

CS 765 - Data Visualization

Tool walkthrough

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Visualization of ATUS Dataset

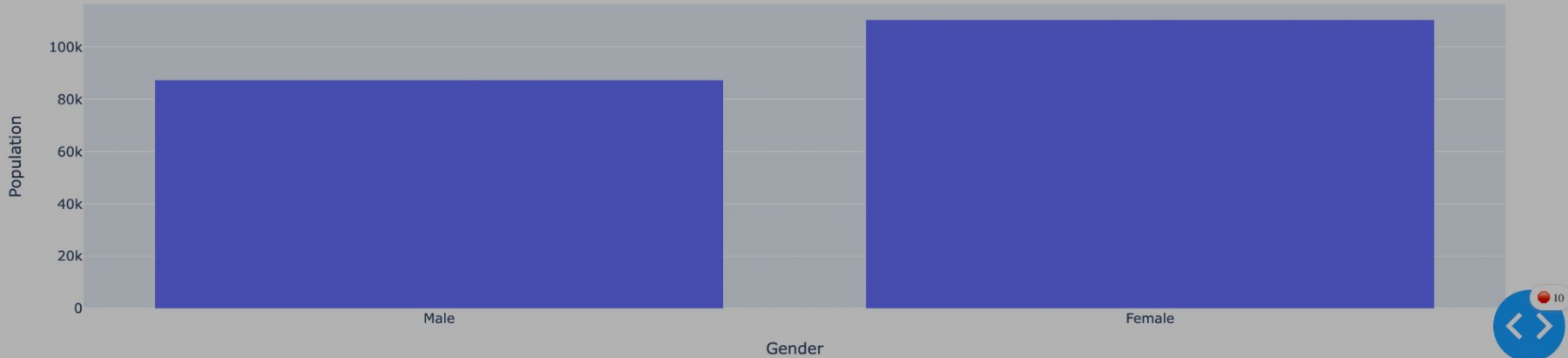
Choose the number of dimensions you want to visualize:

☒ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males and females

Population of Males and Females



- User has the option to select the number of dimensions.
- By default, the selected value is 1 dimension.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

☒ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males and females

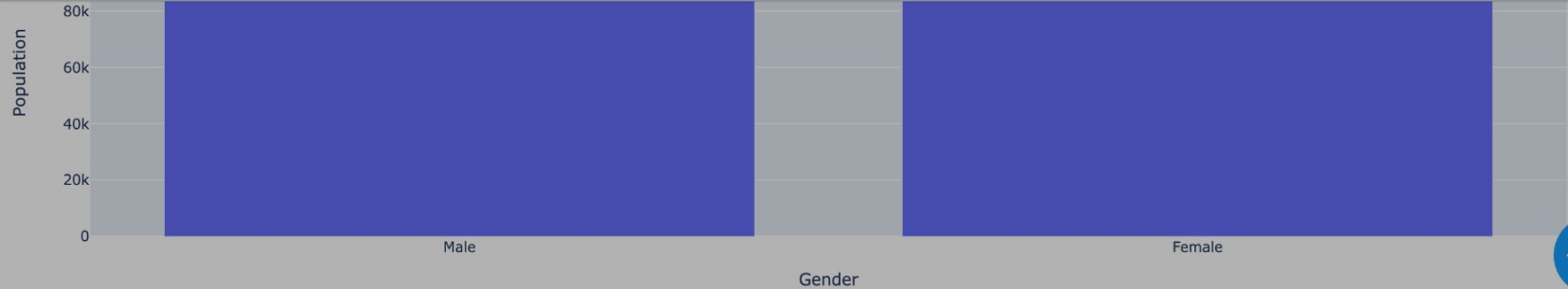
Distribution of males and females

Distribution of metro and non-metro people

Distribution of people in different age groups

Distribution of people in different income levels

Distribution of people based on their time spent on leisure



- User has the option to choose a distribution by using the dropdown menu.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

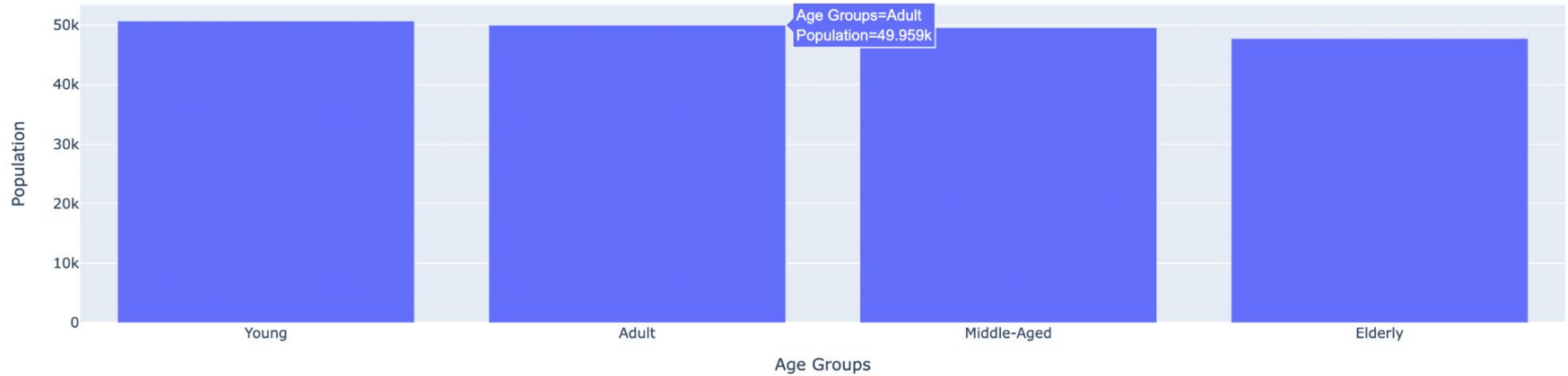
☒ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of people in different age groups



Population of People in each Age Group



- The selected distribution is displayed in the form of a bar graph.

