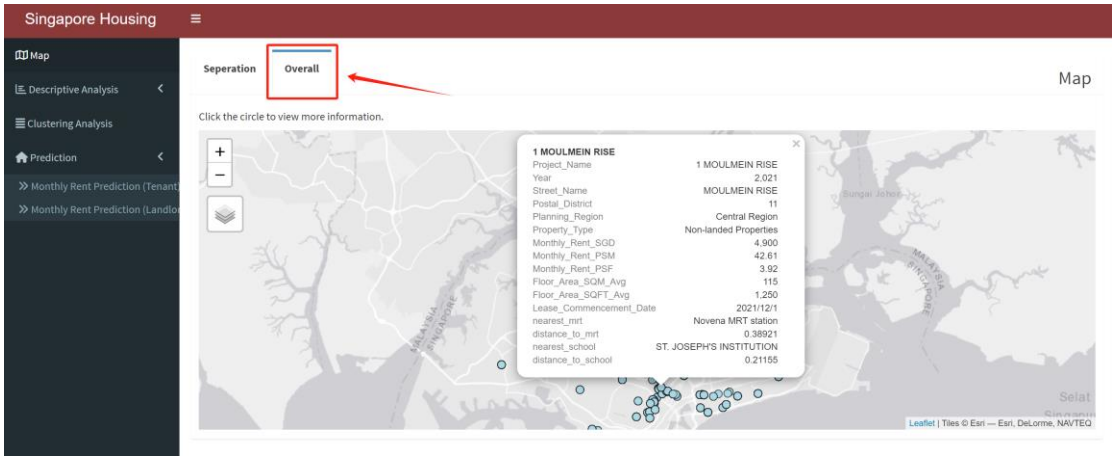
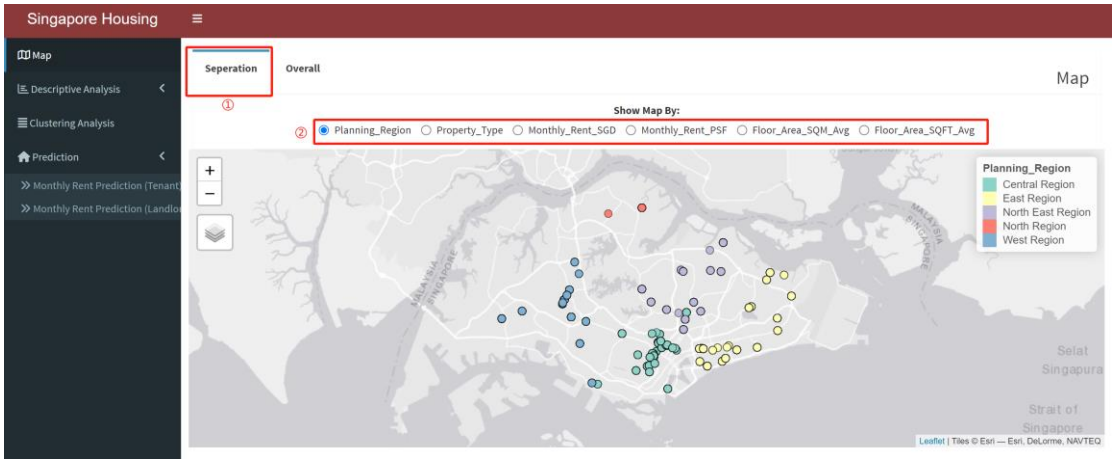
User Guide – A Visual Exploration of Rental forecast in Singapore
ISSS608 Group 06 User Guide – WAN Honglu | ZHENG Kaixin

