

Descriptive Study to Compare the Tariff Rates of Common Surgical Procedures Across Private Hospitals of Delhi NCR and Mumbai

By

Aliya Anwar Thakur

*Dissertation submitted for the partial fulfillment of the
MBA Hospital and Health Management*

Academic year, 2015-2017



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TO WHOMSOEVER MAY CONCERN

This is to certify that **Dr. ALIYA ANWAR THAKUR** student of MBA Hospital and Health Management from The IIHMR University, Jaipur has undergone internship training at **ADITYA BIRLA HEALTH INSURANCE COMPANY LIMITED, MUMBAI** from **February 2017 to May 2017**.

The Candidate has successfully carried out the study designated to her during internship training and her approach to the study has been sincere, scientific and analytical.

The Internship is in fulfillment of the course requirements.

I wish her all success in all his future endeavors.



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The Certificate is awarded to

Aliya Anwar Thakur

In recognition of having successfully completed her
Internship in the department

Provider Network

And her successfully completed her Project on

A Descriptive study to compare the Tariff Rates of Common Surgical
Procedures Across Hospitals of Delhi NCR and Mumbai

May 5th 2017

Aditya Birla Health Insurance Company Limited

She comes across as committed, sincere & diligent person who has a strong drive and zeal
for learning. We wish her all the best for the future endeavours


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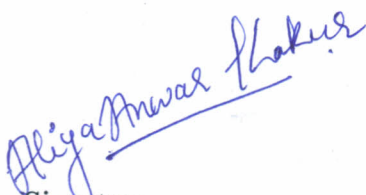
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CERTIFICATE BY SCHOLAR

This is to certify that the dissertation titled **“A Descriptive Study to Compare the Tariff Rates of Common Surgical Procedures across Private Hospitals of Delhi NCR and Mumbai”** submitted by **Dr. Aliya Anwar Thakur** Enrollment No. **IIHMR-U/01/2015-17/0251** under the supervision of **Prof. Anoop Khanna** for award of **MBA Hospital Management** of IIHMR University, Jaipur carried out during the period from **06th February 2017 to 05th May 2017** embodies my original work and has not formed the basis for the award of any degree, diploma associate ship, fellowship, titles in this or any other institute or other similar institution of higher learning.


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CERTIFICATE BY SCHOLAR

This is to certify that all ethical issues have been considered while collecting data for my dissertation titled **“A Descriptive Study to Compare the Tariff Rates of Common Surgical Procedures across Private Hospitals of Delhi NCR and Mumbai ”**

Aliza Anwar Hakeem
Signature of student

Abstract

The purpose of the study was to find the variation in the tariff rates for same surgical procedures across private hospitals of Delhi NCR and Mumbai and reasons for the same. 122 private hospitals across Mumbai and Delhi NCR, which included- NOIDA, Ghaziabad, Faridabad and Gurugram, were selected and data was collected from their tariff rates. The hospitals were categorized into 5 categories based on the bed strength and comparisons were made between the respective categories. The five categories were- 0-50 bedded (Category 1), 51-100 bedded (Category 2), 101-150 bedded (Category 3), 151-200 bedded (Category 4), >200 bedded (Category 5). The tariff rates for 5 common surgical procedures were selected and calculated. The 5 common surgical procedures were- Caesarian section, Laparoscopic Appendectomy, Laparoscopic Cholecystectomy, Laparoscopic Inguinal Hernia and Normal Delivery. 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.

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List of Symbols and Abbreviations

ABHI- Aditya Birla Health Insurance

INR- Indian Rupee

LSCS- Lower Section Caesarian Section

1. Introduction

Surgery has now become an integral part of the global health care, with an estimate of 234 million operations performed every year. The World Bank reported in 2002 that an estimate of 164 million disability adjusted life years, which represented 11% of the entire disease burden, were attributable to surgically treatable conditions. A significant proportion of the global population has undergone one or other forms of surgical procedures which happened at one or more points in their life time. Surgery is performed in each and every community, be it wealthy or poor, rural or urban and in each and every setting from most resource rich to most resource limited. The need for surgery has increased greatly as a result of shifting patterns of disease.

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. The private healthcare has shown a paradigm shift from the simple cure of a disease to a variety of services as per the paying capacity of the individual. This factor plays a major role in the escalation of costs. Now a Days Healthcare is being promoted as a branded product. As healthcare costs continue to skyrocket therefore obtaining pricing information has become even more important. Variation on Prices of treatment vary from hospital to hospital. There is no such standard system which can determine what a hospital should charge for a particular procedure or service. This debate over hospital charges can bring a deeper change. It is difficult to quantify the costs of a surgery. The total payments are often broken down into various subheads like- hospital expenses (60-80% depending upon procedure), Physician charges (13-19%) and post-acute care (7-27 %).

Many factors play a significant role into hospital pricing 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.

For example, if one patient's is shifted from an operation theatre to Intensive Care Unit (ICU) and another's is shifted to a recovery room, the costs of both can vary by thousands of dollars despite of the fact that even surgeries were similar. The cost of cholecystectomy is different for an individual with diabetes than it is for an individual who does not have diabetes.

The bottom line clearly shows that no two hospital bills for same surgery are likely to be the same. So the best information a patient can is a good-faith estimate regardless of a hospital's published surgery fee. Until the final bill is processed, there is no other reliable way to assess the exact amount a patient's final hospital cost.

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 a 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.

Abdominal surgeries are the most common type of surgeries found in the population. The most common surgical procedures performed are Caesarian section, Appendectomy, Cholecystectomy, Inguinal hernia and Normal delivery.

2. Literature Review

A report by National Sample Survey Organization (NSSO) said that –“The average expenditure for medical treatment in a private hospital was four times higher than a public hospital during a period of Jan- June 2014.”

“These scenarios reflect the real challenges that India faces in order to the provision of delivery of Affordable and Accessible health care to the country," the survey said. The survey also mentioned that there are innumerable challenges in path of delivery of efficient and effective health care services given that the paucity of the resources and plethora of the requirements in India.

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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. To avoid seasonal variation the data of cost and utilization was collected retrospectively from April 2010 till March 2011. The Hospitals in which the study was conducted were - A charitable hospital (57 bedded), a Private hospital (200 bedded), A district hospital (400 bedded), A private teaching hospital (655 bedded) and A tertiary care and teaching hospital (778 bedded). The selection of these hospitals was done based on their cooperation and willingness and Data accessibility. The hospitals included in the study were from four different states 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, external fixation- 8406 INR, intestinal obstruction- 6406 INR, Amputation- 5158 INR, Coronary artery bypass graft- 177141 INR, Crainotomy- 75982 INR and functional endoscopic sinus surgery- 53398 INR.

In 2012, in California a consumer watchdog organization, ‘‘The California Public Interest Research Group (CALPIRG)’’ Education Fund, studied the geographic variations in the hospital charges of the state for similar surgery. It found that there were hospitals in California which charged upto 2.7 times as more than the other hospitals facilities in California. It was also found that the community in which the hospital is situated will have an effect on the surgical cost. In San Mateo region, the cost of LSCS cost nearly \$48,000, but it in Folsom it was only \$24,349 and the charge was less than \$13,000 in Fresno. The knee replacement surgery in Fresno costs \$ 46,800 in 2010 as compared to Alameda County where it costs \$127,500. Similarly an angioplasty costs \$44,400 in Bakersfield, \$144,922 in the San Jose area and \$85,520 in Sacramento.

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 which is an urban affluent colony in Delhi. Sample Size was 3,043 individuals who were residing in 622 households. They were interviewed as part of the study. The study revealed that there were 306 (49.2%) total number of households with some member having ever undergone surgery. 375 out of 3043 had undergone one or the other form of major surgery in their lifetime. LSCS was found to be most common surgical procedure to be performed. It was also observed that the total expense of the surgeries conducted in a private hospital was more as compared to a government.hospital. The most common types of surgeries which were found in the community were usually one or other type of abdominal surgeries , eye surgery.etc. and among the female population, LSCS and hysterectomies. 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%). Results are shown in the table given below-

Table 1- Distribution of the common surgical procedures carried out amongst the study population (n = 3043)

Procedure	Number	Percentage
Caesarian Section	101	3.32 ^a
Cataract	43	1.41
Cardiac bypass surgery	32	1.05
Hysterectomy	32	1.05 ^a
Appendectomy	29	0.95
Cholecystectomy	28	0.92
Hernia repair	27	0.89
Angioplasty	19	0.62
Emergency surgery following accident	16	0.53
Prostatectomy	11	0.36 ^b
Hip & knee replacement	9	0.30

In 2005, the average of the total payment made for back a surgery in the US was \$26,515. But it was observed that the difference between the lowest payments and the highest payments for the same procedure was \$18,762. The Coronary artery bypass surgery in US averaged \$45,438, but the difference between the highest and lowest cost was \$16,668. The difference was \$10, 615 for a hip fracture repair and \$12,988 for a colostomy.

3. Research Question

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

4. Objectives

- To find out cost variations for same surgical procedures across private hospitals of Delhi NCR and Mumbai.
- To find out reasons for cost variations for same surgical procedures in Delhi NCR and Mumbai.

5. 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 were empaneled 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 has 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- Gurgaon, NOIDA, Ghaziabad and Faridabad.

The study was done on the Tariffs of 122 hospitals across Delhi NCR and Mumbai. The 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	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

Table 2- Hospital Categorization and each category sample size from Delhi NCR Region and Mumbai.

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.

Comparison is made between the respected categories. Comparison is also made between the room rents for the specific hospital categories.

All the Tariff Rates were taken for Twin Sharing AC Rooms. This Category of room was selected based on expert opinion as maximum number of patient are admitted in Twin Sharing AC rooms.

The Data of Hospital Tariff was taken from the MIS of the organization. Calculations were done based on the different percentage of cost allotted to the different price head. Then final rates of the procedures were calculated and comparisons were done.

Also averages of the tariff rate were calculated for Delhi NCR region for all procedure in all category of hospitals separately and comparisons were done with the averages of the respected procedure with the respected hospital category of Mumbai.

6. Results

Below given tables include average of tariff rates for each of the five common procedures of all the category of Hospitals included in the study from Delhi NCR and Mumbai.

The Figures mentioned below contains graphs which shows comparison of Tariff Rates between Delhi and Mumbai

The graphs also show the Minimum and Maximum price for a procedure and the range of charges which the hospital of similar category charge in the same region for the same procedure.

Table 3- 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

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

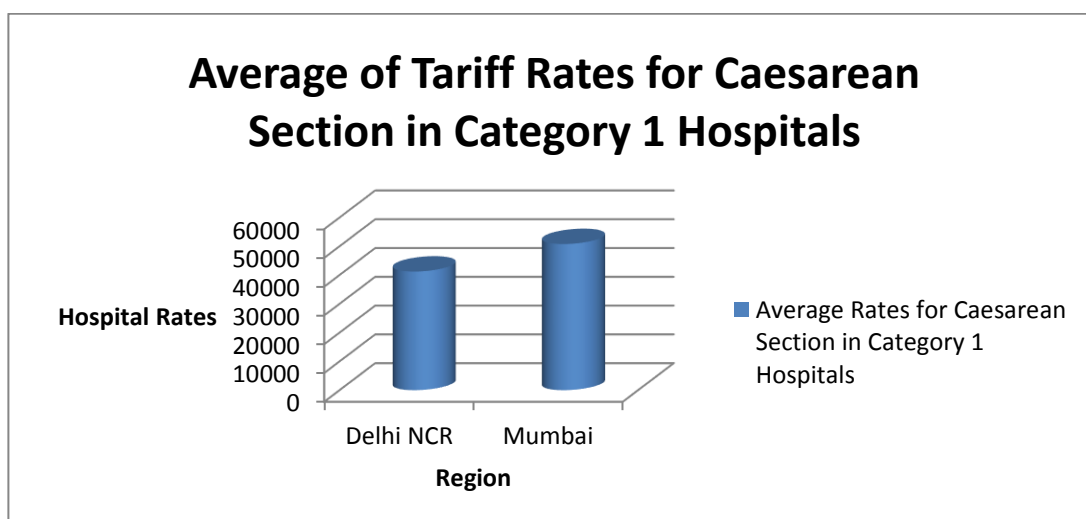


Table 4- Category 1 Hospitals-Caesarean Section Tariff Range(In INR)

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

Figure 2- Category 1 Hospitals-Caesarean Section Tariff Rates in Delhi NCR

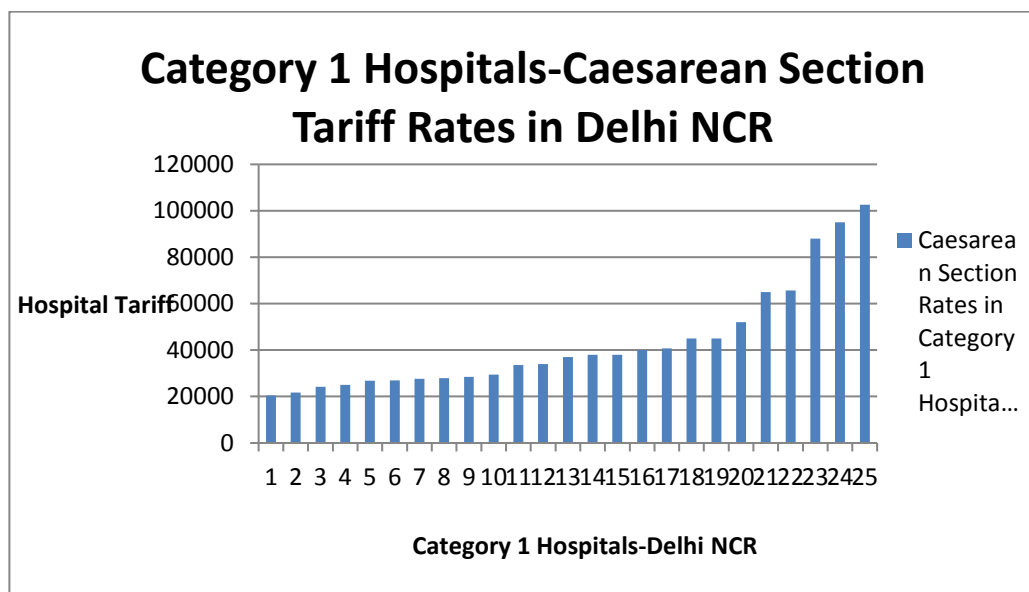


Figure 3- Category 1 Hospital-Caesarean Section Tariff Rates in Mumbai

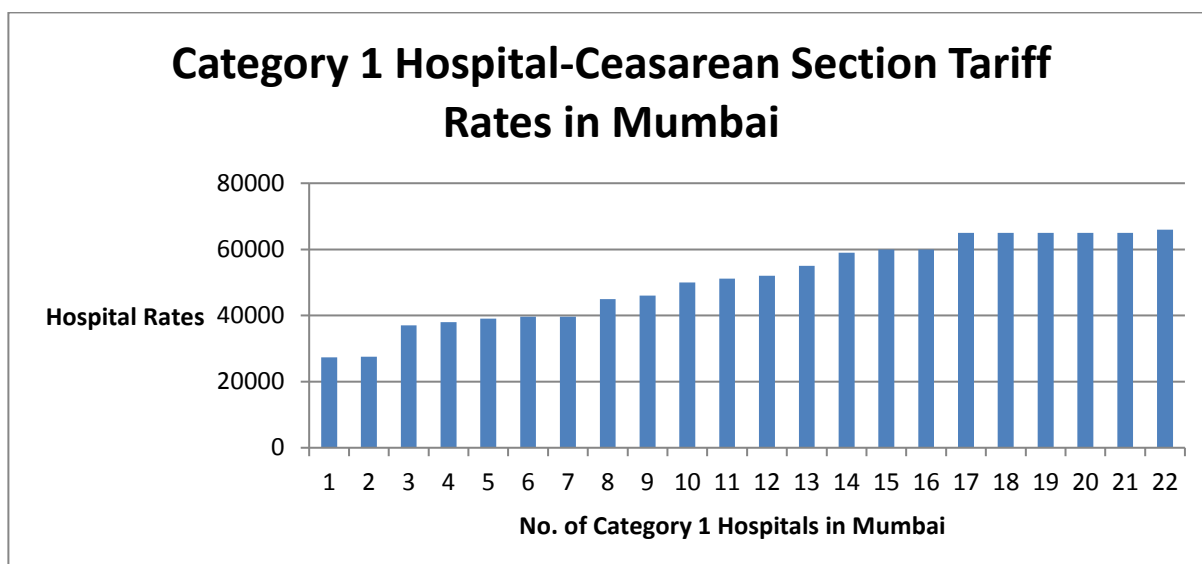


Table 5- Average of Tariff Rates for Normal Delivery in Category 1 Hospitals

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

Figure 4- Average of Tariff Rates for Normal Delivery in Category 1 Hospitals

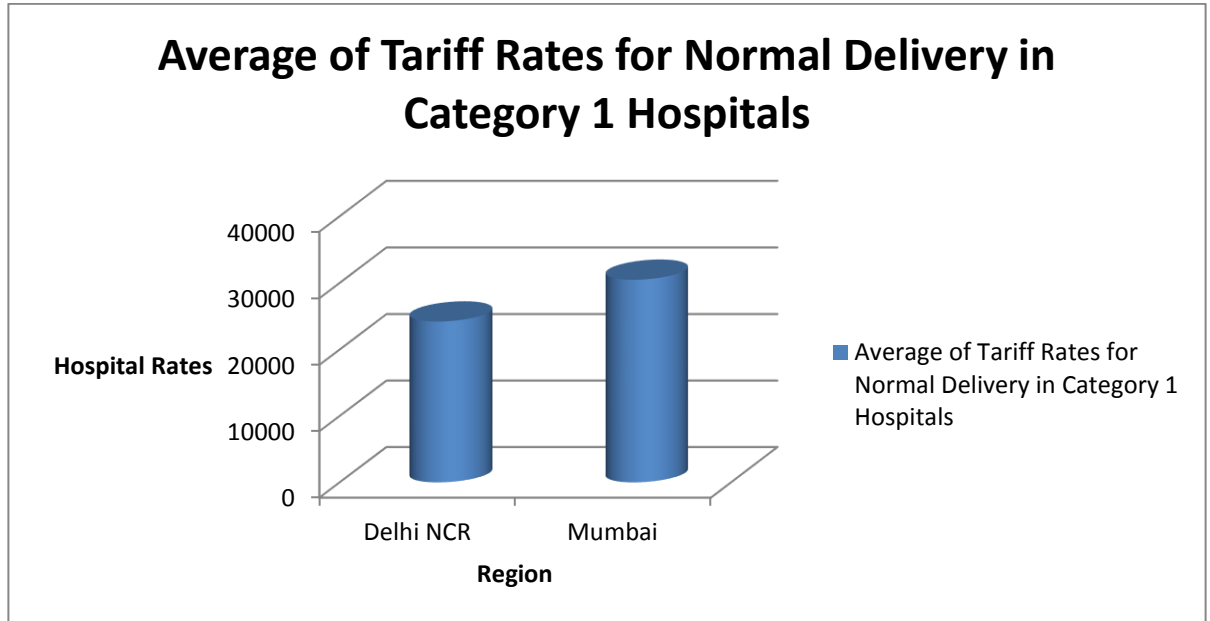


Table 6- Category 1 Hospitals Normal Delivery Price Range(In INR)

