CHAPTER 1
INTRODUCTION

Service: A service is an act or performance offered by one party to another. Although the process may be tied to a physical product, the performance is essentially intangible and does not normally result in ownership of any of the factors of production.

Growth Rates in Components of Services Sector: The real growth rates in components of services sector 1980-2000 in India is presented in Table 1-1.

Table 1-1
Real Growth Rates in Components of Services Sector in India

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Trade</td>
<td>6.02</td>
<td>6.16</td>
<td>5.15</td>
<td>9.10</td>
</tr>
<tr>
<td>2</td>
<td>Hotels, restaurants</td>
<td>5.70</td>
<td>7.45</td>
<td>6.26</td>
<td>10.60</td>
</tr>
<tr>
<td>3</td>
<td>Railways</td>
<td>4.34</td>
<td>3.66</td>
<td>1.41</td>
<td>4.60</td>
</tr>
<tr>
<td>4</td>
<td>Transport By Other Means</td>
<td>7.74</td>
<td>8.17</td>
<td>5.49</td>
<td>7.50</td>
</tr>
<tr>
<td>5</td>
<td>Storage</td>
<td>4.48</td>
<td>1.70</td>
<td>1.50</td>
<td>1.00</td>
</tr>
<tr>
<td>6</td>
<td>Communication</td>
<td>6.32</td>
<td>6.27</td>
<td>9.54</td>
<td>16.00</td>
</tr>
<tr>
<td>7</td>
<td>Banking and Insurance</td>
<td>9.45</td>
<td>13.95</td>
<td>14.31</td>
<td>11.60</td>
</tr>
<tr>
<td>8</td>
<td>Real Estate and Business Services</td>
<td>3.62</td>
<td>3.47</td>
<td>3.27</td>
<td>5.40</td>
</tr>
<tr>
<td>9</td>
<td>Other Services</td>
<td>4.15</td>
<td>6.65</td>
<td>5.27</td>
<td>8.60</td>
</tr>
</tbody>
</table>

Source: Central Statistical Organisation (CSO), New Delhi (www.mospi.nic.in)
It can be seen from Table 1-I that there is a considerable growth in various service sectors which is a positive sign for the Indian economy. The main reasons for the growth of the service sector are increasing affluence, more leisure time, higher percentage of women in the labour force, greater life expectancy, greater complexity of products, increasing complexity of life, greater concern about ecology and resource scarcity, and increasing number of new products.

**Service Quality:** Parasuraman\(^3\) and associates (1985) defined service quality as the conformance of services to customer specifications. Competitive quality requires designing, implementing and continuously adapting systematic transformations to provide efficient, extraordinary, value added outcomes that are important to a wide range of organisational stakeholders. Kessler (1995) defined total quality service as customer satisfaction during the moments of truth.

**Glimpses of Consumer Behaviour in Services:** Consumers\(^4\) rely more on information from personal sources in pre-purchase evaluation. They perceive greater risks when buying services than when buying goods. Evoked set of alternatives is smaller with services than with goods. Mood of the customer influences the way impressions of a service are encoded, retained and retrieved by the customer. Delivery of service can be conceived as drama where service personnel are actors, customers are the audience, physical evidence of the service is the setting and the process of service assembly is the performance. Service encounters can be viewed as role performances. Negative departure from the customer’s expected script will detract from service performance. Customer compatibility is a factor that influences customer satisfaction, particularly in high contact
services. Consumers attribute some of their dissatisfaction with services to their own inability to specify or perform their part of the service. Consumers adopt innovations in services more slowly than they adopt innovations in goods. Brand switching is less frequent with services than products.

**Service Branding and Quality:** The approach to branding services keeping the quality of service as the core concept is shown in Table VI-A in Annexure VI. A service seller has to understand customer needs, deliver superior quality on attributes that matter to customers, low cost of quality and overall cost leadership. Search qualities are the attributes that a customer can determine before purchasing. Experience qualities stand for their attributes that cannot be known or assessed until they have been consumed. Credence qualities are the attributes that the customer may find impossible to evaluate even after consumption.

