

# House Price Escalation by Hedonic Regression Method

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**Abstract** - The Economic health, wealth and prosperity of a nation are greatly dependent upon its housing sector. The factors that influence the market prices of the houses are very important. Presence of any open space relates to Environmental services which provide numerous benefits. It is essential to identify such benefits from the open spaces / environmental services and determine its influence on market price of the properties. Hedonic Regression method (HRM) measures the value of open spaces / environmental services which directly influence the market prices. It measures the implicit prices of non-market goods by considering surrogate goods and services. The aim of the thesis study is to understand the impact of presence of open spaces/ environmental services on property market and evaluate its price. The methodology is adopted by gathering all the necessary information such as location/neighborhood/environmental parameters, household parameters and structural parameters with respect to the open space / environmental services and analyzed using regression analysis that determines a function statistically which relates the parameters of the property to its value. The Results of the study shows that the presence of open spaces greatly enhances the property prices. In the present case the property prices were observed to be higher as compared to the market prices

**Key Words:** open spaces, environmental services, valuation methods, Hedonic Regression Method, Sampling

## 1. INTRODUCTION

Metropolitan cities or areas are greatly affected by the presence of any open space/environmental factors. Presences of any environmental factors like parks or forests or open spaces contribute greatly to the area. For example it improves Quality of air which helps to maintain healthy and active lifestyle. It provides aesthetic and recreational facilities. Moreover, studies has stated that living near garden or parks has a great and direct impact on mental health. Also it greatly helps boosting of environment as it provides home for number of species.

Hedonic regression model measures the value of environmental services which direct influence market prices. Hedonic regression method also known as Hedonic Demand Method measures the implicit prices of non-market goods by consideration of surrogate services or goods. Along with the housing prices this method also throws light on the factors such as building characteristics, public utilities, approach to

school and open spaces, neighborhood characteristics that builds up the real estate prices.

### 1.1 Objectives of the Work

The study aims to achieve the following objectives:

- To indicate the open space or environmental service that influences property values.
- To determine environmental characteristics, neighborhood characteristics, structural characteristics that influences market prices of the property.
- To determine the difference in property value due to its location from the indicated environmental services /open space.

### 1.2 Scope of Work

Analysing the open spaces/environmental services and its effects on the residential property value .

Preparing a house price prediction model for such residences.

Analysis will be subjected to 3.5 km periphery with respect to the open space/ environmental services.

## 2. PROCEDURAL METHOD

Pre-Primary Survey includes Determination of any Open space/environmental services in an around the region that affect the market value of the region

Primary Survey includes a trial survey that is done at the site to find out whether if there any important data found to be missing, data which needs to be re-consider. In Secondary Analysis, all important data is collected from all possible means such as newspaper, magazine, internet, organizations, Municipal offices and etc.

Subjective Analysis

Subjective analysis is a survey in which data are directly collected from the Real site or the region .this survey includes Structural characteristics, neighborhood characteristics of the nearby houses, neighborhood characteristics, environmental characteristics ,open space characteristics, distance to school.

In data compilation, once the data are collected and Interpreted compiled, then we have to statistically

determine a function that relates the value of the property to its characteristics, including the distance to open space. Thus we can determine the value of open space by understanding how much the value of average home varies with the change in the amount of open space.

### 3. SAMPLE SIZE

In order to determine sample size of population, the following Equation can be adopted

$$\frac{1}{n_o} = \frac{e^2}{z^2(p)(q)}$$

Where:

$n_o$  = the desired sample size

$e$  = Level of precision (5-7%)

$p$  = Variability in population (upto 50%)

$q$  =  $1-p$

$z$  = Standard normal deviation

### 4. ANALYTICAL APPROACH

This method assumes that a heterogeneous commodity is defined by many different attributes, and its value is based on a combination of characteristics.

The entire study area is divided into 2 parts for the recorded samples and surveying analysis is done accordingly.

### 5. DESCRIPTIVE APPROACH

It is the summary of the data collected that showcases it in a meaningful way.

Mean=sum of each variable/total number of samples.

Standard deviation=dispersion of set of data calculated from its mean.

### 6. REGRESSION ANALYSIS

Backward elimination multiple Regression method uses regression equation that helps to relate the price of the property to all the parameters identified for survey (independent variables).

$$P=f(M)$$

Where, P is a price, which is a function of the parameters that contributes the price of the property including Distance to open space.

### 7. CONCLUSION

Presence of any open spaces greatly affects the property prices.

People are willing to pay more for the open space benefits near to their houses.

People living proximity to open spaces pays subsequently more than the people residing away from it.

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