

# Percentage Variation in Fair Market Value of Residential Property with Reference to Location: A Case Study of Indore City

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**Abstract - Percentage variation in fair market value of residential property with reference to location: A case study of Indore city, due to various location factors which affected the values of Residential properties during the year April 2015 to March 2020 has been analyzed. Variation in rate of interest during this period has been estimated from the fair market rent and the market value. The data for analysis has been collected from surveys of various Residential properties, State Government Departments & Urban local bodies. Macroeconomic Data have been collected from R.B.I. website and various web-sites mentioned in the report.**

**Keywords: Valuation, Fair Market Value, Years Purchase, Total Weightage Score, Consumer Price Index.**

## I. INTRODUCTION

The variation in fair market value of property primarily depends on its location like a) Distance from the railway station, bus stand & from city bus stop. b) Distance from Shopping centres/local markets. b) Situated on main, major & in the interior roads. c) Corner plot or plot in the same row. d) Frontage, Overlooking & Facing of plot. e) Nearness to Social Facilities like School, Colleges, Hospitals, Place of worship. f) Nearness to recreational amenities like Playground, Garden. g) Availability of Civic Amenities like tapped water, sewage line Etc.

The study has been undertaken to find out the extent of such variation in fair market value with reference to location. This report gives an overview of the data collected, the analysis carried out and the interpretation of the results.

### 1 OBJECTIVE:-

The objective of this dissertation work is as follows:

#### Common objective:-

- To study the Real Estate market by analysis each of the sale transaction to find out rate of interest (ROI) yielded by residential property.
- To find out relationship between rates of interest (ROI) yielded by residential properties with the economic indices.

#### Main objective:-

- To find out variation in fair market values (in terms of rates of interest) due to location obtained by analysing sale instances.
- To find out relationship between location factors with the fair market rent and rates of interest (ROI) yielded by residential properties.
- To find out relationship between fair market rent with the rates of interest (ROI) yielded by residential properties.

### 2 SCOPE:-

- a) Well defined area for the study in the subject of "Percentage variation in fair market value of residential property with reference to location: A case study of Indore city"; eight sectors of sudama nagar area viz sector-A to H are selected from Indore Municipal Corporation's (IMC) Wards viz Ward 82 & Ward 83 and findings or conclusion of the study would be applicable to these study areas & may not be applicable elsewhere.
- b) The period of study is from April 2015 – March 2020.
- c) The scope of the study limited to residential property (houses).

### 3 LIMITATIONS:-

- a) Rental Instances of comparable properties in the locality are usually not available in index-II register of Sub-Registrar's office nor Correct detail like true rent, security deposit, virtual rent etc. are available.
- b) Consideration price of sale Instances available on index-II register of Sub-Registrar's office do not reveal correct price paid.

### 4 ASSUMPTIONS:-

- a) In the instances of rental, information regarding the properties such as letting out date, liabilities for maintenance, repairs and municipal and other taxes,

premium etc paid, if any and the last date of fixing / revising rent etc. information & data to be collected by interviewing owners, occupiers, tenants. After due verification of the collected information and data is considered as true and corrected.

- b) In the instances of sale, information about the actual price paid, including unaccounted money skillfully extracted by interviewing vendors or purchasers. After due verification of the collected information and data is considered as true and corrected.

## II. METHODOLOGY

- i) In order to find out percentage variation in the residential property fair market values due to location, data for instances of sale and rental collected from the index-II register of sub-registrar's office.
- ii) Collect Information about the actual price paid including unaccounted money by interviewing vendors or purchasers, weed out non-genuine sale instances from the data collected. At the same time while interviewing vendors or purchasers using questionnaires, collect data and information about property and importance of various location factors and their levels affecting the consideration price.
- iii) Due to non-availability of appropriate rental instances in sub-registrar's office record and all the properties involved in the instances of sale not let out. The data and information regarding instances of rentals of comparable properties collected by site visits and by interviewing owner or tenant. At the same time while interviewing owners or tenants using questionnaires, collect data and information about property and importance of various location factors and their levels affecting the rent.
- iv) Information about Importance of various location factors and their levels affecting the rent and the consideration price are as well as inquired by local market inquiries using questionnaire.
- v) Based on the information that has collected and the observation that has been made about the various location factors, affecting the rent and the consideration price in the case of residential properties have been ascertained. Weightage assigned to them according to importance of location based on the preferences that people have indicated and the levels assigned to each factor. Multiplication of the level and weightage for a given factor for a given property indicate the weightage score of that factor for that property. The sum of weightage scores of all factors for a given property is the total weightage score (TWS) of that property.

