Chapter 3

Research Methodology

3.1 Research Problem: Overview

Hospital sector is emerging as a pleasure giving industry in India; by reaping cartloads of bucks for the doctors and hospital management, by employing thousands of hands and being their source of bread and butter, by curing the sufferers, giving health to them and pleasure to their loved ones. Today’s evergreen, ever-changing competitive will allow only those businesses to flourish which have dire elements of flexibility with dreams to reach the sky. Hence, a modern hospital must deadly offer the best product, fastest service, maintain the confidentiality of patients and engross a hygienic environment at all hours, at all costs. It is mandatory for all hospitals to have the best possible and latest information of all government laws, policies, amendments and acts. Hence, a comparative analysis of Government and private sector hospitals becomes the need of the hour to understand the situation of hospitals from both customers and the hospital employees (viewpoint). The Indian health system includes Government and private hospitals as well as specialized Ayurvedic, Homeopathic hospitals besides Naturopathic centers and healing-by- nature clinics, offering traditional Indian system of alternative medicine.

Health care sector in India is the dual responsibility of union and state government. State governments of individual states look after proper implementation and execution of services at state level. Central government manages health services in union territories without any legislature. It also has under its domain regulation and development of national standards and regulations, linking the state with funding agencies, rationally distributing the budget allocated by the center to the health department and also sponsor various schemes implemented by the state government. Health care leads the path as one of the largest service sector in India. Despite being ever-changing it is constantly improving for betterment.

The flip side of health care burden in India is that it the governments budgetary plans are a fat lot of help (no use) and Government hospitals dying of starvation, with the middle class feelings running high on the issue of health awareness and they are drifting towards the private health care centers. Spectacular privatization of medical
insurance is making the market fanciful for national as well as international insurance players and for patients as well. The government having mixed feelings in this sector is left with no choice but to institutionalize a support mechanism of Government-private partnership (PPP) in healthcare right from the district level.

The facts speak for themselves that major hurdles limiting the hospital industry to go steady on the road of success are- fragile infrastructure, insufficiency of skilled manpower, immensely flooding patient load, equivocal quality of services, high out of pocket expenditure. Now, it’s high time that these challenges be met with by the Indian hospitals answering these difficulties by managerial skills and policy implementation right from the grass-root level.

This penetrative research is exceptionally exploratory in analysis paying special heed to certain deadly details. Passionate attempts have been done to test a known place of hypothesis. The query which is shaping the base of current study by which means SMS hospital, SDMH hospital, Jaipuria hospital and Fortis hospital is improving their functional presentation. Getting the complete picture out of restless, mentally unstable, time deficient patients, was not a piece of cake. Yet, indomitable efforts were done to pin down information from them. Data gathered by means of questionnaire filled by the patients of the selected hospital handbooks of the hospitals and print literature provided, served as the facts for the investigation.

Research is a perspicacity study with a tenacious target carried out by agility of academicians, to unearth an never-thought-of problem of specific field or area. It has respectable position various fields such as business, economics and politics. Research is the time-bound, fruitful, resultant recipe formed by varied ingredients that include enhancement of the knowledge of the researcher, development of theories, and revision of facts. It cut opens all covers and curtains to denude the root cause of a problem and it discovers and further suggests innovative ways to solve the problem. Methods in research comprises of all those procedures and models that are helpful in performing search. It is device that helps in choosing and performing research work and research design.
3.2 Research Methodology: An Overview

Research is the voyage through unknown paths and pavements to uncharted waters of distant islands for reproduction of new knowledge, excavation of deep-hidden older facts or the use and modification of existing knowledge in an interesting and creative way so as to shape-up new concepts, methodologies and understandings. It may comprise makeup and analysis of previous research to the mark that is leads to innovative and creative outcomes. Research is not an extravagant aerial journey with no set limitations. Indeed it follows strict guidelines with a broad notion of research and experimental development inculcating productive work carried out on a systematic basis in order to increase the level of our sea-of-wisdom, including knowledge of humanity, culture and society, and the use of this stock of knowledge to frame and construct new applications.

“Research comprises defining and redefining problems, formulating hypothesis or suggested solutions; collecting, organizing and evaluating data; making deduction and reaching conclusions; and at last carefully testing the conclusions to determine whether they fit the formulating hypothesis”- Clifford woody.

Two diversified paths namely qualitative and quantitative ultimately lead to one destination building called research. Qualitative studies encompasses in it celestial words and their golden meanings with an objective to capture the aroma, flavour and heavenly complexity of human experience, on the contrary quantitative studies involve mathematical documentation of information obtained from participants to simplify the way to statistical analysis of the findings and the generalization of those conclusions with respect to a wider population. Behind these two main approaches, there are – “important theoretical differences and philosophical assumptions about the nature of knowledge, truth and reality, how this should be recorded, what kinds of methods should be used and the role of the researcher in this process”.

