

## IMPACT OF LOCATION DECISION ON THE OVERALL PERFORMANCE OF THE HOSPITALS IN NAGPUR

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### ABSTRACT

*Selecting a location for a potential facility often decides the success or the failure of such a facility. When it comes to the success of the healthcare service, i.e. the hospitals, the success is defined by the footfall of the patients. Patient when in need would always access that hospital, which located in the city, near to his own location. It is thus important to assess the locations from manifold dimensions before deciding upon the site. This paper provides an overview of decision making for the hospital location. Data was collected from the multispecialty hospitals form Nagpur. It is concluded from this research that many existing location models were developed to cover the need of special cases.*

**KEYWORDS:** *Facility Location, Technical Advancement*

### INTRODUCTION

Location of an industry is a significant organization decision. The location of any firm determines the success of that firm in the long run. This decision is a two-level decision. First, the firm has to identify the region or the geographical area and the second is to identify the supporting factors. A wrong location decision is definite to lead an organization to losses. Organizations long-term strategies such as technological, marketing, resource availability and financial strategies determine the best location (LOCATION STRATEGY).

The main objective of selecting a plant location through decision making is to maximize the advantages and minimize the sum of losses affected by location. Plant location is important because of the following:

- Location influences the layout of the plant facilities needed.
- Location influences capital investment as investing in location is strategic and one time.
- The operating costs of the facility are also influenced thereby deciding the profit or loss.

Location decisions are tactical, long-standing and non-repetitive in nature. Without sound and careful location planning at the beginning itself, the new facilities may create continuous operating and functional problems. Location decision also affects the efficiency, effectiveness, productivity, and profitability of the firm.

The location decision should be taken very carefully, as any mistake may cause poor location, which could be a constant source of higher cost, higher investment, difficult marketing and transportation, dissatisfied and frustrated employees and consumers, frequent interruptions of production, abnormal wastages, delays and substandard quality etc.

Therefore, it should be based upon a careful consideration of all factors that are essentially needed in the efficient running of a particular industry. The necessary factors in the selection of plant location vary among industries and with changing technical and economical conditions.

### ***Strategic Importance of Facility Location***

In the strategic formulation of a company, location decision is a major component of the decision. The company determines:

- The type of goods or service it will offer.
- The markets in which it will compete.
- The forecast of demand in various markets where the company will serve.
- The location from which the potential market will be served.
- The location that will conveniently serve its customers.

The expansion of the existing facility and/ or the need for the new facility is driven by many factors like the growth in demand, an introduction of new product etc. (Garg).

### ***Location Decision Process***

Following are the general steps in the location decision process (ICFAI, pp. 69-70):

- Define the location objectives on the basis of the requirements of the owners, employees, suppliers, and customers.
- Identify the relevant criteria based on economic factors like labor and material costs, and non-economic factors like the impact of the plant on the surrounding environment.
- Relate the objectives to the criteria using evaluation models like break-even analysis, linear programming, and factor analysis.
- Conduct a field research to evaluate the alternative locations.
- Select the location that best satisfies the criteria for meeting desired objectives and benefits to the society.

In the case of health care unit, the chief step in forming any new facility is setting a strong vision. Before recognizing and studying the sites, healthcare organizations must outline what they expect the finished facility will look like, how it will work, whom it will aid and its place in the wider area (Cich, 2017)

### **Factors Affecting the Facility Location Decision**

Various studies reveal that there are various factors considered while selecting an appropriate location. Some of the factors are as follows:

- Availability of Raw Material
- Proximity to market
- Transportation
- Availability of Human Resource
- Competitors
- Rules, Regulation & local Laws
- Political Condition
- Taxation & Restrictions
- Water & Power Supply
- Technical Advancement

### **Supply of Raw Material**

It is important for the organization to get raw material in the right qualities and time in order to have continuous production. This factor becomes very important if the materials are perishable and the cost of transportation is very high. Thus raw material supply should be continuous and uninterrupted. +

### **Proximity to Markets**

Every company is expected to serve its customers by providing goods and services at the time needed and at reasonable price organizations may choose to locate facilities close to the market or away from the market depending upon the product. When the buyers for the product are concentrated, it is advisable to locate the facilities close to the market.