**Dimensions of Service Quality:** The dimensions of service quality comprise:

Models of Service Quality: Various models of service quality have been proposed and the essence of each is presented in the following paragraphs. Gronross (1984) proposed that a service firm, in order to compete successfully, must first understand how the consumer perceives service quality, and, secondly, determine in what way the service quality is influenced. He suggested that functional quality is a more important dimension than technical quality.

Parasuraman, Zeithmal and Berry (1985) have indicated that customers form their perception of quality from different elements of the service. They identified five "gaps" as follows: Gap 1: Gap between customer expectation and management perception, Gap 2: Gap between management's perception and service quality specification, Gap 3: Gap between service quality specification and service delivery, Gap 4: Gap between service delivery and external communication and Gap 5: Gap between perceived service and expected service.

Moore (1987) proposed a service quality improvement model comprising six steps: (1) Obtain Management support and commitment, (2) Identify customer needs and expectation, (3) Evaluate service performance, (4) Develop quality improvement strategy, (5) Test, review and implement strategy, and (6) Monitor progress and performance.

Nash (1988) proposed the service journey model which stressed the importance of customer expectations and espoused that accurate communications and reputation are the key determinants for consumers' selection of a service provider.
The model for service success developed by Beddowes and associates (1987) proposed that for successful quality improvement, a balance between customer and staff expectation is required.

The service delivery model proposed by Johnson (1988) emphasises that experience shapes the expectations for the next stage of the service process and service outcome.

Haywood-Farmer's attribute service quality model proposed that a service has three basic attributes: (a) degree of service customisation, (b) degree of labour intensity and (c) degree of contact and interaction.

Robert Boothe (1990) proposed a conceptual model that emphasised the point that the desired level of quality in a service organisation relates to customers' perceptions and not the perceptions of those who provide the service. It was espoused that Perceiver quality equals Actual quality minus Expected quality, where actual quality is the real level of quality provided to a customer.

The P-C-P attribute model proposed by Philip George (1996) highlighted three attributes as critical determinants in the service environment: (a) Peripheral attributes, (b) Core attributes and (c) Pivotal attributes.

**SERVQUAL**: It is an instrument developed by Zeithaml, Parasuraman and Berry to compare customers' expectations and their perceptions of actual performance. It has five generic dimensions or factors: (a) Tangibles – Physical facilities, equipment and appearance of personnel. (b) Reliability – Ability to perform the promised service
dependably and accurately. (c) Responsiveness – Willingness to help customers and provide prompt service. (d) Assurance (including competence, courtesy, credibility and security) – Knowledge and courtesy of employees and their ability to inspire trust and confidence, and (e) Empathy (including access, communication, understanding the customer) – caring, individualised attention the firm provides its customers. The SERVQUAL instrument has two sets of 22 statements each that measure the performance across these five dimensions in terms of perception and expectation respectively.

Approaches to Quality: The word ‘quality’ has different meanings and can be used in different ways. Garvin (1984) identified five categories or approaches to the concept of quality: (a) The transcendent approach. (b) The manufacturing-based approach, (c) The user-based approach. (d) The product-based approach and (e) The value-based approach. The transcendent approach follows the Pocket Oxford Dictionary’s definition – ‘degree of excellence, relative nature’. Quality in this sense is innate excellence. It reflects the ‘best’ there is. For example, a five-star hotel would be classed as a quality hotel, as opposed to a one-star, family-run hotel.

The manufacturing-based approach relates to conformance with design or specification. A quality service or product would be one which was free of errors, where an error would be defined as non-compliance with specification. The performance of a child playing a simple piece of music with no wrong notes and the correct timing could, with this approach, be classified as a quality performance. While a concert pianist playing a difficult piece of music by A.R. Rahman and hitting the odd wrong note, could be
classified as of lower quality. The user-based approach adopts the attitude that, if a service meets the requirements of the user, then it is a quality service. Another phrase commonly used with this approach is fitness for purpose. The product-based approach is a quantitatively based approach, and considers measurable characteristics. In most cases, more equates with better, and is thus deemed to be of higher quality. The value-based approach is based on customs and traditions. If the service conforms to traditional beliefs and emotions, it is perceived to be of high value.