1. Map Page



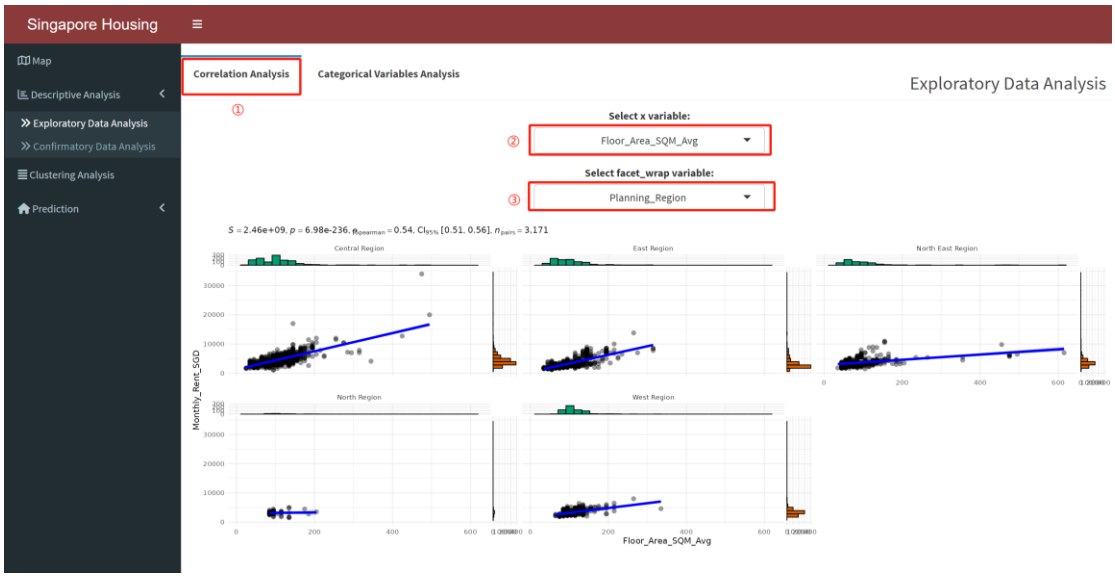
By clicking on the "Overall" option, you can view the distribution of property information across Singapore and see its location visually on a map. By clicking on any of the dots in the map, you can view detailed information about the property, including lease start date, project name, street name, planned area, property type, monthly rent, average floor size, number of bedrooms, nearest MRT station, distance from MRT station, latitude and longitude.



① Select the “Separation” option, you can view more specific classification information.
② Select a specific option, such as "Planning_Region", you can see a more precise breakdown of the number of houses distributed across the five districts in Singapore. You can see the proportion of houses in different areas by looking at the color of the points.

2. Descriptive Analysis

2.1 Exploratory Data Analysis (EDA)



On the EDA analysis page, you can explore the relationship between different independent variables (x variables) and monthly rent. By observing and analyzing various variables, it can help you understand the extent to which each factor affects the rent.

① On the “Correlation Analysis” page, you can view the correlation between the selected variable and the monthly rent by selecting the x variable and the facet_wrap variable.

② “Select x variable”: Select the x variable you want to observe.

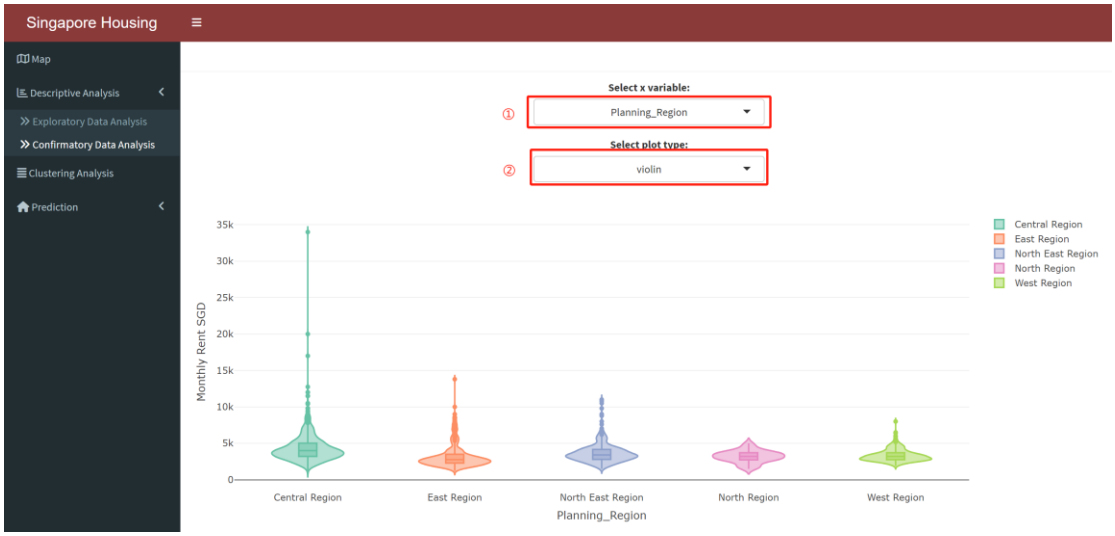
③ “Select the facet_wrap variable”: Select a variable to create facets that divide the data into subgraphs according to different levels or categories of that variable. For example, if "Planning_Region" is selected as the facet_wrap variable, then the resulting graph will include multiple subgraphs, each corresponding to a planning area, so that the rent distribution between different planning areas can be compared.

