

**A DESCRIPTIVE STUDY TO COMPARE THE
TARIFF RATES OF COMMON SURGICAL
PROCEDURES ACROSS PRIVATE HOSPITALS
OF DELHI NCR AND MUMBAI**

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INTRODUCTION

- Surgery has now become an integral part of the global health care.
- The World Bank reported in 2002 that 11% of the entire disease burden, were attributable to surgically treatable conditions. Despite of a growing volume of the surgical procedures in the low-income and the middle-income countries costs of these surgical procedures are not well understood.
- Variation on Tariff rates of treatment vary from hospital to hospital.
- Many factors play a significant role into hospital tariff rates for e.g.- an individual's health status, the cost of lab tests, radiological examination, etc., operating room and recovery room costs, medications, and doctors visiting fee.



- The three major categories for cost for most surgical procedure are represented below-
- Physician Charges - The price which a physician charges from a patient for performing a procedure.
- Facility Charges - The price which is charged by a hospital including nursing charges, supply charges and charges of most medications that are given on-site.
- Anesthesia Charges- The price which is charged by anesthesiologist for its services.



REVIEW OF LITERATURE

- A study was conducted by Mr. Chatterjee, S., & Laxminarayan, R. in 2013 whose title was “Cost of surgical procedures in Indian Hospitals” which estimated the costs of twelve common surgical procedures which were conducted in five different type of hospitals in India. The results are as follows-
- The costs of conducting LSCS ranged from 2469 INR to 41087 INR.
- The cost of Hysterectomy ranged from 4124 INR to 57622 INR
- The cost of Appendectomy ranged from 2421 to 3616 INR.
- The cost of some procedures was computed- Lap Cholecystectomy- 27732 INR, Open Cholecystectomy-44142 INR, Hernia Repair- 13204 INR.



- A cross- sectional study was conducted in an urbanized community of Delhi to study the prevalence of various surgical procedures undergone by individuals in their life time. The study was conducted from October 2008 to April 2009 in Vivek Vihar
- Sample Size was 3,043 individuals who were residing in 622 households. They were interviewed as part of the study.
- The study revealed that the most common types of surgeries which were found in the community were usually one or other type of abdominal surgeries.
- Among the 3,043 residents interviewed, it was found that the commonest procedures were LSCS (3.32%), Appendectomy (0.95%), Cholecystectomy (0.92%) and followed by hernia repair (0.89%).



RESEARCH QUESTION

What is the Variation in the Hospital Tariff Rates for common surgical procedures in Private Hospitals among Delhi NCR and Mumbai Regions?



OBJECTIVES

- To find out the variation in the hospital tariff rates for common surgical procedures across private hospitals of Delhi NCR and Mumbai.
- To find out reasons for the variations for common surgical procedures in Delhi NCR and Mumbai.



METHODOLOGY

- Study Design- Descriptive Cross Sectional study
- Duration of Study- 3 months
- Sample Size- 122 Hospitals
- Sampling Technique- Convenience Sampling Technique
- Limitation of the Study- The hospitals included in the study were only those which were empanelled with ABHI.
- Study Procedure-This study included five surgical procedures- Caesarian section, Laparoscopic Appendectomy, Laparoscopic Cholecystectomy, Laparoscopic Inguinal Hernia and Normal Delivery.



- These five procedures were chosen based on the following reasons-
 - The Literature Review revealed that these were the most common procedures performed in all over the world including studies done in India also.
 - The Frequency of claims for these five procedures at ABHI was high.
- The two regions from where hospitals were included in the study were- Delhi NCR and Mumbai.
- The selection of these two regions was done as these two regions are the top two metropolitan regions in terms of population. Highest population is in Delhi NCR followed by Mumbai



- Delhi NCR had a population of 25,735,000 (2016)
- Followed by Mumbai with the population of 22,885,000 (2016)
- [Source-*Demographia (April 2016)*. *Demographia World Urban Areas (PDF) (12th ed.)*. Retrieved November 17, 2016. (excludes Kondli)]
- In NCR the cities included in the study were- Gurugram, NOIDA, Ghaziabad and Faridabad.
- The study was done on the Tariffs of 122 hospitals across Delhi NCR and Mumbai.



HOSPITALS WERE CATEGORIZED BASED ON THE BED STRENGTH. THERE WERE 5 CATEGORIES WHICH WERE FORMED AS FOLLOWS-

No. Of Hospital Beds	Hospital Category	Sample Size Delhi NCR	Sample Size Mumbai
0-50 Beds	Category 1	25	22
51-100 Beds	Category 2	13	8
101-150 Beds	Category 3	11	7
151-200 Beds	Category 4	11	7
>200 Beds	Category 5	11	7



- In each hospital Tariff rates of the all the five procedures are calculated, which included-
- Surgeon's Fee
- Anesthetist's Fee
- Room Rent (In this study room rent is considered of Twin Sharing AC)
- OT charges
- Instrument Charges (In laparoscopic procedures)
- Labor room charges
- Gynecologists Charges
- Baby Care Charges
- Medicines and consumables are excluded from the study as there is no fixed quantity which can be estimated for the surgical procedures.

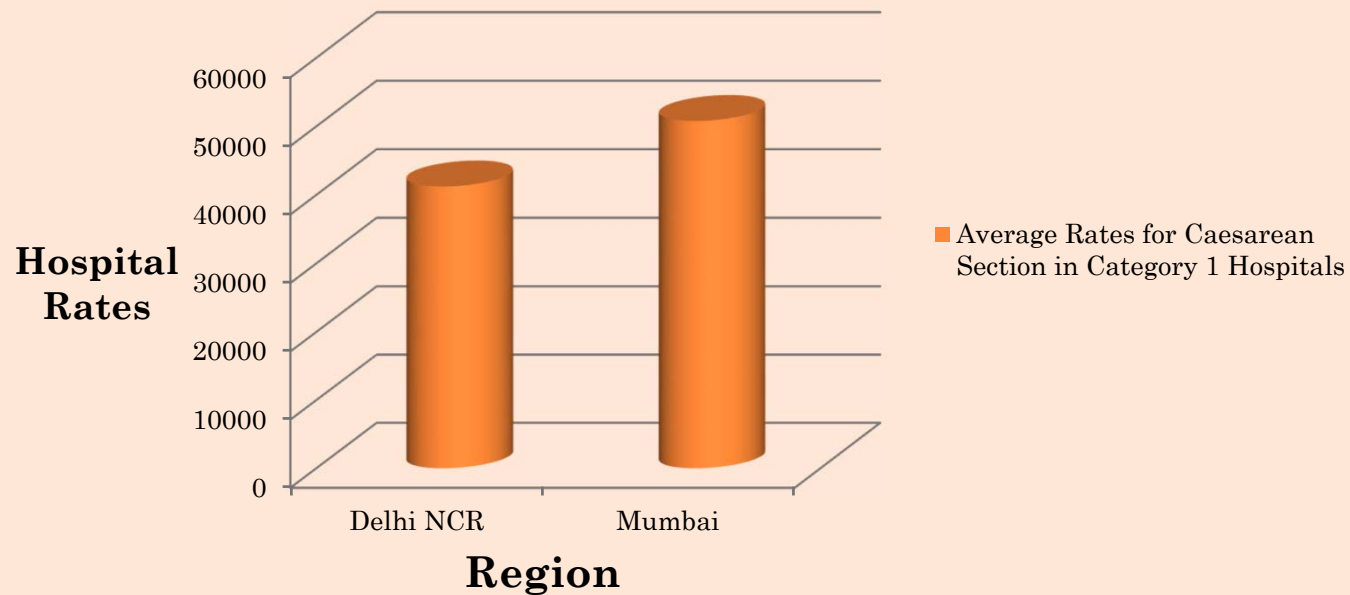


FINDINGS

- Table 1- Average of Tariff Rates for Caesarean Section in Category 1 Hospitals

Region	Average of Tariff Rates for Caesarean Section in Category 1 Hospitals
Delhi NCR	41220
Mumbai	50780

Average of Tariff Rates for Caesarean Section in Category 1 Hospitals



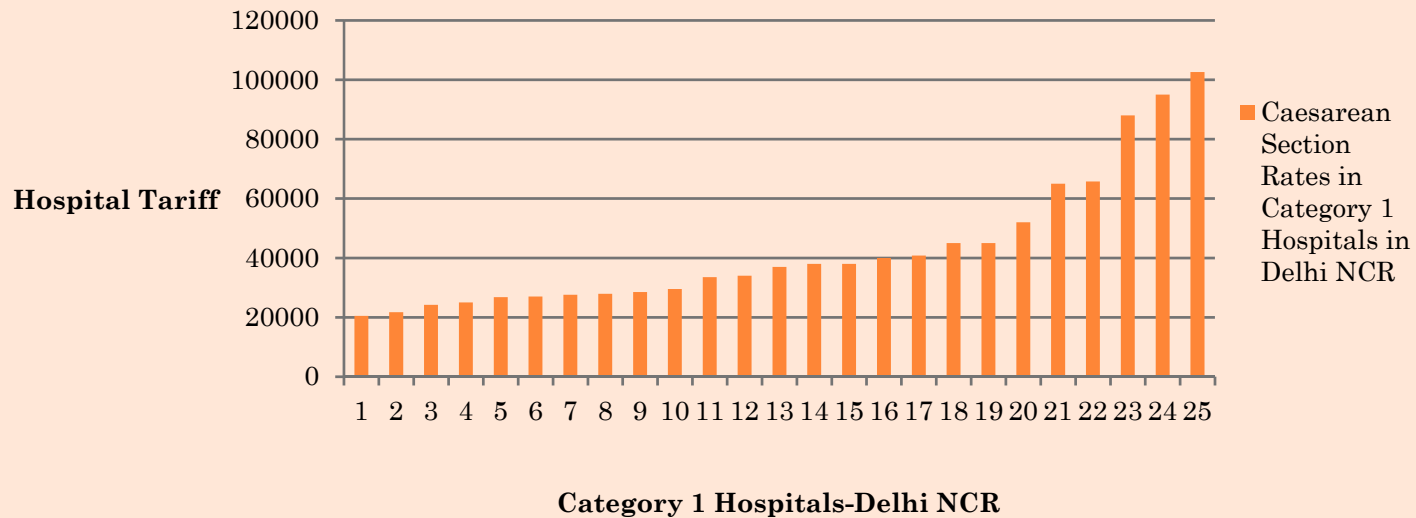
The Graph shows Average of Tariff Rates for Caesarean Section in Category 1 Hospitals (0-50 bedded) in Delhi NCR 41220 INR and Mumbai 50780 INR.

**Table 2- Category 1 Hospitals-
Caesarean Section Tariff Range(In INR)**

Region	Category 1 Hospitals-Caesarean Section Tariff Range(In INR)
Delhi NCR	20475-102610
Mumbai	27300-66000

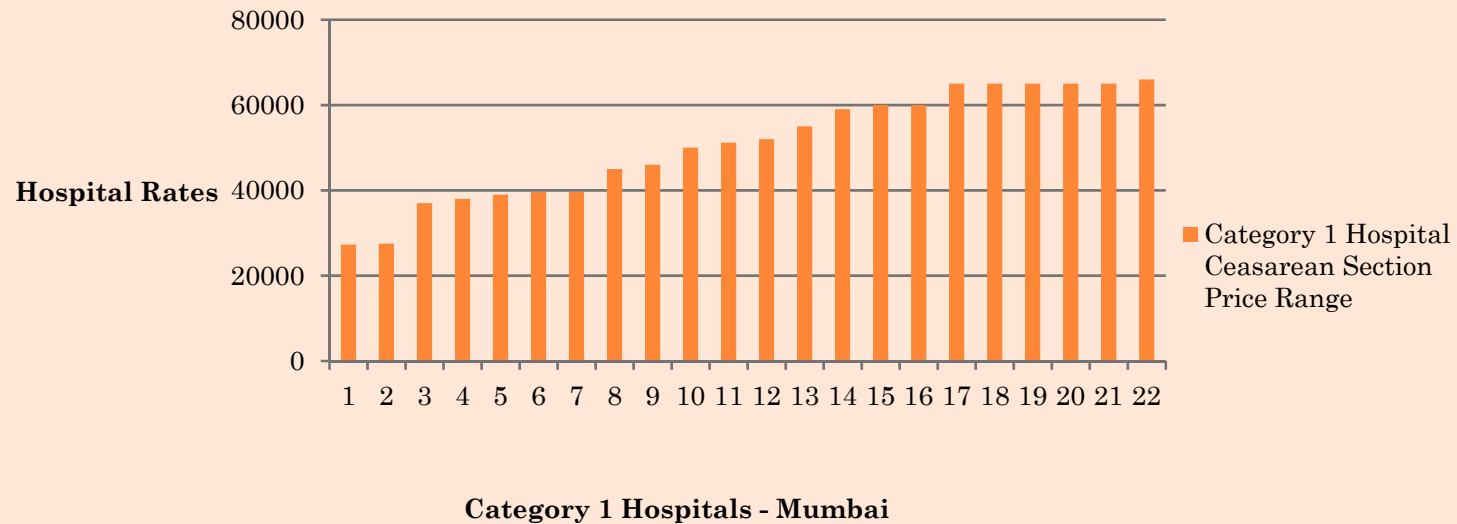


Category 1 Hospitals-Caesarean Section Tariff Rates in Delhi NCR



The Graph Shows the variation in the Tariff Rates for C-Section in 25 Hospitals of Category 1 in Delhi NCR. The price ranges Between 20475-102610.

Category 1 Hospital-Ceasarean Section Rates in Mumbai



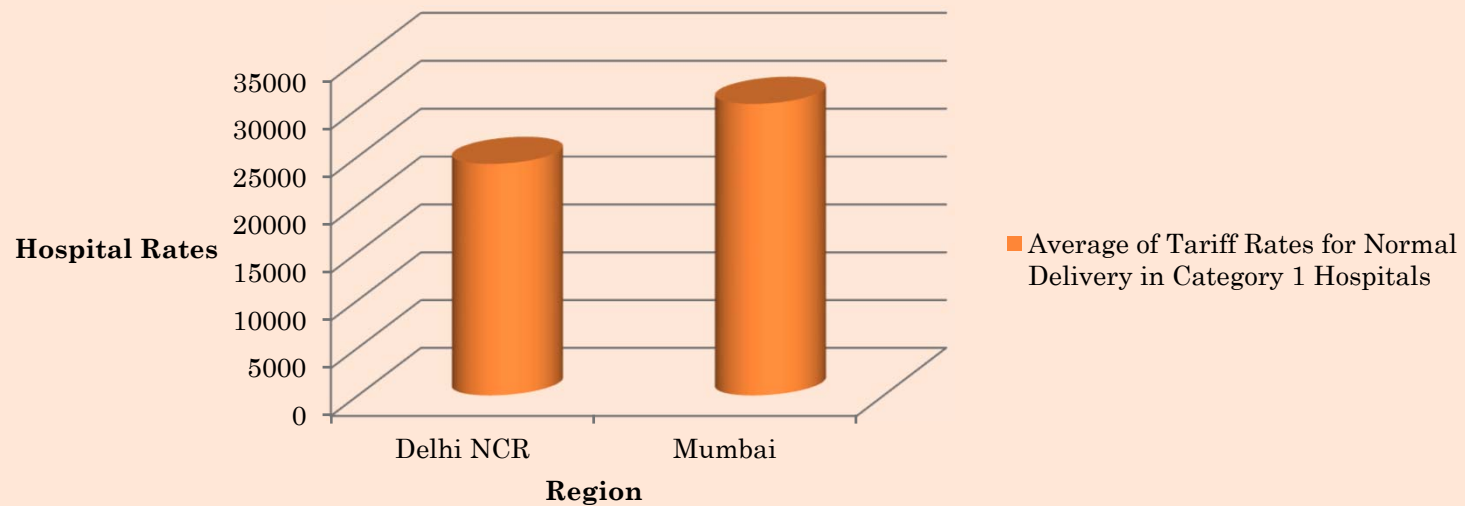
The Graph Shows the variation in the Tariff Rates for C-Section in 22 Hospitals of Category 1 in Mumbai. The price ranges Between 27300-66000

Table 3- Average of Tariff Rates for Normal Delivery in Category 1 Hospitals

Region	Average of Tariff Rates for Normal Delivery in Category 1 Hospitals
Delhi NCR	24219
Mumbai	30487



Average of Tariff Rates for Normal Delivery in Category 1 Hospitals



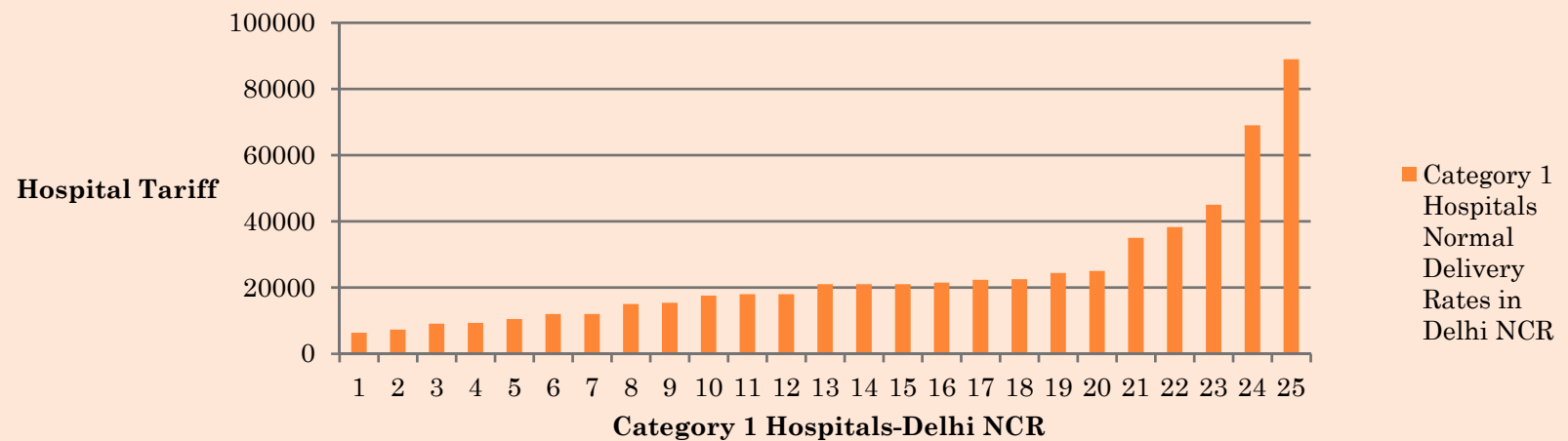
The Graph shows Average of Tariff Rates for Normal Delivery in Category 1 Hospitals (0-50 bedded) in Delhi NCR 24219 INR and Mumbai 30487 INR.

Table 4- Category 1 Hospitals Normal Delivery Price Range(In INR)

Region	Category 1 Hospitals Normal Delivery Price Range(In INR)
Delhi NCR	6350-88980
Mumbai	11000-50000

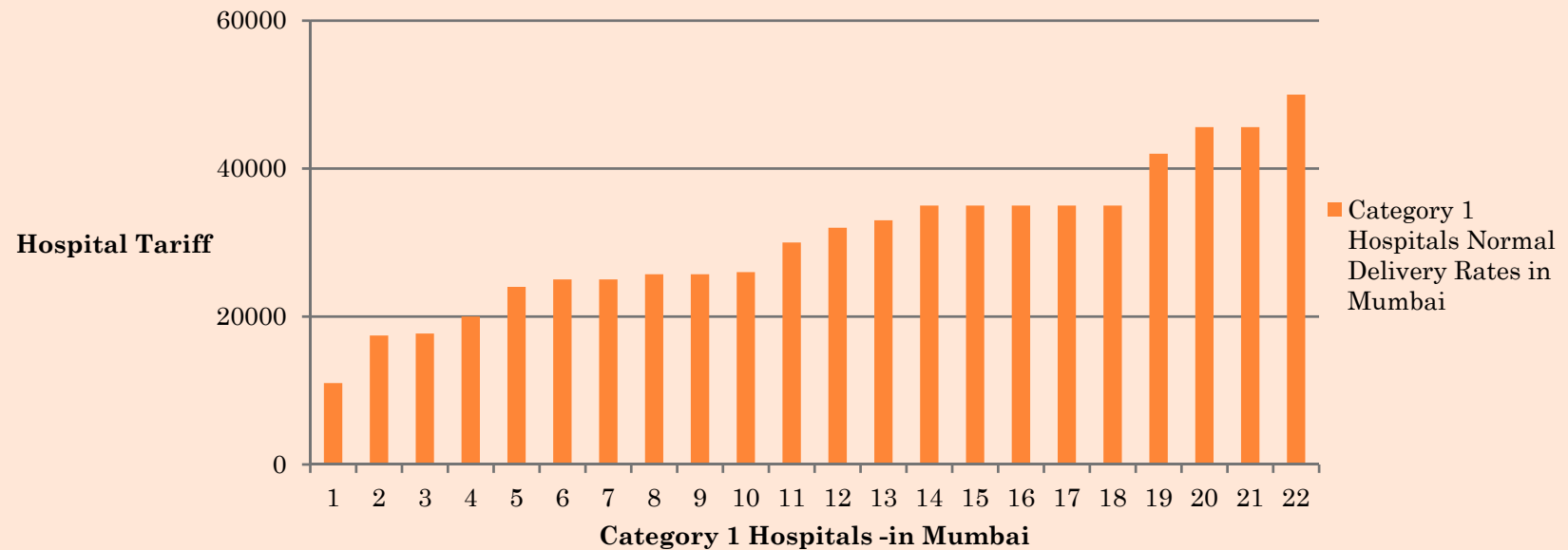


Category 1 Hospitals-Normal Delivery Tariff Rates in Delhi NCR



The Graph Shows the variation in the Tariff Rates for Normal Delivery in 25 Hospitals of Category 1 in Delhi NCR. The price ranges Between 6350-88980

Category 1 Hospitals-Normal Delivery Tariff Rates in Mumbai



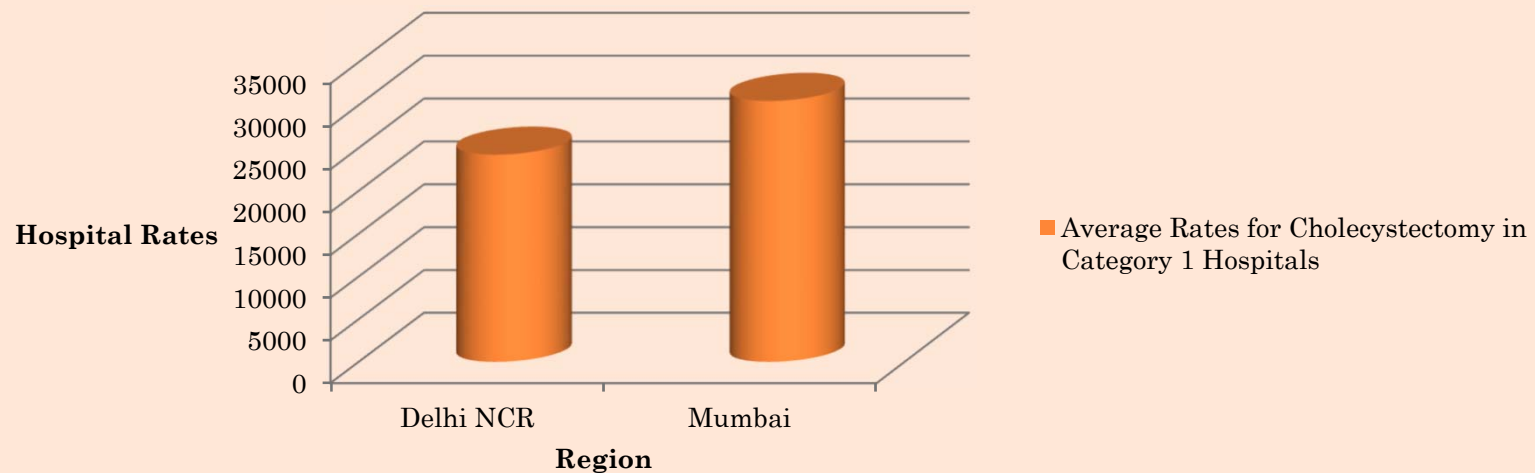
The Graph Shows the variation in the Tariff Rates for Normal Delivery in 22 Hospitals of Category 1 in Mumbai. The price ranges Between 11000-50000