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

Figure 5- Category 1 Hospitals-Normal Delivery Tariff Rates in Delhi NCR

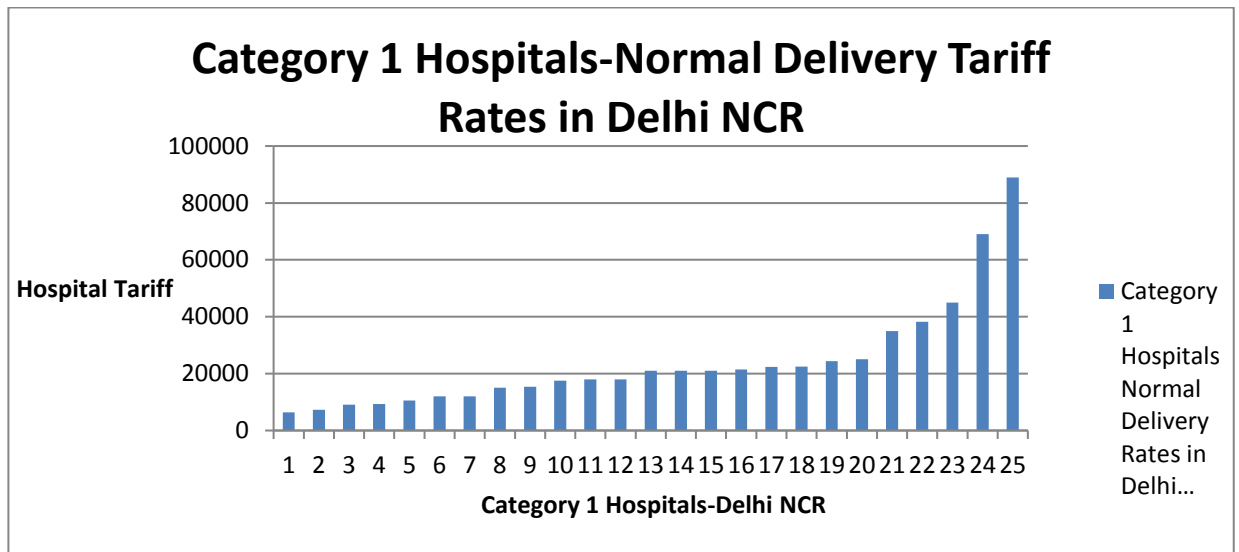


Figure 6-Category 1 Hospitals-Normal Delivery Tariff Rates in Mumbai

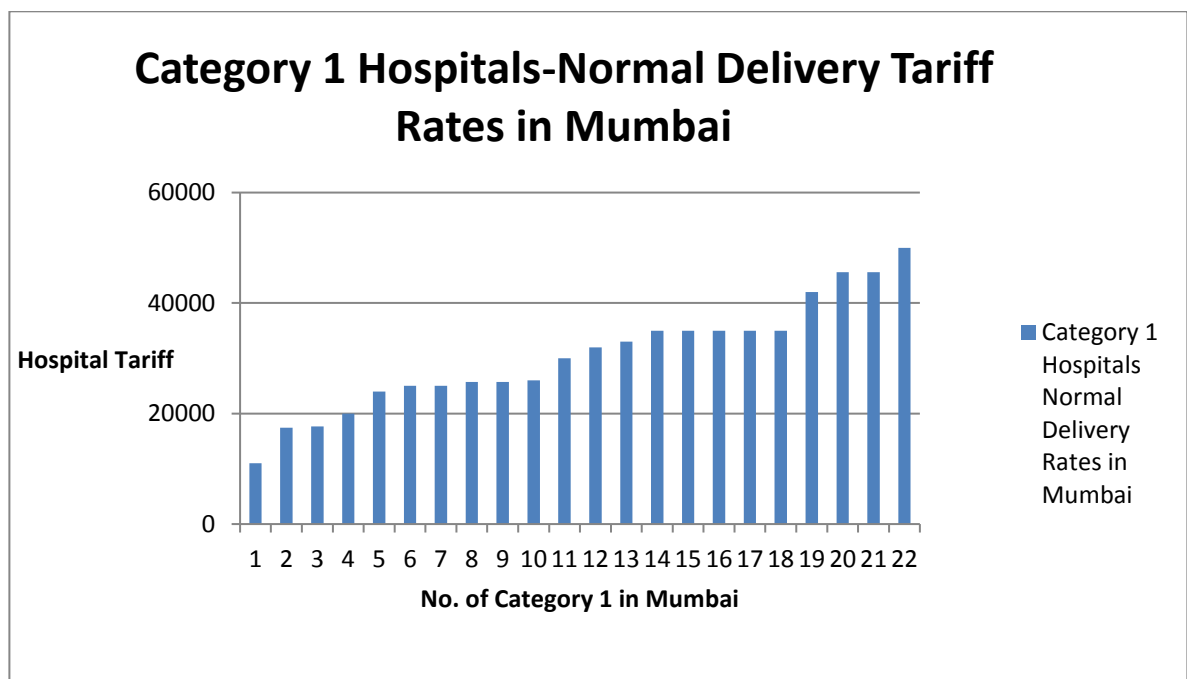


Table 7- Average of Tariff Rates for Cholecystectomy in Category 1 Hospitals

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

Figure 7-Average of Tariff Rates for Cholecystectomy in Category 1 Hospitals

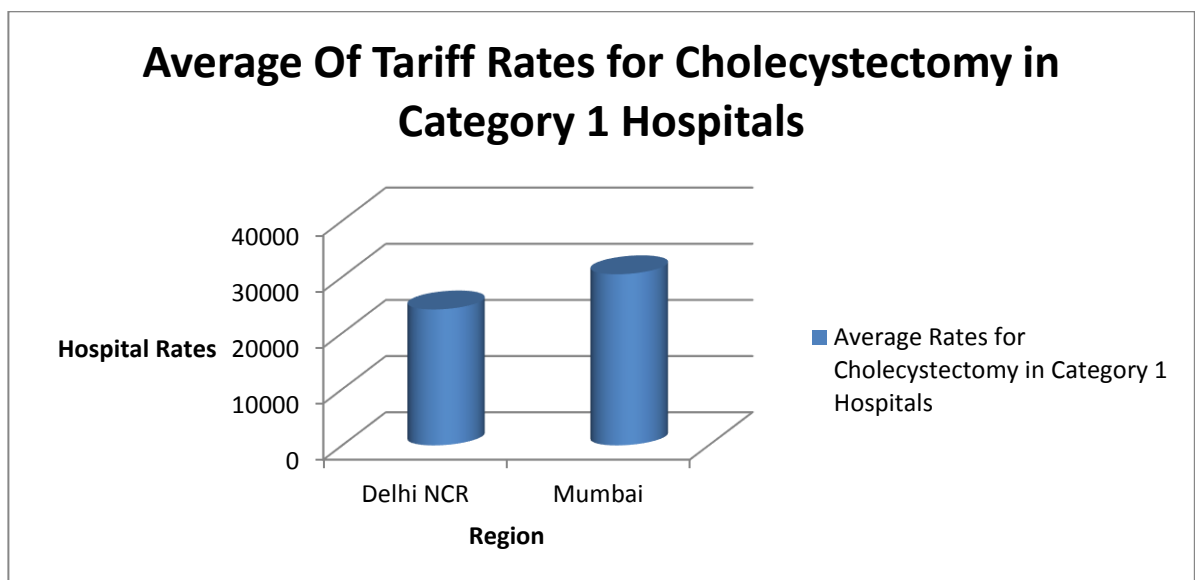


Table 8- Category 1 Hospitals Cholecystectomy Price Range(In INR)

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

Figure 8- Category 1 Hospitals-Cholecystectomy Tariff Rates in Delhi NCR

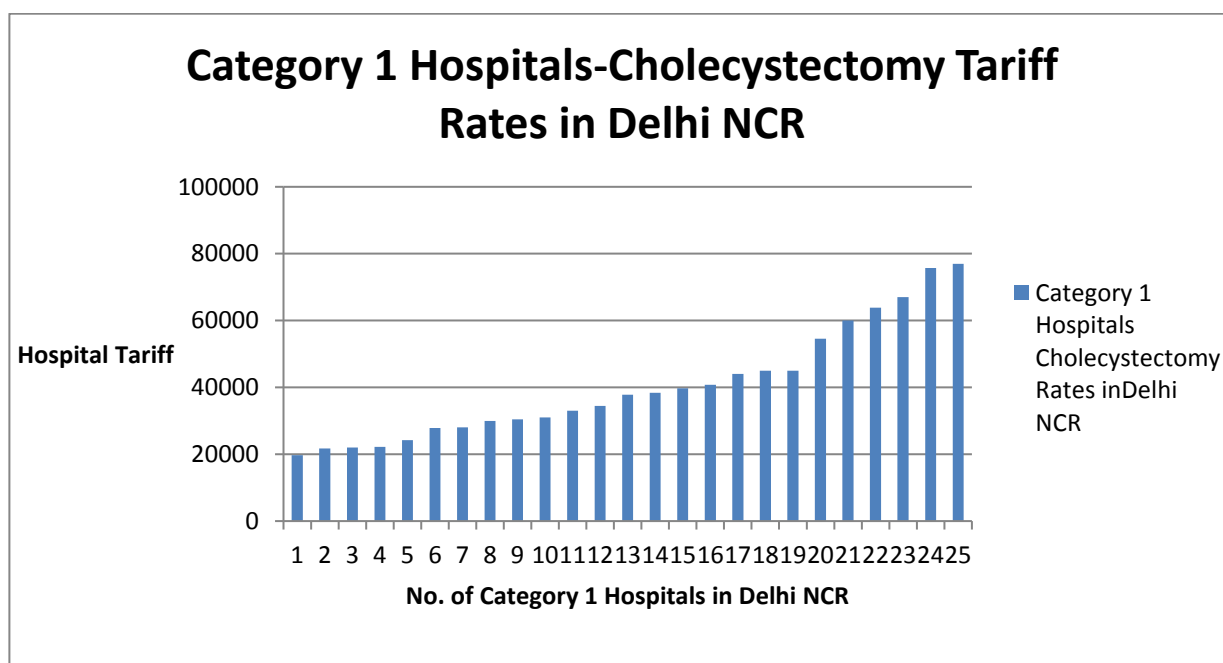


Figure 9- Category 1 Hospitals-Cholecystectomy Tariff Rates in Mumbai

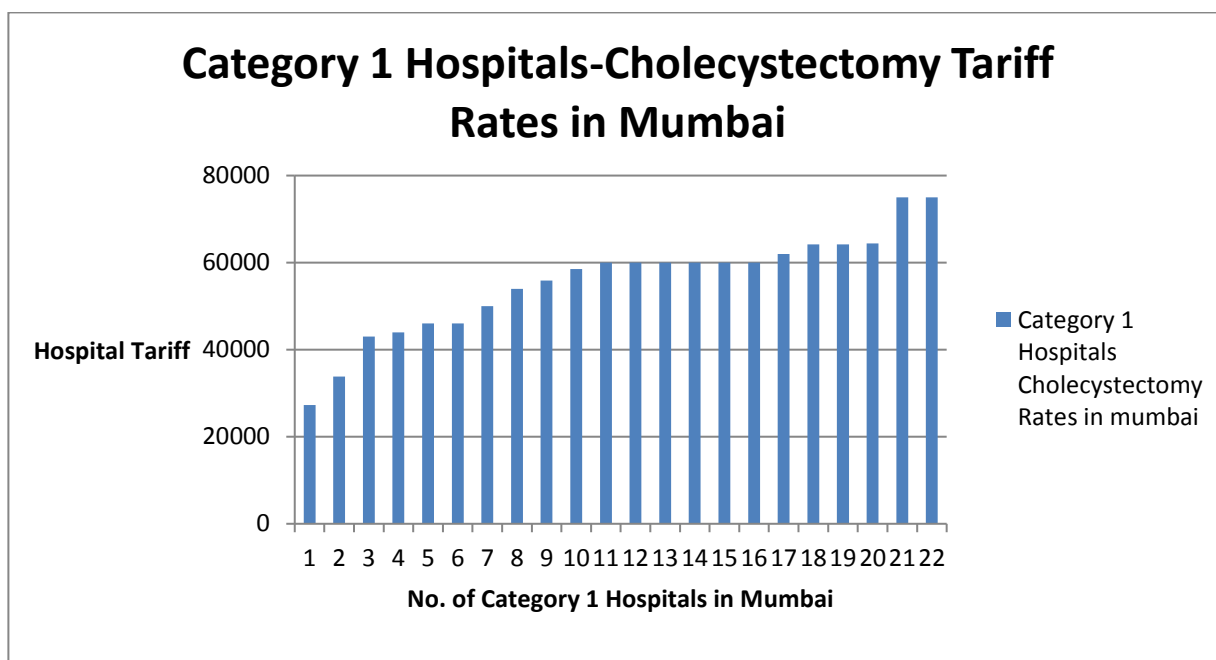


Table 9- Average of Tariff Rates for Appendectomy in Category 1 Hospitals

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

Figure 10- Average of Tariff Rates for Appendectomy in Category 1 Hospitals

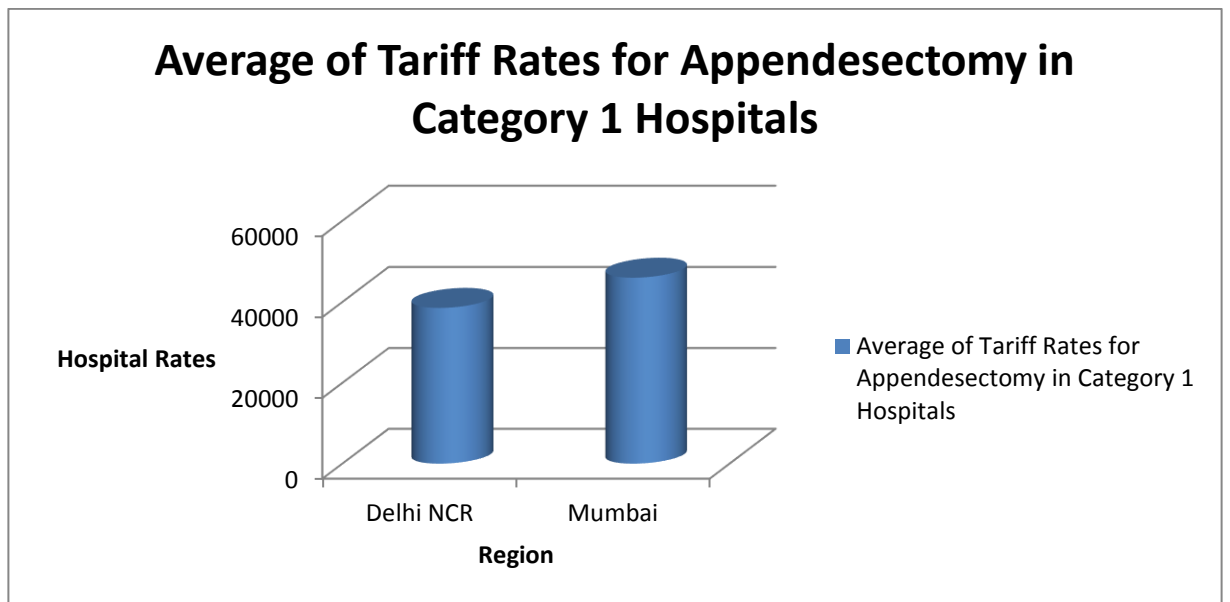


Table 10-Category 1 Hospitals Appendectomy Tariff Range(In INR)

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

Figure 11- Category 1 Hospitals-Appendectomy Tariff Rates in Delhi NCR

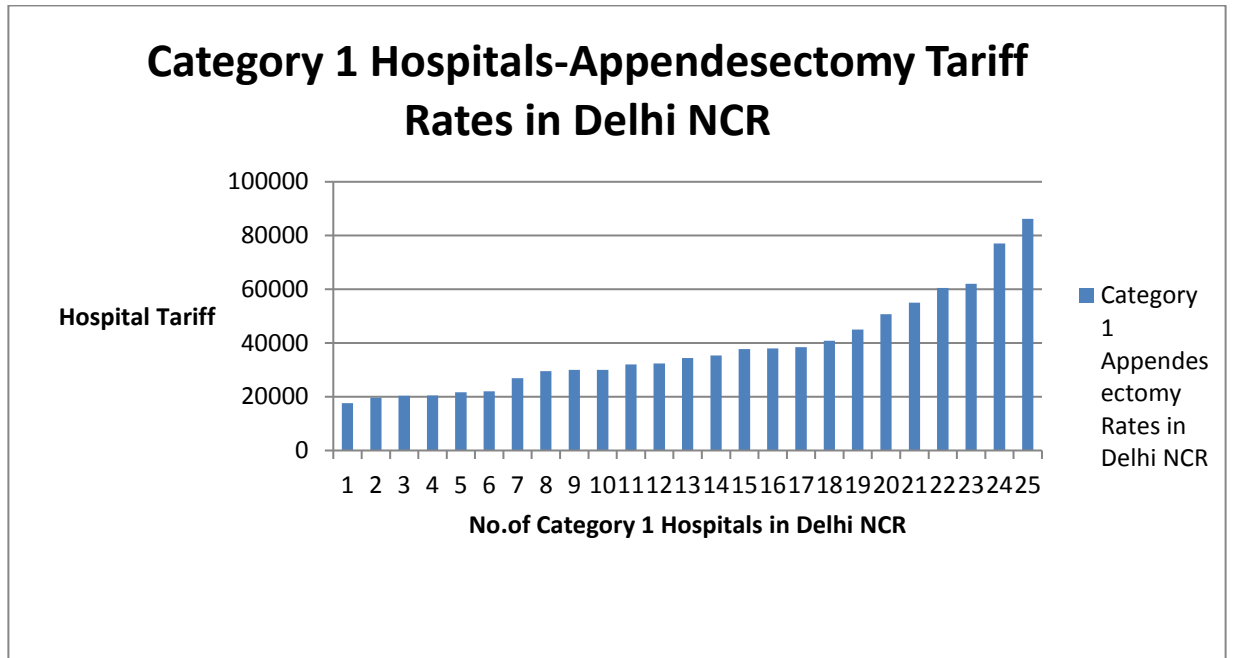


Figure 12- Category 1 Hospitals-Appendectomy Tariff Rates in Mumbai

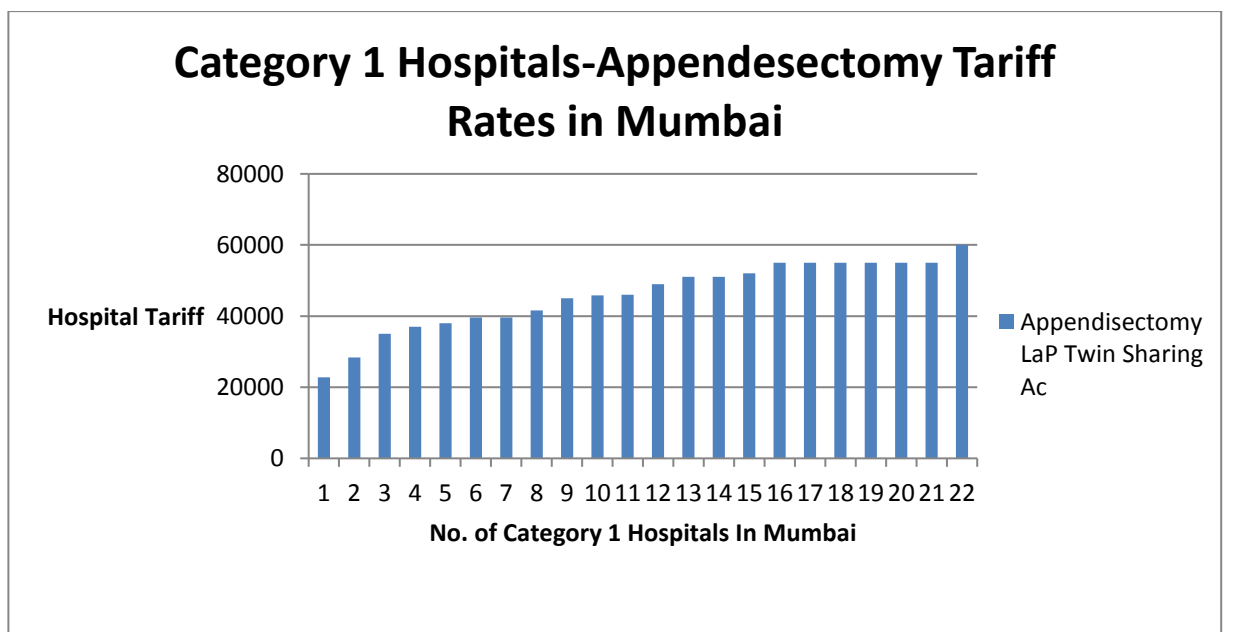


Table 11- Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals

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

Figure 13- Average of Tariff Rates for Inguinal Hernia in Category 1 Hospitals

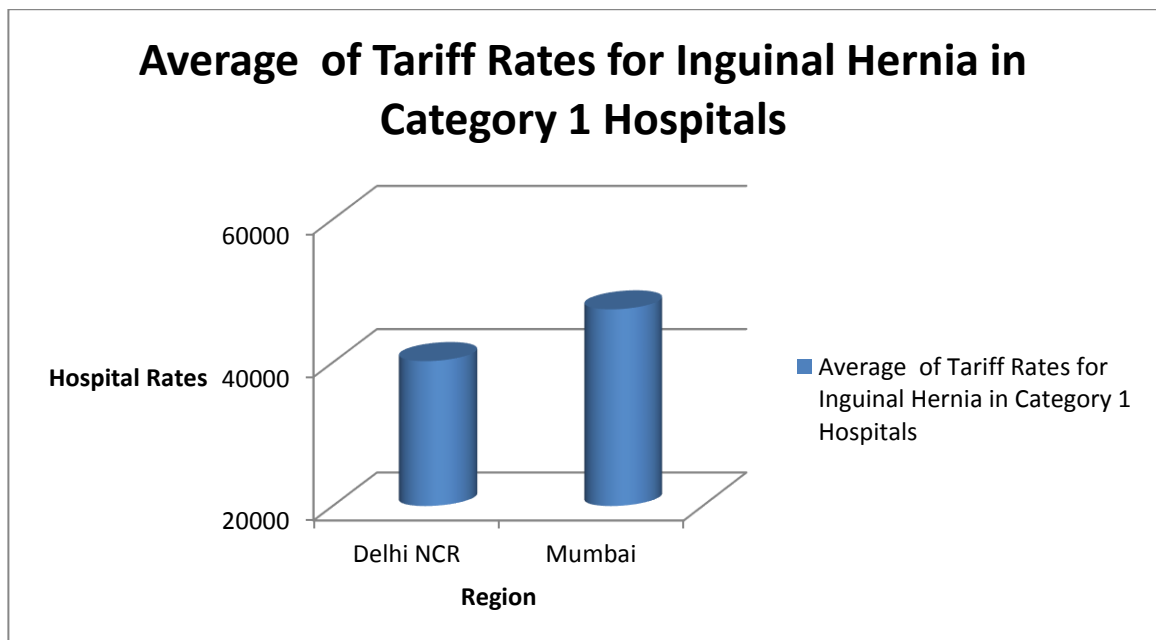


Table 12-Category 1 Hospitals Inguinal Hernia Tariff Range (In INR)

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

Figure 14- Category 1-Inguinal Hernia Tariff Rates in Delhi NCR

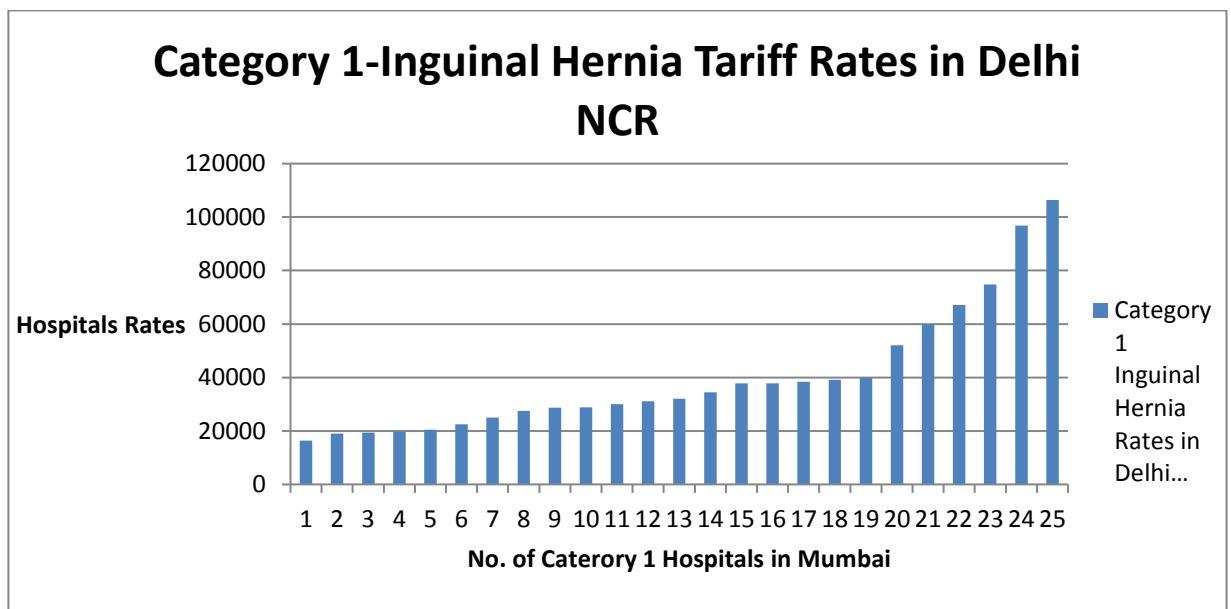


Figure 15- Category 1-Inguinal Hernia Tariff Rates in Mumbai

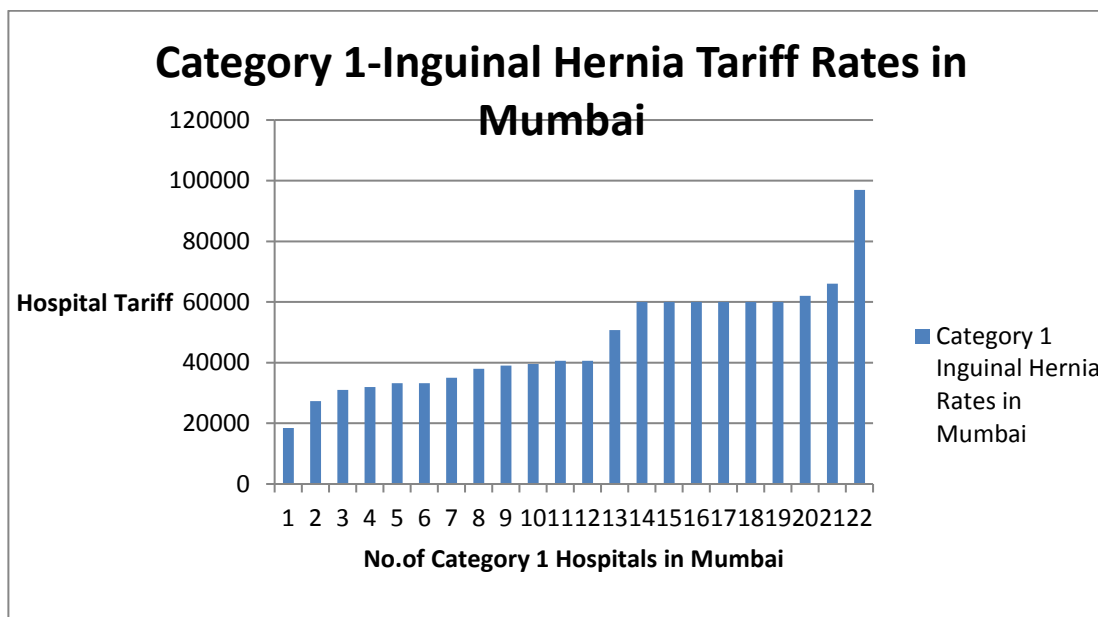


Table -13 Average of Tariff Rates for Caesarean Section in Category 2 Hospitals

Region	Average of Tariff Rates for Caesarean Section in Category 2 Hospitals
Delhi NCR	41628
Mumbai	51125