Visualization of ATUS Dataset

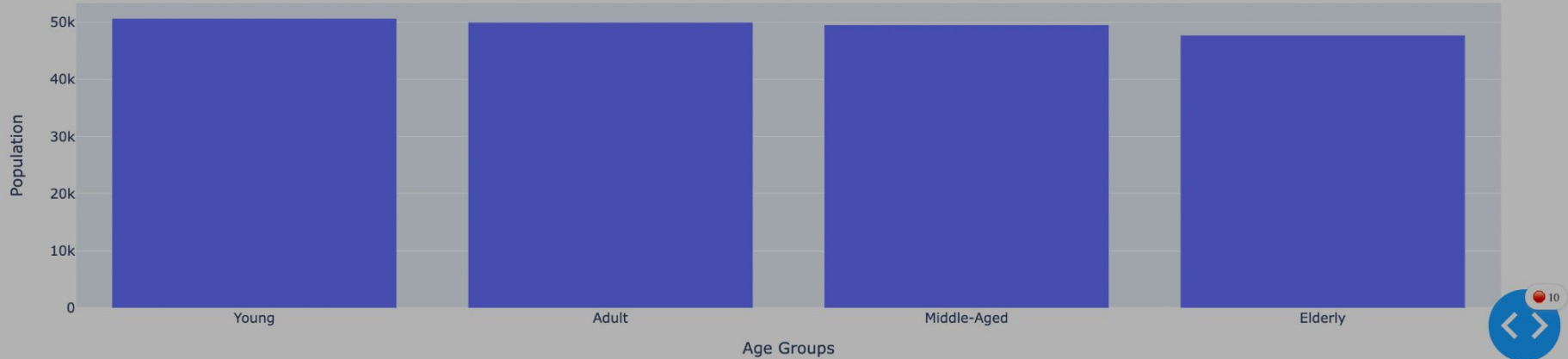
Choose the number of dimensions you want to visualize:

☒ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of people in different age groups

Population of People in each Age Group



- User selects 2 Dimensions.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

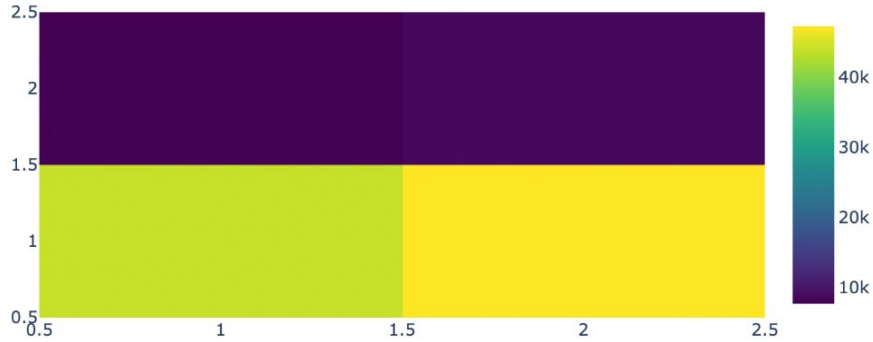
☐ 1 Dimension(s) ☒ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males & females in metro & non-metro cities

Choose the type of visualization(s):

☒ Heatmap ☐ Adjacent bar chart



- On selecting 2 dimensions, a heatmap is shown with default values.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☒ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males & females in metro & non-metro cities

Distribution of males & females in metro & non-metro cities

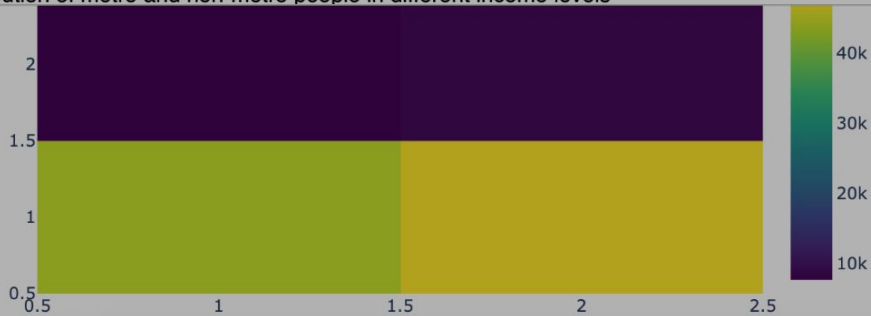
Distribution of males & females in different age groups

Distribution of males & females in different income levels

Distribution of males & females based on their time spent in leisure

Distribution of metro and non-metro people in different age groups

Distribution of metro and non-metro people in different income levels



- User has the option to choose a distribution using the dropdown menu.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

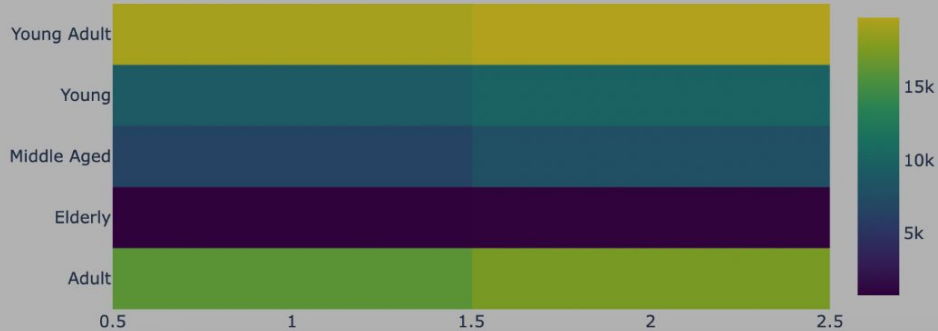
☐ 1 Dimension(s) ☒ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males & females in different age groups

Choose the type of visualization(s):

☒ Heatmap ☐ Adjacent bar chart



- User has the option to choose a different type of visualization by selecting adjacent bar chart.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