① Select the "Categorical Variables Analysis" page, it shows the results of the rental analysis based on different categorical variables.

② Select " Property Type" or "Planning Region" option, and the resulting bar chart sets the

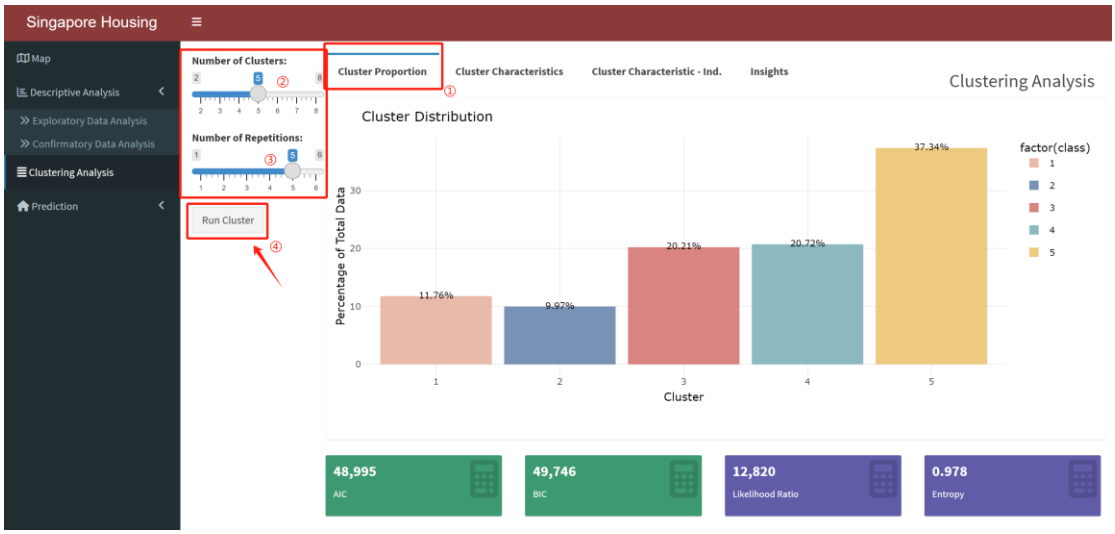
horizontal axis to the optional Property Type or Planning Region, and the vertical axis to the rental price.

2.2 Confirmatory Data Analysis(CDA)



① Select different x variables to explore the relationship with monthly rent.
② Select the type of visual chart you want to view.