A Services Gap Model is presented in Figure 1-1. This is an adaptation of the model developed by A. Parasuraman and associates (original model shown in Figure VI-B in Annexure VI). The various service gaps in the model are: Gap 1 - the overall gap between service provider and consumer which implies that many organisations just do not understand what consumers expect in a service. Gap 2 -service organisation often experience great difficulty in designing the service which requires translation of understanding of needs into design and delivery specifications, Gap 3 - even when formal standards or specifications for maintaining service quality are in existence, the delivery of quality service is by no means certain, Gap 4 - the employees especially customer contact employees (front-line staff) lack understanding of procedures and company strategy, Gap 5 - customers do not perceive the service as expected by the organisation, Gap 6 - actions of customer contact employees, promises or guarantees made by the organisation and other forms of communication by a service organisation can affect consumer expectations when promises made are not kept, Gap 7 - this gap represents the key challenge - to ensure good service quality, the provider must meet or exceed
customer expectations. The model espouses that service quality gap is the result of the gap between consumer's expected quality and perceived quality.

**Need for the Study:** An attempt has been made to study a range of services which have differing behaviours and attributes and which were of tropical interest in India at the time of planning the research. Research on service quality is in its nascent stage in India and literature concentrates only on American and European service industries.

**Objectives of the Research:** The Objectives of the research were:

(a) To study the market scenario of select services at Chennai, namely, Civil Aviation, Banking, Education, Cellular mobile telecommunications and Fast-food restaurants.

(b) To ascertain consumers' expectations and satisfaction level versus service delivery.

(c) To ascertain the gaps in service quality and their determinants.

(d) To suggest measures for quality improvements.

**Scope of the Study:** The study encompasses five services from Indian industry, namely. Civil Aviation, Banking, Cellular Mobile Telecommunication, Education and Fast-Food. The sub-themes comprise market behaviour, service quality and its determinants, customers' expectations and satisfaction level, service quality gaps, demographic influences, customer management and service marketing and management strategies.
Figure 1-1
Service Quality Gaps Model

GAP 1: KNOWLEDGE GAP

GAP 2: DESIGN GAP

GAP 3: DELIVERY GAP

GAP 4: INTERNAL COMMUNICATION GAP

GAP 5: PERCEPTIONS GAP

GAP 6: EXTERNAL COMMUNICATION GAP

GAP 7: SERVICE QUALITY GAP

Customer Needs & Expectations

Management Understanding Of These Needs

Translation Into Design / Delivery Specifications

Execution Of Design / Delivery Specs

Action of Customer Contact Employees & Promises Made by Organisation / Employees

Customer Perceptions Of Service

Customer Interpretation Of Actions & Promises

Customer Experience Relative To Expectations
**Criteria for Selection of Study Services:** The services for the study were selected on the basis of: (a) Developments in the Indian Scenario, (b) Nature of Service Act, (c) Relationship with Customers, (d) Customisation and Judgement, (e) Nature of Demand and Supply and (f) Method of Service Delivery.

The primary criteria for choice of study services was the developments in India at the dawn of the new millennium. Despite the "Open Sky" Policy which emanated after the liberalisation initiatives of Former Prime Minister Mr. Narasimha Rao and Finance Minister Mr. Manmohan Singh, the number of airlines operating in the country has declined. Even those in operation are facing a gamut of problems, the main problem area being service quality. Similarly, the Banking industry has undergone a sea change. The Nationalised Banks were riding a success wave until private and foreign banks entered the scene in the last decade. With innovative strategies coupled with a technology-edge, they weaned the customers away. With finger-tip operations becoming the order of the day, the local banks are being given a run for their money. The education scenario is no less complex. Institutions have been mushrooming at an alarming rate with no regard for quality and values. Once considered a noble service, the education services have now succumbed to commercialisation. The inroads created by foreign universities besides a wide range of opportunities to study abroad has had a powerful impact on education in India. The Fast-food restaurants have challenged the very roots of Indian tradition, namely, family get-togethers and home food. The western cuisine is battling it out with its Indian counterpart. The trend today, especially with families where both parents work, is to grab a quick meal. The communications scenario is equally interesting. Mobile
(cellular) telecommunications has revolutionised business and relationships. The citizens are truly mobile now albeit with hitches.