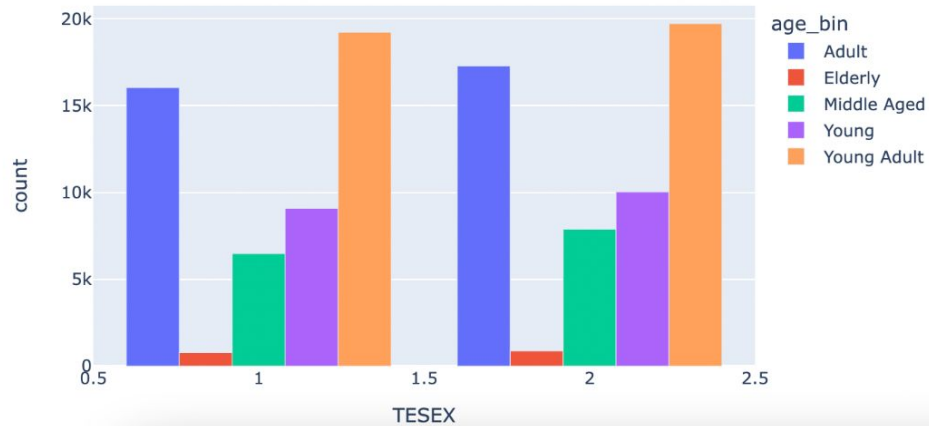
☐ 1 Dimension(s) ☒ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males & females in different age groups

Choose the type of visualization(s):

☐ Heatmap ☒ Adjacent bar chart



- Adjacent bar chart is displayed for the selected distribution.

Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

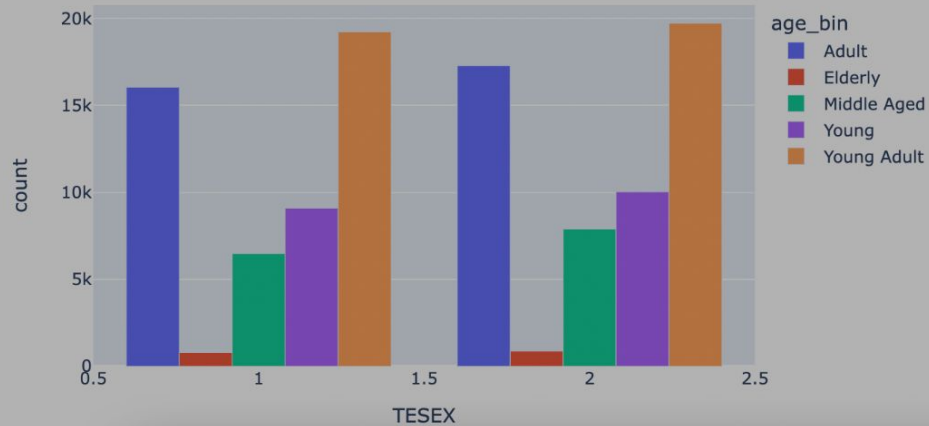
☐ 1 Dimension(s) ☒ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose a Distribution:

Distribution of males & females in different age groups

Choose the type of visualization(s):

☐ Heatmap ☒ Adjacent bar chart



- User selects 3 Dimensions.

Choose the number of dimensions you want to visualize:

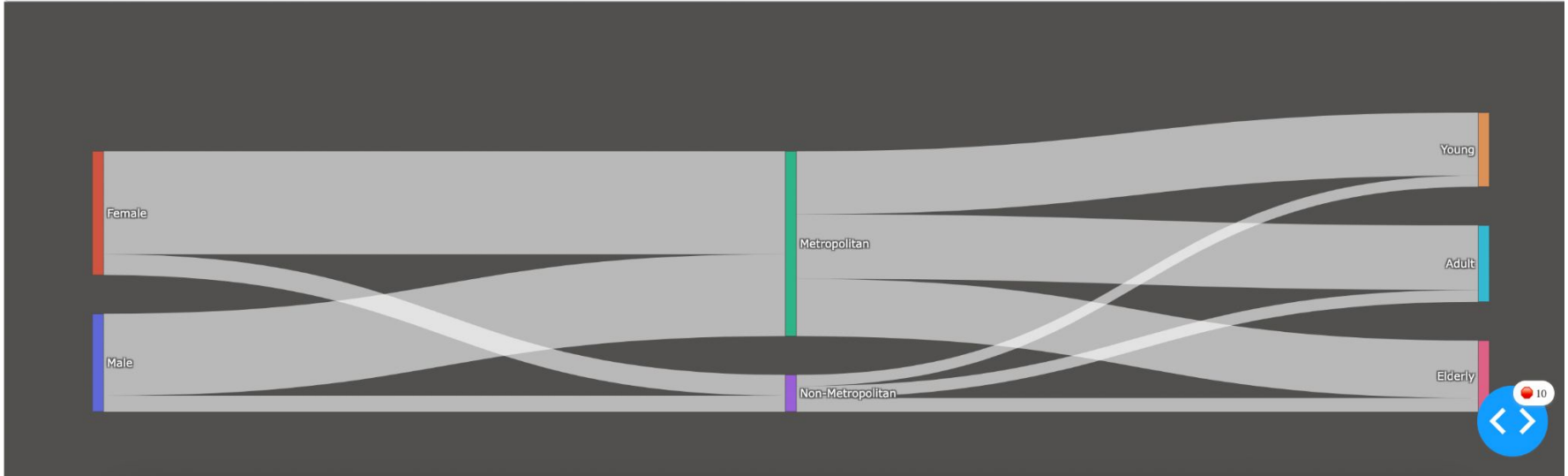
☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☒ Sankey Diagram ☐ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

3



- On selecting 3 dimensions, a sankey diagram with 3 age bins (young, adult, elderly) is shown by default.

