

# Price Prediction Model by Hedonic Concept

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**Abstract** - Presence of any open space relates to an Environmental services which provides numerous benefits. The aim is to clearly identify such benefits from the open spaces / environmental services and to determine its influence on market price of the surrounding. Hedonic regression method 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 using regression analysis that determines a function statistically which relates the parameters of the property to its value. The main concentration is to understand that how much people are willing to pay for the proximity to open space / environmental benefits

**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 environmental factors. Presence 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 2-5 km periphery with respect to the open space / environmental services.

## 2. PROCEDURAL METHOD

Pre-Primary Survey includes Determination of any 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 Information Analysis 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

$$1/n_o = e^2 / z^2 (p)(q)$$

Where:

$n_o$  = the desired sample size  
 $e$  = Level of precision  
 $p$  = Variability in population  
 $q$  =  $1-p$   
 $z$  = 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. CONCLUSIONS

Presence of any open spaces greatly influences property prices.

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people are willing to pay more for the tal benefits near to their houses.

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

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