The secondary criteria was also to choose services that differed on various determinants, as depicted in Tables VI-B to VI-I in Annexure VI.

**Sampling Methodology:** The sample size of international research studies on service quality is presented below (figures in parentheses indicates sample size): Twelve Airline’s Customers from U.S. and Europe (1,956); Shippers (148); Mid-size Hospital Patients (443); Television Licence holders (138); Hospital Patients (443); Insurance Brokers (138); Retail banking Customers (439); Information System Managers (138); Fast-Food Customers (327); Under Graduate Students (134); Airlines Customers (310); Motor Vehicle Repair (133); Telephone Service Users (298); Investment Consultancy (128); Banking Customers (277); Electricity service Consumers (126); Chinese Departments Store’s Customers (273); Department Store’s Customers (120); Flight Attendants (266); Shipping managers (114); Telecom Customers (245); Students (109); Adult Patients (244); Mexican and U.S. shoppers (100); Flight Attendants (238); Banking Customers (100); Mental Health Service Patients (236); Pizza restaurant’s Customers (100); Faculty and Students Library Users (231); Library Users (100); Retail Banking Customers (227); Food-Service Outlets’ Customers (95); Retail Store’s Customers (200); Endodontists (95); Aerobic School Students (197); Dental Patients (74); Entertainment Park Visitors (196); Retail Shoppers (70); University Students (195); Hospital Patients (70);
Apparel° Speciality Stores' customers (181); Retail51 Store's Customers (69); Banking52 Customers (180); Banking53 Customers (65); Business54 Unit Managers (173); Students55 (56); Medical56 Service users (159); M.B.A.57 Programme Students (25); Banking58 Customers (156); Banking59 Customers (18); Retail60 Customers (156); Catering61 Service's Customer (10). The average sample size of international studies on service quality is found to be around 250 respondents. The sample size calculations for the current study are presented in Table 1-2 wherein the standard deviation values were obtained from the pilot study. The population was unknown for the study services except in the case of education services. Table 1-3 depicts the sampling methodology.

The meaning of notations used for sample size computation for the current study are:

D = Level of precision (acceptable error); CL = Confidence Level; z = value associated with CL; σ = standard deviation; n = Estimated sample size; N = size of Population; NA = Data Not Available at the time of computation. The formula62 employed for estimating sample size, for Civil aviation, Banking, Cellular mobile telecommunication and Fast-food services, where the size of the population was not known was:

\[ n = \frac{\sigma^2 z^2}{D^2} \]

The formula employed for estimating sample size for education services, where the size of the population was known, was:

\[ n = \frac{\sigma^2 N z^2}{[(N-1) D^2] + (z^2 \sigma^2)} \]
The population for education service comprised 2400 students (40 colleges x 60 students each) pursuing full-time business administration programmes under colleges affiliated to the University of Madras. The list of colleges affiliated to the University of Madras are presented in Table 6-1 in Chapter VI. Also, the reason for increasing the level of precision from 5 to 4 in the case of education and fast-food services is due to the fact that the consumers are dynamically undergoing the service encounter at the time of the survey, unlike the remaining services where responses are mostly based on past encounters.

Table 1-2

<table>
<thead>
<tr>
<th>S.No</th>
<th>Parameter</th>
<th>Civil Aviation</th>
<th>Banking</th>
<th>Cellular Mobile</th>
<th>Education</th>
<th>Fast Food</th>
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<tbody>
<tr>
<td>1</td>
<td>D</td>
<td>+ or -5</td>
<td>+ or 5</td>
<td>+ or -5</td>
<td>+ or -4</td>
<td>+ or -4</td>
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<td>2</td>
<td>D^2</td>
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<td>25</td>
<td>125</td>
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<td>3</td>
<td>CL</td>
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<td>95%</td>
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<td>4</td>
<td>E</td>
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<td>1.96</td>
<td>1.96</td>
<td>1.96</td>
<td>1.96</td>
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<td>5</td>
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<td>6</td>
<td>σ</td>
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<td>37.15</td>
<td>33.29</td>
<td>33.29</td>
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<td>7</td>
<td>N</td>
<td>1303.21</td>
<td>1246.09</td>
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<td>979.064</td>
<td>1106.23</td>
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<td>8</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2400</td>
<td>NA</td>
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<tr>
<td>9</td>
<td>N</td>
<td>200</td>
<td>192</td>
<td>212</td>
<td>200</td>
<td>266</td>
</tr>
</tbody>
</table>