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☒ Sankey Diagram ☐ Treemap

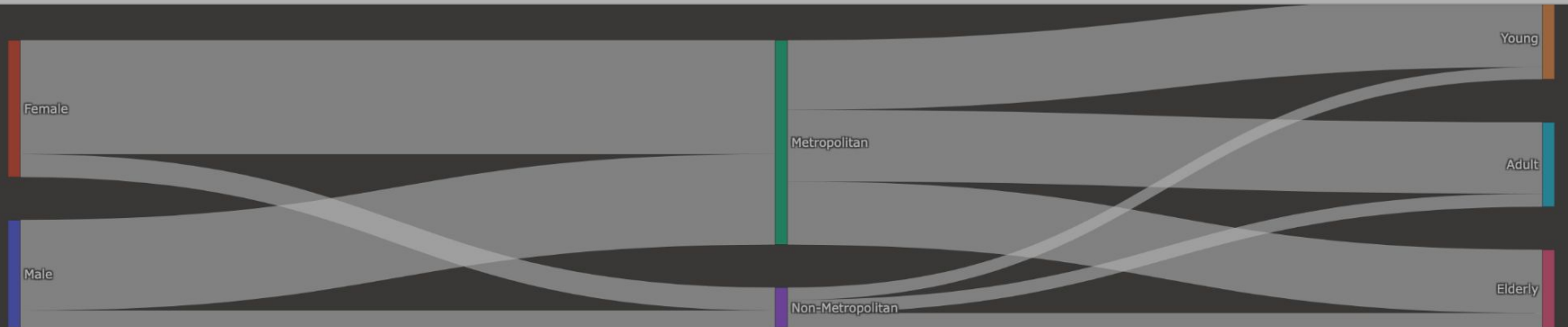
Choose the number of bins for age (Only if you choose sankey diagram):

3

3

4

5



- User can select different number of bins for age. In this figure, user selects 4 bins.

Choose the number of dimensions you want to visualize:

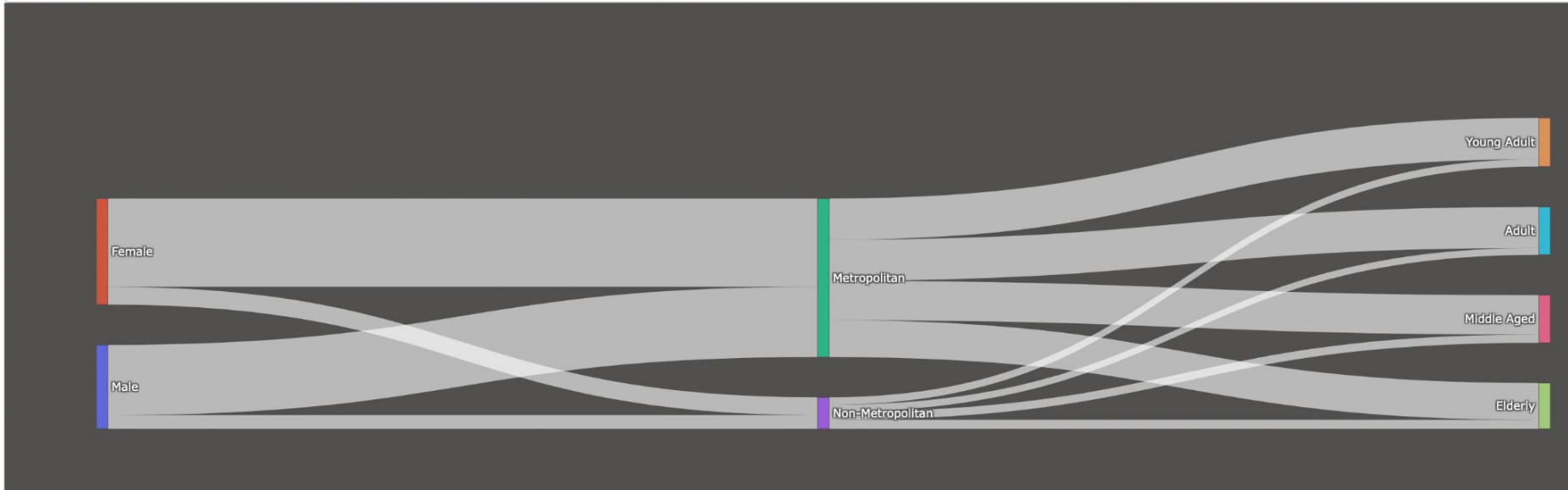
☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☒ Sankey Diagram ☐ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

4



- A snake diagram with 4 age bins (young, adult, middle-aged and elderly) is displayed.

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☒ Sankey Diagram ☐ Treemap

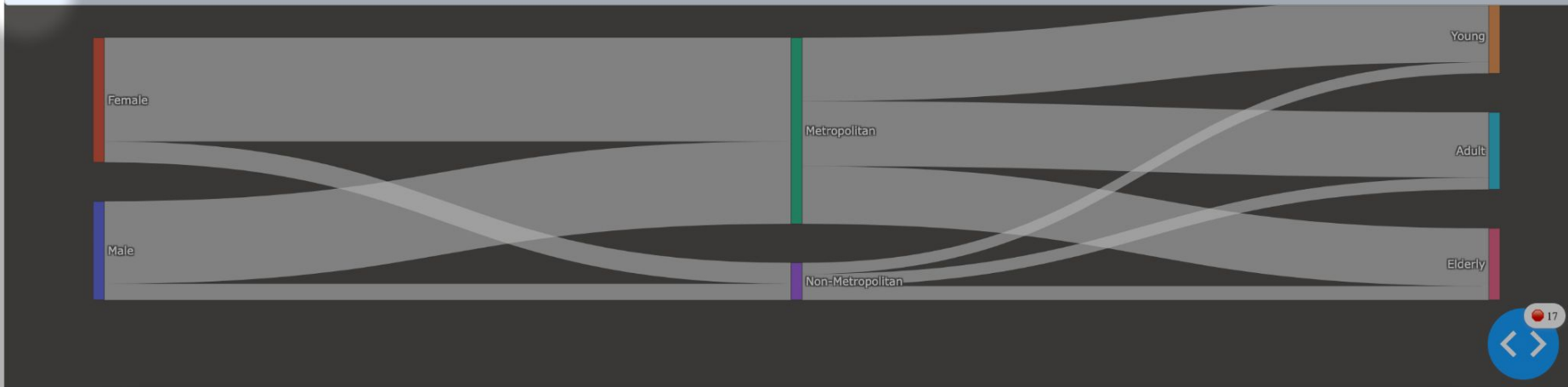
Choose the number of bins for age (Only if you choose sankey diagram):

β

3

4

5



- In this figure, user selects 5 age bins.

