USER GUIDE

Contents

Exploratory Data Analysis

In this session, there are three types of visualisations to address the question from challenge 3. Geographic Graph, Simple Time Series plot and cycle plot. The explore page allows the user to analyse and investigate dataset to summarise the main characteristics of employment pattern, business performance and financial health of the city of Engagement, Ohio USA.

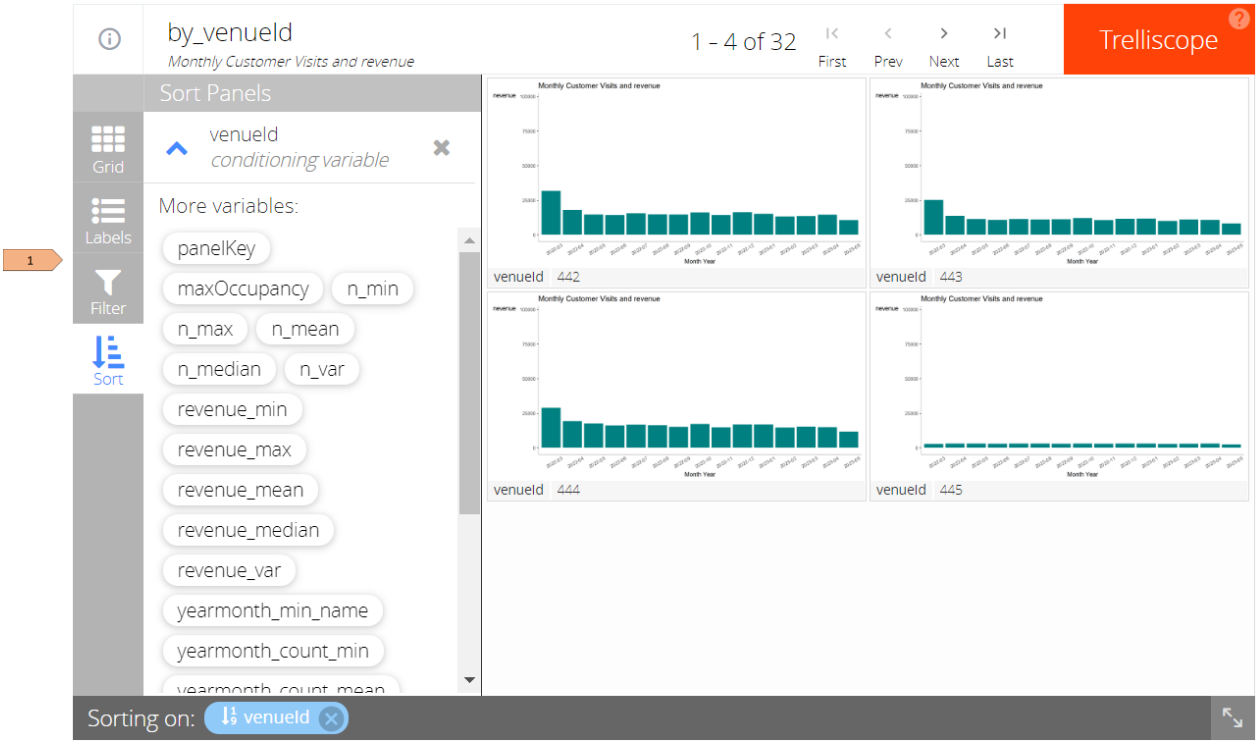
1. Business performance

1.1 Summary

The trelliscope table is used to compare the revenue, number of visits, and the maximum occupancy of all the pubs and restaurants. It provides the used an overview of the performance of each venue ID. Users can simply compare the business performance of any pubs and restaurants by changing the setting.

Function 1: Sorting

User can sort the sequence of venue id based on different criteria, such as maximum number of visits, amount of minimum revenue, etc. Double layer of sorting is also available.