Research is entire, systematized, intellectual, thoroughbred and logical investigation of an problem at hand or in disguise. Science is an understanding of the physical, spacial or material world gained through observation and experiment, by keeping eyes and heart always open and mind alert and receptive. Cornerstone of any research is a basic or primary question feeling abandoned needing the care and shelter of an answer. When out on a research voyage, going thorough parallel research of same
categories, restricts the territories of ongoing work, for its betterment making it manageable, and more closer to its basic, realistic question. Research creates a theory to be proved from the question; the researcher maintains an awareness of the limitations of budget, time and technology on experiments needed to answer the question. Research includes observing and recording the results of the experiments done, generating crude, unfiltered data to approve or disapprove a theory.

A researcher paints an empty canvas, framing steps, discovering blanketed facts, setting up experiments to test, lastly generating digestible, calculable data. Experiments can be tamed, known standards or controls can be deliberately or secretly in corporate in them controls and their large enough sample groups mostly provides statistically valid results. The data gathered is operated upon with the weapon of statistical analysis so that the results born out of it, can flow through your ears into the mind. Data may show trends that may open up the sky for new researchers to start their journey through.

Research includes conclusion, taking a scientific route to reach the destination. Any research will either prove or disapprove the theory. What happened and why did the cookie crumbled that way, needs to be explained by the researcher. Failures, here cannot camouflage the efforts made. Thus, even when a theory is disapproved, valuable data collected during the development and maturation of research may lead to futuristic researches. The results are usually diluted and distributed among the fellow blokes.

3.3 Categories of Research

- **Applied Research**: Applied research adopts practical application of science to unearth meaty issues. It applies and reaches out to some parts of the research communities (the academies) accumulated theories, knowledge, methods, and techniques, for a predetermined, target-oriented objective which may be-state, business, or client focused. Applied research is compared to pure research (basic research) in discussion about research ideals, methodologies, programs and projects. Applied research face-to-face interrogates with practical problems and ai to find best possible solutions for them. It generally employs empirical methodologies. Background of applied research is fishy-stinking-smoky realistic society, so strict research protocols become mandatory to make the surroundings
breathable. For example, “it may be impossible to use a random sample. Thus, transparency in the methodology is crucial. Implications for interpretation of results brought about by relaxing an otherwise strict canon of methodology should also be considered”. Applied research is always specific having a genuine yet urgent problem as its cornerstone. Such research is every time undertaken keeping in mind a specific problem that requires a decision, for example, the improvement of safety in the workplace, or market research. Often this research is restricted to one establishment, business, organization or company. Applied research is designed to solve practical problems of the modern world, rather than to pile up heaps of knowledge for wiser’s intellectual hunger.

- **Exploratory Research**: Exploratory research is conducted to identify misleading aspects and unidentified problem causing features. Management may have spotted out basic problems, but research about them provides a wider perspective and vivid understanding of the dimensions of the problems. Facts and figures provided by an exploratory gives an in-depth knowledge and understanding of any particular situation. But unveiling evidence to pave a path for deciding a specific course of action is not under the dimensions of exploratory research. Usually, exploratory research is conducted with the expectation that its footsteps would guide a subsequent, sister research to provide conclusive evidence. It is extreme waste of time and money to dig directly into the deeper parts of ocean before thoroughly exploring the flora, fauna and ocean waters readily available at the sea shore. (mistake to rush into detailed surveys before less expensive and more readily available sources of information have been exhausted).

- **Descriptive Research**: Tenacious target of any descriptive research is to extract all possible information regarding the current status of the phenomena to describe “what exist” or what is the actual picture of any concerned area in today’s perspective, in accordance with variables or conditions in any given circumstances. Doing such work is no cakewalk, involving various methods like: survey-which describes the status quo, correlation study-which investigates the relationship between variables, developmental studies- which seek to determine time-dependent changes.
• **Quantitative Research:** In Quantitative research, the master does not remain a master but becomes a slave or a gatherer, a gatherer of information, from everywhere, by all means, at any costs. All this collection of facts and numerical data aims to answer a specific research question. Taking this definition one step further, Christiansen inks that “quantitative research is a descriptive type of research where the goal is to attempt to provide an accurate description or picture of a particular situation or phenomenon. Rather than utilizing the cause and effect relationship that are common to quantitative methodologies, qualitative investigations attempt to identify variables that exist in a given situation and at times, to describe the relationship that exists between these variables”. To comprehend this work, statistical data is generally used.

