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VALUATION OF REAL ESTATE IN KARAD CITY

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Abstract:- The valuation of real estate is expected when calculating the market value of a property according to its qualitative characteristics. Based on the basic needs of human housing, real estate prices increase day by day as the population increases. However, predicting the approximate rate will be a very complex problem. Since then, all states have many different characteristics due to the location and use of it. Therefore, the calculation of the exact valuation of any property is becoming a prerequisite. The participation of capital in the real estate market, there is a requirement of accurate valuation of a property that can be achieved by using a fuzzy logic technique. From this project I can study about the valuation of residential properties in Karad. The main objective of this study is to develop a model that uses fuzzy logic for the prediction of the residential property rate. This study would help property investors buy or sell their properties at a precise rate.

Keywords-Real estate, valuation method, fuzzy logic.

1. Introduction-

The real estate sector is one of the most recognized sectors worldwide. The real estate sector comprises four sub-sectors: residential, semi-commercial and commercial. The growth of this sector is complemented by the growth of the corporate environment and the demand for office space, as well as urban and semi-urban housing. The construction industry ranks third among the 14 main sectors in terms of direct, indirect and induced effects in all sectors of the economy. The real estate sector in India is expected to reach a market size of US $ 1 trillion in US $ 1 trillion by 2030 from US $ 120 billion in 2017 and contribute with 13 percent of the country's GDP by 2025. They are also growing significantly, providing the much-needed infrastructure for India's growing needs.

The stock of commercial offices in India is expected to cross 600 million square feet by the end of 2018, while the lease of offices in the eight best cities crosses 100 million square feet during 2018-2019. Gross absorption of offices in the main cities of India increased 26% year-on-year to 36.4 million square feet between January and September 2018. The joint workspace in the seven major cities increased considerably in 2018 (through September), until reaching 3.44 million square feet, compared to 1.11 million square feet for the same period in 2017.

The valuation of real estate is the task of evaluating the potential price of a site or building in the case of a sale. These evaluations are important for investment decisions, real estate funds and project developments.

1.1Need of the Study

In the real estate markets, the offer represents the amount of properties available for sale or lease, and the demand establishes the number of potential purchasers or tenants looking for specific types of properties at different prices in a market within a period of time. The market value is the most likely price that the property would obtain if it were sold in a competitive market. It is affected by factors such as the buyer and the seller, each typically motivated and acting with knowledge, acting in their best interest, the price is not affected by undue motivation, adequate marketing efforts and a reasonable time allowed for the Short exposure In the market, the price represents the normal consideration for the property sold, not affected by the special or creative financing or the sale concessions granted by any person associated with the sale. Asset markets have played an increasingly important role in many economies. Therefore, policymakers are increasingly aware of the fact that considerable changes and significant periodic corrections in asset prices can generate financial instability and, ultimately, macroeconomic instability. No market is continuously in equilibrium, therefore, prices and values differ from time to time. The real estate market is characterized by cycles of prosperous and smashed. These explosions or foams are sudden increases in prices not justified by the fundamentals.

2. Valuation accuracy and the valuation process

The valuation process can be split into three distinct steps, with each step dependent upon the quality of the previous. The first step is the identification and collection of comparable evidence followed by its analysis and then by its application to the subject property to produce a valuation figure. The first stage of this process is flawed in practice and in need of substantial improvement. In the property market comparable evidence is scarce for reasons including confidentiality, competitive advantage and conservatism. Added to these artificially imposed barriers is the paucity of transaction evidence caused, at times, by market inactivity. This situation is further compounded by the reluctance of surveyors to spend time recording data properly and the inefficient media used for storage.

The second stage of the process involves the analysis of comparable data. Objectivity in terms of the evaluation process of the analysis of comparable properties and the application of this analysis to the property in question. The evaluators rely on internal data, contacts with local companies and secondary Evidence as the property press for their objective evidence base. To increase the supply of evidence of valuation, all internal databases must be available to all evaluators. In the interest of the profession and the generality of its clients, in the area of valuation, the information must flow freely. This freedom can only increase the quality and reliability of the valuations, a common objective of the Institution and its members. Prediction of real estate is defined as all the interests, benefits, rights and encumbrances inherent in the ownership of physical real estate. The valuation of real estate must provide a quantitative measure of the benefit and the liabilities derived therefrom. The forecast is to estimate an indefinite future based on past information, which is a major problem in most aspects of real estate practice. The development of the property is based on the forecast of the expected costs and performances. Property and investment managers use the demand and supply forecasts and the respective value of the property in the future. In recent decades, there have been significant changes in forecasting methods, and complex methods are available for routine use. The prognostic model that uses an appropriate AI technique takes into account the effect of intrinsic and extrinsic factors that provide a better prognosis. Therefore, it is necessary to study the work done in this area and explore the possibilities of applying AI techniques in the prognosis of property value.

3. Basic principles of fuzzy logic system-

The main objective of systems based on fuzzy logic is to deal with human behavior in the management and resolution of problems that cannot be completely formalized through the use of mathematical models and treatment through systems theory approaches of language descriptions of knowledge about human operational criteria and knowledge about process states and input-output relationships. Control actions are determined using fuzzy inference rules. Fuzzy logic is a form of logic of many values in which the truth values of the variables can be any real number between 0 and 1, which is considered "fuzzy".