NA – Data Not Available

The actual number of respondents surveyed exceeded estimated sample size by 50. This was employed in order to achieve the estimated sample size after adjusting for possible refusals and rejections.
Sampling Method: Two-stage Area sampling\textsuperscript{63} (Multi-stage sampling) was employed for all services except education services. In the primary stage, the city of Chennai was divided into four geographical zones (Zone 1 to Zone 4) for the purpose of survey, as depicted in the form of a cartogram in Figure VI-A in Annexure VI. The second stage involved collection of samples (respondents utilising the study services) within each geographical area. In the case of education services, proportionate stratified sampling was employed, as depicted in Table 1-4. It can be seen from Table 1-4 that the majority of respondents comprised students pursuing full-time business administration programmes in engineering colleges, as such colleges accounted for nearly three-fifths of the educational institutions affiliated to the University of Madras, at the time of the survey.

Methods of Data Collection: Survey method was employed for the customers of the five services under study. Unstructured interviews were conducted with employees of various organisations related to the study services. In some cases retired (superannuation and voluntary) employees were also interviewed.

Tools of Data Collection: Structured questionnaire were employed for each of the five services (Annexures I to V). The profile of the questionnaires is shown in Table 1-5. The main instrument in the questionnaire was given an appropriate name (adapted versions of SERVQUAL).
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Parameters</th>
<th>Civil Aviation</th>
<th>Banking</th>
<th>Cellular Mobile</th>
<th>Education</th>
<th>Fast-Food</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Population (Customers)</td>
<td>Airlines on Domestic routes across India</td>
<td>Nationalised Banks in India</td>
<td>Cellular Mobile Services in India</td>
<td>Students of Educational Programmes in Business Administration in India</td>
<td>Pizza (Fast-Food) Restaurants in India</td>
</tr>
<tr>
<td>2</td>
<td>Frame (Customers)</td>
<td>Airlines on Domestic routes from Chennai</td>
<td>Nationalised Banks at Chennai</td>
<td>Cellular Mobile Services At Chennai</td>
<td>Students of Full-Time Post-Graduate Programmes in Business Administration at Chennai</td>
<td>Pizza (Fast-Food) Restaurants at Chennai</td>
</tr>
<tr>
<td>3</td>
<td>Sampling Method</td>
<td>Multi-stage Area Sampling</td>
<td>Multi-stage Area Sampling</td>
<td>Multi-stage Area Sampling</td>
<td>Proportionate Stratified Sampling</td>
<td>Multi-stage Area Sampling</td>
</tr>
<tr>
<td>4</td>
<td>Estimated sample size</td>
<td>200</td>
<td>192</td>
<td>212</td>
<td>200</td>
<td>266</td>
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<tr>
<td>5</td>
<td>Attempted</td>
<td>250</td>
<td>242</td>
<td>262</td>
<td>250</td>
<td>316</td>
</tr>
<tr>
<td>6</td>
<td>Actual sample size</td>
<td>210</td>
<td>220</td>
<td>215</td>
<td>230</td>
<td>315</td>
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</tbody>
</table>
Table 1-4

Proportionate Stratified Sampling for Education Services

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Category</th>
<th>Number of Colleges</th>
<th>Estimated Sample Size</th>
<th>Attempted Sample Size</th>
<th>Actual Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Arts &amp; Science College</td>
<td>12 (30)</td>
<td>60 (30)</td>
<td>70</td>
<td>61 (26.52)</td>
</tr>
<tr>
<td>2</td>
<td>Engineering College</td>
<td>23 (57.5)</td>
<td>115 (57.5)</td>
<td>145</td>
<td>134 (58.26)</td>
</tr>
<tr>
<td>3</td>
<td>Other Colleges</td>
<td>5 (12.5)</td>
<td>25 (12.5)</td>
<td>35</td>
<td>35 (15.22)</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>40 (100)</td>
<td>200 (100)</td>
<td>250</td>
<td>230 (100)</td>
</tr>
</tbody>
</table>

(Figures in parentheses indicate percentage)
Source: Annual Report, University of Madras, 2002.