Figure 16- Average of Tariff Rates for Caesarean Section in Category 2 Hospitals

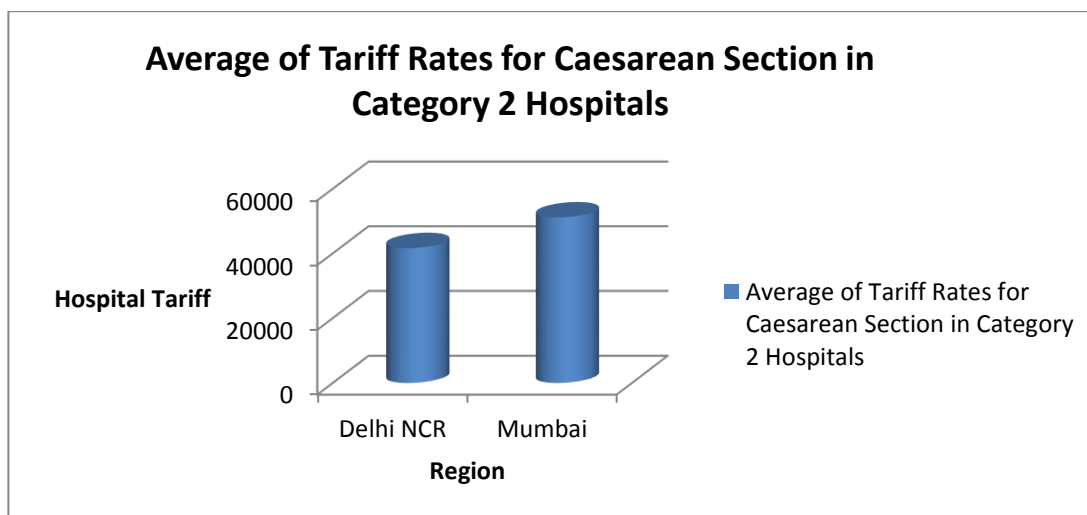


Table 14- Category 2 Hospitals-Caesarean Section Tariff Range(In INR)

Region	Category 2 Hospitals-Caesarean Section Tariff Range(In INR)
Delhi NCR	18445-76860
Mumbai	35000-85100

Figure 17- Category 2 Hospitals-Caesarean Section Tariff Range in Delhi NCR

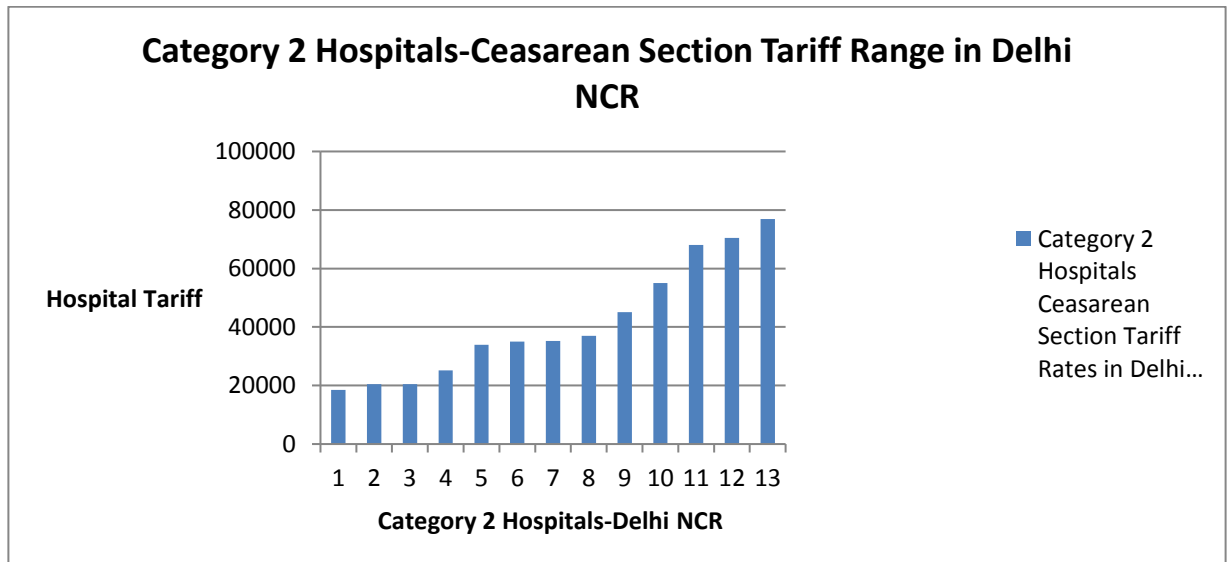


Figure 18- Category 2 Hospitals-Caesarean Section Tariff Range in Mumbai

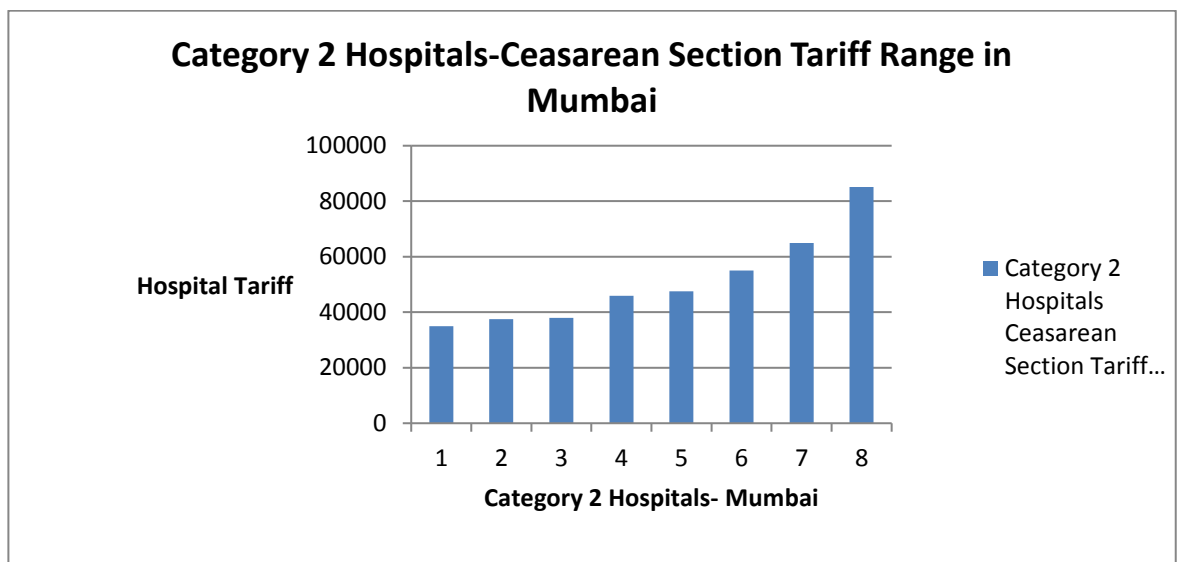


Table- 15 Average of Tariff Rates for Normal Delivery in Category 2 Hospitals

Region	Average of Tariff Rates for Normal Delivery in Category 2 Hospitals
Delhi NCR	27522
Mumbai	31031

Figure 19- Average of Tariff Rates for Normal Delivery in Category 2 Hospitals

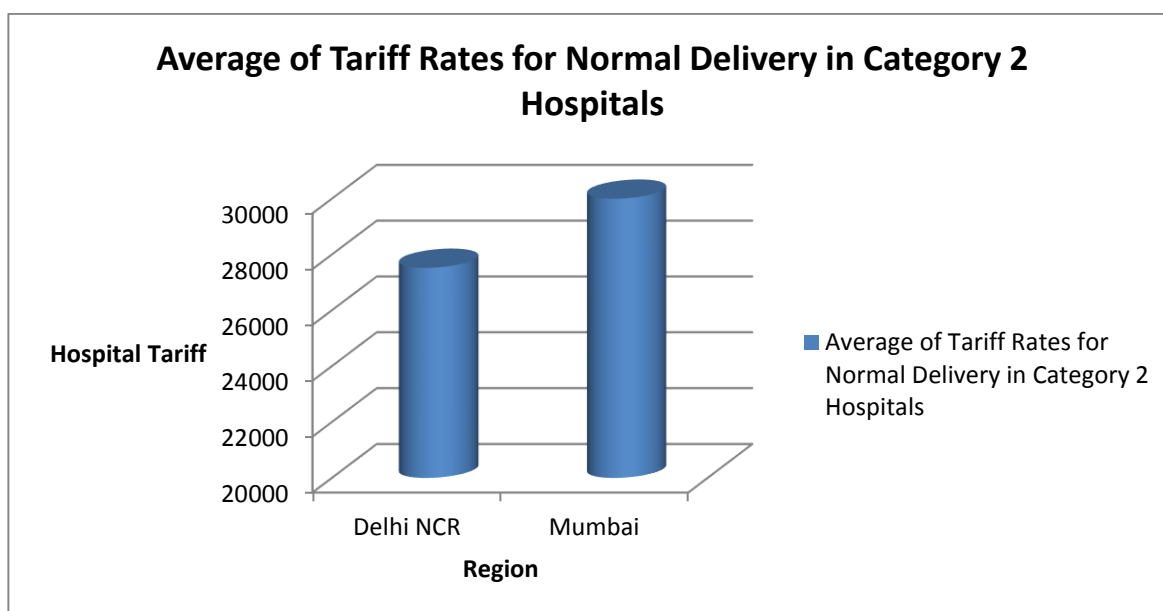


Table -16 Category 2 Hospitals-Normal DeliveryTariff Range(In INR)

Region	Category 2 Hospitals-Normal DeliveryTariff Range(In INR)
Delhi NCR	6570-60690
Mumbai	15000-40000

Figure-20 Category 2 Hospitals- Normal Delivery Tariff Rates in Delhi NCR

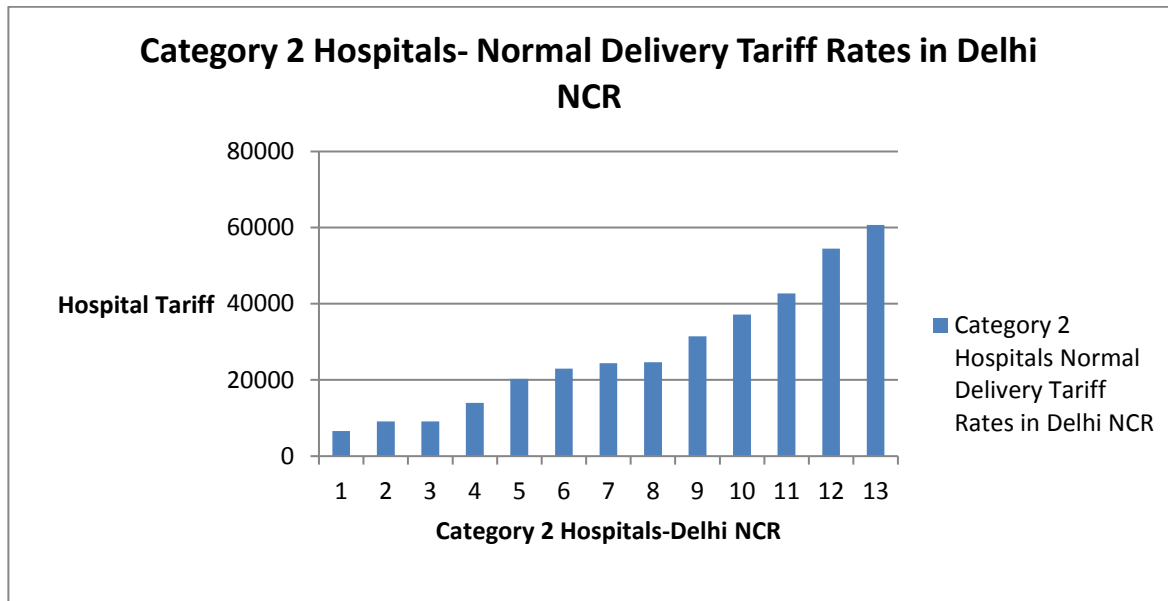


Figure-21 Category 2 Hospitals-Normal Delivery Tariff Rates in Mumbai

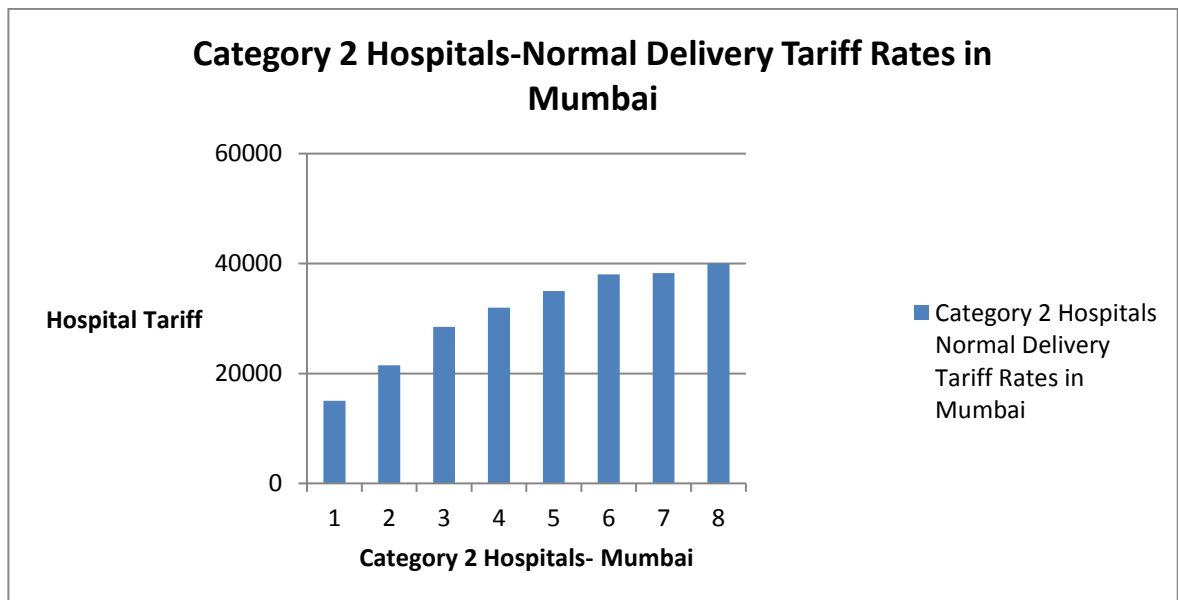


Table -17 Average of Tariff Rates for Cholecystectomy in Category 2 Hospitals

Region	Average of Tariff Rates for Cholecystectomy in Category 2 Hospitals
Delhi NCR	39426
Mumbai	51087

Figure-22 Average of Tariff Rates for Cholecystectomy in Category 2 Hospitals

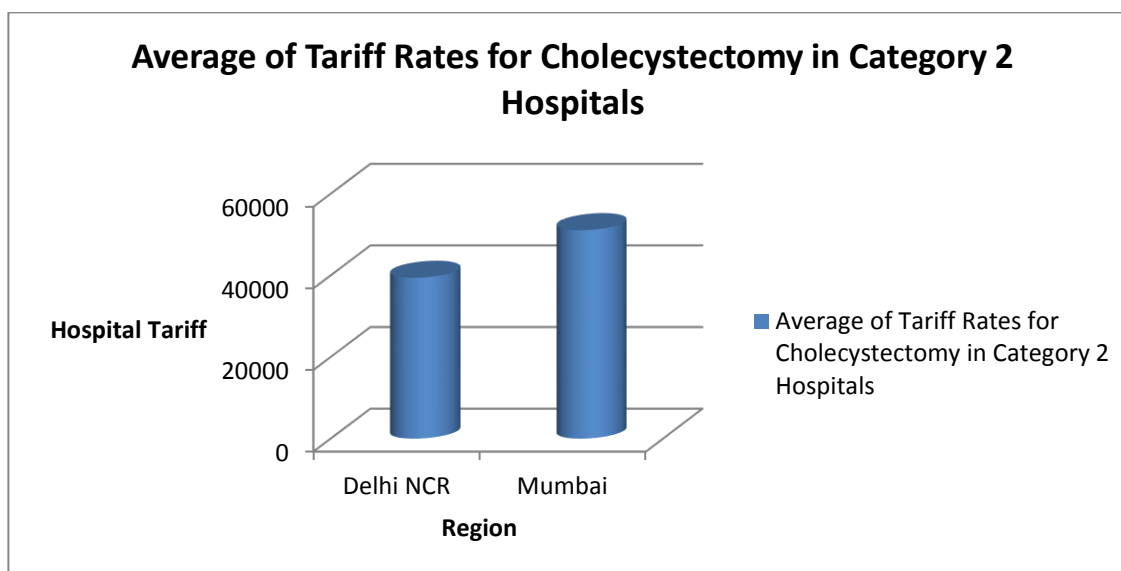


Table -18 Category 2 Hospitals- Cholecystectomy Tariff Range(In INR)

Region	Category 2 Hospitals- Cholecystectomy Tariff Range(In INR)
Delhi NCR	19688-62700
Mumbai	35000-70000

Figure- 23 Category 2 Hospitals-Cholecystectomy Tariff Rates in Delhi NCR

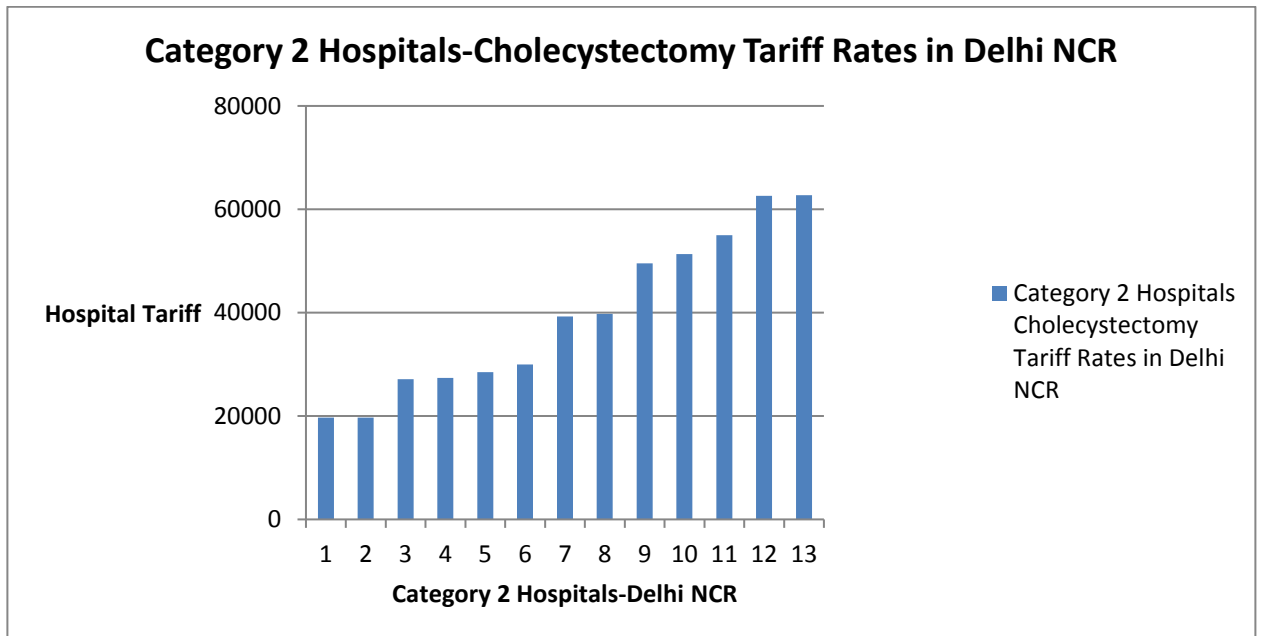


Figure- 24 Category 2 Hospitals-Cholecystectomy Tariff Rates in Mumbai

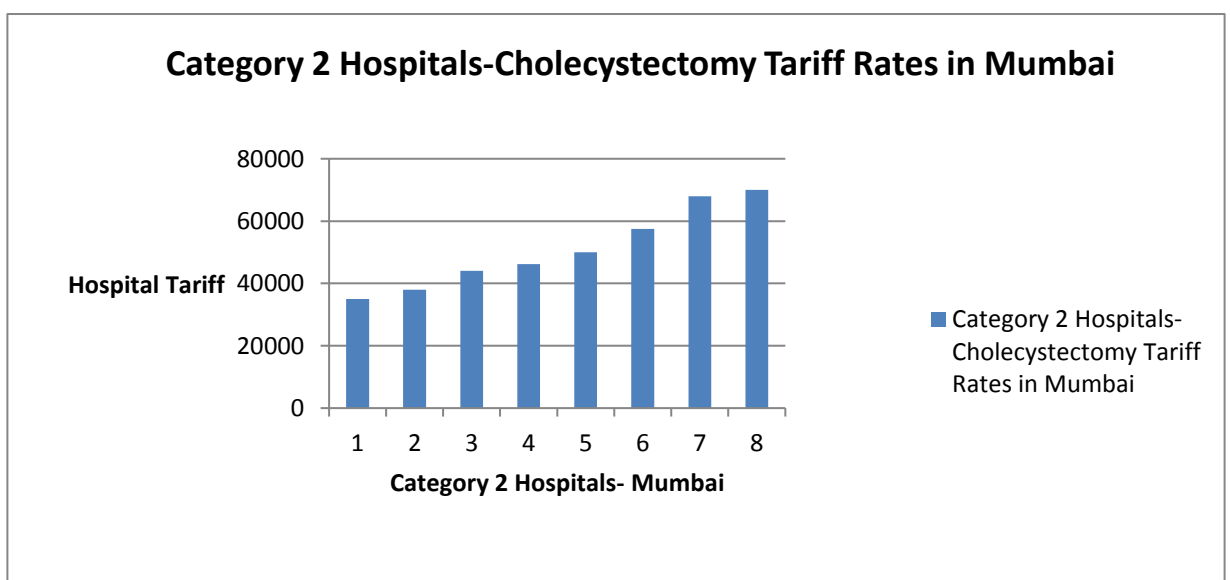


Table-19 Average of Tariff Rates for Appendectomy in Category 2 Hospitals

Region	Average of Tariff Rates for Appendectomy in Category 2 Hospitals
Delhi NCR	39426
Mumbai	51087

