluating professional service quality". *Journal of the Academy of Marketing Science*, 17 (2), 189-195.