- vi) The fair market rent for instances of sale have been estimated by comparing them with the properties involved in the instances of rental mainly on the basis of area of the property, total weightage score (TWS) and the date of transaction.
- vii) For the partially and excess developed residential property permissible B/UP area in terms of Floor Area Ratio (FAR) provided by Municipal Corporation and consideration price is calculated.
- viii) The net annual income estimated by deducting the annual outgoings from the estimated gross annual rent. The consideration price divided by the net annual income gives the Year's Purchase.
- ix) All the properties involve in the instances of sale have estimated future life of more than 60 years. The Years' Purchase (Y.P.) would therefore be in perpetuity in which case the ROI would be  $100 / Y.P.$
- x) The ROI yielded by the residential property involved in the instances of sale has been compared with the economic indices such as SENSEX, NIFTY, Gold, Gross domestic product (GDP), Consumer price index (C.P.I.) etc. to know the relative changes in Real Estate investment.
- xi) Find the relationship between location factors with the ROI yielded and estimated fair market rent of the residential property involved in the instances of sale, also find the relationship between ROI yielded and estimated fair market rent of the residential property involved in the instances of sale.

## III. CONCLUSION

Case study of the study area for the study period of last five years sale & rental instances on "percentage variation in fair market value of residential property with reference to location: A case study of Indore city"; conclusions are following:

### 1 Rate of interest yielded by residential properties.

For the period **April 2015 to March 2016** the rate of interest yielded from the properties was in the range of **2.30% to 3.60%**. For the period **April 2016 to March 2017** the rate of interest yielded from the properties was in the range of **2.28% to 3.65%**. For the period **April 2017 to March 2018** the rate of interest yielded from the properties was in the range of **2.48% to 3.90%**. For the period **April 2018 to March 2019** the rate of interest yielded from the properties was in the range of **3.02% to 3.99%**. For the period **April 2019 to March 2020** the rate of interest yielded from the properties was in the range of **2.89% to 3.92%**.

The variation in Rate of Interest yielded by the residential

properties for overall period i.e. **April 2015 to March 2020** is in the range of **2.28% to 3.99%** for various properties on study area.

## 2 Relationship between Rates of Interest (ROI) Yielded by Residential properties and Economic Indices.

Graphical representation shows that, through out the study period market is stable neither in boom nor in recession.

### a. ROI and National Indices (BSE Sensex & CNX Nifty)

Correlation Coefficient takes value 0.6 for BSE Sensex & 0.6 for CNX Nifty; it indicates that correlation is fairly positive, ROI and National Indices moving in the same direction. Graphical representation shows that ROI and National Indices reach peaks and bottoms almost in the same time.

### b. ROI and GOLD (Unit INR per 10 gram)

Correlation Coefficient takes value -0.2; it indicates that correlation is Slightly Negative, ROI and Gold price moving on average in different direction. Graphical representation shows that peak of the ROI occur when the Gold price reaches bottom and vice - versa.

### c. GDP Base Year 2011-12 constant prices growth rate ( INR Billions)

Correlation Coefficient takes value 0.6; it indicates that correlation is fairly positive, ROI and GDP moving in the same direction. Graphical representation shows that ROI and GDP reach peaks and bottoms almost in the same time.

### d. CPI Inflation Y-o-Y (All India) Base: 2012 = 100

Correlation Coefficient takes value -0.6; it indicates that correlation is Fairly Negative, ROI and CPI Inflation moving on average in different direction. Graphical representation shows that peak of the ROI occur when the CPI Inflation reaches bottom and vice - versa.

## 3 Variation in fair market values due to location.

According to location, residential property's weightage score limit in the range of 112 to 560. Lower limit shows poor location and upper limit shows best location of the properties.

For the period **April 2015 to March 2016** the fair market values of the residential properties in terms of rate of interest was in the range of **2.33% to 3.62%** and **weightage score** according to location is **265 to 403**. For the period **April 2016 to March 2017** the fair market values of the residential properties in terms of rate of interest was in the range of **2.24% to 3.64%** and **weightage score** according to location is **253 to 377**. For the period **April 2017 to March 2018** the fair market values of the residential properties in terms of rate of

interest was in the range of **2.47% to 3.87%** and **weightage score** according to location is **242 to 380**. For the period **April 2018 to March 2019** the fair market values of the residential properties in terms of rate of interest was in the range of **3.02% to 3.97%** and **weightage score** according to location is **272 to 400**. For the period **April 2019 to March 2020** the fair market values of the residential properties in terms of rate of interest was in the range of **2.88% to 3.93%** and **weightage score** according to location is **266 to 459**.

The conclusion derived from the above references is that, the lower weightage score property gives lower rate of interest and higher weightage score property gives higher rate of interest.

## 4 Relationship between location factors with the fair market rent and rates of interest (ROI) yielded by residential properties

### a. Relationship between location factors with the rates of interest (ROI) yielded by residential properties

For the location factor **Access of Plots/Houses**, **Correlation Coefficient** takes value **-0.1** it indicates that correlation is Very weak and Negative, means ROI negligibly affected by it.