Figure-25 Average of Tariff Rates for Appendesectomy in Category 2 Hospitals

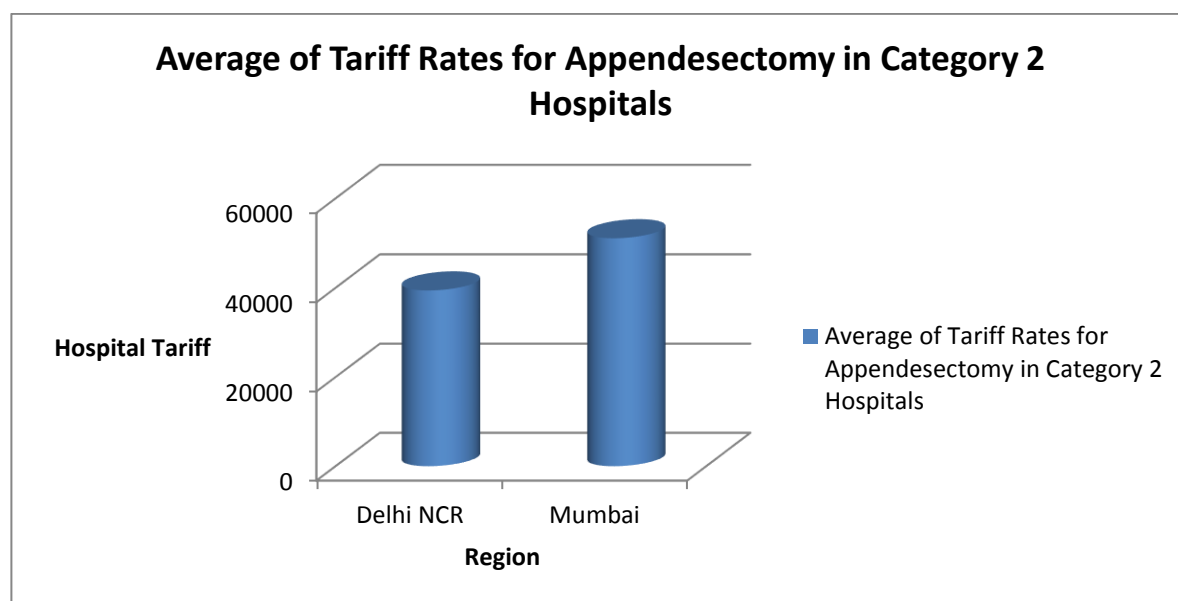


Table 20- Category 2 Hospitals- Appendectomy Tariff Range(In INR)

Region	Category 2 Hospitals- Appendectomy Tariff Range(In INR)
Delhi NCR	19688-88000
Mumbai	30000-72100

Figure-26 Category 2 Hospitals- Appendectomy Tariff Rates In Delhi NCR

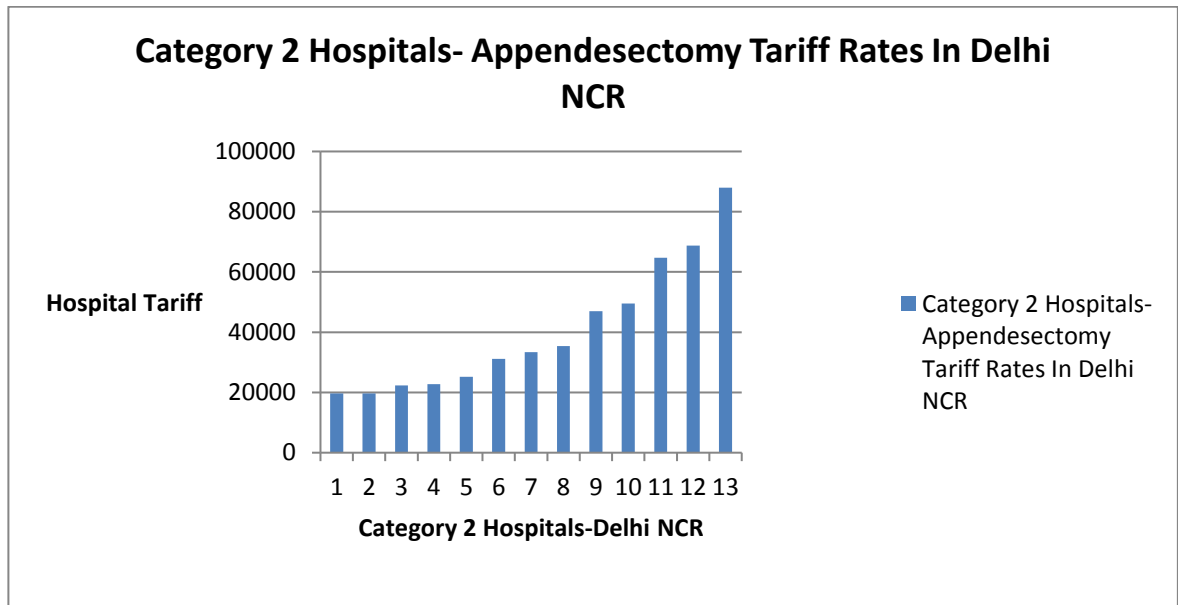


Figure-27 Category 2 Hospitals- Appendectomy Tariff Rates In Mumbai

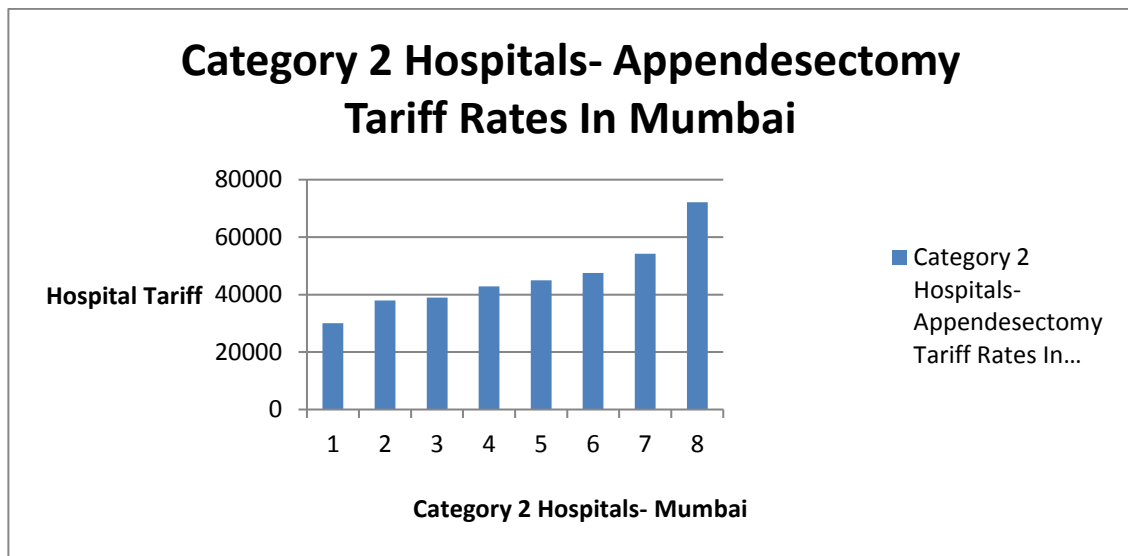


Table 21-Average of Tariff Rates for Inguinal Hernia in Category 2 Hospitals

Region	Average of Tariff Rates for Inguinal Hernia in Category 2 Hospitals
Delhi NCR	40900
Mumbai	47584

Figure-28 Average of Tariff Rates for Inguinal Hernia in Category 2 Hospitals

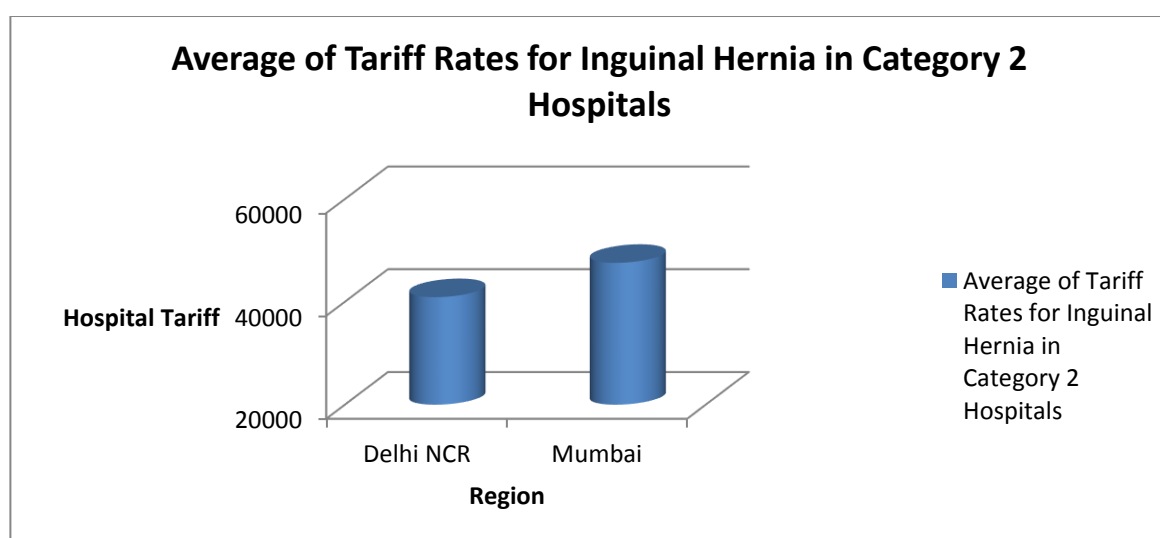


Table 22- Category 2 Hospitals- Inguinal HerniaTariff Range(In INR)

Region	Category 2 Hospitals- Inguinal HerniaTariff Range(In INR)
Delhi NCR	19688-75706
Mumbai	29000-65100

Figure-29 Category 2 Hospitals- Inguinal Hernia Tariff Rates In Delhi NCR

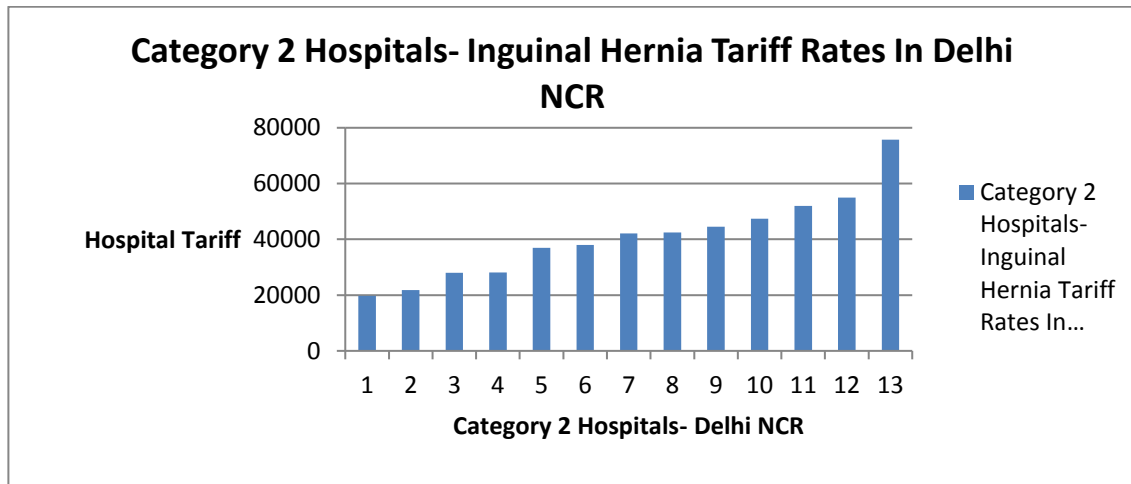


Figure-30 Category 2 Hospitals- Inguinal Hernia Tariff Rates In Mumbai

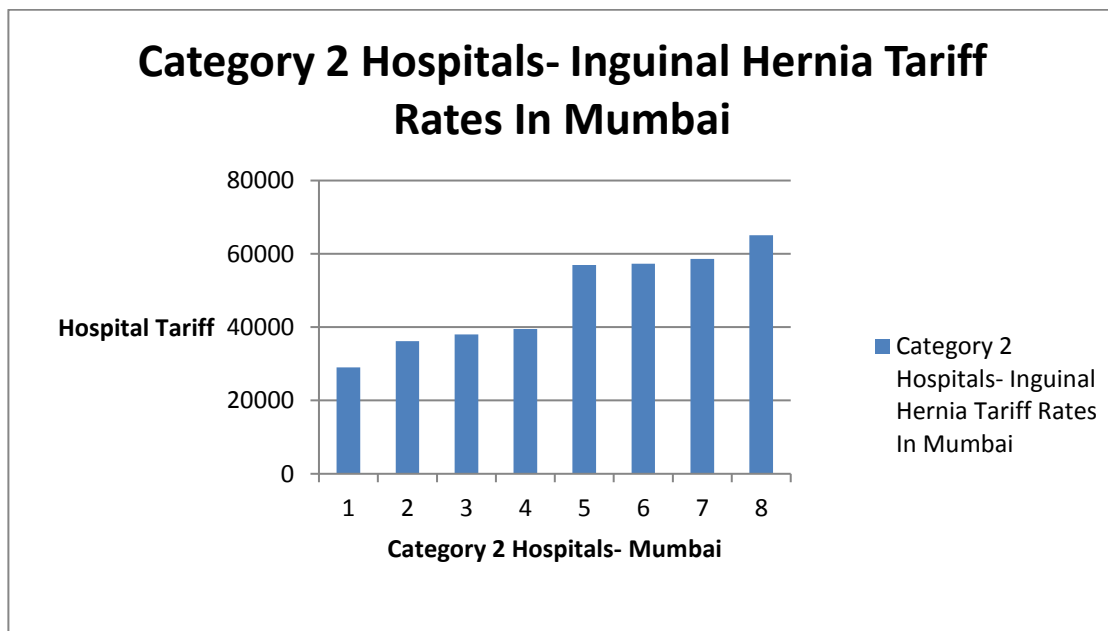


Table 23- Average of Tariff Rates for Caesarean Section in Category 3 Hospitals

Region	Average of Tariff Rates for Caesarean Section in Category 3 Hospitals
Delhi NCR	41795
Mumbai	56160

Figure 31- Average of Tariff Rates for Ceasarean Section in Category 3 Hospitals

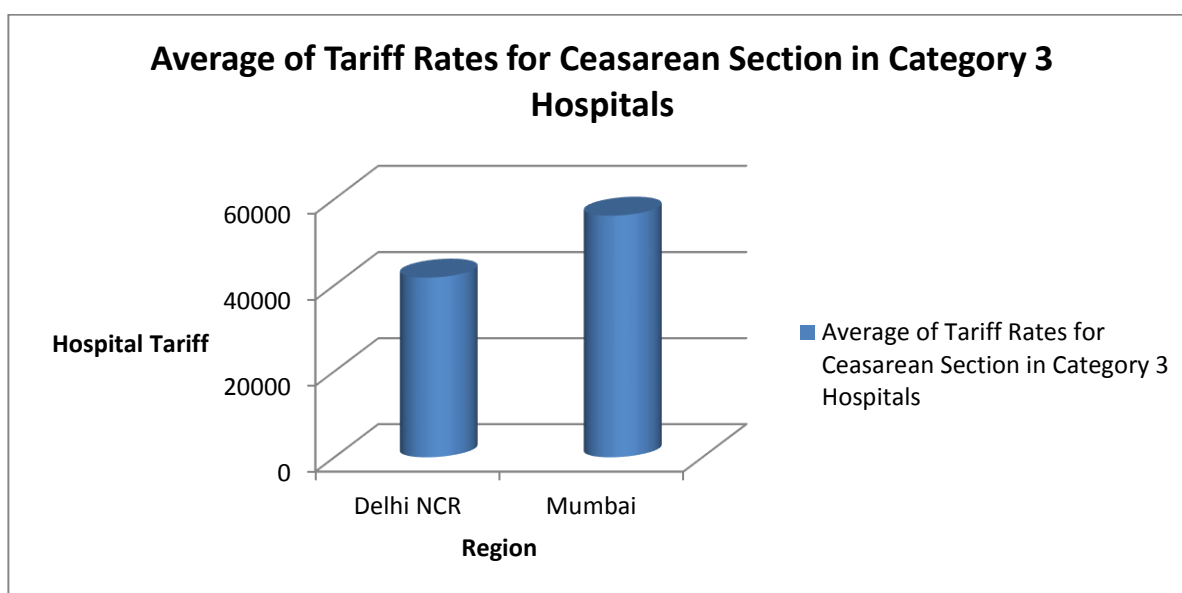


Table 24- Category 2 Hospitals- Caesarean Section Tariff Range(In INR)

Region	Category 2 Hospitals- Caesarean Section Tariff Range(In INR)
Delhi NCR	18000-78000
Mumbai	39072-87500

Figure 32- Category 3 Hospitals- Caesarean Section Tariff Range in Delhi NCR

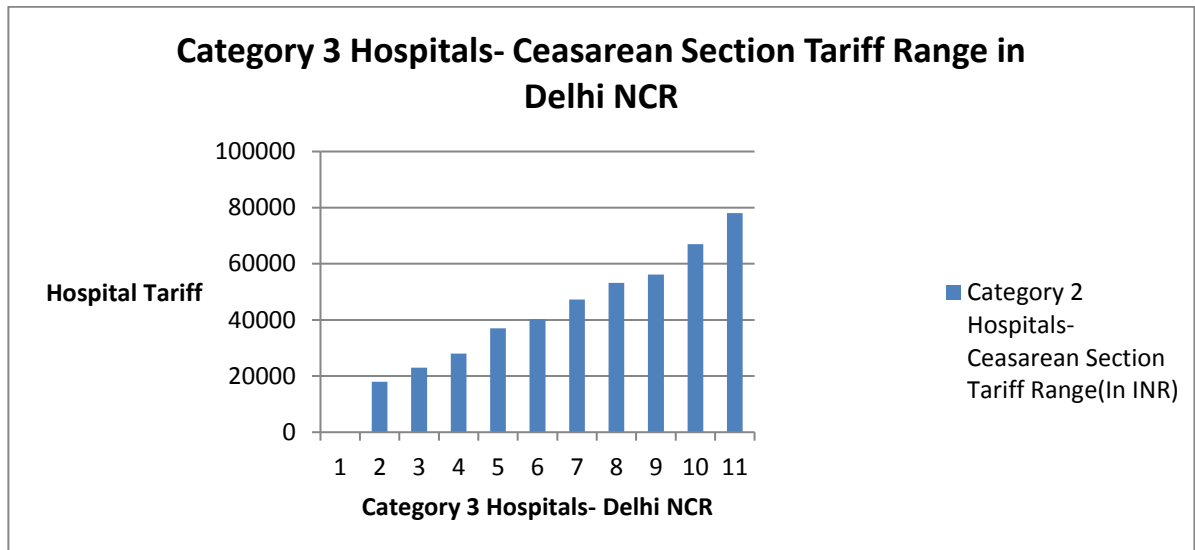


Figure 33- Category 3 Hospitals- Caesarean Section Tariff Range in Mumbai

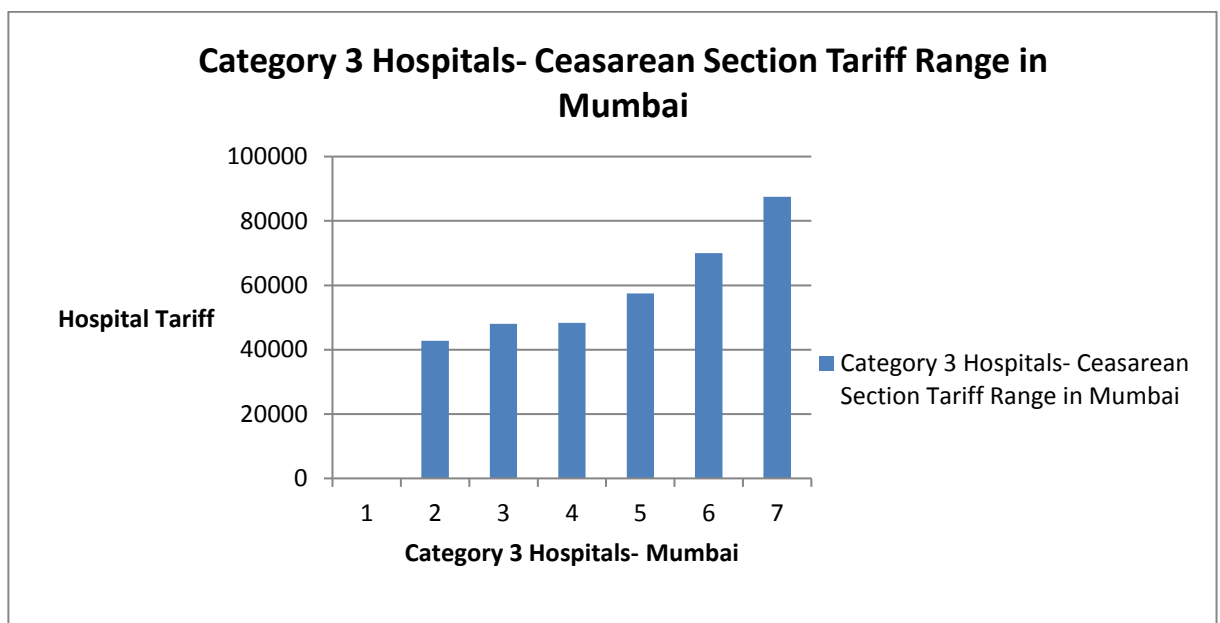


Table 25-Average of Tariff Rates for Normal Delivery in Category3 Hospitals

Region	Average of Tariff Rates for Normal Delivery in Category3 Hospitals
Delhi NCR	28322
Mumbai	31723