Table 1-5

Profile of Structured Questionnaires used for the Study

<table>
<thead>
<tr>
<th>Main Instrument Used in the Corresponding Questionnaires</th>
<th>Number of Questions Inclusive of Main Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Closed-ended</td>
</tr>
<tr>
<td>AIRQUAL comprising 39 attributes</td>
<td>7</td>
</tr>
<tr>
<td>BANKQUAL comprising 31 attributes</td>
<td>5</td>
</tr>
<tr>
<td>CELLQUAL comprising 34 attributes</td>
<td>5</td>
</tr>
<tr>
<td>EDUQUAL comprising 35 attributes</td>
<td>5</td>
</tr>
<tr>
<td>FOODQUAL comprising 28 attributes</td>
<td>5</td>
</tr>
</tbody>
</table>
Null Hypotheses Tested: Null hypotheses were framed for the services under study and are mentioned in the following paragraphs, service-wise.

Null Hypotheses for Civil Aviation: The null hypotheses framed for Civil Aviation service were: There is no significant difference in the ratings for service encounter and logistics management with respect to: Age groups ($H_{01}$) (b) Occupation ($H_{04}$) (c) Income groups ($H_{07}$)

There is no significant difference in the ratings for value added services with respect to: (a) Age groups ($H_{02}$) (b) Occupation ($H_{08}$) (c) Income groups ($H_{08}$)

There is no significant difference in the ratings for reliable customer management and service guarantees with respect to: Age groups ($H_{03}$) (b) Occupation ($H_{06}$) (c) Income groups ($H_{09}$)

Null Hypotheses for Banking: The null hypotheses framed for Banking service were: There is no significant difference in the ratings for willing and motivated personnel apropos: (a) Age groups ($H_{01}$) (b) Occupation ($H_{07}$) (c) Monthly Income ($H_{013}$).

There is no significant difference in the ratings for conducive internal environment apropos: (a) Age groups ($H_{02}$) (b) Occupation ($H_{08}$) (c) Monthly Income ($H_{014}$).

There is no significant difference in the ratings for uniform service across branches apropos: (a) Age groups ($H_{03}$) (b) Occupation ($H_{09}$) (c) Monthly Income ($H_{015}$).
There is no significant difference in the ratings for reliable and standardised service apropos: (a) Age groups ($H_{04}$) (b) Occupation ($H_{010}$) (c) Monthly Income ($H_{016}$).

There is no significant difference in the ratings for information management apropos: (a) Age groups ($H_{05}$) (b) Occupation ($H_{011}$) (c) Monthly Income ($H_{017}$).

There is no significant difference in the ratings for community welfare apropos: (a) Age groups ($H_{06}$) (b) Occupation ($H_{012}$) (c) Monthly Income ($H_{018}$).

**Null Hypotheses for Cellular Mobile Telecommunications:** The null hypotheses framed for Cellular mobile telecommunications services were: There is no significant difference in the ratings for diversity, intensity and depth of service apropos: (a) Age groups ($H_{01}$) (b) Hierarchical position ($H_{03}$) and (c) Cellular mobile telecommunications companies ($H_{05}$).

There is no significant difference in the ratings for handling of critical incidents apropos: (a) Age groups ($H_{02}$) (b) Hierarchical position ($H_{04}$) and (c) Cellular mobile telecommunications companies ($H_{06}$).

The rankings by male respondents and female respondents are identical for (a) Brand Name ($H_{07}$), (b) Schemes ($H_{08}$), (c) Pricing ($H_{09}$), (d) Advertising ($H_{010}$), (e) Brand Ambassadors ($H_{011}$), (f) Customer Service ($H_{012}$), (g) Office / Agent proximity ($H_{013}$),
(h) Territorial coverage ($H_{014}$), (i) Value-added services ($H_{015}$), (j) Promotional offers ($H_{016}$) and (k) Recommendations ($H_{017}$).

The respondents are not applying essentially the same standard in ranking the reasons for choice of mobile service provider ($H_{018}$).