• **Qualitative Research:** It is a kind of merry-go-easy approach. Here the investigator views the phenomena to be investigated with a soft hand and delicate emotions. This research uses methods such as personal accounts, unstructured interviews and participant observation to gain an understanding of the underlying reasons and motivations for people’s attitudes, preferences or behaviours. With this approach, the emphasis is more on generating hypotheses from the data collection rather than testing a hypothesis.

• **Action Research:** This kind of investigative work does not come out floating off the research topic and through the pen on paper. This form of research is wholesomely action packed - where action is both an outcome and a part of the research. The researcher interferes with or intentionally changes what is being researched. The critics of action research argue that since the researcher is changing what is being researched during the process of research, the work cannot be replicated. In absence of its duplication, its findings cannot be tested in other situations. This prevents general knowledge being developed and thus it cannot contribute to theory, this being the unavoidable sin in this thrilling kind of research.

• **Diagnostic Research:** Diagnostic research study is the daughter of descriptive research study but with a different objective. It aims to take the curtains off from the earthly stage to bring into everybody’s notice about what is happening, why it is happening and what can be done about it. It targets in identifying the causes creating a problem and the possible solutions for it. A diagnostic research study
may also be concerned with discovering and testing whether certain variables are associated.

- **Experimental Research:** Science is nothing but experiments - earning smiles out of fruitful works and experiences out of wasteful tasks. Thus, it becomes loud and clear that before conducting an experiment all elementary knowledge regarding its execution is required to obtain useful and valid results. When scientists speak of experiments, by the truest meaning of this word, they mean a true experiment, where they functions like the majesty in heaven, controlling all the factors and conditions. Living-breathing world observations, and case studies, should be better called as observational research, rather than experiments.

### 3.4 Literature Review

This segment of our work analyzes past studies regarding service quality improvement in the hospital industry. The continuing trend to a model of service quality improvement, from personnel counter services to electronic services, is demonstrated. Latest, pocket friendly yet improved service quality should run with the blood in the veins of the hospital sector to maintain competence in the global economy and sustain and exaggerate previous successes. This chapter contributes knowledge and background for hospitals to apply these findings to pain a better shape in the market and also to provide service quality to Customers. Some related studies undertaken in the past are reviewed as follows:

<table>
<thead>
<tr>
<th>Study Reference</th>
<th>Objective</th>
<th>Sampling Method/Sampling Size/Data Source</th>
<th>Data Analysis Method</th>
<th>Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>“T.Dheepa N.Gayathri P.Karthikeyan, (2015)”</td>
<td>To know how to measure the patient’s satisfaction and more critical of the quality of service they experience. To identify.</td>
<td>SM: Multistage sampling method, SS: 286 Respondents were chosen for the study, DS: Self completed questionnaire</td>
<td>• Percentag e analysis, Factor analysis, Multiple regression s.</td>
<td>It was noticed that patient’s were disappoi nted and annoyed. And governm ent.</td>
</tr>
</tbody>
</table>
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| “Zahra Khamda, Nazanin Pilevari (2013)” | • To measure service providers’ perceptions and preferences towards quality of healthcare services  
• To present a model for ranking service quality among four Iranian hospital wards | • SM: Random sampling  
• SS: Health care service providers were chosen from different areas of Iran.  
• DS: 20-item scale questionnaire | • Preference Ranking Organization Method  
Research findings conclude that a sharper way to demystify grades of service of any organization if done according to a ranking process would be more worth. |

| “S. SHARMI LA, DR. JAYAS REE KRISHNAN, (2013)” | • To present an analysis of the literature examine objective information concerning the subject of patient | • SM: Simple Random Sampling  
• SS: 320 respondents were chosen for the study  
• DS: Questionnaire | • Structural equation modeling (SEM)  
Findings once again proved that in private hospitals doctors are... |
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<table>
<thead>
<tr>
<th><strong>“Fethi Calisir, Cigdem Altin Gumussoy, Ayse Elvan Bayraktaroglu and Burcu Kaya, (2012)”</strong></th>
<th><strong>To evaluate the effect of service quality dimensions on customer satisfaction.</strong></th>
<th><strong>To understand the usage of modified SERVQUAL model</strong></th>
<th><strong>To evaluate the effect of service quality dimensions on customer satisfaction.</strong></th>
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<tr>
<td></td>
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<td></td>
<td><strong>SM: Random Sampling method</strong></td>
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<td></td>
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<td><strong>SS: 292 Patients from different hospital types of turkey</strong></td>
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<td></td>
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<td><strong>DS: Survey item were adopted for questionnaire</strong></td>
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<td></td>
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<td></td>
<td><strong>Regression analysis</strong></td>
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<td></td>
<td><strong>Cronbach’s alpha,”</strong></td>
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<td></td>
<td><strong>The effect of SERVQUAL dimensions on customer satisfaction and return intention was undergone thoroughly for each type of</strong></td>
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</table>