Figure 34- Average of Tariff Rates for Normal Delivery in Category 3 Hospitals

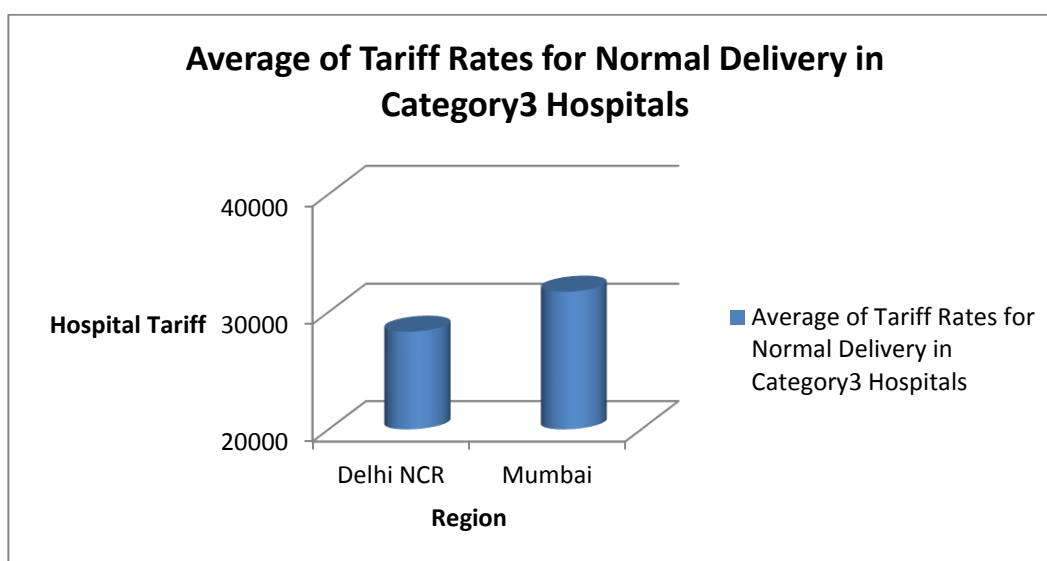


Table 26- Category 3 Hospitals- Normal Delivery Tariff Range(In INR)

Region	Category 3 Hospitals- Normal Delivery Tariff Range(In INR)
Delhi NCR	8000-48000
Mumbai	21800-40000

Figure 35- Category 3 Hospitals Normal Delivery Tariff Range in Delhi NCR

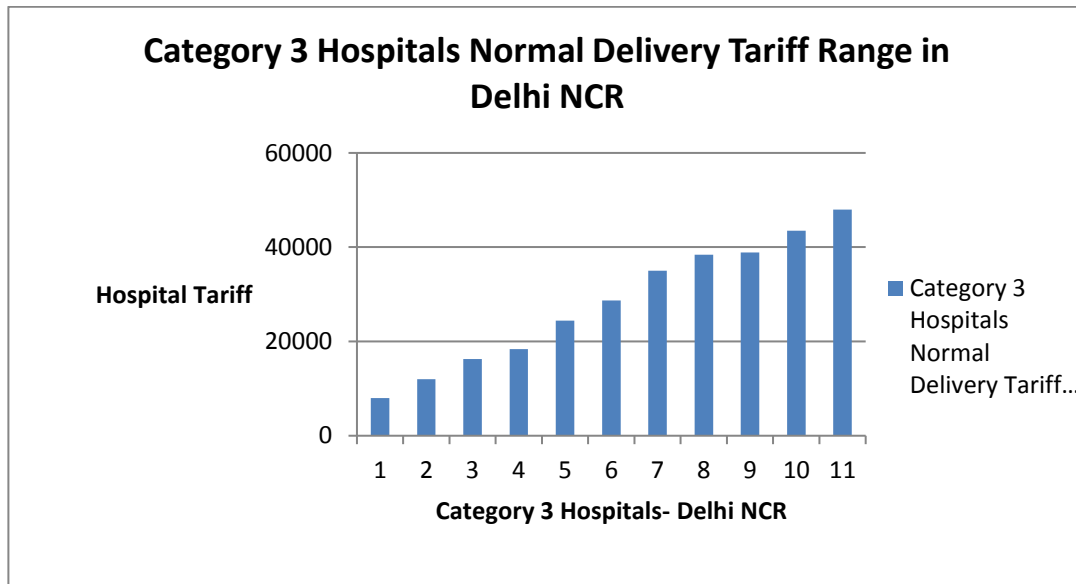


Figure 36- Category 3 Hospitals Normal Delivery Tariff Range Mumbai

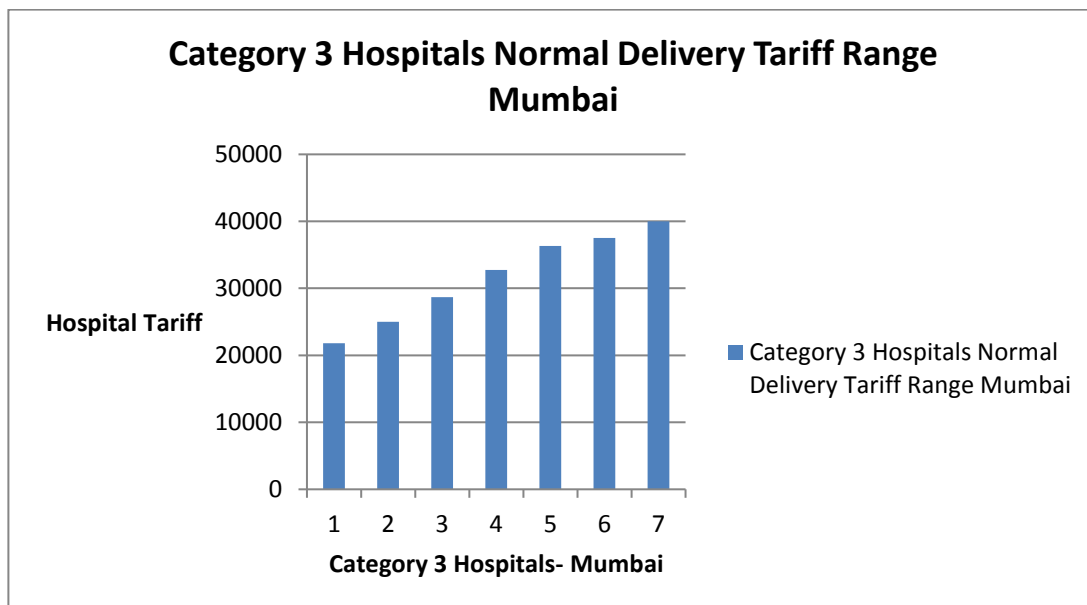


Table-27 Average of Tariff Rates for Cholecystectomy in Category3 Hospitals

Region	Average of Tariff Rates for Cholecystectomy in Category3 Hospitals
Delhi NCR	40013
Mumbai	56064

Figure 37- Average of Tariff Rates for Cholecystectomy in Category 3 Hospitals

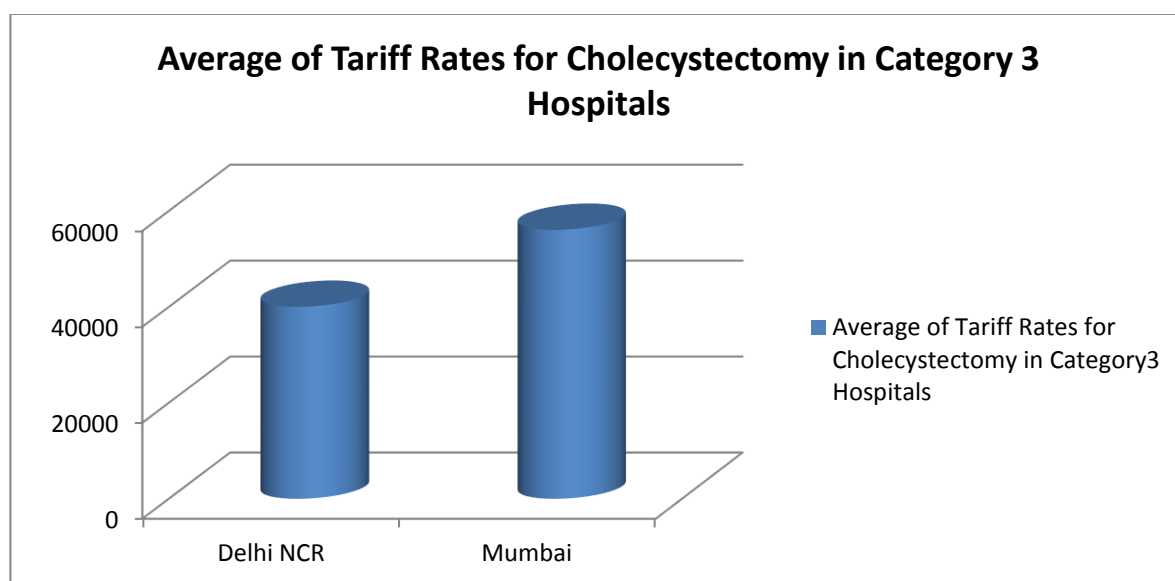


Table 28- Category 3 Hospitals- Cholecystectomy Tariff Range(In INR)

Region	Category 3 Hospitals- Cholecystectomy Tariff Range(In INR)
Delhi NCR	15200-73522
Mumbai	31640-92485

Figure- 38 Category 3 Hospitals-Cholecystectomy Rates in Delhi NCR

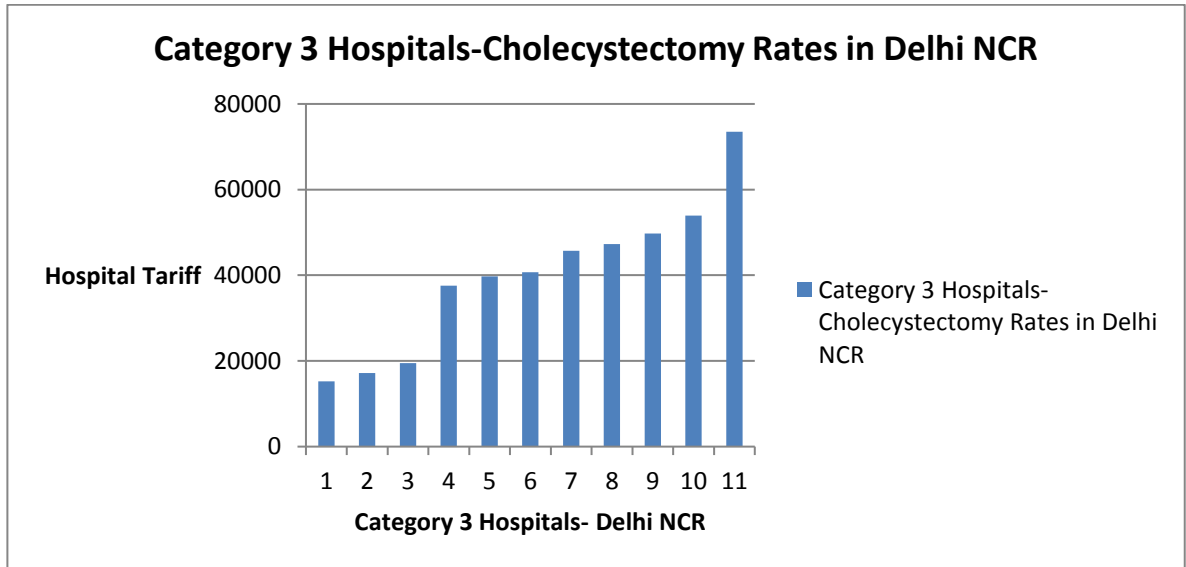


Figure- 39 Category 3 Hospitals-Cholecystectomy Rates in Mumbai

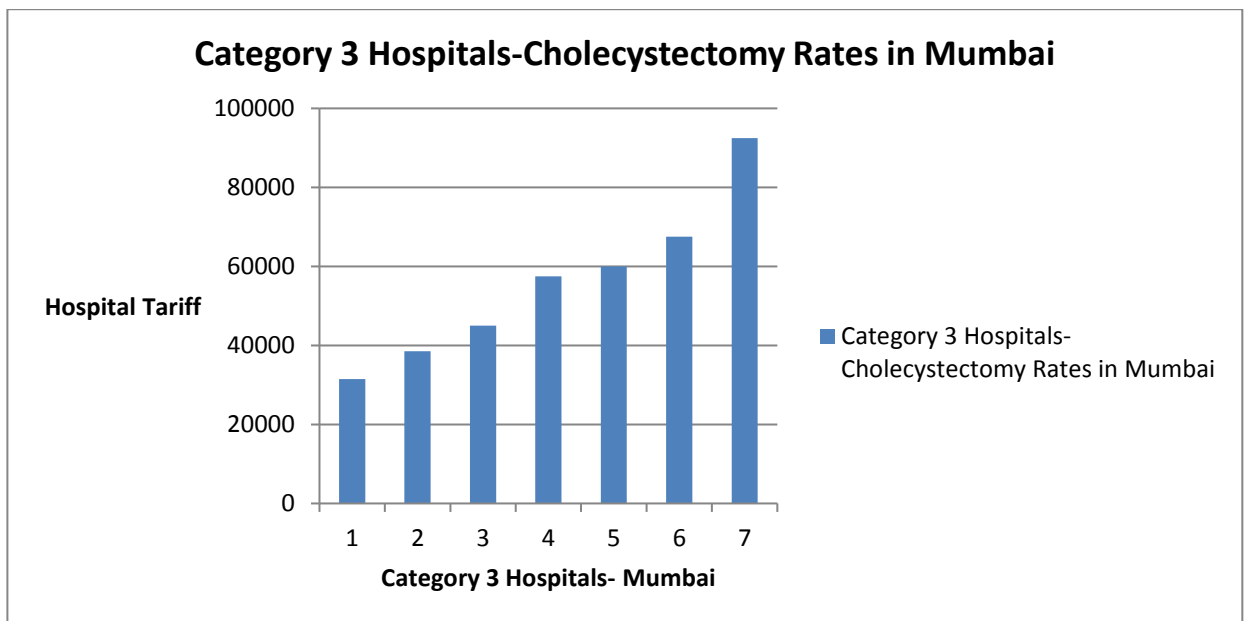


Table-29 Average of Tariff Rates for Appendectomy in Category3 Hospitals

Region	Average of Tariff Rates for Appendectomy in Category3 Hospitals
Delhi NCR	40020
Mumbai	51326

Figure-40 Average of Tariff Rates for Appendesectomy in Category3 Hospitals

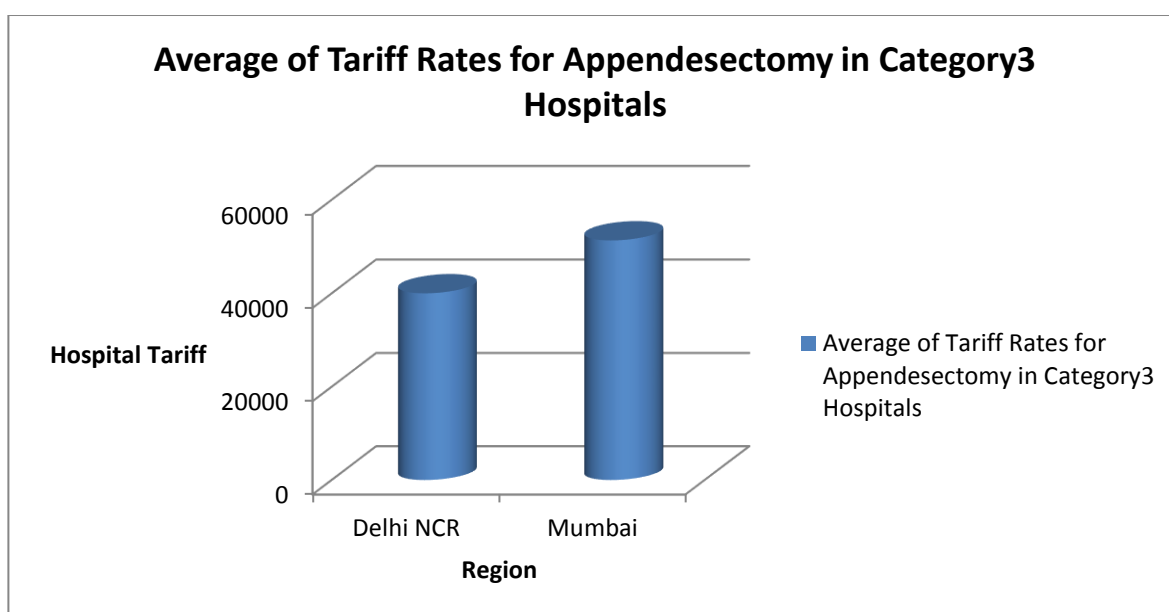


Table-30 Category 3 Hospitals- Appendectomy Tariff Range(In INR)

Region	Category 3 Hospitals- Appendectomy Tariff Range(In INR)
Delhi NCR	20000-56490
Mumbai	34460-65020

Figure-41 Category 3 Hospitals- Appendesectomy Tariff Rates in Delhi NCR

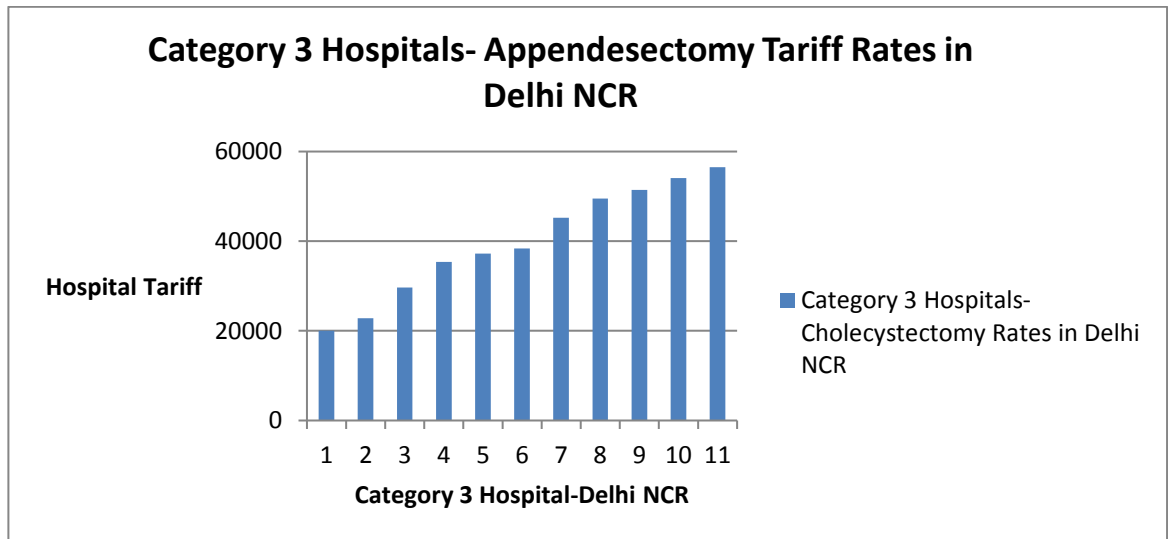


Figure-42 Category 3 Hospitals- Appendesectomy Tariff Rates in Mumbai

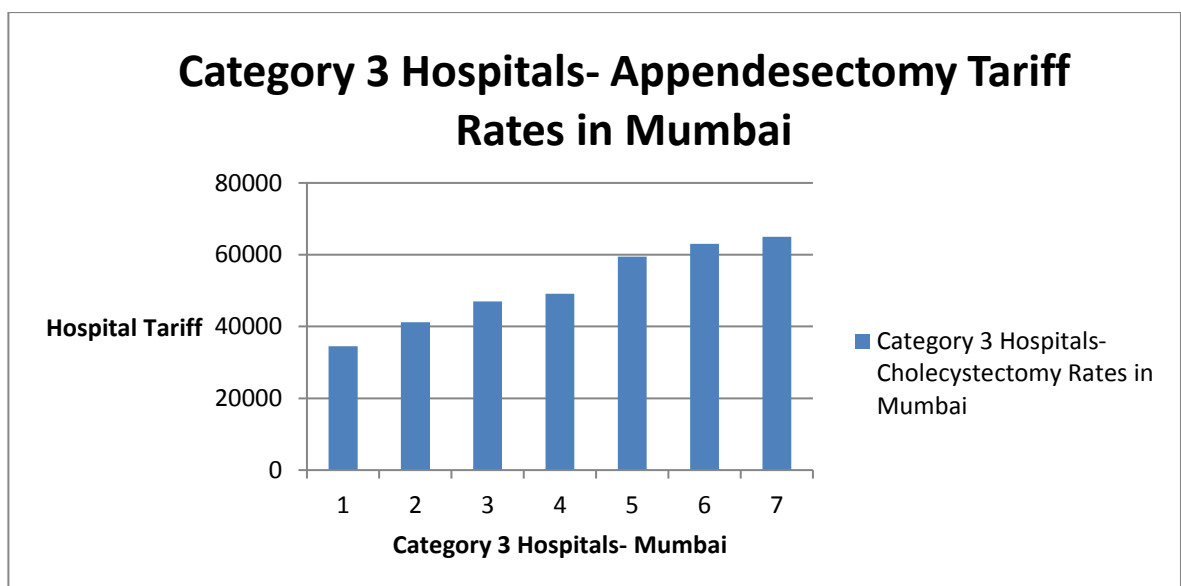


Table-31 Average of Tariff Rates for Inguinal Hernia in Category 3 Hospitals

Region	Average of Tariff Rates for Inguinal Hernia in Category 3 Hospitals
Delhi NCR	41401
Mumbai	51646