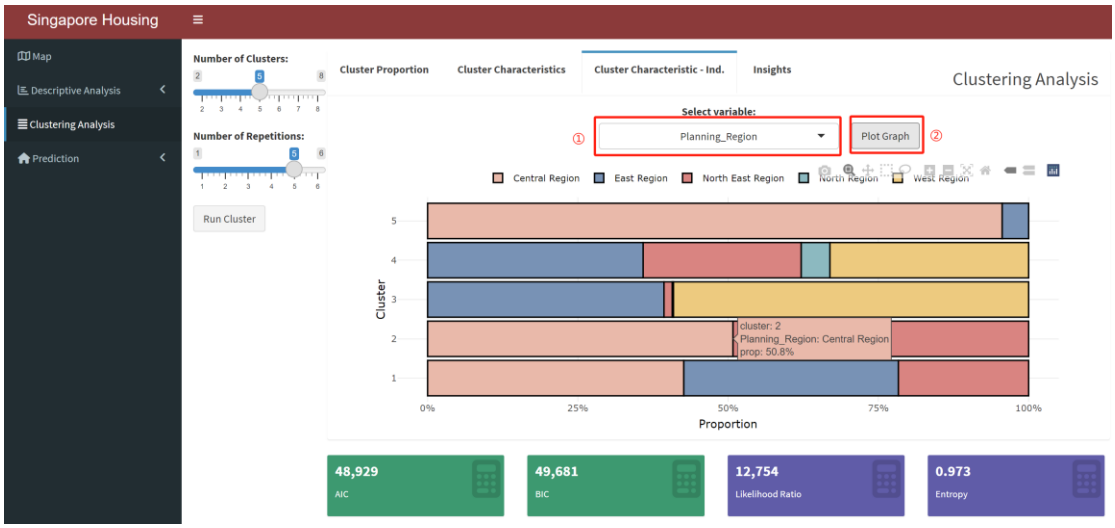
3. Clustering Analysis



① On the “Clustering Analysis” page, select Cluster Proportion, which displays the proportion for each category.
② Select the Number of Clusters to adjust the cluster.
③ Select the Number of Repetitions to adjust the cluster.
④ Click "Run Cluster" to perform the cluster analysis.

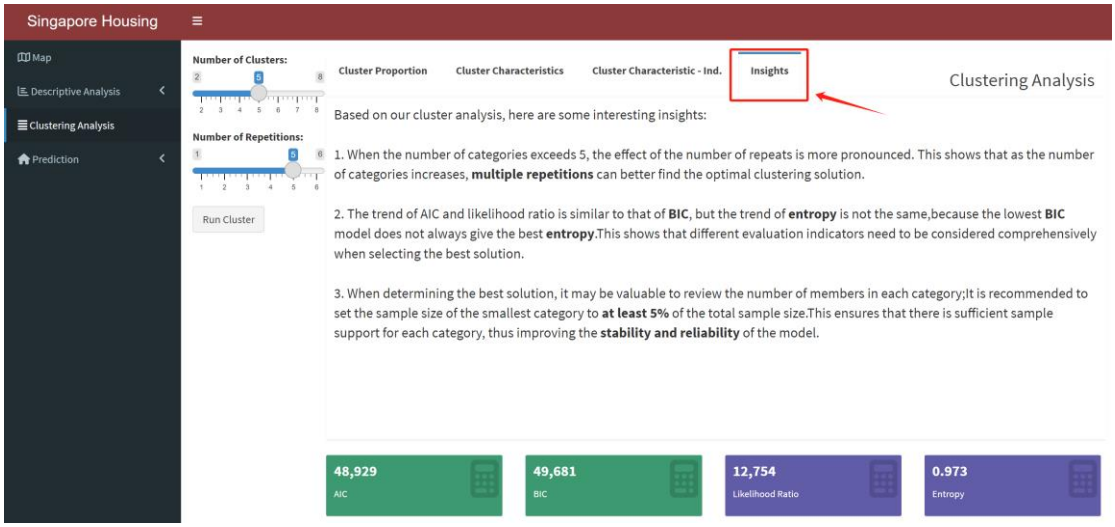
The purpose of these steps is to give the user the flexibility to adjust the clustering process in order to obtain the best clustering results according to the actual needs. Users can adjust the number of clusters and the number of repetitions based on the values of AIC, BIC, likelihood ratio, and entropy to find the best cluster.

Once the model has been run, just click on the other tabs to view the relevant charts without having to rerun the model.



① After the model is run, in the "Cluster Characteristics-Ind." option, can select the variables that you want to look at in detail. Only one input is accepted for each parameter.