sincerely concerned about the patients, doctors and nurses work more faithfully there, and private hospitals are leaving no stone unturned in order to provide comfort to their patients.
Conclusions pointed out that empathy was the deciding ingredient regarding customer satisfaction for all hospital types showing that customer’s desire and welcome a customer-focused service concept.

<table>
<thead>
<tr>
<th>“Johan de Jager and Therese du Plooy, (2011)”</th>
<th>To study the in-patients and out-patients expectations, perceptions and satisfaction related to services.</th>
<th>SM: Random sampling method</th>
<th>Kolmogorov-Smirnov Test method</th>
</tr>
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<tbody>
<tr>
<td></td>
<td>SS: 448 Patients were chosen from provincial hospital in Gauteng, South Africa.</td>
<td>SS: 448 Patients were chosen from provincial hospital in Gauteng, South Africa.</td>
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<td></td>
<td>DS: Personal Interview method</td>
<td>DS: Personal Interview method</td>
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<td>KruSkall Wallis test’</td>
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<td></td>
<td>The findings pointed out that patients from stem to stern wish ultimate level of response, but only birdfeed of it is</td>
<td>hospital.</td>
<td>hospital.</td>
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</table>

The findings pointed out that patients from stem to stern wish ultimate level of response, but only birdfeed of it is
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being given, resulting in failure on hospital part and dissatisfaction on customer part.

“Dr. Mamta Brahmbhatt, Dr. Narayan Baser, Prof. Nisarg Joshi (2011)”

- To explore the concept of service quality in a health care setting
- **SM:** Convenient sampling method
- **SS:** 246 patients were chosen for the study
- **DS:** Structured Questionnaire

- **Mean score**
- **Comparative analysis**

The results revealed that the customer's perceptions did not exceed their expectations, as they were dissatisfied with the level of healthcare services rendered by both Government and private sector.
SS: 234 respondents  
DS: Designed Questionnaire | “Regressi on Analysis  
ANAVA”  
The standards of customer service and products in Tata Motor’s Company brings and retains customer satisfaction, and it has been seen that there is a positive relationship between customer satisfaction and customer loyalty in the context of the Indian automotive industry. |
| “Figen Yesilada and Ebru Direktor, (2010)” | To test the dimensionality of the SERVQUAL instrument in the Northern | SM: Systematic sampling method  
SS: 806 systematically | Gap analysis gave clear indications that |
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Cyprus health care industry

- To assess the service quality provided in Government and private hospitals in Northern Cyprus
- To identify the service quality dimensions that play important role on patient satisfaction.

selected patients

**DS:** Questionnaire of two phases

private hospitals have diminutive gaps than Government hospitals in all three service quality dimensions. Lastly, logistic regression findings disclosed that although all three dimensions have somewhat their respective effects on patient satisfaction, yet in Government hospitals tangibles dimension seems to exert bought significa
“Prabha Ramseook-Munhurrun, Soolakshna D. Lukea-Bhiwajee, Perunjodi Naidoo (2010)”

- To obtain a better understanding of the extent to which service quality is delivered within the Mauritian Government service by drawing on front-line employees (FLE) and customer perceptions of service quality.

| SM: Non-probability convenience sampling |
| SS: 250 Customers |
| DS: Survey Questionnaires |

- “Paired t-test”

- The conclusions drawn depict that front-line workforce and actual clients had a similar opinions pool in terms of the gaps between their perceptions and expectations in this Government organization.

- The findings followed the footsteps of the studies of Bitner et al. (1994)
and Schneidere and Bowen (1985) where all bloke involved (employees and customers) share similar, harmonious sentiments in relation to the level of service quality offered and practiced in any organization.

“Rahim Mosahab, Osman Mahamad, T. Ramayah (2010)”

- To determine the quality of services offered by Sepah Bank
- To study the relationship between the service quality, satisfaction and loyalty.

- **SM:** Cross sectional method.
- **SS:** 147 Customers of bank
- **DS:** Questionnaires

- “Pair student T test”
- “Spearman correlation index.”
- “Beta (β) meaningful level test in linear regression”

- This research again proved that consumer satisfaction acts as a mediator in decoding the effects of...
service quality on service loyalty. These conclusions were further elaborated.