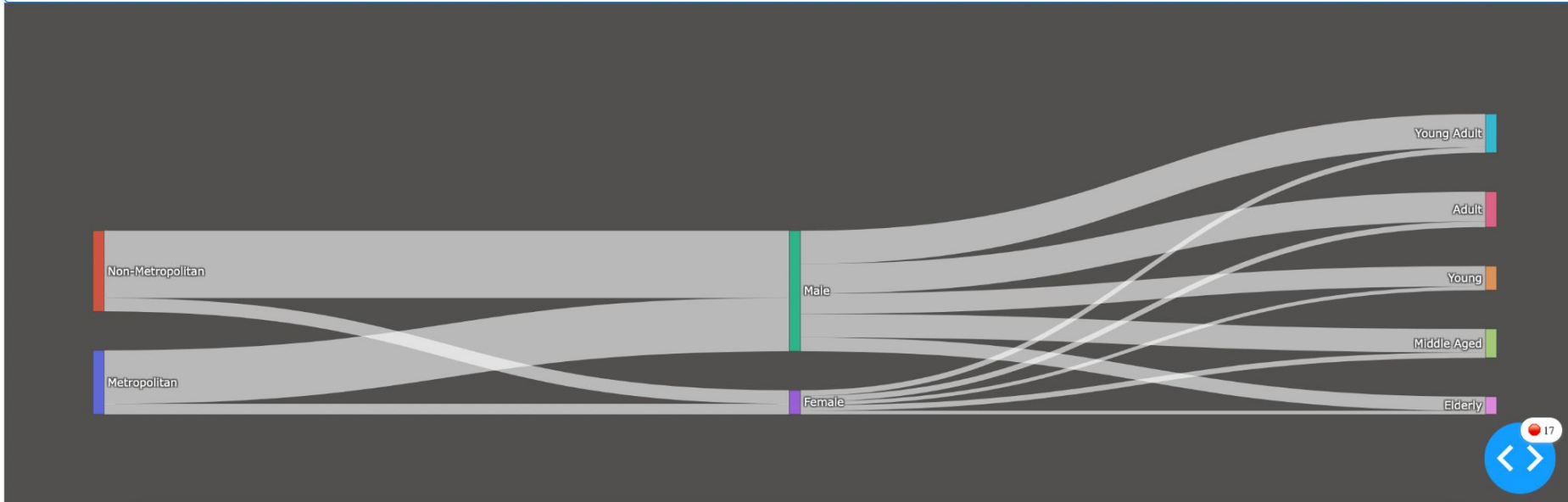
☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☒ Sankey Diagram ☐ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

5



- A sankey diagram with 5 age bins (young adult, adult, young, middle-aged, elderly) is displayed.

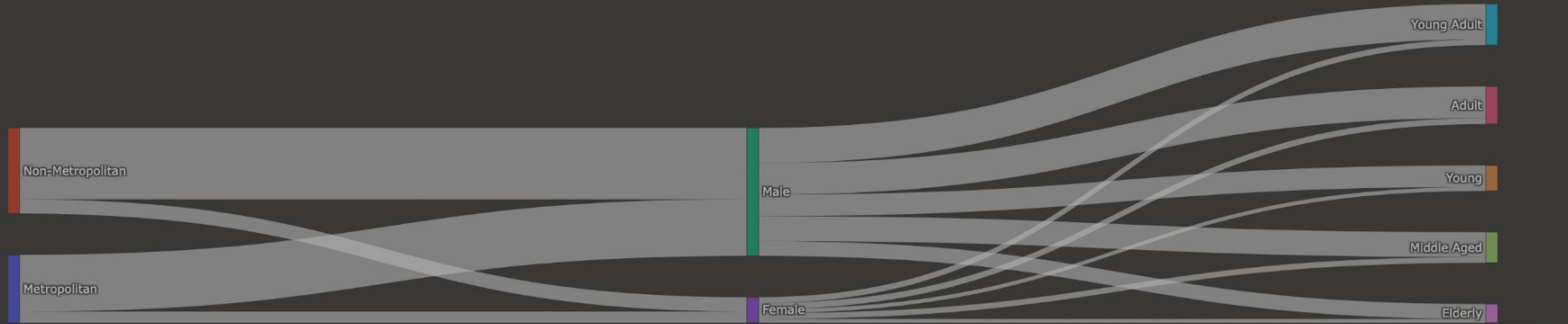
☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

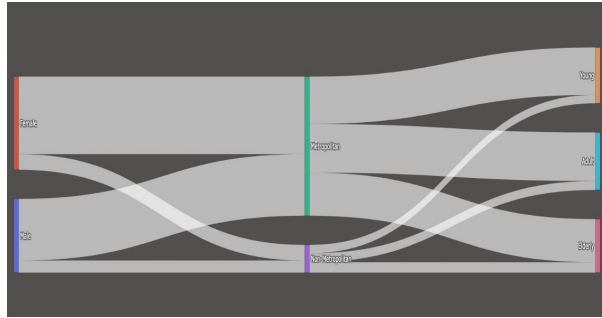
☒ Sankey Diagram ☐ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