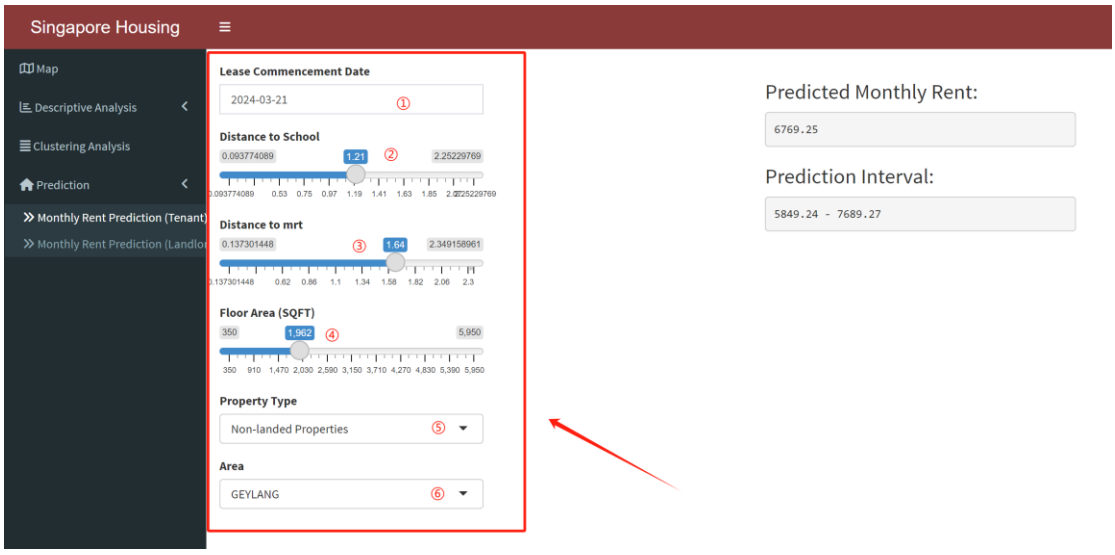
② Clicks the "Plot Graph" button, the graph will be displayed.



This is the “Insight” page, which shows the insight results of our analysis.

4. Prediction Model

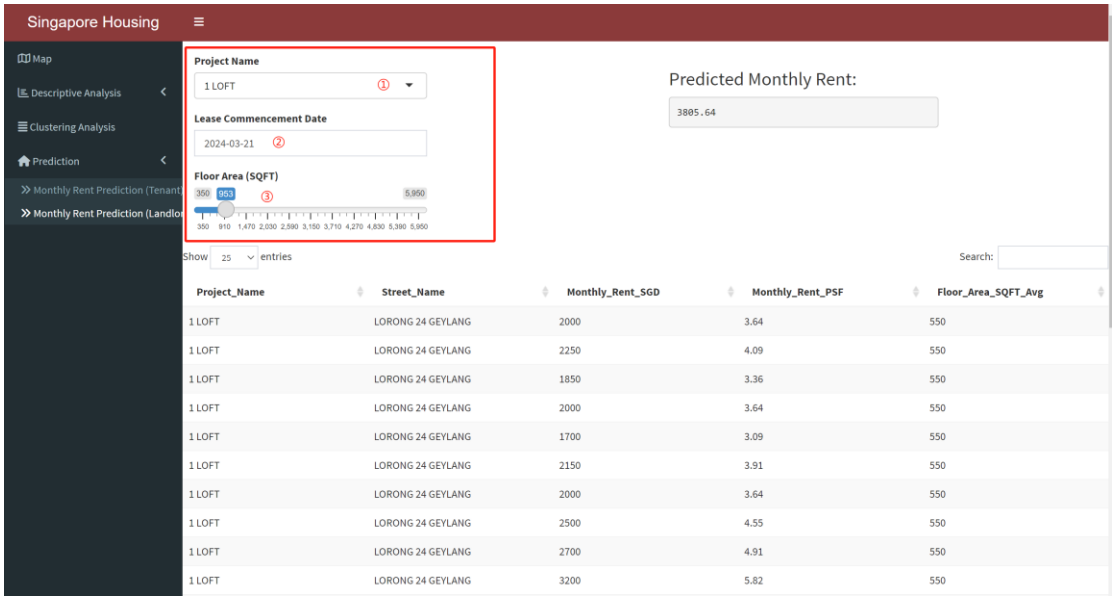
4.1 Monthly Rent Prediction(Tenant)



The generated predictive model is designed for tenants.

① Select the date you want to rent.
② Choose the distance from the nearest school.
③ Select the distance from the nearest MRT station.
④ Choose the size of the home you want to rent.
⑤ Choose the type of home you want to rent.
⑥ Select the area in which you want to rent the property.

4.2 Monthly Rent Prediction(Landlord)



The generated predictive models are designed for landlords.

① Select the project name for the house.

② Select the dates you want to rent.

③ Choose the size of the house you want to rent.

After entering this information, the system will display the area where your house is located and the prices of other houses for rent.