<table>
<thead>
<tr>
<th>“K. Ravichandran, B. Tamil Mani, S. Arun Kumar, S. Prabhakaran (2010)”</th>
<th>To examines the influence of perceived service quality on customer satisfaction.</th>
<th>SM: Convenience sampling</th>
<th>“Regression Analysis”</th>
<th>Present study demystifies that service quality level of private banks was happily satisfactory and the regression on wholesome service quality figures out varied servqual items which uniformly occupied all the spaces and</th>
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<td></td>
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<td>SS: 300 respondents</td>
<td>DS: undisguised structured questionnaire</td>
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<tbody>
<tr>
<td>• To enhance service quality in a hospital using data mining.</td>
<td>• SM: Random sampling method</td>
<td>• SS: Patients of different hospitals of India</td>
<td>Results establish the authenticity of this weighting model.</td>
</tr>
<tr>
<td>• DS: Questionnaire method</td>
<td>• SS: Patients of different hospitals of India</td>
<td></td>
<td>The proposed model would be meaningfully worth of for understanding the patient’s outlook on hospital services experienced by him like technical efficiency, reliability and levels of sanitation under a limited research environment.</td>
</tr>
<tr>
<td>Mohamma d Muzahid Akbar and Noorjahan Parvez (2009)</td>
<td>To investigate the effects of customers perceived service quality, trust, and customer satisfaction on customer loyalty</td>
<td>SM:</td>
<td>SS: 304 customers of a major private telecommunication company operating in Bangladesh</td>
</tr>
</tbody>
</table>
| Dr. D. Selcen Aykac, Dr. Serkan Aydin, Dr. Metin Ates, Dr. Ayse Tansel Cetin, | To understand the factors that underly the perception of customers regarding service | SM: | Purposive Convenient Sampling | SS:250 Inpatients of the marmara university hospital | DS: Close | Regression Analysis Method | The result of the study indicates that the “service quality of Marmara universit
| (2007)” | quality in healthcare industry  
• To study the dimensions of service quality and their effect on customer satisfaction | ended questionnaire | y hospital is perceived to differ from a perfect hospital on all SERVQUAL dimensions.” |
| “Anders Gustaffsson, Michael D. Johnson, Inger Roos (2006)” | • To examine the effects of customer satisfaction, affective commitment and calculative commitment on retention.  
• To examines the potential for situational and reactional trigger conditions to moderate the satisfaction–retention relationship. | • SM: Simple Random Sampling  
• SS: 2734 respondents  
• DS: Qualitative Interview method | • “Churn Models”  
• Calculative commitment, an element not explored in usual studies of retention, has a considerable negative effect on churn. This calculative commitment becomes worth-considering as it retains the competit |
| “Hanjoon Lee, Linda M. Delene, Mary Anne Bunda, Chankon Kim (2000)” | • To study the psychometric properties of three different measurements of healthcare service quality as assessed by physicians. | • **SM:** Random Sampling Method<br>• **SS:** 1,428 Physicians were selected from American Medical Association<br>• **DS:** Questionnaire divided into four sections | • Multitrait-multi method”<br>This study focused its research objective to physicians’ perceptions toward healthcare service quality. Under CQI or TQM, patients’ perceptions or expectations regarding healthcare services also play a mandatory role. |
3.5 Research Gap

Literature have been reviewed in detail to draw a clear understanding of the previous studies made on customer satisfaction practices in different industries particularly hospitals. As a result of the studies of the previously published literature it has been understood and discovered that the studies in the area of customer satisfaction related parameters with respect to hospital sector in India, is rather a lesser explored one. This has led to develop an interest to conduct a research work on customer satisfaction practices in hospital sector.

- In published literatures it has been observed that no research has been made in the area of Service quality related parameters with respect to hospitals of Jaipur, Rajasthan.

- This has led to develop an interest to conduct a research work on service quality related practices in Hospitals of Jaipur Rajasthan.

3.6 Statements of Problem

- Hospital sector has emerged to be beneficial for the patients (customers).

- A hospital to survive in this cut-throat competition it is important to offer the best product, with quick service, with complete security features and hygiene environment

- It is also important for a hospital to be up to date with the government laws and policies; therefore a comparison between Government and private sector hospitals is also necessary to understand the situation of hospitals from both customers and the hospital employees.

3.7 Objectives of the Study

- To study the customer expectation and perception of service quality from government and private sector hospitals.

- To examine the perceived service quality of customers of government and private sector hospitals.

