A Study of Price and Quality in Service Operations

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Introduction
Service quality is the central issue facing the service industry and the service sector of the manufacturing industry today. In a recent Gallup survey, executives ranked the improvement of service and tangible product quality as the single most critical challenge facing US firms. One of the reasons for the importance of service quality is that the American economy has become a service economy. Service accounts for approximately three-quarters of the gross national product and nine of the ten jobs the economy creates (Zeithaml et al., 1990). It is also estimated that, by the end of the century, up to 90 per cent of the employees currently working in the manufacturing sector will be working in the service sector. Since service plays an important role in every organization, both service dominated and product dominated, service quality takes on an immensely significant role in the 1990s.

This article attempts to:

- define perceived service quality along with the perceived price;
- relate the concepts of perceived price and perceived service quality in service operations;
- relate the concepts of perceived service quality and its five dimensions in service operations.

To our knowledge no one has yet attempted to assess empirically the relationship between consumers’ perception of the service quality and the perceived price. This analysis could provide managers with additional information about the dynamics of the service organization.

Perceived Service Quality
Services differ from goods in terms of how they are produced, consumed, and evaluated. Chase and Tansik (1983) classified services based on consumer contact. The extent of consumer contact with the service organizations was used as a means of differentiating types of services. Three types of services identified are:

1. Pure service – organizations in which the customer must be present for service production (e.g., fast food restaurant, nursing home).
(2) Mixed service – organizations in which there is both face-to-face as well as back office contact with the customer (e.g. commercial airline).

(3) Quasi-manufacturing service – organizations in which there is no face-to-face contact with the customer (e.g. credit card, long-distance phone company).

While the literature on quality has been predominantly goods oriented, several contributions have focused on service quality (e.g. Grönroos, 1978; Lewis and Booms, 1983). Moreover, the three characteristics of services – intangibility, heterogeneity, and inseparability – have also been documented (Parasuraman et al., 1985). According to Zeithaml et al. (1990), the following themes become clear from early studies:

- Customers do not evaluate service solely on the outcome of a service; they also consider the process of service delivery.
- The criteria consumers use for evaluating service quality is based on the comparison of consumer expectations with the actual service performance. Thus the perceived service quality is based on a consumer’s judgement about a service’s overall excellence or superiority.

Perceived service quality is different from the actual goods quality because:

- it involves a higher level of abstraction rather than a specific attribute of a product; and
- a judgement is usually made within a consumer’s evoked set.

The quality of service is usually built up from the myriad of individual characteristics that determine customer satisfaction. To bridge the gap between specific characteristics and the abstract concepts of quality, it is useful to consider service quality in terms of broader dimensions (Zeithaml, 1988). Such dimensions can serve as a framework for analysing and designing quality and may be utilized in setting a company’s quality strategy. In a study of four consumer service industries, Parasuraman et al. (1988) identify five quality dimensions that linked specific service characteristics to consumer expectations of quality. These five basic dimensions are:

(1) Tangibles – physical facilities, equipment, and appearance of personnel.

(2) Reliability – ability to perform the promised service dependably and accurately.

(3) Responsiveness – willingness to help customers and provide prompt service.

(4) Assurance – knowledge and courtesy of employees and their ability to convey trust and confidence.

(5) Empathy – caring, individualized attention provided to customers.
Further, an instrument for measuring service quality (i.e. SERVQUAL) has been
developed on the basis of the above five dimensions. SERVQUAL has been
gaining acceptance as a platform for work in service quality. While SERVQUAL
identifies the extent of the quality gap between customer’s expectations and
their perceptions of the service, a broader view is also provided by the
conceptual gap model of service quality. This essentially identifies four internal
gaps in the service firm that contribute to poor customer perceived quality. The
first internal gap occurs because the firm does not know what the customer
expects. The second gap is due to the employment of incorrect service quality
standards. The third gap entails the misalignment between service quality
specifications and actual service delivery. The final gap is due to the mismatch
between actual service delivery and what is promised to the customer. The
combination of these gaps produces the customer’s perception of the service
quality of the firm. Lytle and Mokwa (1992) suggest that the main strength of
Parasuraman et al.'s gap model is its ability to examine critically key
interaction or service delivery variables that influence perceived service quality.
They also point out that a major weakness of the gap model is that certain
outcome variables that could moderate an individual’s perception of service
quality are not included.

Davidow and Uttal (1989) believe that a key step that must be taken by
service companies is to clearly understand their customer’s expectations. They
point out that inward looking companies are guided by industry norms and
their own past practices. This focus causes these companies to create
inappropriate strategies, which result in lower market shares and anaemic
profits. On the other hand, good service results when the provider meets or
exceeds the customers’ expectations. In fact, exceeding customer expectations
by a great amount is the manner by which superior service is recognized.