Figure-43 Average of Tariff Rates for Inguinal Hernia in Category3 Hospitals

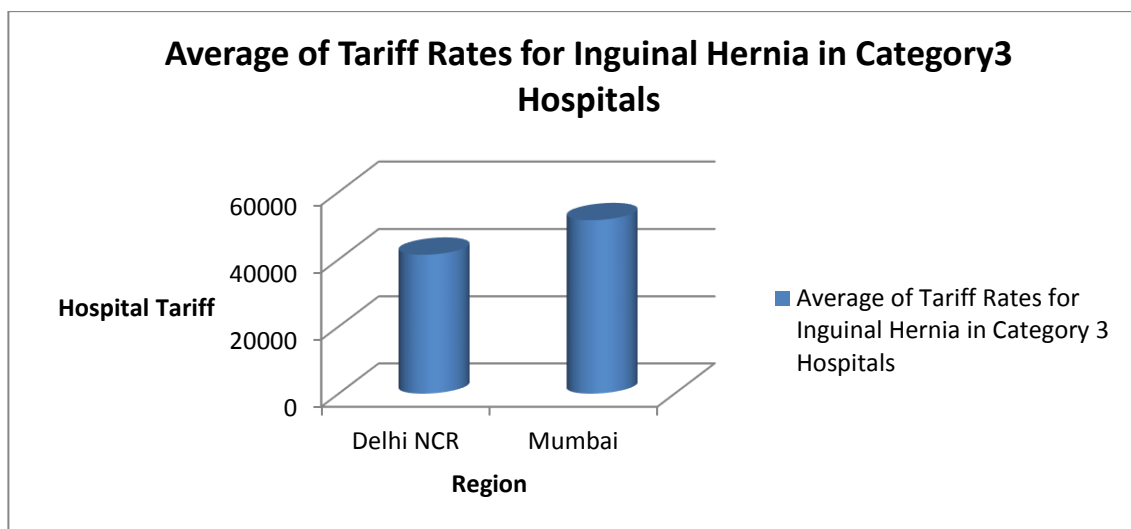


Table-32 Category 3 Hospitals- Inguinal Hernia Tariff Range (In INR)

Region	Category 3 Hospitals- Inguinal Hernia Tariff Range (In INR)
Delhi NCR	18800-55145
Mumbai	29325-92485

Figure-44 Category 3 Hospitals-Inguinal Hernia Rates in Delhi NCR

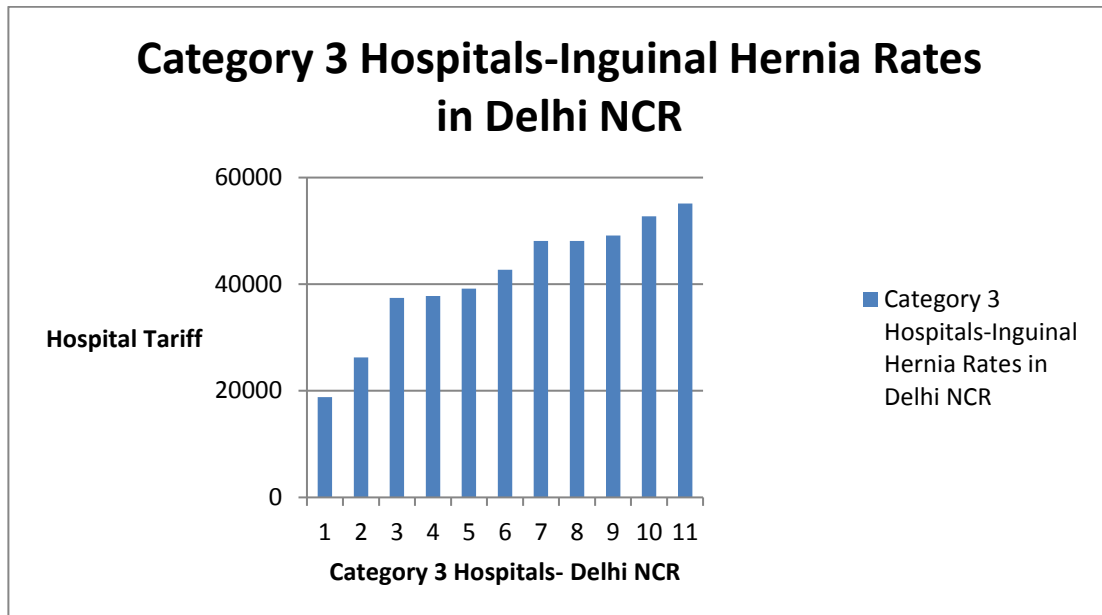


Figure- 45 Category 3 Hospitals-Inguinal Hernia Rates in Mumbai

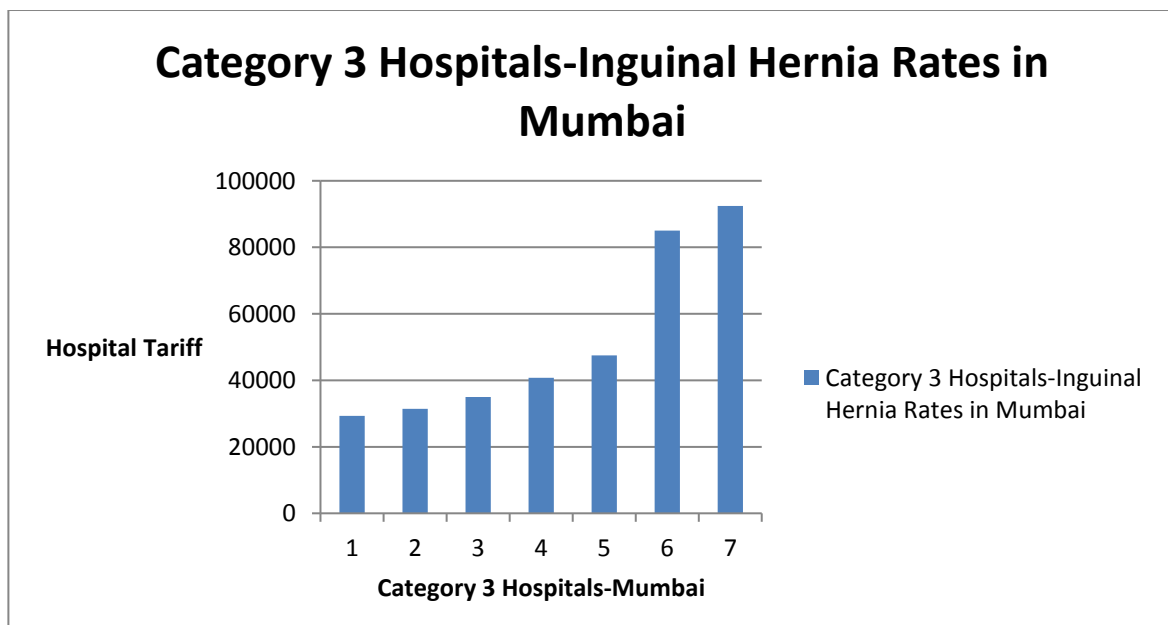


Table-33 Average of Tariff Rates for Caesarean Section in Category 4 Hospitals

Region	Average of Tariff Rates for Caesarean Section in Category 4 Hospitals
Delhi NCR	41432
Mumbai	51875

Figure- 46 Average of Tariff Rates for Cesarean Section in Category 4 Hospitals

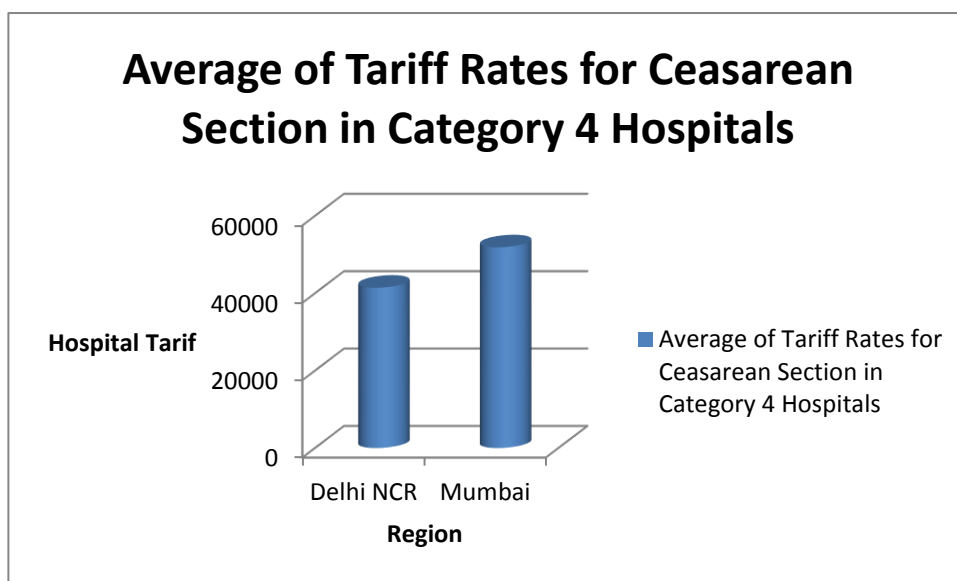


Table- 34 Category 4 Hospitals- Caesarean Section Tariff Range(In INR)

Region	Category 4 Hospitals- Caesarean Section Tariff Range(In INR)
Delhi NCR	22000-68000
Mumbai	30000-75500

Figure-47 Category 4 Hospitals-Ceasarean Section Tariff Range in Delhi NCR

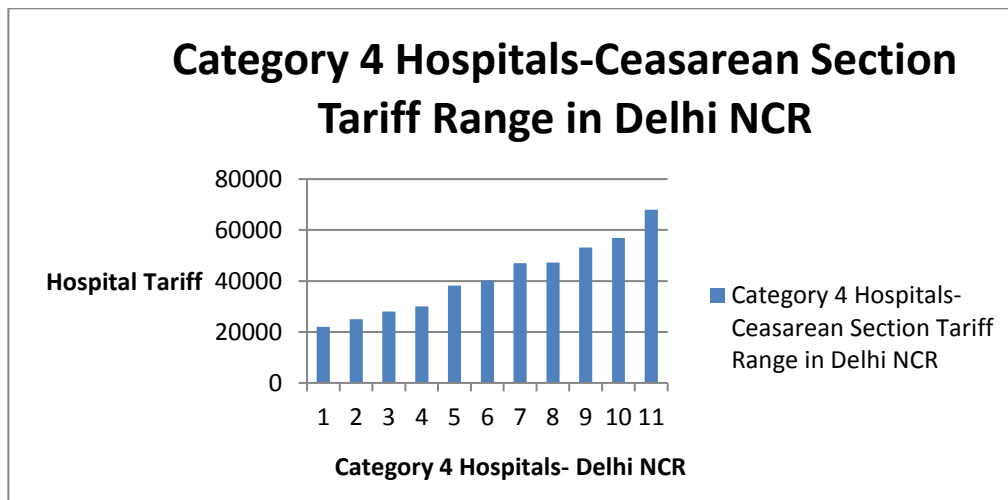


Figure-48 Category 4 Hospitals-Ceasarean Section Tariff Range in Mumbai

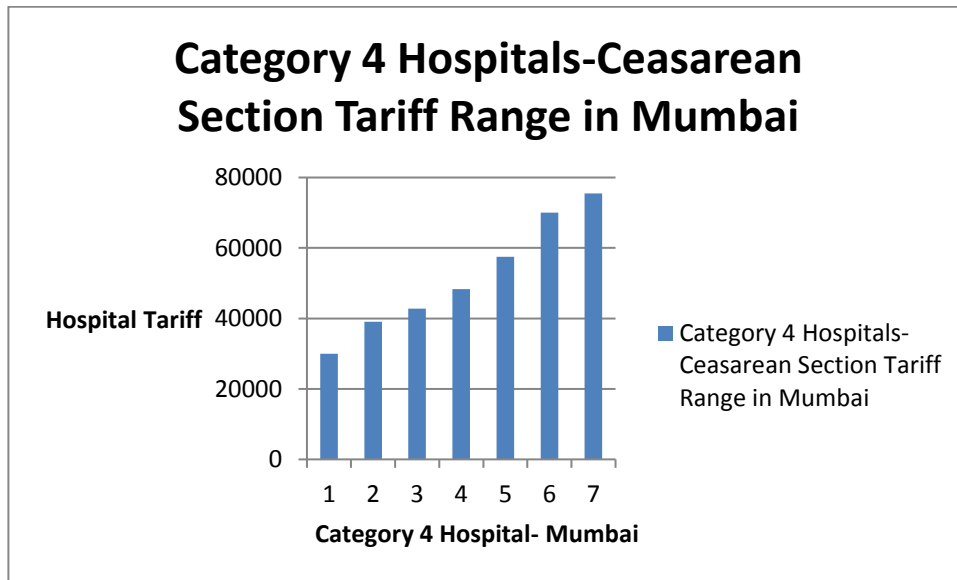


Table-35 Average of Tariff Rates for Normal Delivery in Category 4 Hospitals

Region	Average of Tariff Rates for Normal Delivery in Category 4 Hospitals
Delhi NCR	29140
Mumbai	32723

Figure-49 Average of Tariff Rates for Normal Delivery in Category 4 Hospitals

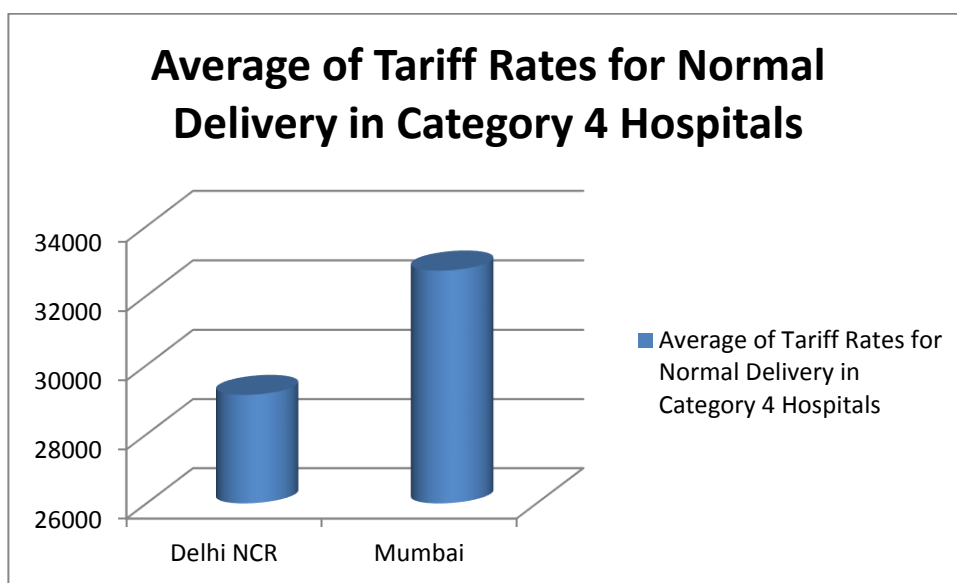


Table-36 Category 4 Hospitals- Normal Range Tariff Range(In INR)

Region	Category 4 Hospitals- Normal Range Tariff Range(In INR)
Delhi NCR	11360-58000
Mumbai	21800-40000

Figure-50 Category 4 Hospitals-Normal Delivery Tariff Range in Delhi NCR

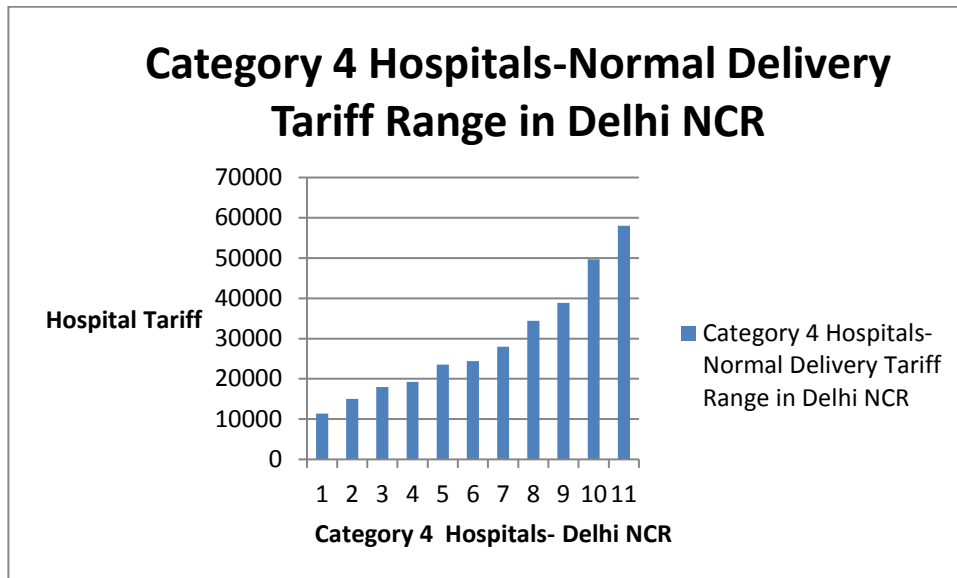


Figure-51 Category 4 Hospitals-Normal Delivery Tariff Range in Mumbai

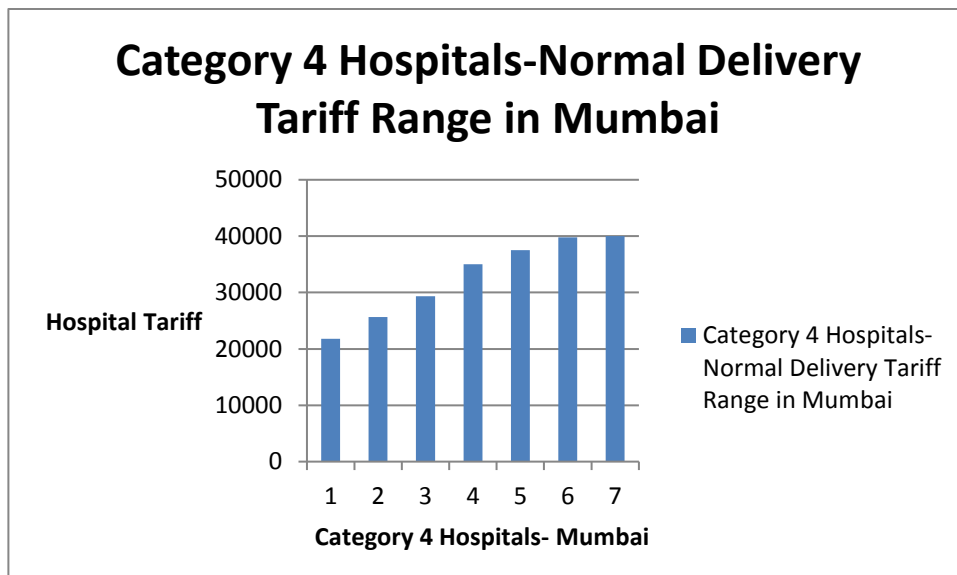


Table-37 Average of Tariff Rates for Cholecystectomy in Category 4 Hospitals

Region	Average of Tariff Rates for Cholecystectomy in Category 4 Hospitals
Delhi NCR	40740
Mumbai	57492

Figure-52 Average of Tariff Rates for Cholecystectomy in Category 4 Hospitals

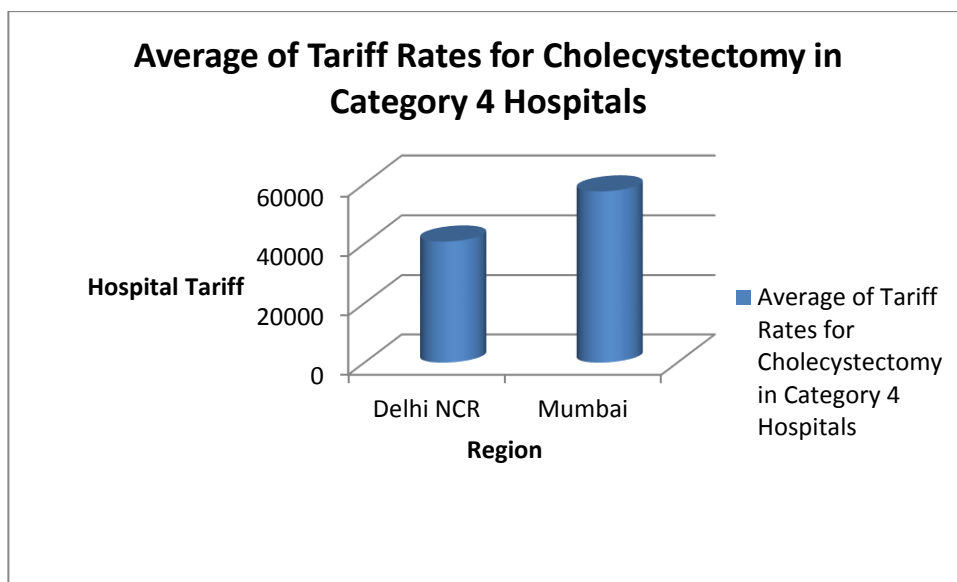


Table-38 Category 4 Hospitals- Cholecystectomy Tariff Range(In INR)

Region	Category 4 Hospitals- Cholecystectomy Tariff Range(In INR)
Delhi NCR	15200-73522
Mumbai	31460-92485

Figure-53 Category 4 Hospitals- Cholecystectomy Tariff Range in Delhi NCR

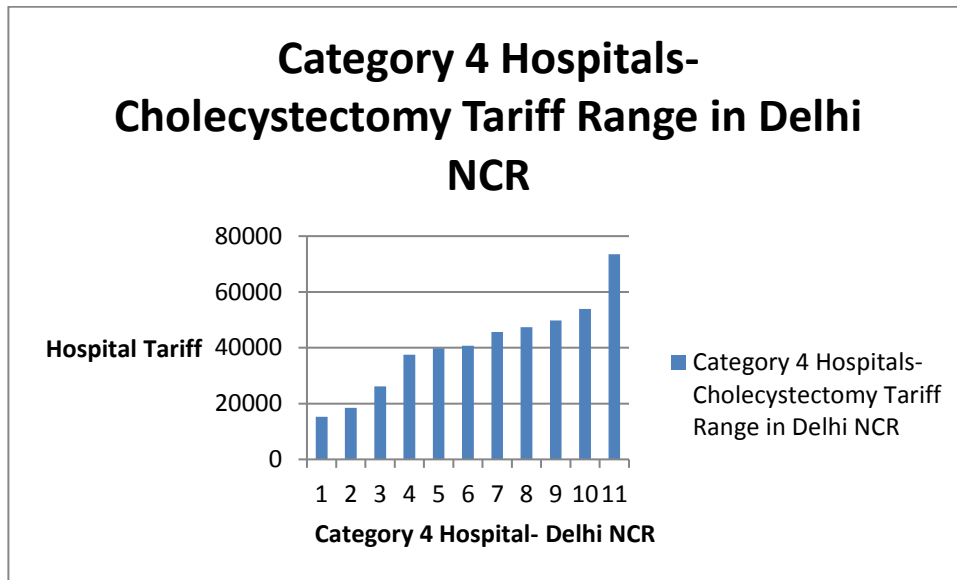


Figure-54 Category 4 Hospitals- Cholecystectomy Tariff Range in Mumbai

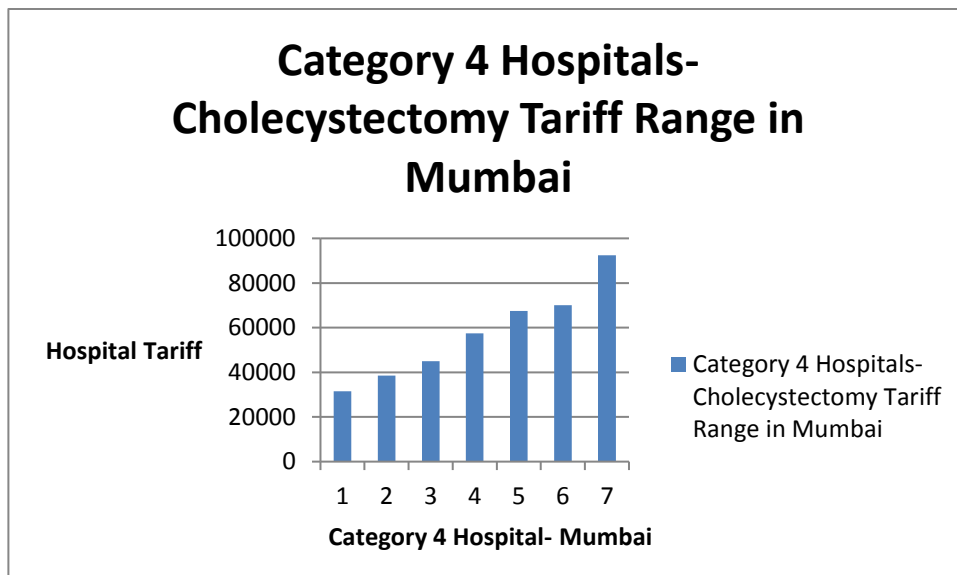


Table- 39 Average of Tariff Rates for Appendectomy in Category 4 Hospitals

Region	Average of Tariff Rates for Appendectomy in Category 4 Hospitals
Delhi NCR	41293
Mumbai	54469