- To explore the changes in customer’s expectation from hospitals.
• To identify the truth that whether hospitals consider both the patients’ satisfaction and perceived service quality for the stability of a health care organization in a competitive environment.

• To investigate different determinants of service quality: - satisfiers and dissatisfies.

3.8 Hypotheses

Hypothesis is a statement of predictions which is to be proved or refused after testing. It gives the prediction on what can happen in the research study. It is not necessary that all the research studies have hypothesis, but a study can contain more than one hypothesis. Hypothesis must clearly explain the relationship between all the determined variables. It must provide clear direction to the interpretation of available data. A research problem cannot be solved unless it is projected in a hypothesis from. It can neither be to exact nor too basic. Hypothesis which is being formulated for the purpose of testing, it should be done in such a manner that it can be replicate by others. It is not necessary for the hypothesis to be right or wrong in each situation.

Hypotheses

<table>
<thead>
<tr>
<th>H0 1: There is no significant difference between expected service quality by customers/patients of government and private hospitals</th>
</tr>
</thead>
<tbody>
<tr>
<td>H0 2: There is no significant difference between perceived service quality by customers/patients of government and private hospitals</td>
</tr>
<tr>
<td>H0 3: There is no significant difference between expectations and perceptions of service quality by customers within selected hospitals.</td>
</tr>
</tbody>
</table>

3.9 Significance of the Study

This study attempts to know the relationship between the customer satisfaction and the service quality through selected government and private sector hospitals. This study, aimed at relationship building through identifying customer satisfaction variables, and developing a conceptual framework of relationship marketing practices in Government and private sector hospitals.
To The Hospital Sector:

This study will definitely be vital for the hospital sector as the hospitals will come across the information related to customer satisfaction practices. The study will provide them with feedback from patients/customers about the customer satisfaction practices and will also help the hospital sector to maintain their reputation. This will further help them to improve their productivity and competence. It will also provide them with information about the satisfaction level of their patients/customers.

To The Patients/Customers of the Hospital Sector:

The study will provide a comparative description of the pros and cons of the service of the hospital and satisfaction level of the patients of the hospitals. This will surely help them to retain and understand the existing standards with respect to customer satisfaction practices in the industry.

To The Academicians, Researchers and Students:

The research will provide information for academicians, students and readers who are interested in methods and procedures of management research especially for customer satisfaction related activities. This research will let them know about the levels of customer satisfaction in the hospital sector. It will also provide them with the information on the perception and expectation of the customers using the services of the hospital sectors in Jaipur district.

3.10 Scope of the study

Healthcare industry occupies an important place in the life of every human being now a day; hence the study becomes all the more important. The study aims to find the customer satisfaction practices that has been adopted by the Government & private sector hospitals, whether the hospitals are providing necessary satisfaction measures in SMS, SDMH, Jaipuria and Fortis hospital. The scope of the current study named “Impact of Service Quality on Customer Satisfaction in Hospitals (A Comparative Study of Selected Government and Private Sector Hospitals)” is confined to all the four hospitals of Jaipur district been selected for the study. This study helps to find out the satisfaction levels of the customers using the services of selected hospitals and also helps in improving the performance of the hospitals.
3.11 Research Design

A research design is a logical and systematic plan prepared for directing a research study. It specifies the objective of the study, the methodology and techniques to be adopted for achieving the objectives. It constitutes the blueprint for the collection, measurement and analysis of data. A research design is the program that guides the investigators in the process of collecting, analyzing and interpretation observation. It provides a systematic plan of procedures for the researcher to follow.

A research design is indispensable for a research project. However, it is not a precise and specific plan like a building plan to be followed without deviations, but rather a series of guideposts to keep one going in the right direction. It is tentative plan which undergoes modifications, as circumstances demand, when the study progresses, new aspects, new conditions and new relationships come to light and insight into the study deepens. Thus a research design “represents a compromise dictated by many practical considerations. Hence without studying research design at the beginning the conclusion normally be feeble and fail to give answer for the research questions.

**Research Design:** Present research is Exploratory Research Design.

The sampling arrangement for the study has been prepared depending on the background of the study. The standards on which sampling was conducted are as follows:

**Target population or universe:** Patients of the selected hospitals

**Sampling method:** Simple random Probability sampling

**Sampling Formula**

\[
\frac{Z^2 \times P \times (1-P)}{C^2}
\]

\(Z = 1.96\) (95% confidence level)

\(P\) = Percentage of population picking a choice, or proportion.