Perceived Price
In the complex pricing environment of services, it is difficult to use objective
price for determining its role. Most of the services we considered for our study
(i.e. a commercial airline company, a long distance telephone company and a
fast food restaurant) offer a wide variety of products. The price of these
products varies widely within a particular type of service industry. To eliminate
this difficulty, we propose to use perceived price. Perceived price can be defined
as the customer’s judgment about a service’s average price in comparison to its
competitors. The notion of perceived price is based on the simplistic nature of
competitive-oriented pricing approach. The guidance available to customers
consists of information about whether they are charged more than or about the
same as the competitors charge. Perceived price, therefore, does not eliminate
objectivity; rather it adds some subjectivity with the goal of achieving greater
organized pricing structure.

Perceived price will include monetary as well as nonmonetary prices. In
service industry, nonmonetary costs such as time and effort to the consumer
must also be considered (Zeithaml, 1988). With more and more couples working
in the US today, time has become a precious commodity. Services with innovative features to reduce time and effort on the part of the consumer can increase the perceived value and thereby reduce the perceived price.

The Importance of Perceived Price and Perceived Quality Relationship

Attempts to validate the relationship between price and product quality have proceeded along two different approaches. In one approach, researchers have attempted to verify that buyers do perceive a positive price-quality relationship. Leavitt (1954) investigated four products, each with four sets of prices. He found that the subjects were more likely to choose the higher price brand for a product when the price differential was large than when it was small among the different brands of a certain product. These findings, later supported by Tull et al. (1964), McConnell (1968) and Monroe and Krishman (1985), point out that buyers do perceive a positive price-quality relationship. In the second approach, researchers attempted to validate whether there is a positive correlation between actual product quality and price. As noted by Scitovsky (1945), the tendency to use price as an indicator of quality merely implies the belief that price can convey demand-related quality information or supply-related information. A high price may reflect either a high demand for superior quality or the high production costs associated with the high quality. To determine whether this belief is justified, studies have used some “objective” criteria to examine whether higher-priced options are better quality than lower-priced options (Riesz, 1978; Sproles, 1977). Gerstner (1985) assessed the degree of positive correlation between quality and price for 145 products and concluded that the relationship between quality and price appeared to be product specific and generally weak. His findings suggest that some products display a positive quality-price association in the marketplace, but others do not.

One key difference between the economic and the behavioural conceptualization on the use of price in purchase decisions is the assumption of perfect information. This assumption acknowledges that consumers often are not completely familiar with products and product alternatives. Jacoby et al. (1971) suggest that consumer expertise or familiarity may mediate the effect of price on perceptions of quality. Venkataraman (1981) examines the effect of prior purchase/use experience on the price-perceived quality relationship. His findings support the argument that knowledge or familiarity does influence the impact of price on a buyer’s quality assessment. Rao and Monroe (1988) suggest that novice or unfamiliar buyers tend to use price as an indicator of quality to a greater extent than expert or familiar buyers. They also presented a conceptual framework to explain how differential knowledge or familiarity moderates the use of price as an indicator of product quality.

All of the above studies are concentrated on the relationship between objective price and product quality (objective or perceived). It may not be appropriate, however, to apply results of the price-product quality relationship to services because:
Service quality measurement involves a higher level of abstraction. Services often offer a bundle of products instead of one single product. Price bundling in services makes it difficult to quantify one single product price as representative of the overall service operation.

To our knowledge no one has yet attempted to assess empirically the relationship between consumers’ perception of the service quality and the perceived price. In this study we assess, in particular, the relationships between:

- Perceived price and the five dimensions of service quality as defined by Parasuraman et al. (1988).
- Perceived price and consumer perceived overall service quality measured on a Likert scale of seven. Figure 1 depicts the hypothetical relationship.

Both of the above relationships are separately assessed for the three types of service as defined by Chase and Tansik (1983) namely pure (fast food restaurant), mixed (airline company), and quasi-manufacturing (long-distance telephone company) services.

Methodology

The five service dimensions are measured with an instrument known as SERVQUAL (Parasuraman, 1988). SERVQUAL is a seven-point Likert scale which measures consumer expectations and perceptions of the service quality. In SERVQUAL, service quality is determined using gap analysis (i.e., the difference between expectations and perceptions of quality). The SERVQUAL score for each statement pair, for each customer, is computed as follows (see Figure 2):

\[
\text{SERVQUAL score} = \text{Perception score} - \text{Expectation score}
\]

The SERVQUAL score along each dimension is obtained by adding the SERVQUAL scores on the statements pertaining to the dimension and then dividing the sum by the number of statements making up the dimension. The SERVQUAL scores for the five dimensions obtained in the previous steps were averaged (i.e., summed and divided by five) to obtain an aggregate measure of service quality.

We used SERVQUAL to collect data for all three types of services: fast food restaurant for pure service, airline for mixed service, and long-distance telephone company for quasi-manufacturing service.
telephone company for quasi-manufacturing service. A SERVQUAL questionnaire was given to 110 consumers for each of the three services. Of the 110 questionnaires distributed, the response rate was as follows:

- Long-distance phone company: 78 (71 per cent).
- Fast food restaurant: 65 (59 per cent).
- Airline: 69 (63 per cent).

In addition to the 22 items on SERVQUAL, the respondents were also asked to rate the overall quality of service operations on a seven-point Likert scale. We used a seven-point Likert scale instead of a four-point as used by Parasuraman et al. (1988) because it will give a better normal spread of observations. The reason for having a separate question for measuring overall service quality is that using average of measured gaps (SERVQUAL) will result in multi-collinearity. The result from the separate question on overall service quality measurement was used for the regression purposes.

The respondents to our survey were also asked to rate their perceptions about the price charged by a firm in comparison to a competitor on a Likert scale of seven. This price analysis was individually performed for all three types of services. All the major competitors in each service type were identified by their name along with the name of the firm for the type of service operation under study. The perceived price used for the analysis was calculated by averaging the price gap between a particular type of service firm and its competitors. The sample questions in regard to the overall quality and perceived price in the long-distance company case are given in Table I. In these sample questions, due to the confidentiality obligations, we have not disclosed the name of the company researched. The questions for the other two service types are based on the same format.

Data for each of the three services were then analysed by:
Regressing the scores of the perceived price of service by the consumer on five dimensions of service quality as defined by Parasuraman et al. (1988) on a seven-point Likert scale.

Regressing the perceived price of service on the consumer’s perception of overall quality measured on a seven-point scale.

Regressing the scores of the perceived quality of service by the consumer on five dimensions of service quality on a seven-point Likert scale.

Results
The results of our analysis are presented in Tables II, III and IV. The adjusted $R^2$ values are statistically significant in two cases; first for the relationship between perceived price and the five dimensions of quality in commercial airlines and, second, for the relationship between perceived price and overall quality in long distance telephone service operations.

A striking result in terms of gap analysis is the statistically significant relationship between perceived price gap and reliability and assurance gaps, respectively. If an airline could reduce significantly the gap between perceptions and expectations for reliability and assurance (i.e. improve service quality on these two dimensions) then it could charge the customers more than its competitors. In other words, the consumer may be willing to trade off the higher price of an airlines ticket for convenience in terms of scheduling and dependability of flight arrivals and departures. The decrease in gap between consumer perception and expectations for responsiveness and empathy should also increase the perceived price gap.

Another important result of this analysis is the statistically significant relationship between overall service quality and perceived price for the long distance telephone company. As shown in Table III, the results imply that a long distance telephone company can increase the price gap with its competitors in
the positive direction by reducing the gap between consumers’ perception and expectation of overall quality. The absence of any significant results for the perceived price and perceived quality relationship for fast food and commercial airlines reinforces the earlier beliefs (about product quality-price relationship) that perceived service quality itself may not be a good indicator of perceived price.
As shown in Table IV, an interesting result in terms of service quality dimensions is the statistically significant relationship between perceived service quality and reliability for all three types of services. Reliability is the most important dimension in determining service quality for all three types of services. For example, in the case of an airline, the consumer may have higher satisfaction if the airline provides dependability of flight arrivals and departures.

Tangibles is the other important critical variable for mixed service. Empathy is a critical variable for quasi-manufacturing service, implying that caring and individualized attention affect the customer’s perceived satisfaction.

**Conclusion**

The findings of this study indicate that the perceived price and perceived service quality relationship is service specific. The existence of a statistically significant relationship for an airline company (mixed service) indicates that differing dimensions may influence the perceived price gap. In long distance telephone services (quasi-manufacturing), a focus on overall service quality may be required to influence the perceived price gap. The negative slopes in Table II and Table III reject the hypothesized relationship that higher perceived quality leads to higher perceived price. We believe that the logic behind these results is as follows:

<table>
<thead>
<tr>
<th>Service Type</th>
<th>Tangibles</th>
<th>Reliability</th>
<th>Responsiveness</th>
<th>Assurance</th>
<th>Empathy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pure service (Fast food)</td>
<td>0.1934</td>
<td>0.2891</td>
<td>0.1757</td>
<td>0.2191</td>
<td>0.0498</td>
</tr>
<tr>
<td>Mixed service (Airlines)</td>
<td>0.2827</td>
<td>0.3049</td>
<td>0.0400</td>
<td>0.1356</td>
<td>0.1628</td>
</tr>
<tr>
<td>Quasi-manufacturing service</td>
<td>0.0114</td>
<td>0.5452</td>
<td>0.0829</td>
<td>0.1039</td>
<td>0.2968</td>
</tr>
</tbody>
</table>

* p < 0.5
High quality → High perceived → Good value → Low perceived value for money → Low perceived price

The limitations of our study must also be considered in practice and future research. First, our study may lack generalizability because we considered only one type of service setting for each service type. Second, our study was cross-sectional and therefore time-dependent constructs of expectation and perceived service outcome may be confounded.

While this exploratory study is limited because it selects only one industry for each type of service, the findings do indicate that further research along these lines is warranted. It would be interesting to compare two service operations for the same service type in terms of perceived price-perceived quality relationship. If these findings can be supported by future research, service operations management will gain important insight about factors which are critical to price determination in varying service types.

References