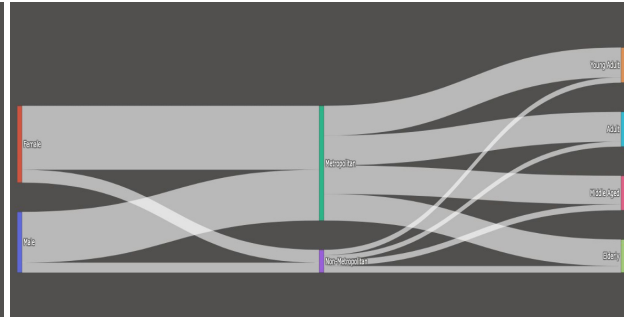
5



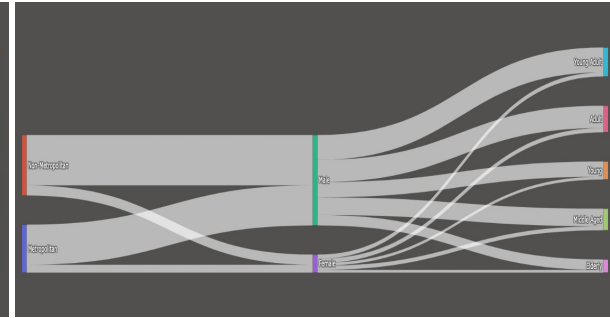
- Users also have the option to view an alternate visualization by choosing treemap radio button.



Age divided into 3 bins



Age divided into 4 bins



Age divided into 5 bins

- User interaction to change the number of bins for the sankey diagram. The bins are calculated according to equal weight binning algorithm.

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

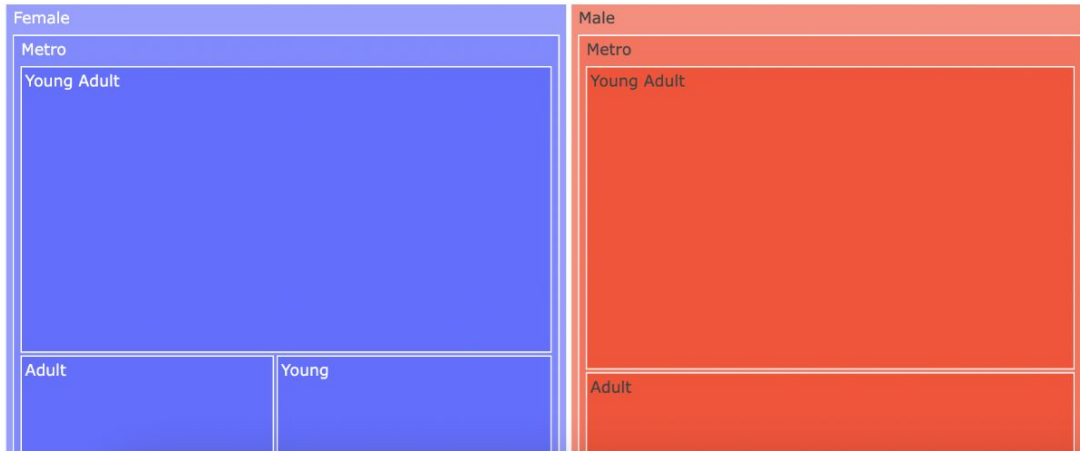
Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☐ Sankey Diagram ☒ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

5

Number of Females and males in each category



- On clicking the treemap radio button, an interactive treemap with default number of bins is displayed.



Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☒ 3 Dimension(s) ☐ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 3-Dimensional data(Age groups, gender and city type)

☐ Sankey Diagram ☒ Treemap

Choose the number of bins for age (Only if you choose sankey diagram):

5

Number of Females and males in each category



- User clicks 4 Dimensions.

Visualization of ATUS Dataset

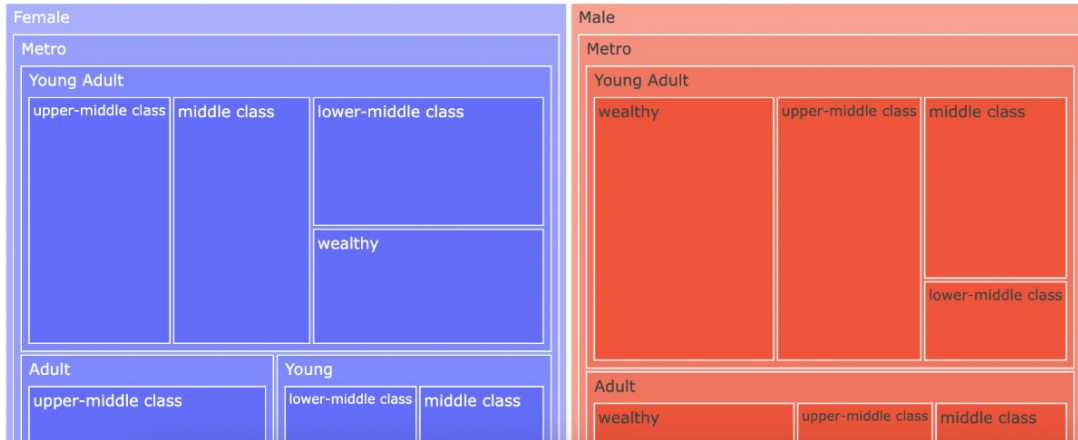
Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☒ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 4-Dimensional data

☒ Treemap ☐ Circular Packing ☐ Upset Plot

Number of Females and males in each category



- Users have the option to select from 3 different types of visualizations.
- The default visualization is an interactive treemap.