**Null Hypotheses for Education:** The null hypotheses framed for Education service were: The rankings by male respondents and female respondents are identical for (a) Results ($H_{01}$), (b) Discipline ($H_{02}$), (c) Transportation ($H_{03}$), (d) Infrastructure ($H_{04}$), (e) Special status ($H_{05}$), (f) Specialisation ($H_{06}$), (g) Accessibility ($H_{07}$), (h) Special facilities ($H_{08}$), (i) Residential facilities ($H_{09}$), (j) Recommendation by friend / relative ($H_{010}$), (k) Ward of employed staff ($H_{011}$), (l) Placement record ($H_{012}$), (m) Fee charged ($H_{013}$), (n) Admission compulsion ($H_{014}$), (o) Canteen / dining facilities ($H_{015}$), and (p) Other reasons ($H_{016}$).

**Null Hypotheses for Fast-Food:** The null hypotheses framed for Fast-food service were: The rankings by male respondents and female respondents are identical for (a) Additional free pizza ($H_{01}$), (b) Complimentary soft drinks ($H_{02}$), (c) Discount coupons ($H_{03}$), (d) Gift vouchers ($H_{04}$), (e) Pizza eating contest ($H_{05}$), (f) Gifts / discounts for bulk ordering ($H_{06}$), (g) Discounts for repeat orders ($H_{07}$), (h) Invites to events ($H_{08}$), (i) Club Membership ($H_{09}$), (j) Surprise gifts ($H_{010}$), (k) Gifts / coupons for constructive suggestions ($H_{011}$), and (l) Food festivals ($H_{012}$).
Analytical Tools:

**Factor Analysis:** Factor analysis[^64] denotes a class of procedures primarily used for data reduction and summarisation. There may be a large number of variables, most of which are correlated and which must be reduced to a manageable level. In Principal Component Analysis, the total variance in the data is considered. The primary concern is to determine the minimum number of factors that will account for maximum variance. The factors are called principal components. Although the initial or unrotated factor matrix indicates the relationship between the factors and individual variables, it seldom results in factors that can be interpreted. Varimax procedure is an orthogonal (axes are maintained at right angles) rotation method that minimises the number of variables with high loadings on a factor, thereby enhancing the interpretability of the factors. This results in factors that are uncorrelated. Factor-loadings are those values which explain how closely the variables are related to each one of the factors discovered. Communality shows how much of each variable is accounted for by the underlying factor taken together.

**Regression Analysis:** Multiple regression[^65] involves a single dependent variable and two or more independent variables. $R^2$, coefficient of multiple determination, is adjusted for the number of independent variables and the sample size to account for diminishing returns. After the first few variables, the additional independent variables do not make much contribution.

**One-Way Analysis of Variance (ANOVA) Test:** The basic principle of ANOVA[^66] is to find out the difference among the mean of the population by examining the amount of variation with in each of those samples relative to the amount of variation between the
samples. In short we have to make two estimates of population variance example one based on between samples variance and the other based on with in sample variance then the said two estimates of population variance are compared with F-test where in we obtain

\[ F = \frac{\text{Estimate of population variance based on between samples variance}}{\text{Estimation of population variance based on within samples variance}} \]

**Mann-Whitney U Test:** In U test\(^7\) two samples are combined and the cases are ranked in order of increasing size. The test statistic \(U\) is computed as the number of times a score from sample 1 or group 1 precedes a score from group 2. In case of ties, average ranks must be assigned. If the samples are from the same population, the distribution of scores from the two groups in the rank list should be random. An extreme value of \(U\) would indicate non-random pattern, pointing to inequality of the two groups.

**Kendall's Coefficient of Concordance \(w\) Test:** The coefficient of concordance\(^8\) is represented by the symbol “\(w\)” and is used for determining the degree association among several (k) sets of ranking of \(N\) objects or individuals. It is used when there are 3 or more sets. The procedure for computing and interpreting Kendall’s coefficient of concordance \((w)\) is as follows

\[
W = \frac{S}{0.083 K^2 (N^3 - N)}
\]
Cronbach Alpha Reliability Test: Reliability refers to the extent to which a scale produces consistent results if repeated measurements are made. The coefficient alpha, or Cronbach alpha, is the average of all possible split-half coefficients resulting from different ways of splitting the scale items. This coefficient varies from 0 to 1, and a value of 0.6 or less generally indicates unsatisfactory internal consistency reliability.