Figure-55 Average of Tariff Rates for Appendesectomy in Category 4 Hospitals

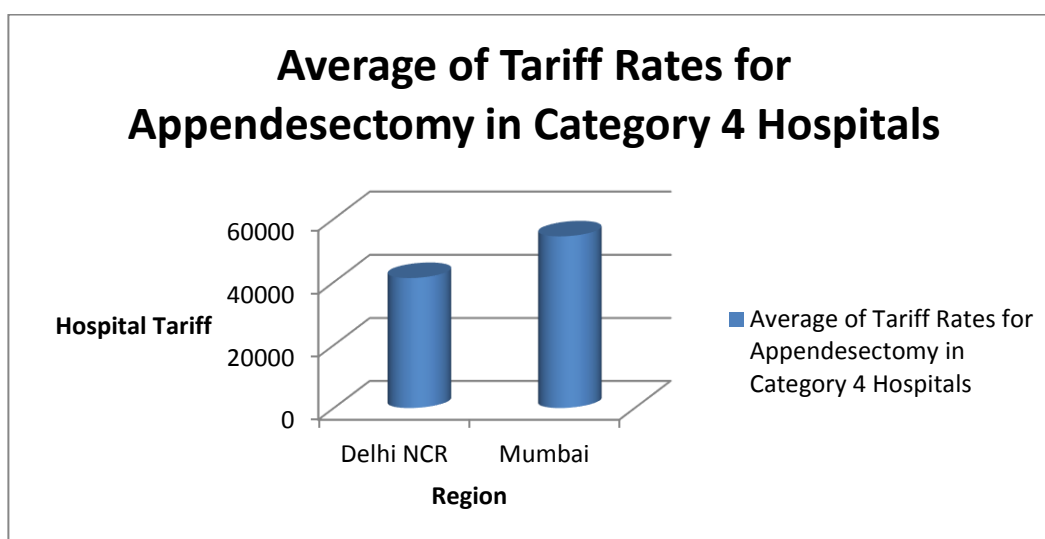


Table-40 Category 4 Hospitals- Appendectomy Tariff Range(In INR)

Region	Category 4 Hospitals- Appendectomy Tariff Range(In INR)
Delhi NCR	15000-62480
Mumbai	39100-71460

Figure-56 Category 4 Hospitals- Appendectomy Tariff Range in Delhi NCR

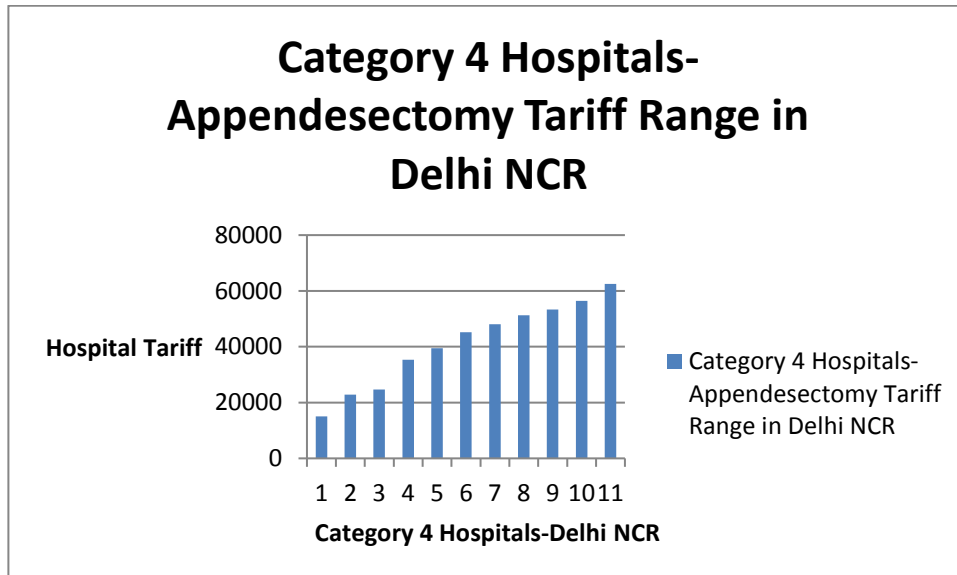


Figure 57- Category 4 Hospitals- Appendectomy Tariff Range in Mumbai

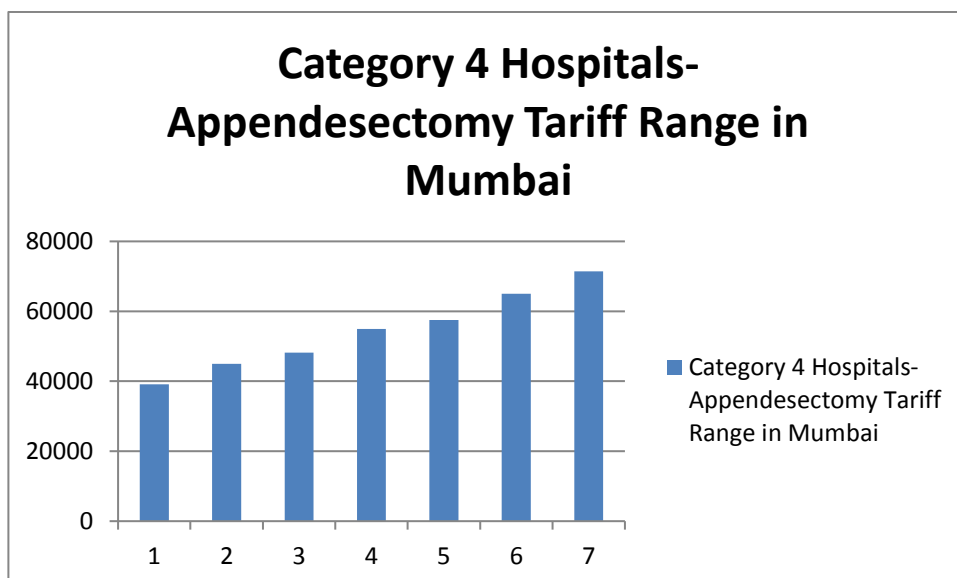


Table-41 Average of Tariff Rates for Inguinal Hernia in Category 4 Hospitals

Region	Average of Tariff Rates for Inguinal Hernia in Category 4 Hospitals
Delhi NCR	41583
Mumbai	53074

Figure-58 Average of Tariff Rates for Inguinal Hernia in Category 4 Hospitals

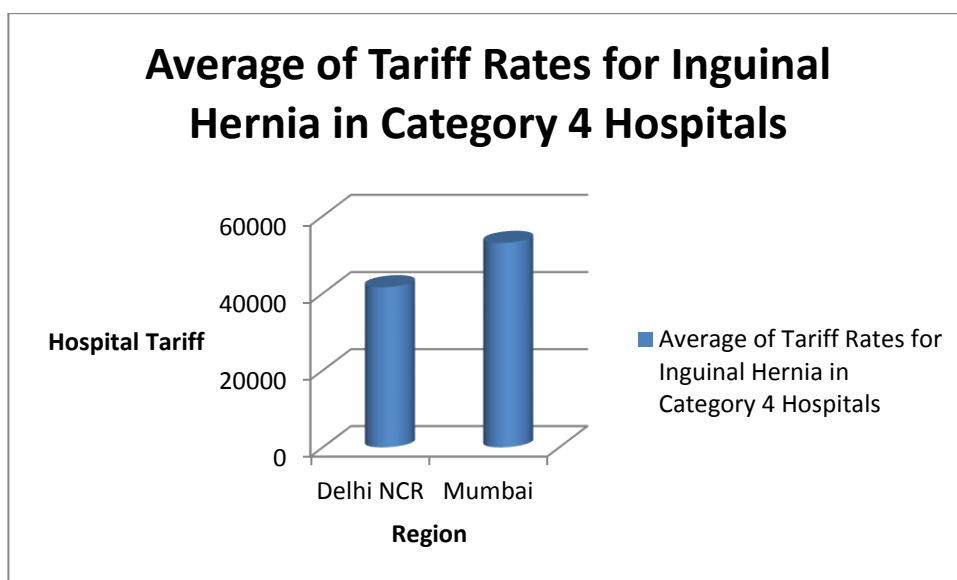


Table-42 Category 4 Hospitals- Inguinal Hernia Tariff Range(In INR)

Region	Category 4 Hospitals- Inguinal Hernia Tariff Range(In INR)
Delhi NCR	20414-57191
Mumbai	39325-72485

Figure- 59 Category 4 Hospitals- Inguinal Hernia Tariff Range in Delhi NCR

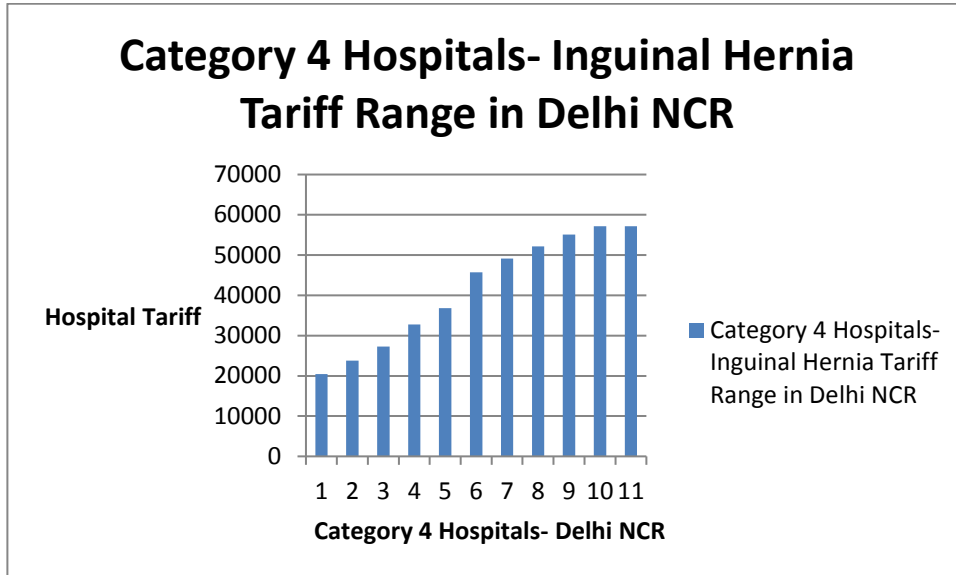


Figure- 60 Category 4 Hospitals- Inguinal Hernia Tariff Range in Mumbai

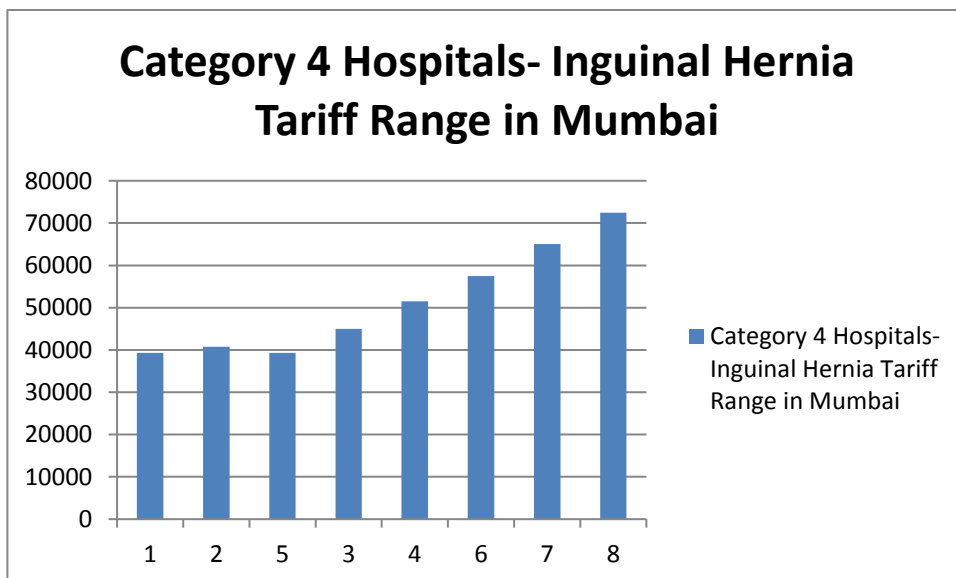


Table-43 Average of Tariff Rates for Caesarean Section in Category 5 Hospitals

Region	Average of Tariff Rates for Caesarean Section in Category 5 Hospitals
Delhi NCR	49001
Mumbai	62764

Figure 61- Average of Tariff Rates for Ceasarean Section in Category 5 Hospitals

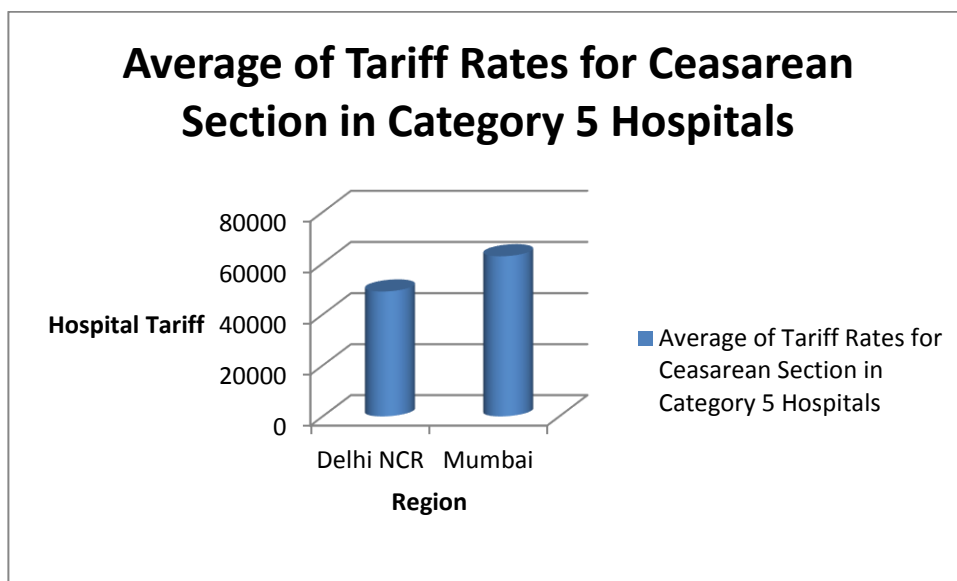


Table-44 Category 5 Hospitals- Caesarean Section Tariff Range(In INR)

Region	Category 5 Hospitals- Caesarean Section Tariff Range(In INR)
Delhi NCR	25600-86603
Mumbai	38000-98000

Figure-62 Category 5 Hospitals Caesarean Section Tariff Range In Delhi NCR

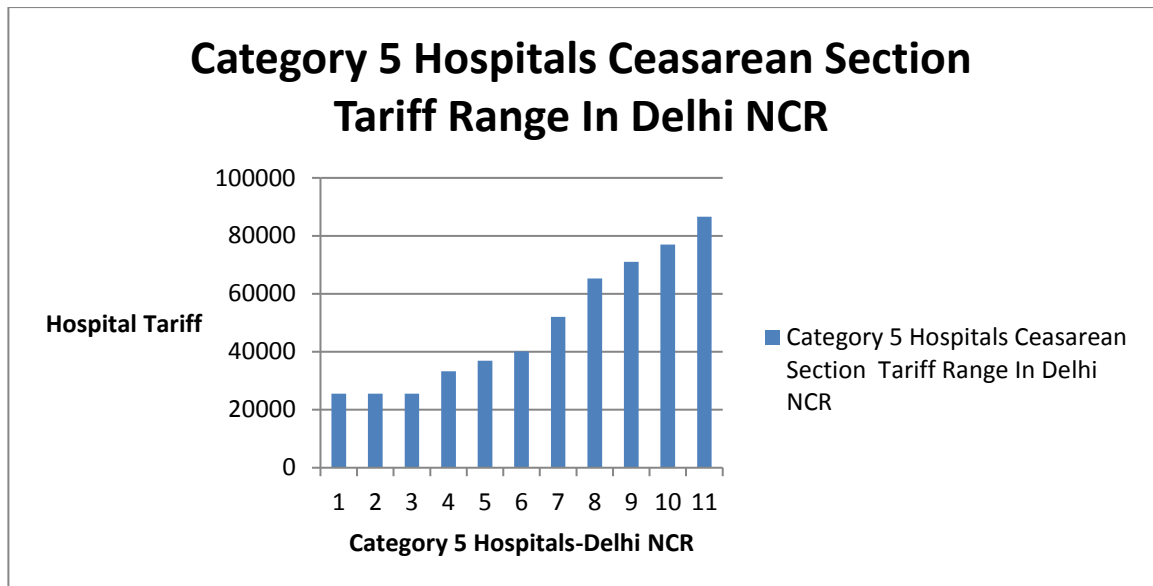


Figure-63 Category 5 Hospitals Caesarean Section Tariff Range In Mumbai

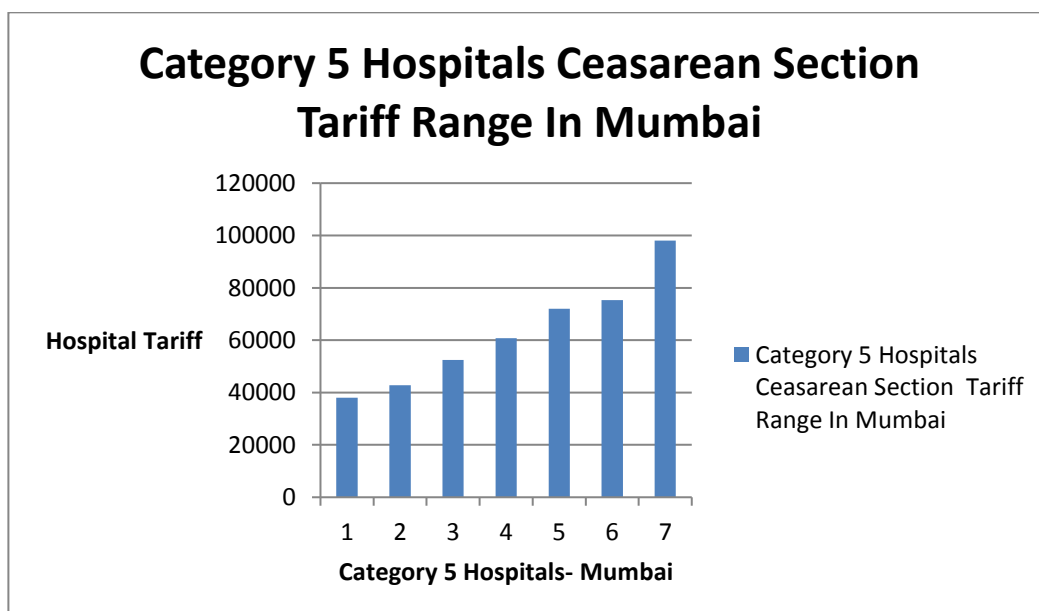


Table-45 Average of Tariff Rates for Normal Delivery in Category 5 Hospitals

Region	Average of Tariff Rates for Normal Delivery in Category 5 Hospitals
Delhi NCR	33345
Mumbai	38893

Figure-64 Average of Tariff Rates for Normal Delivery in Category 5 Hospitals

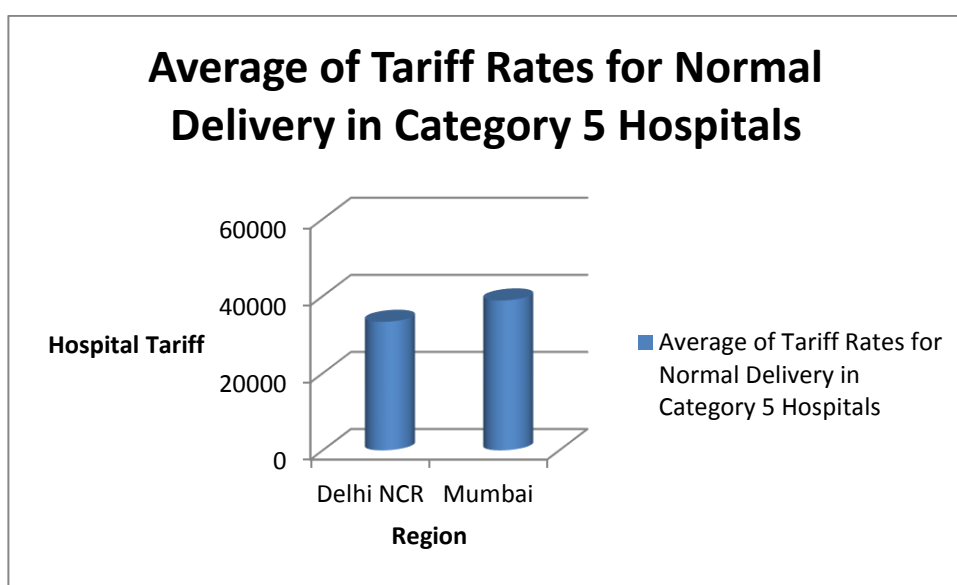


Table-46 Category 5 Hospitals- Caesarean Section Tariff Range(In INR)

Region	Category 5 Hospitals- Caesarean Section Tariff Range(In INR)
Delhi NCR	19680-57000
Mumbai	25000-55750