\(C\) = Confidence interval or marginal error; (+/-4 percentage points).

\[
\frac{3.8416 \times 0.5 \times 0.5}{0.04 \times 0.04} = 600
\]
Sampling Size : 600
Area of Survey : Jaipur district

3.12 Sampling Design

The final study was conducted on patients of the Government and private sector hospitals stated below of Jaipur district of Rajasthan state.

Government and Private Sectors

- Sawai Man Singh Hospital.
- **Rukmani Devi Beni Parsad** Jaipuria Hospital
- Santokba Durlabji Memorial Hospital.
- Fortis Hospital.

<table>
<thead>
<tr>
<th>Area</th>
<th>Sector</th>
<th>Hospital</th>
<th>No. of Patients/Customers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jaipur District</td>
<td>Government</td>
<td>SMS Hospital</td>
<td>150</td>
</tr>
<tr>
<td>Jaipur District</td>
<td>Government</td>
<td>Jaipuria Hospital</td>
<td>150</td>
</tr>
<tr>
<td>Jaipur District</td>
<td>Private</td>
<td>SDMH Hospital</td>
<td>150</td>
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<tr>
<td>Jaipur District</td>
<td>Private</td>
<td>Fortis Hospital</td>
<td>150</td>
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Parameters of choosing these hospitals for the research are:-

- Location of the hospitals
- Number of patients being served in these hospitals is more.
3.13 Sources of Data

Primary data has been collected through questionnaire filled from 600 respondents. The respondents have been selected by simple random probability sampling technique. The division of the data collected was on the following basis:

**Government and Private sector Hospitals**

- Government Sector Hospitals : 300
- Private Sector Hospitals : 300

Primary data has been collected through five point Likert scaled questionnaire.

Secondary data has been collected from hospital’s website, related literature in books and journals both national and international, and hospitals handbooks.

Analysis of data the data has been analyzed using IBM SPSS 22 statistical software.

Place of work and facilities available

The present study aims at the customer satisfaction practices adopted in the SMS, Jaipuria (Government hospitals) SDMH and Fortis hospitals (Private Hospitals); the primary data has been collected from the patients/customers of these hospitals of Jaipur district.

Study largely depends on primary sources of data. In respect to support the information’s reference, secondary data has been taken from journals, articles, internet both published and unpublished.

3.14 Tools for Data Analysis

The collected data was organized in the required form and analyzed to get the results out of it. There are numerous methods to do this and so it is decided in advance which method would be most suitable for this study. For the analysis purpose in the present study statistical tools such as independent t-test etc have been used. The data has been put in a tabular form and pie charts are drawn on the basis of which comparisons have been drawn between the hospitals. For the purpose of hypothesis testing, various tests have been applied. Furthermore, diagrammatic and tabular representation of data makes the comparison easy to understand and interpret through it is very difficult task to compare the data.
3.15 Hypotheses Testing

Hypothesis testing is a process of making decisions related to the research problem by taking into consideration the related available data. It is a logical method of making authenticate decisions. In hypothesis testing we take one statement as true, in which there is no relationship between the variables which is known as “null hypothesis”. We can also take one statement as false, which says there is a relationship between variables, which will be known as “alternative hypothesis”. Subsequent to this, null hypothesis will be tested to accept or reject the statements. Null hypothesis is tested with the help of checking the level of significance. The level of significance is the probability on the basis of which the null hypothesis is accepted or rejected. The commonly used level of significance is 1%, 5% and 10%.

**Null and Alternative Hypotheses:**

A hypothesis is a statement prepared by the researcher on the problem for which research has been undertaken. Generally two types of hypothesis are there:

- Null Hypothesis
- Alternative Hypothesis

**Null Hypothesis (Ho):** In case of null hypothesis no difference is there in the statement. The Ho means there is no significant difference between the assumed statements; it is represented as follows:

\[ H_0 : \mu = 0 \]

**Alternative Hypothesis (Ha):** Hypothesis which is approving to null hypothesis and is called alternative hypothesis. The Ha means there is a significant difference between the assumed statements it is represented as follows:

\[ H_a : \mu \neq 100 \]

3.16 Variables

Variable is a value that varies or change accordingly. It can be changed from group to group, persons to person and also several times within a person. It is the central idea in the research. It carries two or more than two values. Variables are used to demonstrate the values of quality or scale. Variable carries and assumes different numerical values. The opposite of variable is constant, which do not change its values.
according to conditions. Variables are not always numerical in nature, like in cases of gender i.e. ‘male’ or ‘female’. Variables can be divided in many different types but in case of research study, there are two major categories in which it can be classifies, which are as follows:

**Dependent variable**- Dependent variables are those variables which cannot be manipulated by the researcher. Academic performance is a score and other examples of dependent variables are IQ, attitude, self-esteem and so forth. Other names for the dependent variables are outcome variable, results and criterion variable.