Visualization of ATUS Dataset

Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☒ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 4-Dimensional data

☒ Treemap ☐ Circular Packing ☐ Upset Plot

Number of Females and males in each category

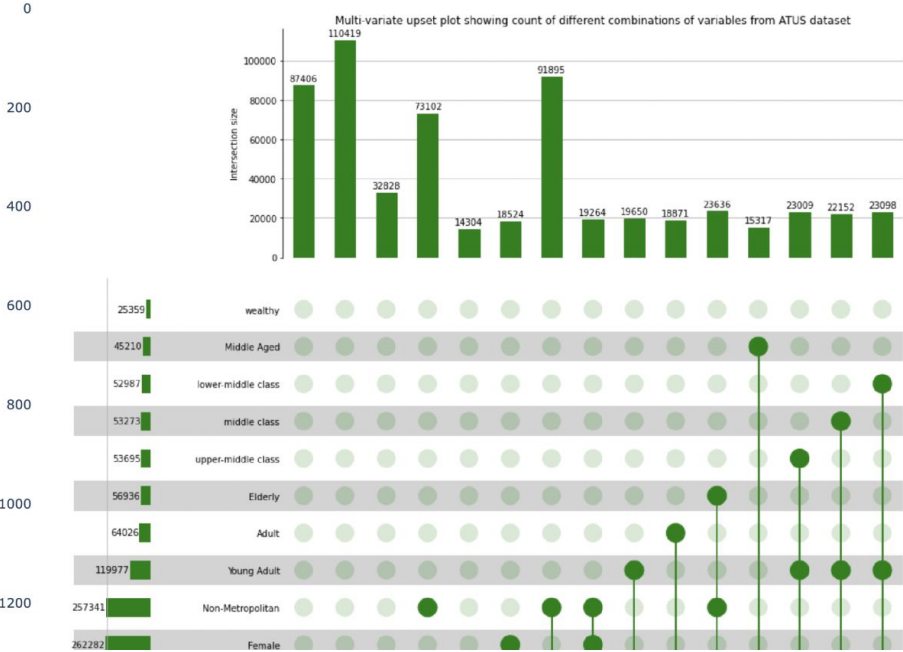


- User clicks on Upset Plot.



Choose the visualization type to visualize 4-Dimensional data(Age groups, gender, income_bins, city type)

Treemap Circular Packing Upset Plot



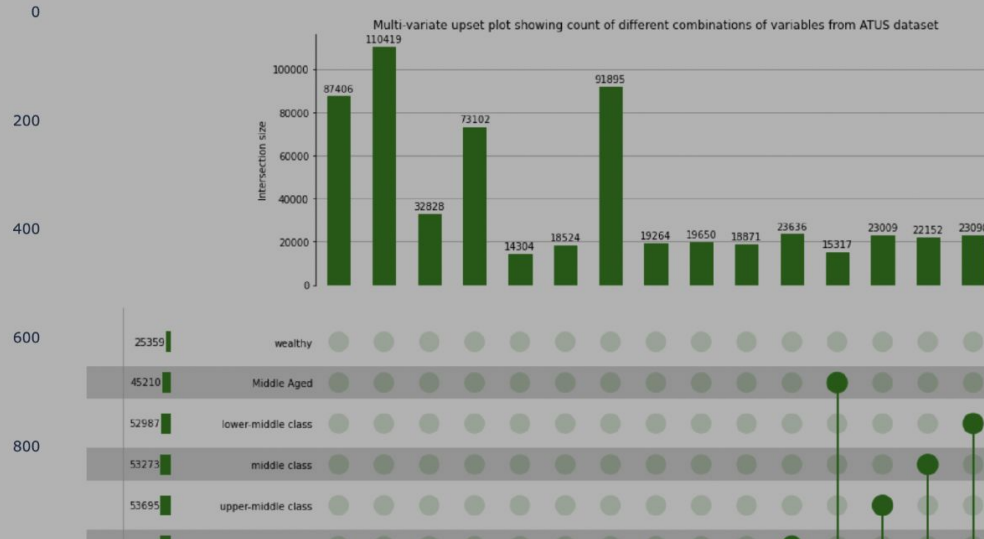
- Upset plot is displayed.

Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☒ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 4-Dimensional data(Age groups, gender, income_bins, city type)

☐ Treemap ☐ Circular Packing ☒ Upset Plot



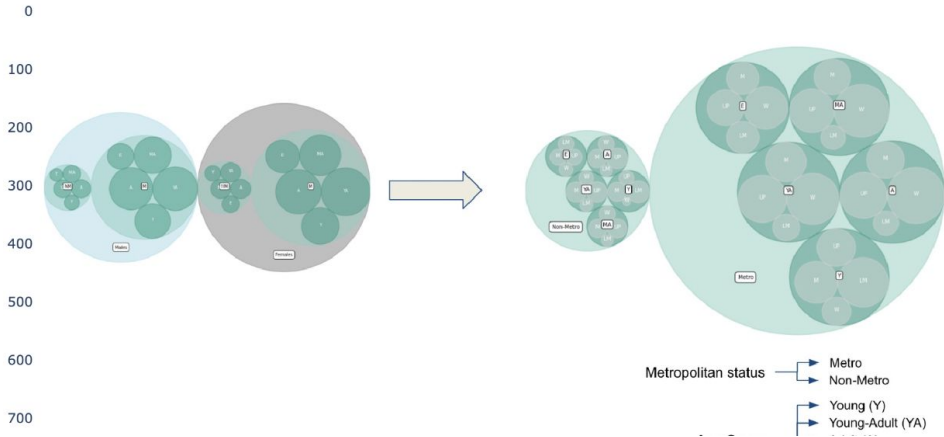
- User can choose an alternate visualization by clicking Circular Packing.

Choose the visualization type to visualize 4-Dimensional data(Age groups, gender, income_bins, city type)

☐ Treemap ☒ Circular Packing ☐ Upset Plot

Choose gender:

Male

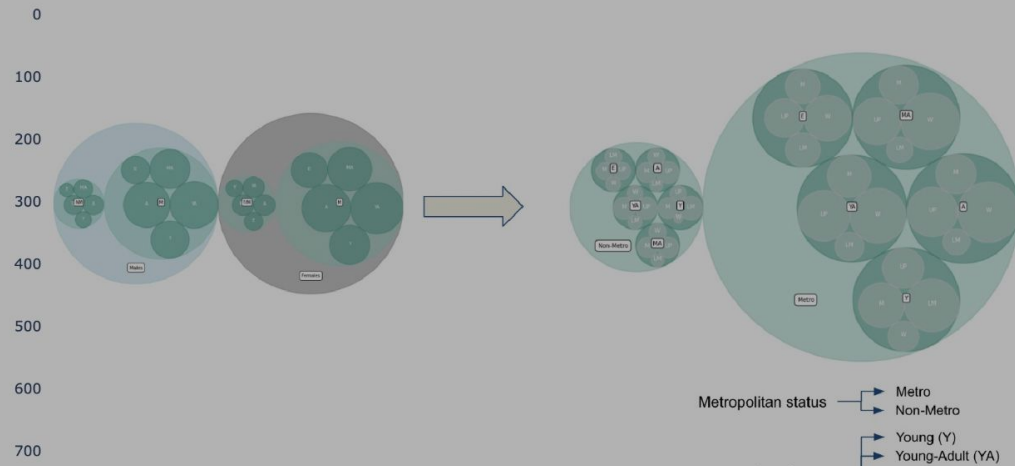


- Circular Packing visualization is displayed.