Table 5- Average of Tariff Rates for Cholecystectomy in Category 1 Hospitals

Region	Average of Tariff Rates for Cholecystectomy in Category 1 Hospitals
Delhi NCR	24219
Mumbai	30487



Average Of Tariff Rates for Cholecystectomy in Category 1 Hospitals



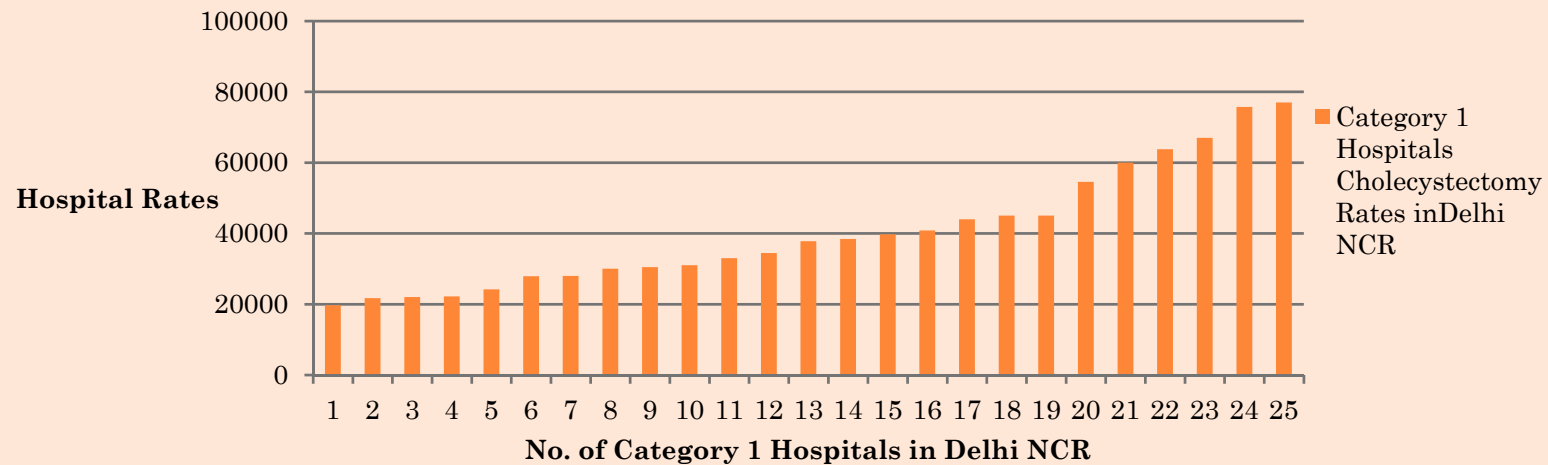
The Graph shows Average of Tariff Rates for Cholecystectomy in Category 1 Hospitals (0-50 bedded) in Delhi NCR 24219 INR and Mumbai 30487 INR.

Table 6- Category 1 Hospitals Cholecystectomy Price Range(In INR)

Region	Category 1 Hospitals Cholecystectomy Price Range(In INR)
Delhi NCR	19688-77000
Mumbai	27300-75000

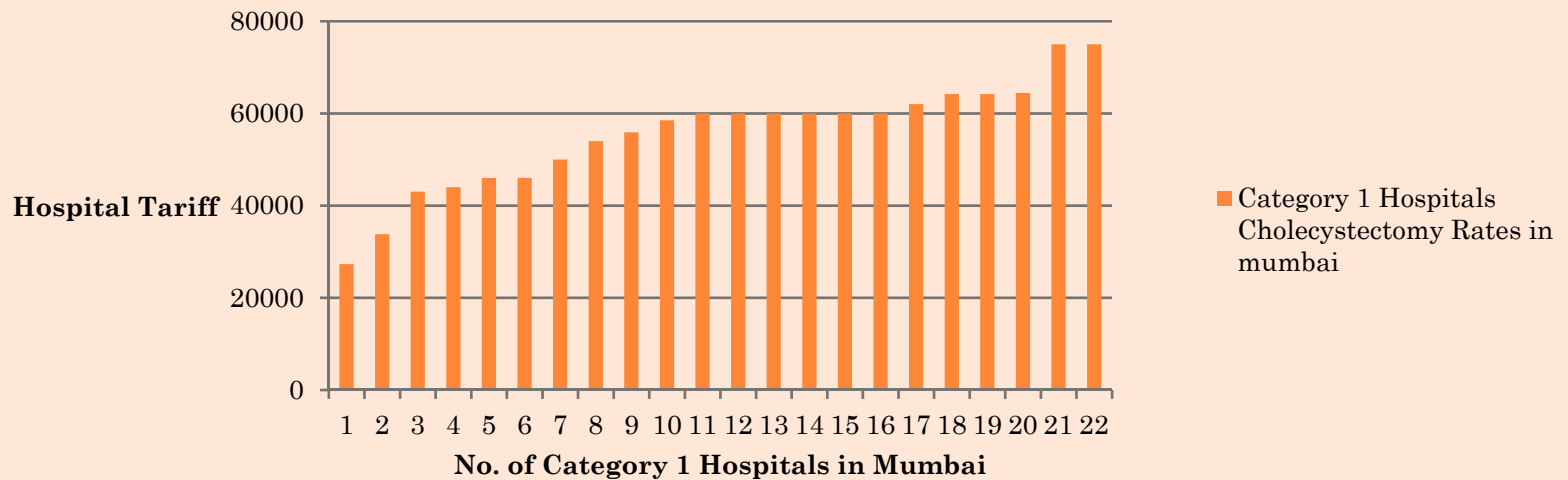


Category 1 Hospitals-Cholecystectomy Tariff Rates in Delhi NCR



The Graph Shows the variation in the Tariff Rates for Cholecystectomy in 25 Hospitals of Category 1 in Delhi NCR. The price ranges Between 19688-77000 INR