**Independent variable**- The Independent variables can be manipulated. “Manipulated” means the variable can maneuvered and in this case it is divided into ‘discussion method’ and ‘lecture method’. Other examples if independent variables are gender, race, socio-economic status. Other names for the independent variable are treatment, factor and predictor variable.

The Dependent and Independent variable used in this study by the researcher are:-

<table>
<thead>
<tr>
<th>Dependent variable (According to the SERVQUAL Model)</th>
<th>Independent variable (According to the SERVQUAL Model)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer satisfaction</td>
<td>Tangibility</td>
</tr>
<tr>
<td></td>
<td>Reliability</td>
</tr>
<tr>
<td></td>
<td>Responsiveness</td>
</tr>
<tr>
<td></td>
<td>Assurance</td>
</tr>
<tr>
<td></td>
<td>Empathy</td>
</tr>
<tr>
<td></td>
<td><strong>Transparency (On the basis of Pilot Study)</strong></td>
</tr>
</tbody>
</table>

**Likert Scale**: Likert scale is developed by Rensis Likert. Here the respondents are asked to express their views on the basis of agreement or disagreement based on statement questions. Questions will have 5 categories ranging from strongly agree to strongly disagree. Each view has been assigned a numerical value and the total value of the respondents is calculated by adding their score. Evaluating results under Likert
scale is easy to calculate and manage. Likert scale is of ordinal type, it gives ranks to attitude but do not allow to make difference between attitudes.

Likert scale used for preparing questionnaires is as follows:

<table>
<thead>
<tr>
<th>Statements (examples)</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company is good</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Company have basic amenities</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Company have good environment</td>
<td>1 2 3 4</td>
</tr>
<tr>
<td>Company gives remuneration</td>
<td>1 2 3 4</td>
</tr>
</tbody>
</table>

Such a scale permits the researcher to say that position 5 on the scale is above position 4 and also the distance from 5 to 4 is same as distance from 4 to 3. Such a scale however does not permit conclusion that position 4 is twice as strong as position 2 because no zero position has been established. The data obtained from interval scale can be used to calculate the mean scores of each attributes over all respondents. The standard deviation (a measure of dispersion) can also be calculated.

### 3.17 Test of Reliability

**Cronbach’s Alpha**

Cronbach’s Alpha is a measure of interior reliability. It is most commonly utilized when Likert scale based questions in a questionnaire are present. It is also used when a range is structured and the reliability of the data has to be checked.

Cronbach’s Alpha was developed by Lee Cronbach’s in the year 1951; it is used to judge the internal reliability of the available data. It is denoted in number as 0 and 1. Internal reliability explains inter-relationship between the items within the test. Cronbach’s alpha test has to be performed on the complete study device (all subscales pooled) and on each unit’s subscale. Reliability analysis must be carried out before the test has been conducted for the purpose of analysis with the help of which validity can be ensured. Number of errors can also be evaluated under the test of reliability. Higher the value of reliability, lesser will be the amount of errors in the test. Higher will be the correlation between the items in the test, higher will be the value of alpha. In other cases it is not necessary that the higher the value of alpha results in higher
level of internal consistency because the value of alpha is also affected by the length of the test.

\[ \alpha = \frac{K}{K - 1} \left( 1 - \frac{\sum_{i=1}^{K} P_i Q_i}{\sigma_X^2} \right) \]

A number of factors are there which affect the value of alpha during a test and it can be e.g. test items, interrelatedness and their various scopes. There are various reports on acceptable value of alpha which ranges from 0.70 to 0.95. a low value of alpha can be due to less number of questions, lower interrelation between the questions or items. If the value of alpha is too high then it can be because some of the items in the tests are redundant and they are testing the items more than once but in a different form 0.90 is the maximum value of alpha which has been recommended.

### 3.18 Two Independent T-Test

The steps that are taken in testing the significance of a mean in case of a large sample should be taken also in testing the significance of a mean in case of a small sample (n<30), expect in respect to the application of the test statistic. In case of testing the significance of the mean of a small sample, t-values, instead of z-values, are used as test statistic. Since the distribution of the means of small samples conforms to the t-values contained in the t-distribution, in testing the significance of the mean of small sample t-values are used as test statistic.

### 3.19 Paired T-Test

In the t-test for difference of means the two samples were independent of each other. Suppose in a particular situation the samples size is equal and the sample observations are not completely independent but they are dependent in pairs i.e. the pair of observations corresponds to the unit respectively.
References

Journals:


Books:


