User Guide

Table of Contents

City Characterization2
Overview2
Apartment Insights3
Pubs, Restaurants and Schools4
Participant Regional Distribution5
Participants Residence6
Traffic Bottlenecks
Calendar Heatmap7
Traffic Hotspot Mapping
Daily Routine9
Attribute Comparison9
Daily Routine Statistics10
Daily Routine ViSiElse11

City Characterization

This tab aims to characterize the distinct regions of the city.

Overview

This tab allows the user to discover where the different facilities are in the city.



There are two maps on display. The map on the left shows the reference of the four different geographical regions of the city. The map on the right shows the location of the different facilities within the city. The side panel allows for the selection of facilities that will displayed on the Facilities Location map.

Apartment Insights

This tab provides users insights into apartment rental costs, max occupancy, and number of rooms with statistical testing.



Graph one on the first row of the main display shows a ggbetweenstats plot, displaying the four regions. It shows the Rental Cost in a Box Violin plot with Parametric testing as default. Users can use **Select Variable** to choose between Rental Cost, Maximum Occupancy and No. of Rooms to toggle the y axis of the stats plot.

Select Plot Type provides three options for the plot, Box Violin, Violin and Box. There are also four test types for the user to choose from under **Select Test Type**: Parametric, Non-Parametric, Robust and Bayes-Factor. To insert the desired plot title, the user can key in the desired text under the **Plot Title** option and click **Go!** to update the plot.

Graph two and three on second row of the main display show static stacked bar plots for Max Occupancy and No. of Rooms by region as descriptive visuals for the user.

Pubs, Restaurants and Schools

This page provides users with an interactive visual insight into differences in establishments across the different regions.



The first row of charts shows the cost associated with the different establishment types while the second row of charts show the occupancy/enrolment associated with the different establishments. Individual establishments are plotted, and the fill is used to differentiate them by the different regions of the city. Hovering over any bar will highlight all establishments in the same region from all charts in orange, while fading out the other establishments, allowing the user to see the characteristics of a certain region.

Participant Regional Distribution

This page shows the distribution of participants by their attributes across the different regions with statistical tests for age and joviality.



Graph one on the first row of the main display shows a ggbetweenstats plot, displaying the four regions. It shows the Age in a Box Violin plot with Parametric testing as default. Users can use **Select Variable** to choose between Age and Joviality to toggle the y axis of the stats plot. **Select Plot Type** provides three options for the plot, Box Violin, Violin and Box. There are also four test types for the user to choose from under **Select Test Type**: Parametric, Non-Parametric, Robust and Bayes-Factor.

Graphs on the second row of the main display show static stacked bar plots for Household Size, Have Kids and Education Level by Region as descriptive visuals for the user.

Participants Residence

This page allows the user to see where residence of certain demographic attributes live.



The side panel provides the user with filters for Household Size, Have Kids, Education Level, Interest Group, Age and Joviality. Users can use these filters to observe where participants of attributes of interest reside at. The **Show Other Facilities** check box at the bottom of the panel allows the user to toggle the background later showing the other facilities in the city.

Traffic Bottlenecks

This tab aims to explore the traffic bottle necks that take place in the city during peak hours.

Calendar Heatmap

This page aims to allow the user to explore different months of the year to identify the peak hours for the weekdays and weekends.



There are two heatmaps shown on this page. Heatmap #1: Weekdays or Weekends and Heatmap #2: Weekdays or Weekends options allow the user to toggle the two heatmaps between Weekday and Weekend format. Heatmap #1: Which Year-Month? and Heatmap #2: Which Year-Month? option allows the user to select multiple year-month combinations to be displayed on the plots. Do note that the Click to Compute! button needs to be pressed to display the heatmap.

Traffic Hotspot Mapping

This page allows to identify with areas of the city where the bottlenecks occur during the peak hours.



There are two plots placed side by side for ease of comparison. Hotspot Plot #1: Which Day? allows the user to select the day of the week they are interested in. Hotspot Plot #1: Which Year-Month? allows the user to select the year-months of choice. Hotspot Plot #1: Which Hour? allows for the selection of multiple identified peak hours for display. Hotspot Plot #1: Select top % of traffic allows the user to select the percentile of peak hour traffic they want displayed. The areas of bottleneck are displayed in dark maroon diamonds on the chart.

Duplicate options are present for Hotspot Plot #2. Do note that the **Click to Compute!** button needs to be pressed to display the plot, and a spinning wheel indicates that the plot is loading.

Daily Routine

This tab aims to explore the differences between participants and their daily routines.

Attribute Comparison

This page allows the users to compare the attributes of two participants of interest.



The side panel allows the user to select two participants from a drop-down list. Participant 1 attributes are shown with a red dot on the graphs while the Participant 2 attributes are shown with a green dot. A data table of the two selected participants is shown at the bottom of the page.

Daily Routine Statistics

This page allows the user to explore the statistical differences between activity time of the two participants of interest.



The main display shows a ggbetweenstats plot displaying the two participants of interest selected by the user using the **Select Participant 1** and **Select Participant 2** options on the side panel. As each participant has weekend and weekday routines, the user can use the **Select Time Period for Participant 1** and **Select Time Period for Participant 2** to toggle between weekday and weekend routines.

Users can use **Select Comparison Parameter** to choose between fourteen different options to toggle the y axis of the stats plot. **Select Plot Type** provides three options for the plot, Box Violin, Violin and Box. There are also four test types for the user to choose from under **Select Test Type**: Parametric, Non-Parametric, Robust and Bayes-Factor. To insert the desired plot title, the user can key in the desired text under the **Plot Title** option and click **Go!** to update the plot.

A data table is added at the bottom of the page for the user to view the attributes of the two participants that they have selected.

Daily Routine ViSiElse

This page allows for the visualization and comparison of two selected participants daily routines using the ViSiElse plot.



User can use the **Select Participant 1** and **Select Participant 2** options on the side panel to select the two participants of interest. The preferred time (either Weekday or Weekend) can be chosen using the **Select Time Period for Participant 1** and **Select Time Period for Participant 2** options.

Type of Statistical Test allows the user to select between Median, Mean and Null tests that appears on the ViSiElse plot. Do note that if an error occurs, please select the Null test input. To insert the desired plot title, the user can key in the desired text under the **Plot Title** option and click **Go!** to update the plot.

A data table is added at the bottom of the page for the user to view the attributes of the two participants that they have selected.