Category 1 Hospitals-Cholecystectomy Tariff Rates in Mumbai



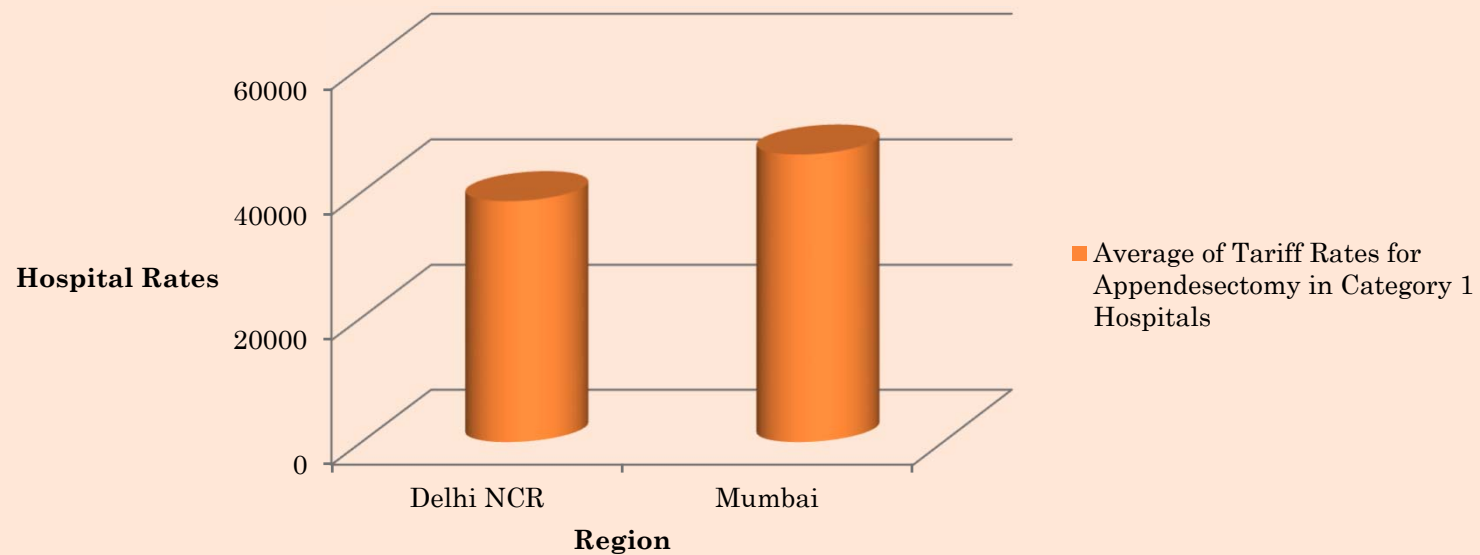
The Graph Shows the variation in the Tariff Rates for Cholecystectomy in 22 Hospitals of Category 1 in Mumbai. The price ranges Between 27300-75000 INR

Table 7- Average of Tariff Rates for Appendectomy in Category 1 Hospitals

Region	Average of Tariff Rates for Appendectomy in Category 1 Hospitals
Delhi NCR	38559
Mumbai	45990



Average of Tariff Rates for Appendectomy in Category 1 Hospitals



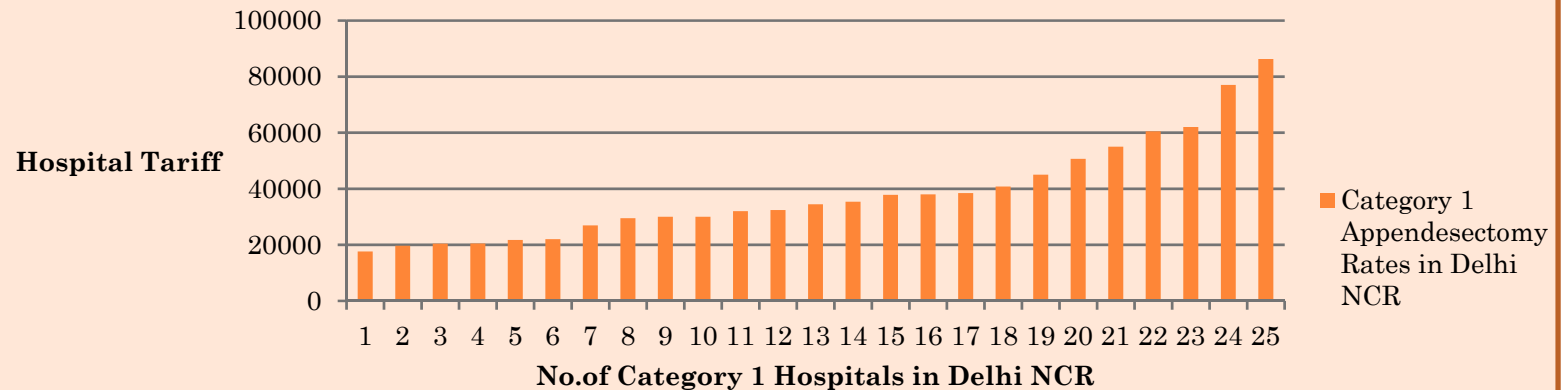
The Graph shows Average of Tariff Rates for Appendectomy in Category 1 Hospitals (0-50 bedded) in Delhi NCR 38559 INR and 45990 Mumbai INR.