Limitations of the Research Study: The limitations of the study are:

(a) The study was restricted to the city of Chennai due to time and cost constraints and hence the findings cannot be extrapolated for other cities or regions.

(b) The study is focused on service quality only and other dynamics of operations and service management are not under its purview.

(c) The Hawthorne effect cannot be totally eliminated.

(d) The data was collected during 2001 and 2002 and there may be changes in the service sector environments in the future which in turn may influence changes in service quality levels.

Chapterisation: Chapter one titled "Introduction" traces the growth of services industry, especially that of the service sector in India. It presents the association between service branding and quality besides the dimensions of service quality. It traces the various models of service quality developed in the last two decades. It also presents the need, objectives, scope, research methodology and limitations of the study. It concludes with the chapterisation scheme.
Chapter two “Review of Literature” presents the research and investigate work done on various services with reference to service quality. It commences with the highlights of the research on the use of SERVQUAL instrument. The research on the five study services, is presented in view of the fact that these services are the focus of the current research study. The chapter also reviews research work on total quality management, customer satisfaction, customer relationship management and loyalty. It concludes by highlighting the focus of the current study and how it differs from earlier work.

Chapter three titled “Quality Gaps in Civil Aviation Industry” gives an overview of airlines bearing the stamp of quality across the world and the passenger traffic on Indian domestic routes. The demographic profile of respondents and prevailing market scenario followed by data analysis and interpretation of quality attributes in the civil aviation industry, its determinants, quality gaps and quality dimensions.

Chapter four titled “Quality Gaps in Banking Services” gives an overview of service quality in banking and the banking scenario at Chennai. The demographic characteristics of the respondents is profiled and the prevailing market behaviour is presented followed by data analysis and interpretation of quality attributes in the banking industry, its determinants, quality gaps and quality dimensions.

Chapter five titled “Quality Gaps in Cellular Mobile Telecommunication Services” gives an overview about the telecommunication sector in India and cellular services scenario at Chennai inclusive of subscriber base. The demographic profile of respondents and the
prevailing market scenario is presented followed by data analysis and interpretation of quality attributes in the cellular mobile industry, its determinants, quality gaps and quality dimensions.

Chapter six titled “Quality Gaps in Higher Education” gives an overview of global management education scenario as well as the management education scenario in India. The chapter also presents an analysis of the quality prevailing in Indian Business Schools at Chennai. The demographic profile of respondents and the prevailing market scenario is presented followed by data analysis and interpretation of quality attributes in education (management), its determinants, quality gaps and quality dimensions.

Chapter seven titled “Quality Gaps in Fast-Food Industry” gives an overview of the evolution of pizza restaurants and the service quality in fast-food. The demographic profile of respondents and the prevailing market scenario is presented followed by data analysis and interpretation of quality attributes in the civil fast-food industry, its determinants, quality gaps and quality dimensions.

The Strengths, Challenges, Opportunities and Threats (SCOT) analysis for each service has been compiled and presented in their respective Chapters (Chapters III to VII). The final chapter, namely, Chapter Eight titled “Conclusions” presents the summary of findings for each service, as a result of surveys and interviews conducted. The recommendations for closing quality gaps and measures for improving the quality of service are also presented.
Endnotes:


5 ibid., p 37.


8 Iwaarden, Jos Van, Van Der Wiele. Ton *A Study on the Applicability of SERVQUAL Dimensions for Web Sites*.


17 Van Dyke, Thomas, P., et al. “Cautions on the Use of SERVQUAL Measure to Assess the Quality of Information System Services” University of Nevada.


21 Mels, Gerhard, op. cit.

22 Asubonteng, Patrick, op. cit.


40 Van der Qal, R., op. cit.


Lee, Haksik, op. cit.

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Asubonteng, Patrick, op. cit.

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Asubonteng, Patrick, op. cit.


63 ibid., p 329.

64 ibid., pp 558-570.

65 ibid., pp 502-521.

66 ibid., pp 469-482.

67 ibid., pp 455-456.