For the location factor **Frontage of Plots/Houses**, **Correlation Coefficient** takes value **0.2** it indicates that [https://www.howtogeek.com/wp-content/uploads/2017/07/img\\_5969426d0bbfe.png](https://www.howtogeek.com/wp-content/uploads/2017/07/img_5969426d0bbfe.png) orrelation is Very weak and positive, means ROI negligibly affected by it.

For the location factor **Plots/Houses overlooking**, **Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means ROI negligibly affected by it.

For the location factor **Plot located according to road**, **Correlation Coefficient** takes value **0.0** it indicates that there is no correlation, means ROI not affected by it.

For the location factor **Plots/Houses situation and facing**, **Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means ROI negligibly affected by it.

For the location factor **Shopping centres/local markets**, **Correlation Coefficient** takes value **0.5** it indicates that correlation is Fairly Positive, means ROI affected by it.

For the location factor **Nearness to school**, **Correlation Coefficient** takes value **0.3** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Nearness to college**, **Correlation Coefficient** takes value **0.3** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Nearness to hospital, Correlation Coefficient** takes value **0.3** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Nearness to Place of worship, Correlation Coefficient** takes value **0.4** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Nearness to playgrounds, Correlation Coefficient** takes value **0.4** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Nearness to gardens, Correlation Coefficient** takes value **-0.2** it indicates that correlation is Very weak and Negative, means ROI negligibly affected by it.

For the location factor **Availability of tapped water, Correlation Coefficient** takes value **0.3** it indicates that correlation is slightly positive, means ROI slightly affected by it.

For the location factor **Sewage line distance, Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means ROI negligibly affected by it.

For the location factor **Nearness to Railway Stations for long distance trains, Correlation Coefficient** takes value **0.5** it indicates that correlation is Fairly Positive, means ROI affected by it.

For the location factor **Nearness to City bus stop, Correlation Coefficient** takes value **-0.1** it indicates that correlation is Very weak and Negative, means ROI negligibly affected by it.

**Correlation Coefficient** takes value **0.6** for **Total Weightage Score (TWS)** of location factors; it indicates that correlation is Fairly Positive, means ROI affected by it.

b. Relationship between location factors with the fair market rent.

For the location factor **Access of Plots/Houses, Correlation Coefficient** takes value **-0.1** it indicates that correlation is Very weak and Negative, means rent negligibly affected by it.

For the location factor **Frontage of Plots/Houses, Correlation Coefficient** takes value **0.2** it indicates that correlation is Very weak and positive, means rent negligibly affected by it.

For the location factor **Plots/Houses overlooking, Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means rent negligibly affected by it.

For the location factor **Plot located according to road, Correlation Coefficient** takes value **0.0** it indicates that there is no correlation, means rent not affected by it.

For the location factor **Plots/Houses situation and facing, Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means rent negligibly affected by it.

For the location factor **Shopping centres/local markets, Correlation Coefficient** takes value **0.6** it indicates that correlation is Fairly Positive, means rent affected by it.

For the location factor **Nearness to school, Correlation Coefficient** takes value **0.4** it indicates that correlation is slightly positive, means rent slightly affected by it.

For the location factor **Nearness to college, Correlation Coefficient** takes value **0.4** it indicates that correlation is slightly positive, means rent slightly affected by it.

For the location factor **Nearness to hospital, Correlation Coefficient** takes value **0.4** it indicates that correlation is slightly positive, means rent slightly affected by it.

For the location factor **Nearness to Place of worship, Correlation Coefficient** takes value **0.5** it indicates that correlation is Fairly Positive, means rent affected by it.

For the location factor **Nearness to playgrounds, Correlation Coefficient** takes value **0.5** it indicates that correlation is Fairly Positive, means rent affected by it.

For the location factor **Nearness to gardens, Correlation Coefficient** takes value **-0.2** it indicates that correlation is Very weak and Negative, means rent negligibly affected by it.

For the location factor **Availability of tapped water, Correlation Coefficient** takes value **0.3** it indicates that correlation is slightly positive, means rent slightly affected by it.

For the location factor **Sewage line distance, Correlation Coefficient** takes value **0.1** it indicates that correlation is Very weak and positive, means rent negligibly affected by it.

For the location factor **Nearness to Railway Stations for long distance trains, Correlation Coefficient** takes value **0.6** it indicates that correlation is Fairly Positive, means rent affected by it.

For the location factor **Nearness to City bus stop, Correlation Coefficient** takes value **0.0** it indicates that there is no correlation, means rent not affected by it.

**Correlation Coefficient** takes value **0.7** for **Total Weightage Score (TWS)** of location factors; it indicates that correlation is Fairly Positive, means rent affected by it.

## 5 Relationship between fair market rent with the

### **rates of interest (ROI) yielded by residential properties**

Correlation Coefficient takes value 0.9 for Total Weightage Score (TWS) of location factors; it indicates that correlation is Strongly Positive, rent and ROI moving in the same direction. Rent and ROI reach peaks and bottoms in the same time.

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