### **Transportation Facilities**

Speedy transport facilities ensure timely supply of raw materials to the company and finished goods to the customers. The transport facility is a prerequisite for the location of the plant.

### **Infrastructure Availability**

The basic infrastructure facilities like power, water and waste disposal, etc., become the prominent factors in deciding the location. A waste disposal facility for process industries is an important factor, which influences the plant location.

### **Labor and Wages**

The problem of securing an adequate number of labor and with skills specific is a factor to be considered both at territorial as well as at community level during plant location. Importing labor is usually costly and involves the administrative problem.

### **Capital**

By looking at capital as a location condition, it is important to distinguish the physiology of fixed capital in buildings and equipment from financial capital. Fixed capital costs as building and construction costs vary from region to region. But on the other hand buildings can also be rented and existing plants can be expanded.

### **Government Policy**

The policies of the state governments and local bodies concerning labor laws, building codes, safety, etc., are the factors that demand attention. In order to have a balanced regional growth of industries, both central and state governments in our country offer the package of incentives to entrepreneurs in particular locations.

### **Climatic Conditions**

The geology of the area needs to be considered together with climatic conditions (humidity, temperature).

### **Supporting Industries and Services**

Now a day the manufacturing organization will not make all the components and parts by itself and it subcontracts the work to vendors. So, the source of supply of component parts will be one of the factors that influence the location.

### **Community Infrastructure and Amenity**

All manufacturing activities require access to a community infrastructure, most notably economic overhead capital, such as roads, railways, port facilities, power lines and service facilities and social overhead capital like schools, universities, and hospitals.

### **Community and Labour Attitudes**

Community attitude towards their work and towards the prospective industries can make or mar the industry. Community attitudes towards supporting trade union activities are important criteria.

## **OBJECTIVES OF THE STUDY**

- To identify the factors that affect the location decision for hospitals.
- To study the impact of location decision on the performance of the hospital.

## **HYPOTHESIS**

*Null Hypothesis H<sub>0</sub>: There is no significant relationship between the factors considered while selecting the facility location and the benefit of the location to the hospitals.*

## **RESEARCH METHODOLOGY**

In the process of data collection, samples for the study were taken from the prevailing hospitals of Nagpur region.

**Sampling Size:** 10 Hospitals. These hospitals were the private multispecialty hospitals of the Nagpur city. Cluster sampling was used to determine the units in the sample. The city was divided into five clusters.

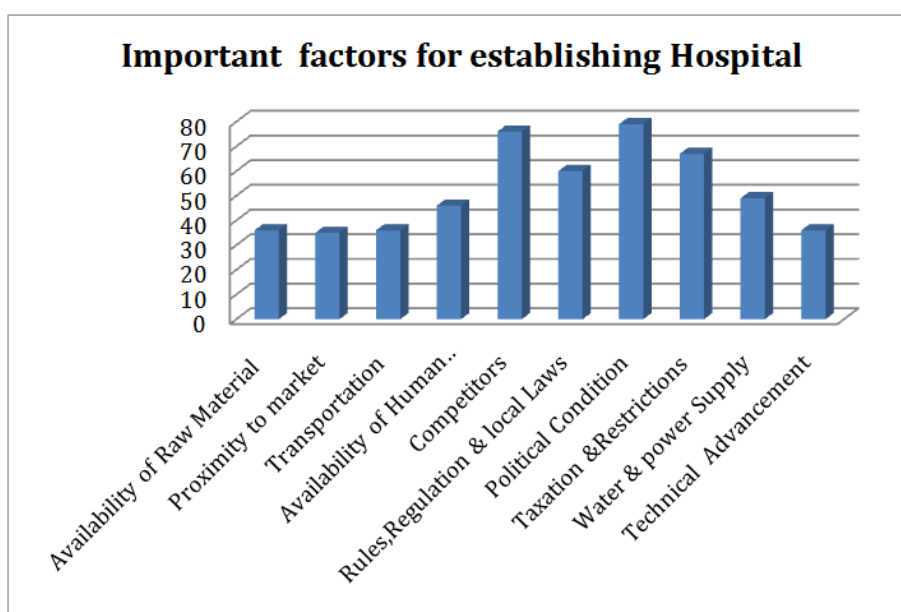
**Primary Data Collection Method:** A structured questionnaire comprising of 16 statements was designed for primary data collection. These statements were put on 10 points Likert Scale, 1 being highest rank and 10 being the lowest rank.