Figure-65 Category 5 Hospitals Normal Delivery Tariff Range In Delhi NCR

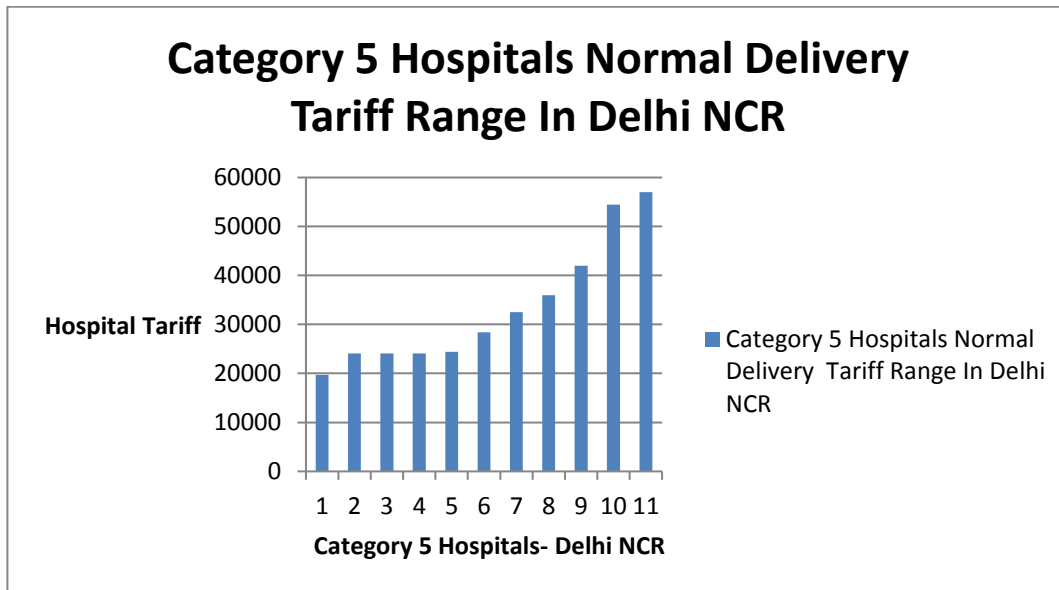


Figure-66 Category 5 Hospitals Normal Delivery Tariff Range In Mumbai

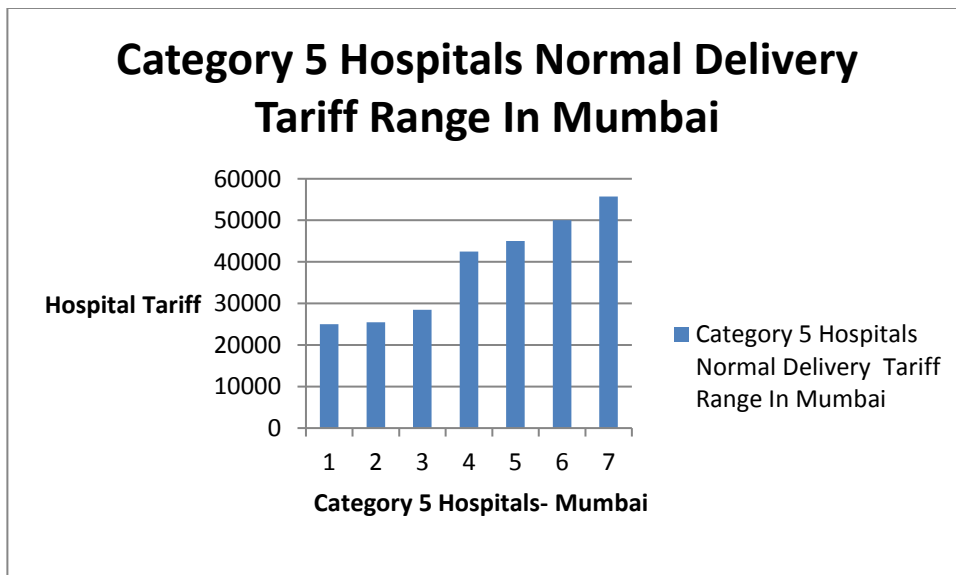


Table-47 Average of Tariff Rates for Cholecystectomy in Category 5 Hospitals

Region	Average of Tariff Rates for Cholecystectomy in Category 5 Hospitals
Delhi NCR	50681
Mumbai	71434

Figure-67 Average of Tariff Rates for Cholecystectomy in Category 5 Hospitals

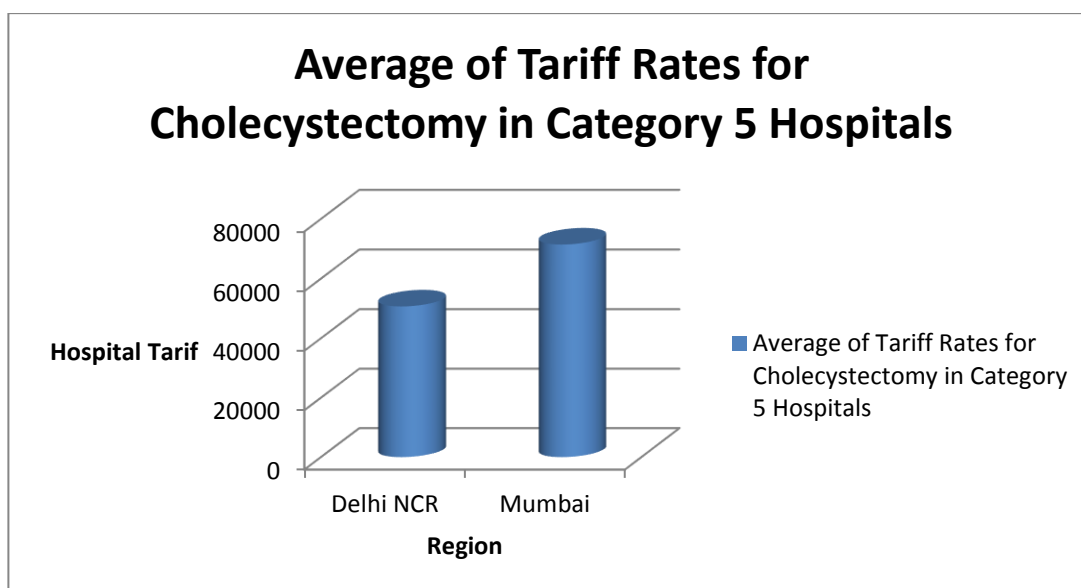


Table-48 Category 5 Hospitals- Cholecystectomy Tariff Range (In INR)

Region	Category 5 Hospitals- Cholecystectomy Tariff Range(In INR)
Delhi NCR	26900-78000
Mumbai	40750-114000

Figure-68 Category 5 Hospitals Cholecystectomy Tariff Range In Delhi NCR

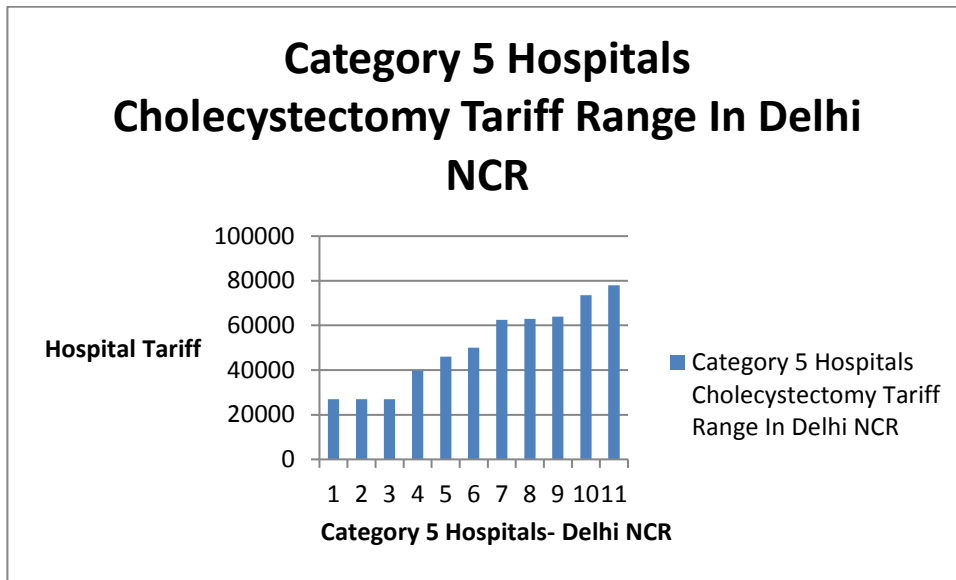


Figure-69 Category 5 Hospitals Cholecystectomy Tariff Range In Mumbai

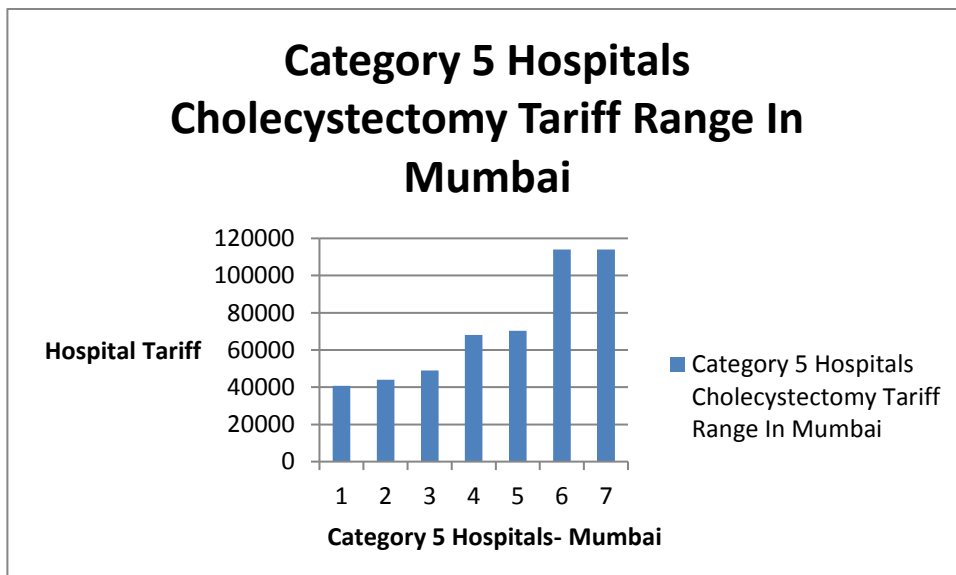


Table-49 Average of Tariff Rates for Appendectomy in Category 5 Hospitals

Region	Average of Tariff Rates for Appendectomy in Category 5 Hospitals
Delhi NCR	43645
Mumbai	62426

Figure-70 Average of Tariff Rates for Appendesectomy in Category 5 Hospitals

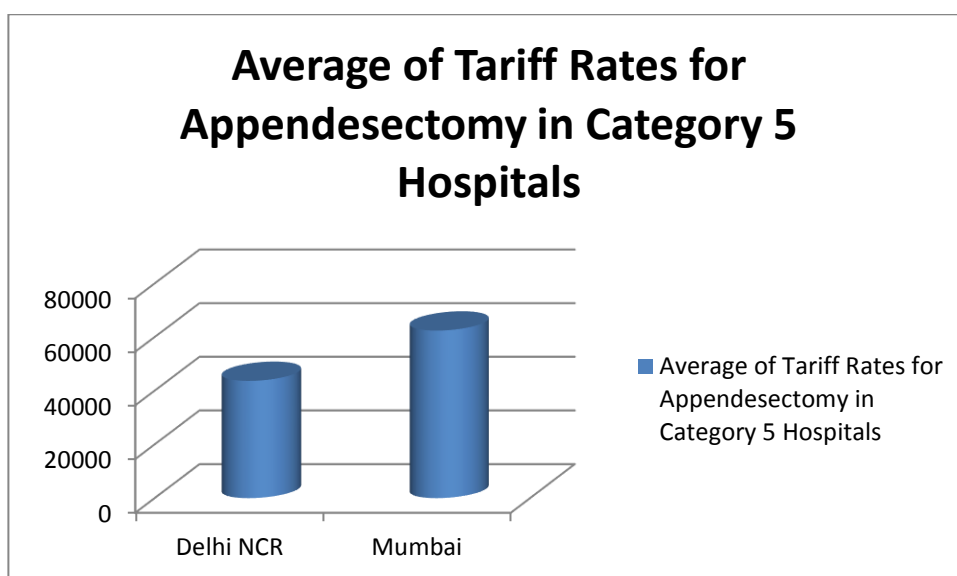


Table-50 Category 5 Hospitals- Appendectomy Tariff Range(In INR)

Region	Category 5 Hospitals- Appendectomy Tariff Range(In INR)
Delhi NCR	22500-69993
Mumbai	36000-101000

Figure-71 Category 5 Hospitals Appendectomy Tariff Range In Delhi NCR

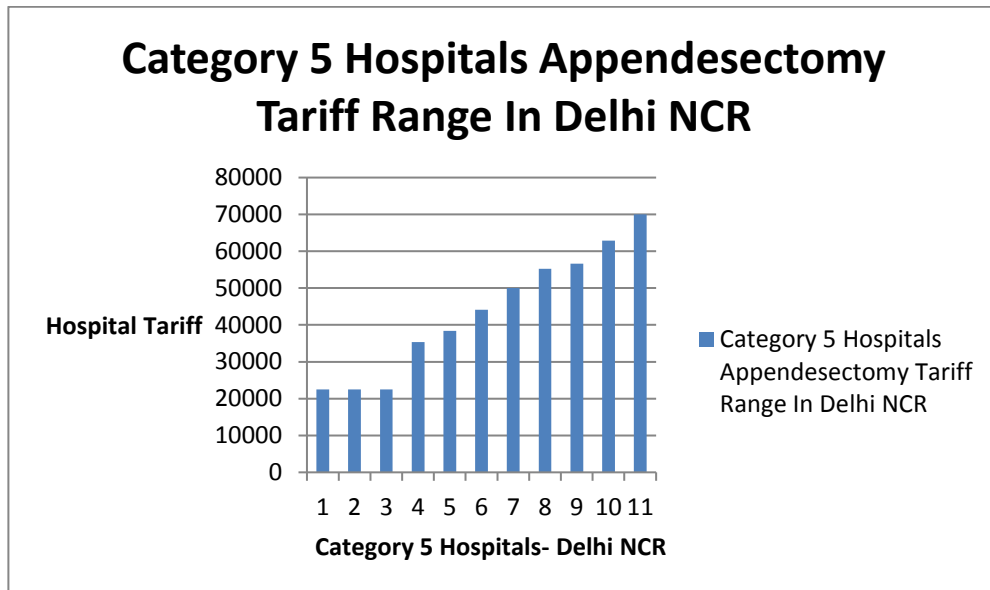


Figure-72 Category 5 Hospitals Appendectomy Tariff Range In Mumbai

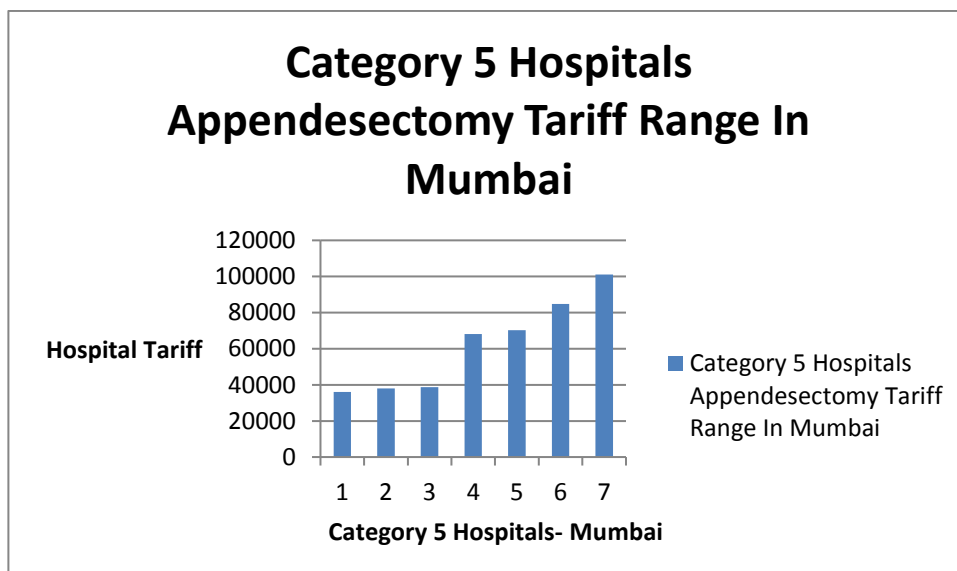


Table-51 Average of Tariff Rates for Inguinal Hernia in Category 5 Hospitals

Region	Average of Tariff Rates for Inguinal Hernia in Category 5 Hospitals
Delhi NCR	45950
Mumbai	67183

Figure-73 Average of Tariff Rates for Inguinal Hernia in Category 5 Hospitals

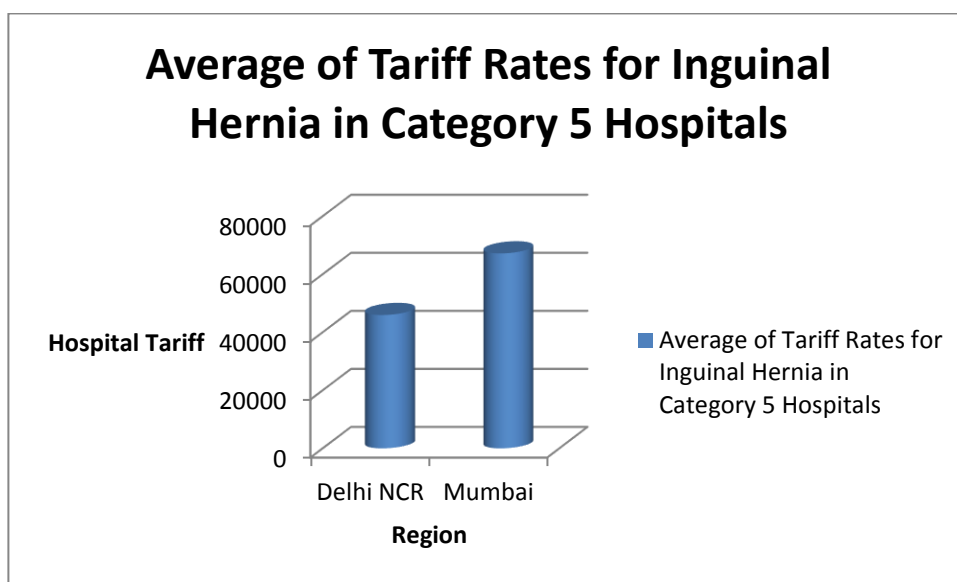


Table-52 Category 5 Hospitals- Inguinal Hernia Tariff Range(In INR)

Region	Category 5 Hospitals- Inguinal Hernia Tariff Range(In INR)
Delhi NCR	27300-79294
Mumbai	32000-113931

Figure 74- Category 5 Hospitals Inguinal Hernia Tariff Range In Delhi NCR

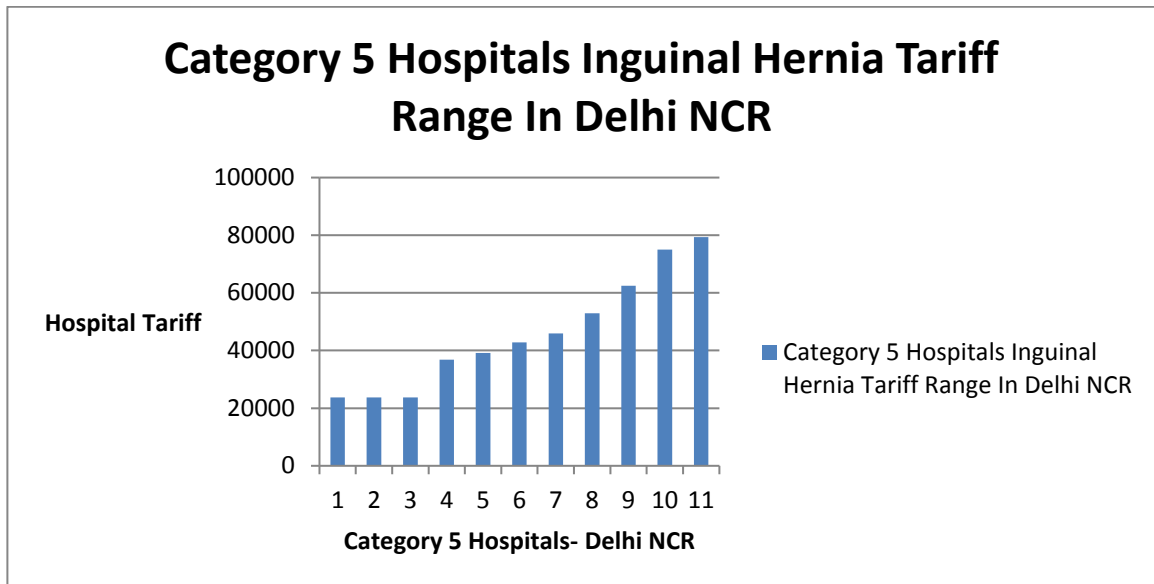
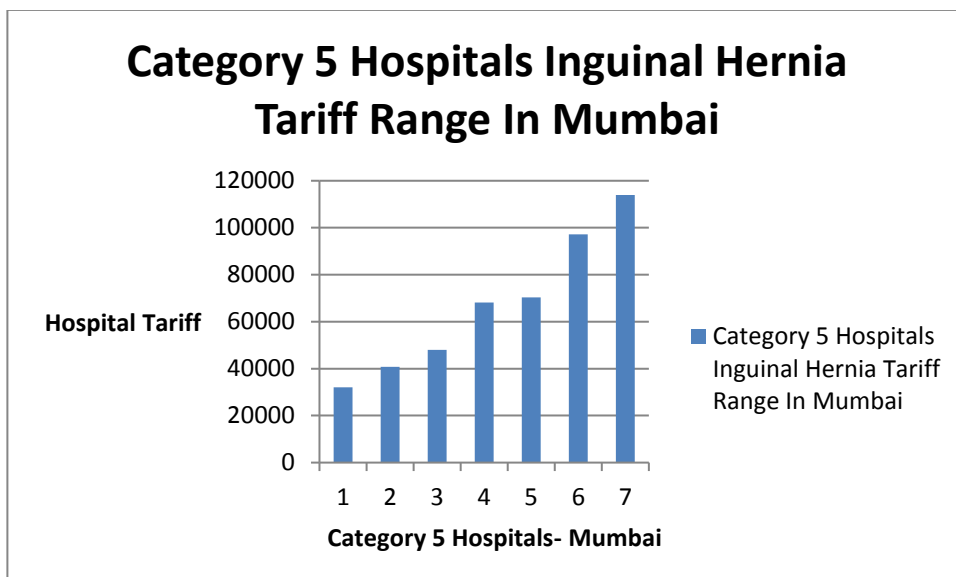


Figure-75 Category 5 Hospitals Inguinal Hernia Tariff Range In Mumbai



7. Discussion

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-

1. 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.
2. 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.
3. 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.
4. There is a wide variety of hospitals in Delhi which leads to higher discrepancy in the rates of a particular Procedure.

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