Examining Rental House Data With MRL Analysis:
An Empirical Approach for Future Perspective of E-Business for Smart Cities and Industry 5.0

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ABSTRACT

In today's scenario, we all are surrounded with technologies. As the world is shifting towards technology with great pace, and technology is also showing its efficiency and strength, we must appreciate its power. Now the world is shifting towards digitalization. So, it's also important to think that ideas should lie towards e-business to get full advantage of the system. The housing sector is one of the important fields which must get the support of the technological domains to overcome many challenges. So, there is a requirement to bring a system that can direct the work of renter and customer easier. To bring this idea into the real world, the author's team has come up with the idea of a rental house portal system. This portal is a web application which acts as an e-platform to search flats, apartments, property, etc., with scientific analysis-based data. In this system, the owner provides the details of flats with its features and using ML (machine learning) technology, the price of flat is calculated and the customer can check the availability of flat according to his/her requirement and to provide benefits to both parties. As the details of the flat are available on site, there is no need to explain the features of the house to the owner. Customers also have the benefits of searching for the desired house in less time and at a very reasonable price. Therefore, the rental house system is a very nice step towards the finding of flats online. The present manuscript has new thoughts of prediction of house rent price according to the features provided using statistical techniques and has come as one of the best platforms to search the property at a reasonable price.

1. INTRODUCTION

In today's fast growing world, people want to do all their work at a higher rate with a greater amount of precision in it. Today; no one wants to waste their resources i.e. money and time, in just doing those things that can be accurately done by machines. During the time of renting a house, people feel that there is a lot of waste of time and resources for searching the best suitable house where they can live with their family.

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Searching for a rental house involves different factors that are present in the mind of the buyer, some of them can be like the location of the house, society behavior and nature, area of the flat, number of rooms and balcony in the flat, size of the rooms etc. In small cities, searching for a perfect house manually gives the feeling of worth investment of time, but in the case of large cities, or in metropolitan cities; it becomes a very tedious task to search for a house. So it requires the need for a broker in the process of renting the property. This leads to an increase in the price of the property which affects the capacity of the buyer and also affects the seller as many a time the seller is not able also to get the perfect expected cost.

This problem can be solved by using some techniques that filter the property according to the need of the renter and also provides a fair cost to the renter.

1.1 Problem Statement Identification and Hypothesis

Living in a smart environment, where the internet rates are getting cheaper day-by-day, people feel relaxed by getting their daily needs fulfilled on the internet. This also reduces the dependency on other people to get a particular job done. Examining rental house data and making an e-business platform where users and owners can be benefited at the same time.

Before making a prediction on the house rents there are some factors which are considered by authors' team so that analysis can be demonstrated further. The hypotheses are like followings:

- Rental flat price changes with change in basement area, living area, roof area of the flat and the number of rooms present in it.
- Price may vary with the change in the longitude and latitude of that property.
- It may vary with the area zip code.
- Price might rise with the presence of private parking space in the property.
- It may differ with various views available from different flats.

1.2 State of the Art and Motivation of the Study

The present scenario of pandemic has shown a difficult time for the world in different fields and in case of the scenario to get a proper place to live at an affordable price, it requires a great research. In the present system, if a person wants to rent a house, then it is very difficult and uncomfortable process. During the time of renting a house, people feel that there is a lot of waste of time and resources for searching the best suitable house where they can live with their family. So, the current scenario of pandemic and also the advancement of people towards e-platform have provided the authors' team a motive to develop a user friendly web-application.

1.3 Aim and Scope of the Study

This study aims to segregate the rental property available in the area based on the needs of the user. For this, the user does not need to contact a person and tell him all his requirements so that, he can get the price range and location of the property. Implementing this study on an e-commerce platform increases the renter's trust on the price as they are not randomly generated. It also helps the user to easily decide the requirements based on the budget of the property which can easily be predicted when the user specifies his requirements.

Further this study can be helpful in the market business as it saves the time and expenses of both renter and the owner of the property. This study helps the user to get the best price for their requirements without any effort of visiting any office or to property location.

1.4 A Rental House Portal: Need of Current Time

This Portal is a web application which is implementable irrespective of the location. It is acting as an interface between different users (owner and renter). It gives the facility to the owner to display their

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