3.1. Use of fuzzy logic in general application-

Fuzzy logic is exceptionally useful for many people involved in research and development,including(electrical,mechanical,chemical,civil,aeroscope,agricultural,biomedical,computer,environment,geological,industrial and mechatronics**)**.

In fact, applications of fuzzy logic, which was once thought to be a dark mathematical curiosity, can be found in many engineering and scientific works. Diffuse logic has been used in numerous applications, such as the recognition of facial patterns, air conditioners, washing machines, vacuum cleaners, anti-slip braking systems, transmission systems, control of subway systems and unmanned helicopters, systems based on the knowledge for multiple -Optimization of objectives of energy systems, weather forecasting systems, models for the valuation of new products or evaluation of project risks, medical diagnoses and treatment plans, and stock negotiation. Fuzzy logic has been used successfully in numerous fields, such as control systems engineering, image treating, electrical engineering, industrial automation, robotics, consumer electronics and optimization. This branch of mathematics has instilled new life in scientific fields that have been inactive for a long time.

3.1.1. Use of fuzzy logic in civil engineering application-

Applicability has been Fuzzy logic experimented in various areas of civil engineering by number of experts. Proposed model for predicting the failure loads of laterally loaded masonry wall panels based on their corresponding cracking patterns derived from laboratory experiments. Studied the prediction capability of fuzzy logic for pile capacity, settlement of foundation, soil properties and behaviour, liquefaction, slope stability etc. Application of fuzzy logic in tide level forecasting, problems such as earthquake induced liquefaction and wave induced seabed instability was studied. Proposed the use of fuzzy logic in early cost estimation of road tunnel construction work. Implemented fuzzy logic to predict groundwater levels of shallow aquifers and found fuzzy logic to be a viable option as compared with traditional methods.

Developed model to predict the ferrite fraction of micro alloyed steels during continuous cooling and observed fuzzy logic to give fairly accurate results.

4. Methodology-

Total variables were identified from literature as well as discussion with experts. Opinion of the experts about the level of significance of each of the variables towards value of property was taken through a well-structured questionnaire survey. The most important factors that affect Indian real property value included living conditions of residents; characteristics of housing; regional influence; utilities; age of property; economic, political & social influence; area & legal aspect. A methodology is a sequence the tasks that leads to a final deliverable and work on them in order. The power of methodology is that every step is replanted and laid out in the proper sequence. Here we are going to discuss the methodology used for this project.

1. Scaling

Scaling is the process of varying levels of achievement in a course. Scaling can be assigned as a range. In this research, scaling is done by using 5 point method. All variables are scaled by using the 5 point scale since many experiments have indicated that 5- point scale was more effective to predict any judgments. Specification of scaling is as follows-

Lower value Higher value

2. Data collection and analysis.

The data has been collected personally after conducting personal technical visits. A total of 115 cases of residential properties have been studied. For each case, we have found the latest rate, location of the project, location, distance from the city center, proximity to the distance terms of the IT park, etc. We divided Karad into 5 sectors, namely, central Ogalewadi as sector 1, Kushna Naka 2, Koyana Vasahat as sector 3, Saidapur 4, Kolhapur naka as sector 5 and, finally, Vijaynagar 6. After collecting this data, we scale them using a 5-point scale, as explained above.

3. Artificial intelligence technique process.

The field of artificial intelligence has developed very rapidly as computing power has increased. Artificial intelligence refers to the ability to perform the intelligent functions of the human brain. Several techniques of artificial intelligence include ANN, fuzzy logic, neuro fucate, genetic algorithm, expert system, etc. AI has found applications in various fields, such as engineering and technology, law, medicine, biology, chemistry, social sciences. Its use is more widespread, particularly in the fields of research and forecasting. When the objective is to build a model directly from a set of measurements of system behaviour, AI models derived from data that give qualitative results are preferred. The application of several techniques in the prediction of value and their respective results are discussed in the study.

This section deals with the design of a diffuse system that returns the valuation of a property according to the client's preferences. In our model, the system uses as input nine main parameters that arise from the union of all the main characteristics in all profiles: type of farm (apartment, apartment, villa, etc.), area, and number of rooms, good light, elevator, garage, urbanization, characteristics and community cost. A variable defined in the fuzzy system is associated with each parameter.

5. Conclusion-

Identifying factors affecting property value is crucial to predict the behavior of property prices in future. The motivation behind this study is to help valuation professionals in India in assessing property value by identifying correlation between various parameters considered in finding value of property to optimize the process and results of valuation. Hence, the present study has been undertaken to comprehensively address the factors specifically affecting the real property prices in India. The outputs can further be used to prepare a prediction model using suitable artificial intelligence technique which is already in progress. The present study is a part of the value prediction model and throws light on the Indian property valuation and corresponding factors with reference to applications in the past, data has been implemented for a more inclusive exploration of property characteristics directly affecting its present day value. The analysis includes identifying few factors which represent maximum variance of the entire dataset.

Many decision making problems need fuzzy logic, since fuzziness is present in quite a number of key concepts that appear when human beings manage information. This paper shows a particular potential application, still to be developed, when

real estate has to be valuated according to the profile of potential buyers or renters. Although we are in a very preliminary stage, a software tool with the above outlined characteristics will be hopefully very useful for any estate business.

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