☐ Treemap ☒ Circular Packing ☐ Upset Plot

Choose gender:

Male



- User has the option to choose a specific gender in circular packing graph.

Choose the number of dimensions you want to visualize:

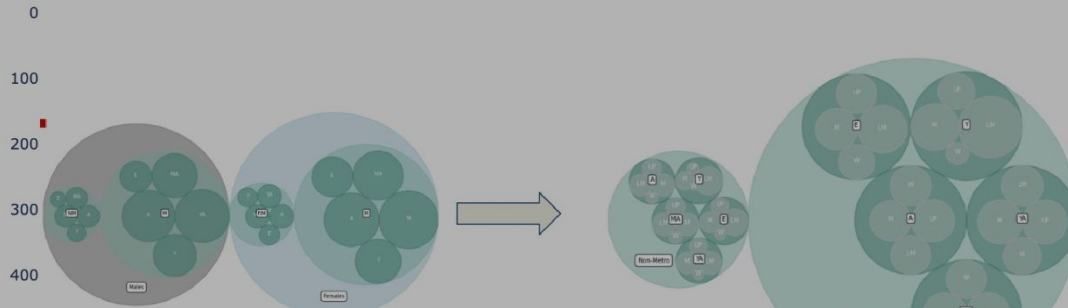
☐ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☒ 4 Dimension(s) ☐ 5 Dimension(s)

Choose the visualization type to visualize 4-Dimensional data(Age groups, gender, income_bins, city type)

☐ Treemap ☒ Circular Packing ☐ Upset Plot

Choose gender:

Female



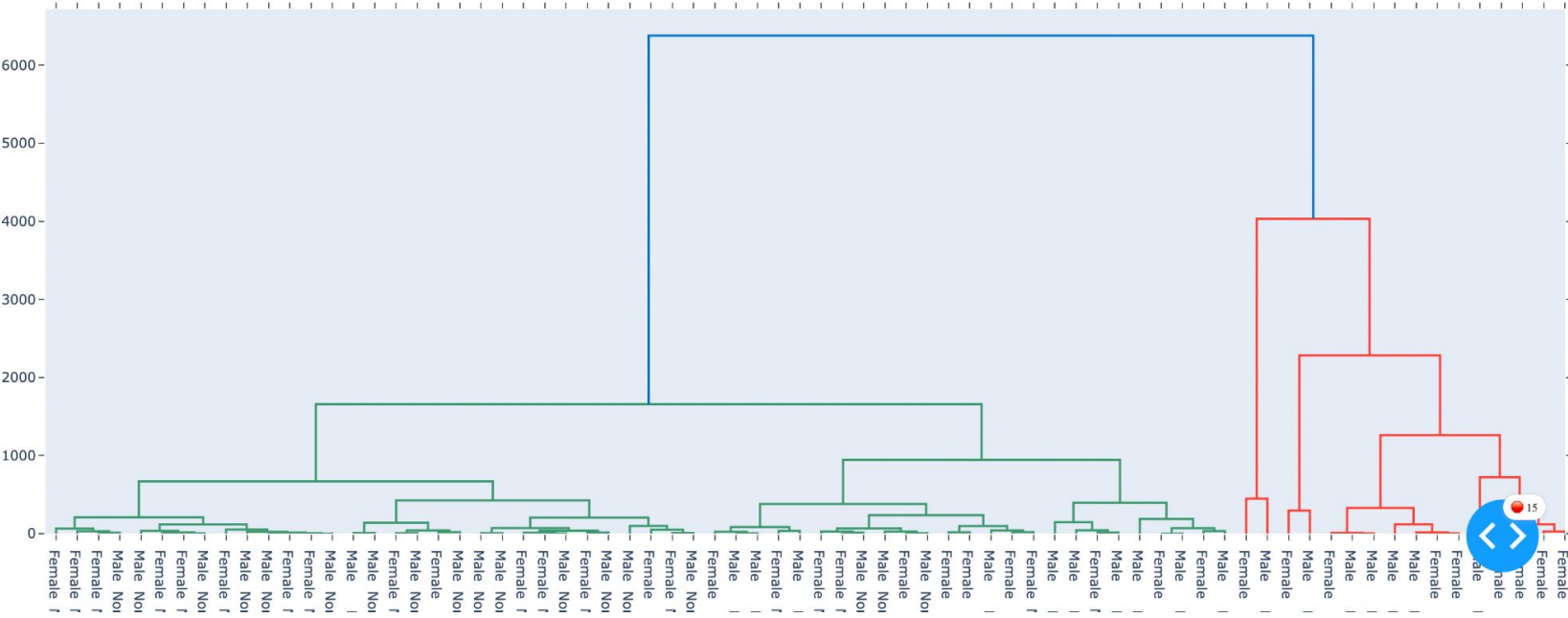
- User selects 5 dimensions.

Choose the number of dimensions you want to visualize:

☐ 1 Dimension(s) ☐ 2 Dimension(s) ☐ 3 Dimension(s) ☐ 4 Dimension(s) ☒ 5 Dimension(s)

Heirarchy of clusters/bins in Dendrogram

☒ Dendrogram



- Dendrogram is displayed.