## DATA ANALYSIS

**Table 1**

Factors	N	Mean	Std. Error	Std. Deviation
Availability of Raw Material	10	5.5	0.96	3.03
Proximity to market	10	6.1	0.87	2.77
Transportation	10	4.3	1.05	3.34
Availability of Human Resource	10	2.2	0.36	1.14
Competitors	10	5.5	0.96	3.03
Rules, Regulation & local Laws	10	5.5	0.96	3.03
Political Condition	10	5.8	0.88	2.78
Taxation & Restrictions	10	5.5	0.96	3.03
Water & power Supply	10	5.5	0.96	3.03
Technical Advancement	10	5.5	0.96	3.03

It can be seen that the competitors, Rules, regulation & locals laws, political Condition and Taxation & Restriction are the key factors were considered by Hospital current location.



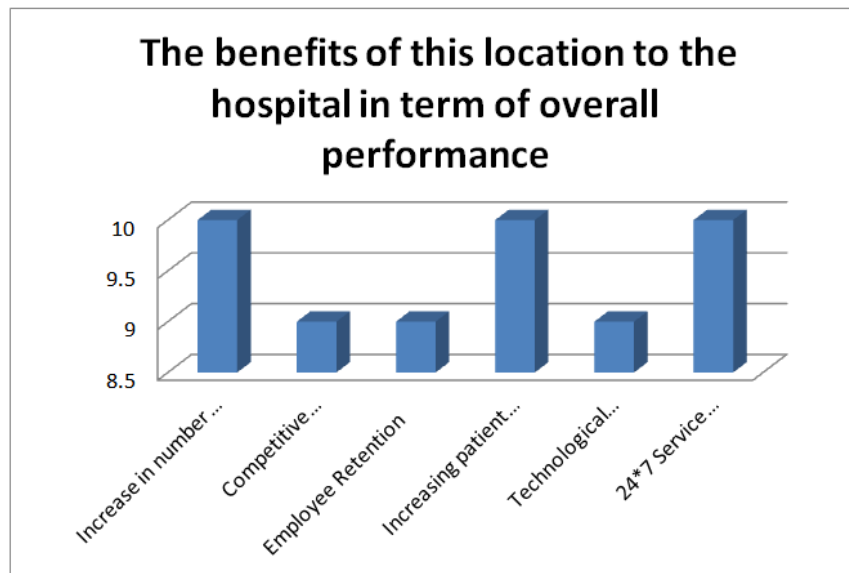
**Figure 1**

**Above Figure Shows the Factors Affecting Location Decision as Identified by the Hospital. The Factors Considered Are:**

- Availability of Raw Material
- Proximity to market
- Transportation

- Availability of Human Resource
- Competitors
- Rules, Regulation & local Laws
- Political Condition
- Taxation & Restrictions
- Water & Power Supply
- Technical Advancement

It can be seen that factors like competitors, political condition and taxation & restrictions of the location were the important factors are considered while selecting the location decision.



**Figure 2**

Above figure shows the benefits that hospitals have gained because of their current location. The factors considered are

- Increase in the number of patients
- Competitive Advantage
- Employee Retention
- Increasing patient loyalty
- Technological Advancement
- 24\*7 Service availability

It can be seen that the location decision has contributed to increasing in the number of patients as a result of the

central location of the hospital. Patient loyalty has also increased and the services like water facility, electricity available 22 by 7.