**Table 8- Category 1 Hospitals Appendectomy Tariff
Range(In INR)**

Region	Category 1 Hospitals Appendectomy Tariff Range(In INR)
Delhi NCR	17600-86270
Mumbai	22800-60000

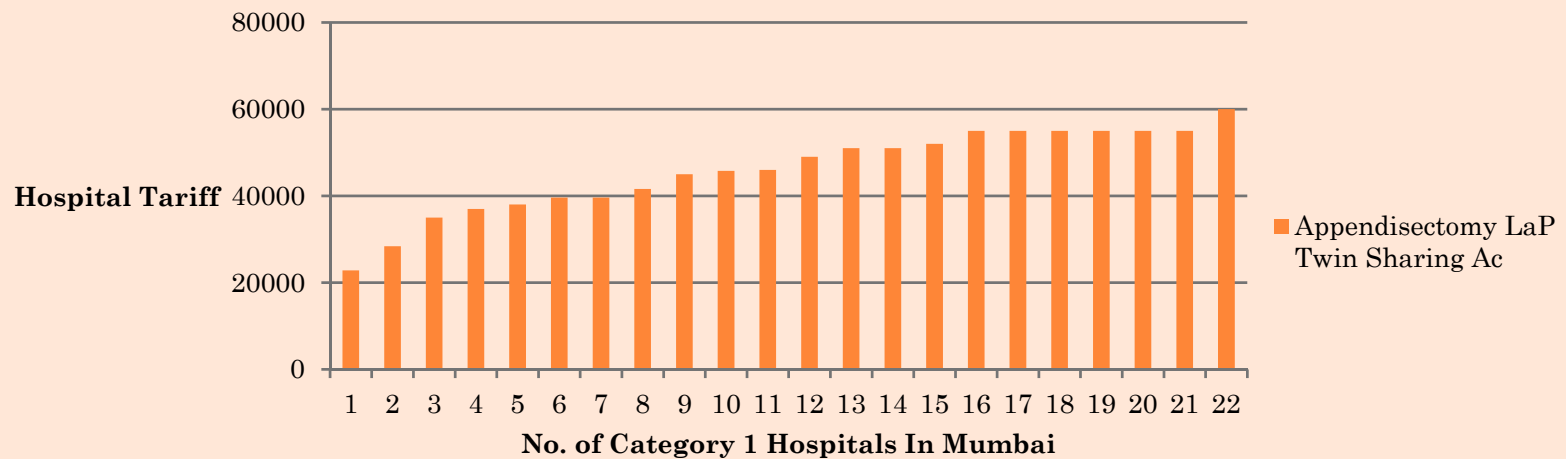


Category 1 Hospitals-Appendesectomy Tariff Rates in Delhi NCR



The Graph Shows the variation in the Tariff Rates for Appendesectomy in 25 Hospitals of Category 1 in Delhi NCR. The price ranges Between 17600-86270 INR

Category 1 Hospitals-Appendesectomy Tariff Rates in Mumbai



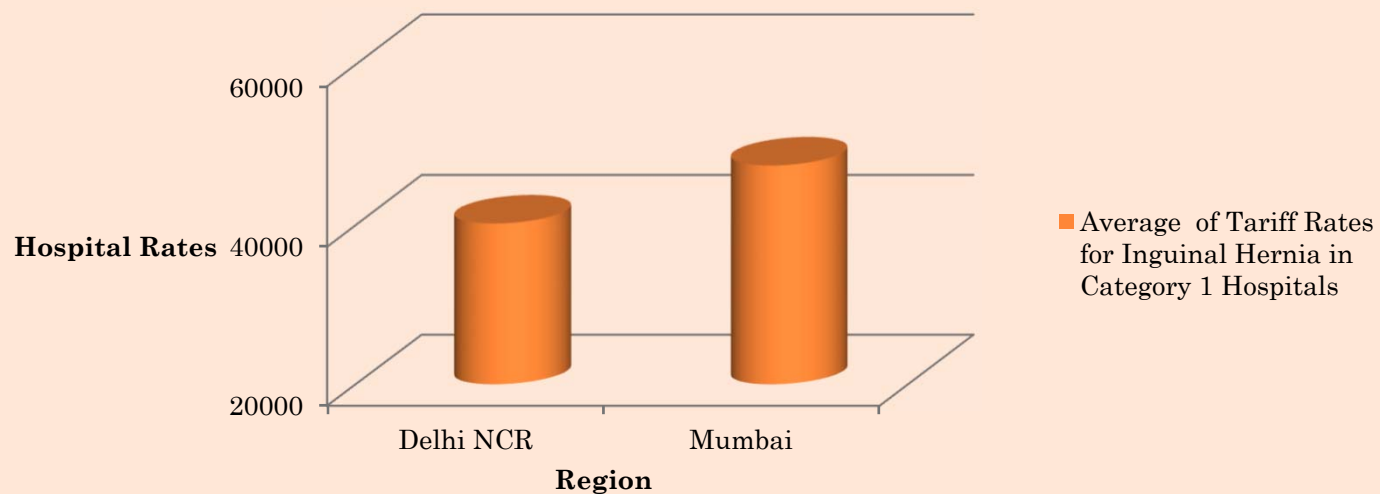
The Graph Shows the variation in the Tariff Rates for Appendesectomy in 22 Hospitals of Category 1 in Mumbai. The price ranges Between 22800-60000 INR

Table- 9 Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals

Region	Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals
Delhi NCR	40208
Mumbai	47437



Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals



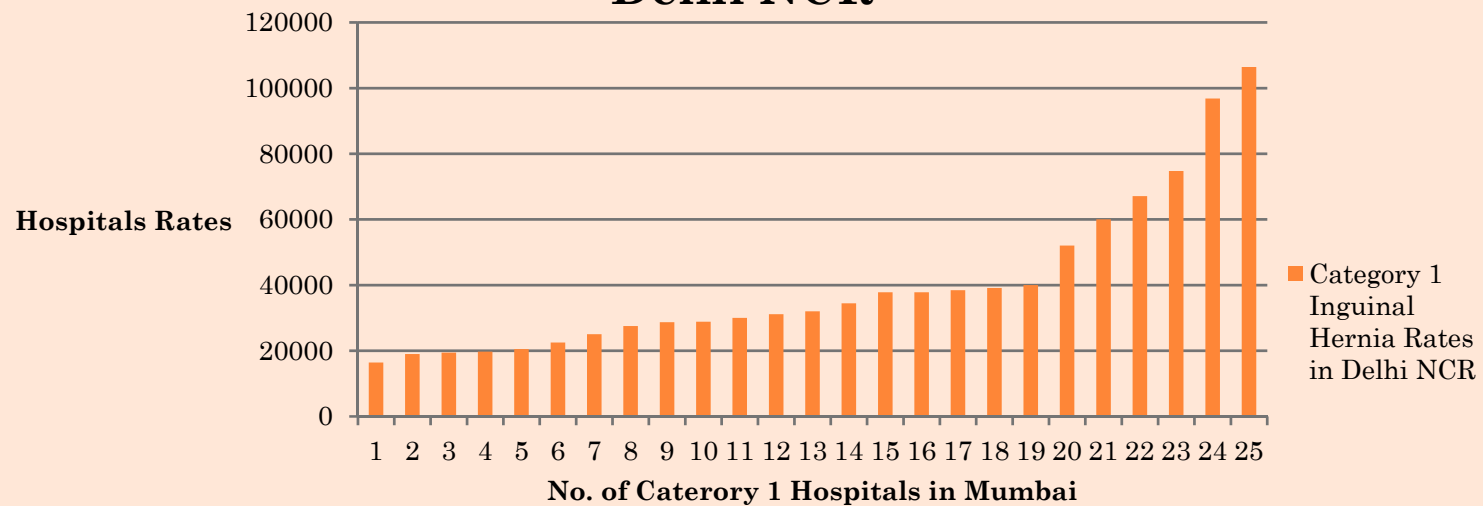
The Graph shows Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals (0-50 bedded) in Delhi NCR 40208 INR and Mumbai 47437 INR

**Table -10 Category 1 Hospitals Inguinal Hernia Tariff
Range (In INR)**

Region	Category 1 Hospitals Inguinal Hernia Tariff Range (In INR)
Delhi NCR	16400-106400
Mumbai	18500-97000

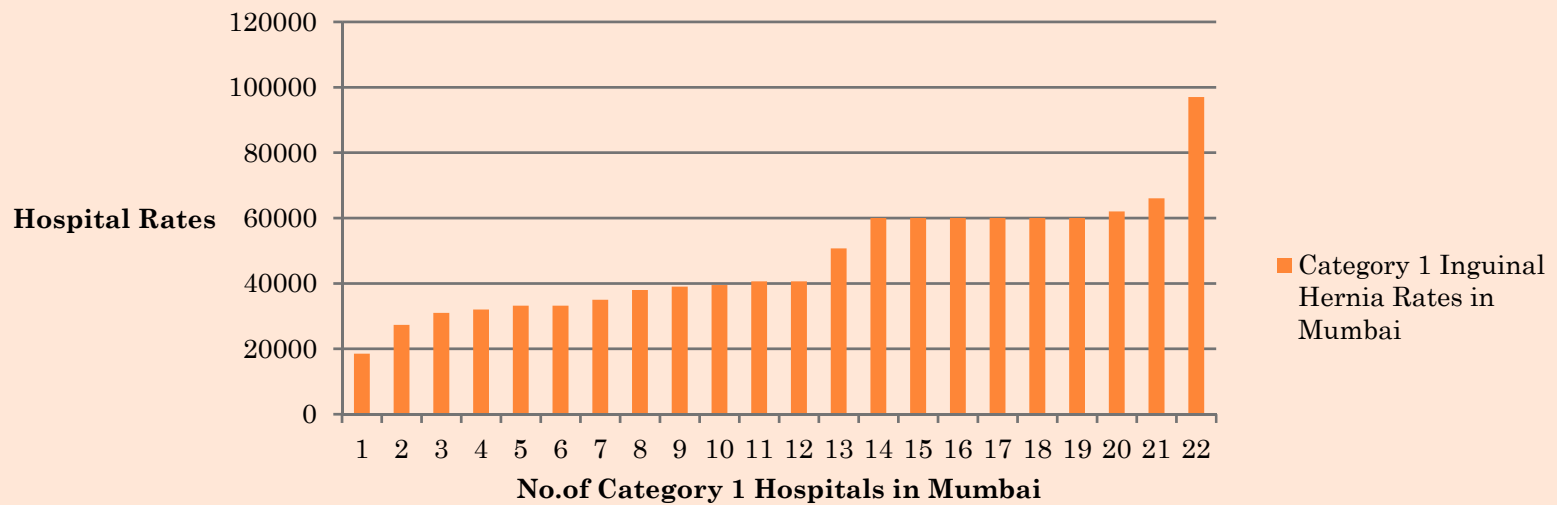


Category 1-Inguinal Hernia Tariff Rates in Delhi NCR



The Graph Shows the variation in the Tariff Rates for Inguinal Hernia in 25 Hospitals of Category 1 in Delhi NCR. The price ranges Between 16400-106400 INR

Category 1-Inguinal Hernia Tariff Rates in Mumbai



The Graph Shows the variation in the Tariff Rates for Inguinal Hernia in 22 Hospitals of Category 1 in Mumbai. The price ranges Between 18500-97000 INR

REASONS

- The study revealed that in all the five procedures across all the five category of hospitals the average of the tariff rates is higher in Mumbai Hospitals as compared to Delhi NCR.
- The study also highlighted that in case of Delhi NCR the hospitals of the same category had a huge price difference for the same procedure as compared to Mumbai.
- In Mumbai the price difference for a particular procedure across similar category of hospital was less.
- The reasons for the same were tried to explore. In order to do that expert's opinions were taken. The opinions revealed the following reasons-



- Mumbai being a city with high cost of living, cost of infrastructure, overheads, manpower is also high. In order to get the return on investment, the hospitals charge high for treatment.
- Due to Regulatory Issues it is not easy to build a hospital in Mumbai. One has to go through many regulatory procedures which leads to less no. of hospitals in Mumbai also there are less fraudulent activities in Mumbai. This is one of the reason that the discrepancy in the hospital rates is less in Mumbai in comparison to Delhi.
- In Delhi the number of private hospitals is much higher. The density of hospitals is higher which leads to lower average of rates of a procedure.
- There is a wide variety of hospitals in Delhi which leads to higher discrepancy in the rates of a particular Procedure.