**Testing of Hypothesis**

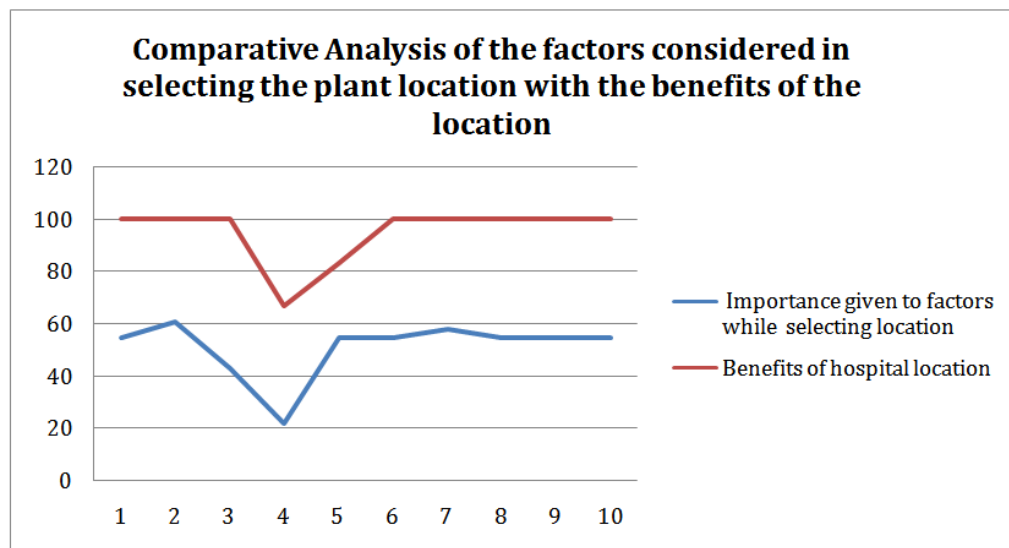
The assumption that there is no significant relationship between the factors considered while selecting the facility location, and the benefit of the location to the hospitals, is tested using the Pearson’s correlation coefficient.

**Table 2**

Correlations			
		Consideration of Factors While Selecting Facility Location	Benefit to the Hospital Because of the Facility Location
Consideration of factors while selecting facility location	Pearson Correlation	1	.804**
	Sig. (2-tailed)		.005
	N	10	10
Benefit to the hospital because of the facility location	Pearson Correlation	.804**	1
	Sig. (2-tailed)	.005	
	N	10	10

\*\* . Correlation is significant at the 0.01 level (2-tailed).

The above table shows that the relationship between the Consideration of factors while selecting facility location and Benefit to the hospital because of the facility location is 0.804. This is a high degree of positive correlation. Thus it can be inferred that those health care units that have focused on the factors affecting the location decision have been benefited from it.



**Figure 3**

The above graph shows the comparative analysis of the factors considered in selecting the plant location with the benefits on the location.

X-axis has the hospital’s average responses. It can be seen that the hospital which has planned the factors that contribute to a better location, has been benefited more. While the hospital that did not consider the factors that affect the location selection decision have not been benefited more.

## CONCLUSIONS

It can be concluded that while selecting a facility location the factors like competitors and the political condition of the region play a vital role. And hence the organization must pay more attention to the same. Nagpur is an important hub for healthcare facilities, people from the adjoining regions are also coming to the city for the healthcare facilities. Further, there is no healthcare facility in the 200 km periphery from Nagpur. This gives as the advantage to Nagpur in terms of patient's footfall. Hence new hospitals are also coming up in the city thereby increasing the competition. The final conclusion that can be made from this research study is that hospitals that have given more attention to the factors affecting the strategic location decision have got more benefits in terms of increase in a number of patients, Competitive Advantage, employee Retention, increasing patient loyalty, technological Advancement and 24\*7 Service availability.

## SUGGESTIONS

- Since selecting a facility location is a strategic and long-term, it cannot be changed one made. Hence suggestions of this research work are limited to those which are in the process of establishing the hospital in the region.
- Hospitals must first study the prevailing competitors in the given region.
- Since patients, when requiring emergency needs, cannot run out of the city on the outskirts for availing the health care services, a hospital must be situated in the city.

### Possible Contribution of the Study

New entrants in the Healthcare sector may get some insight from this study regarding the factors to be considered while identifying the best location. Further studies can be done to study the locational decisions of the single specialty hospitals. Further study can be done to identify the issues and problems relating to the locations decision made by the healthcare units in Nagpur.

## REFERENCES

1. Cich, B. C. (2017, October). *Four criteria for selecting health care sites*.
2. Garg, A. K. (n.d.). *Facility location*. In A. K. Garg, *Production and Operations Management* (p. 244).
3. (n.d.). *Operations Management*. In ICFAI. ICFAI Center for Management Research.
4. *LOCATION STRATEGY*. (n.d.). Retrieved from [www.referenceforbusiness.com](http://www.referenceforbusiness.com):  
<http://www.referenceforbusiness.com/management/Int-Loc/Location-Strategy.html>