Function 2: Filtering

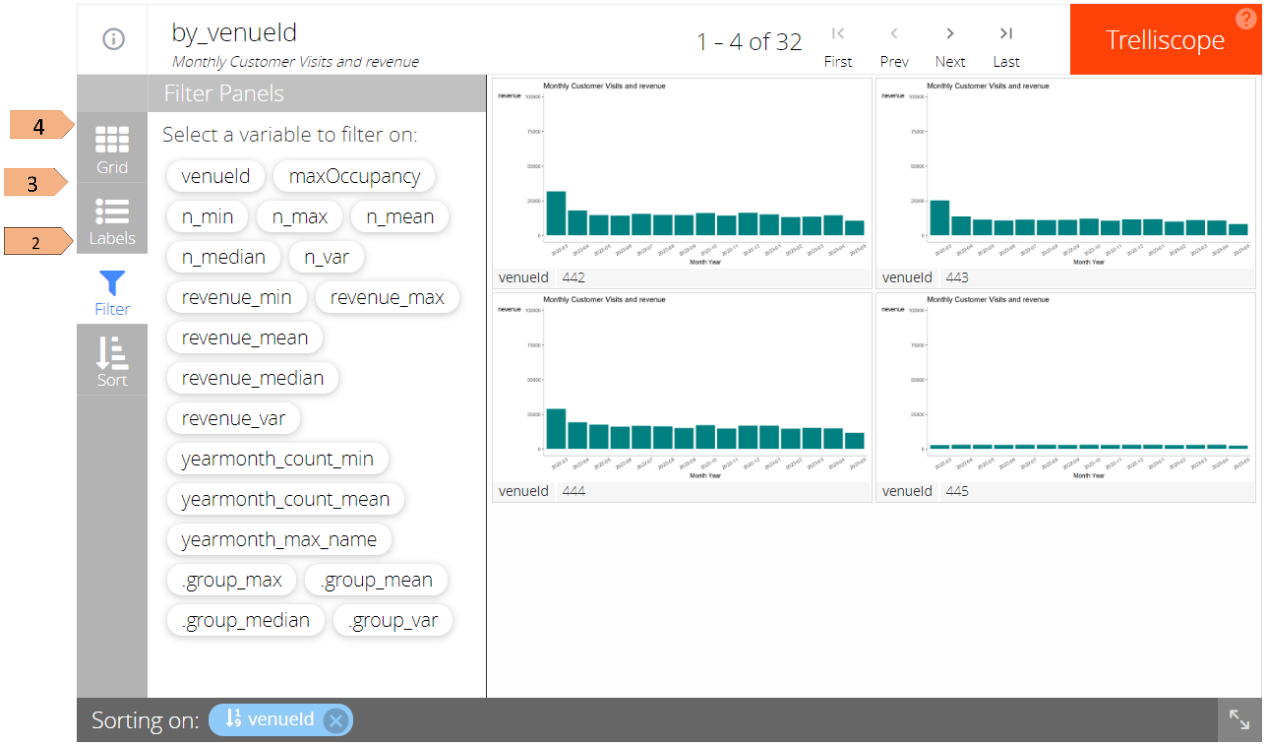
User can use this function the focus on the business number they are interested in.

Function 3: Labelling

User can use this function to add on the detailed numbers of the business under the graphs, such as the average of revenue etc.

Function 4: Grid

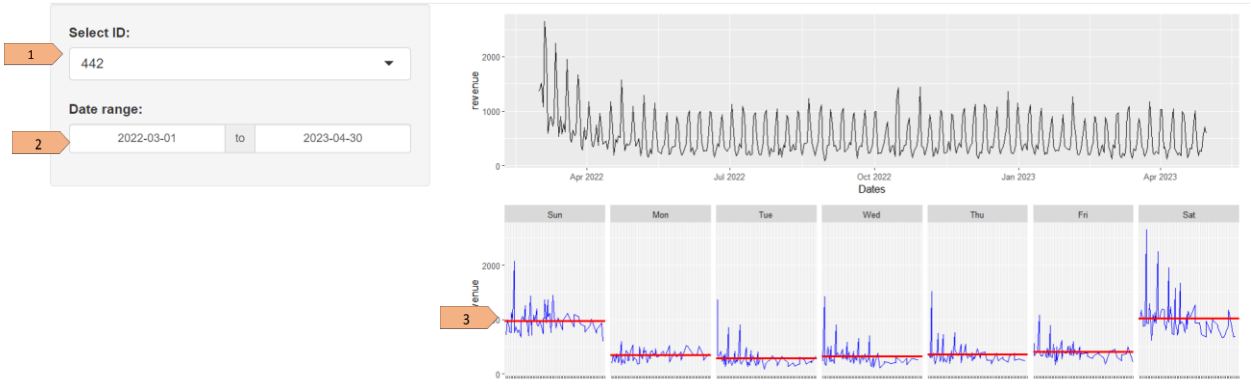
Users can select the number of graph they would like to display on one page.



After comparing the performance among different business, user can find the venue id from the next two tabs to discover more details of the selected business.

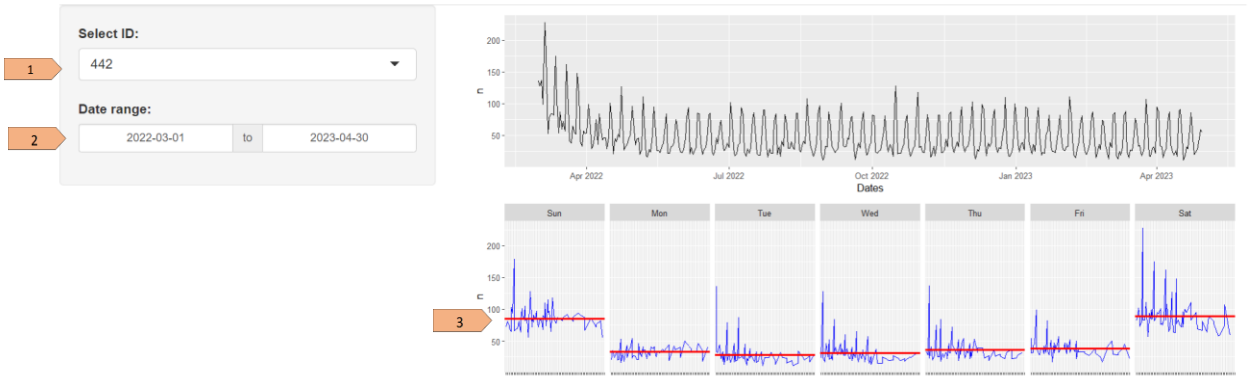
1.2 Revenue

The figure of this page is calculated by the sum of daily expenditure from visitors in each pub or restaurant. By selecting the venue ID and the period from the selection penal, user can see the movement of the revenue from selected ID within the selected period. The red line of the cycle plot is the mean of revenue over the selected period.



1.3 Visit

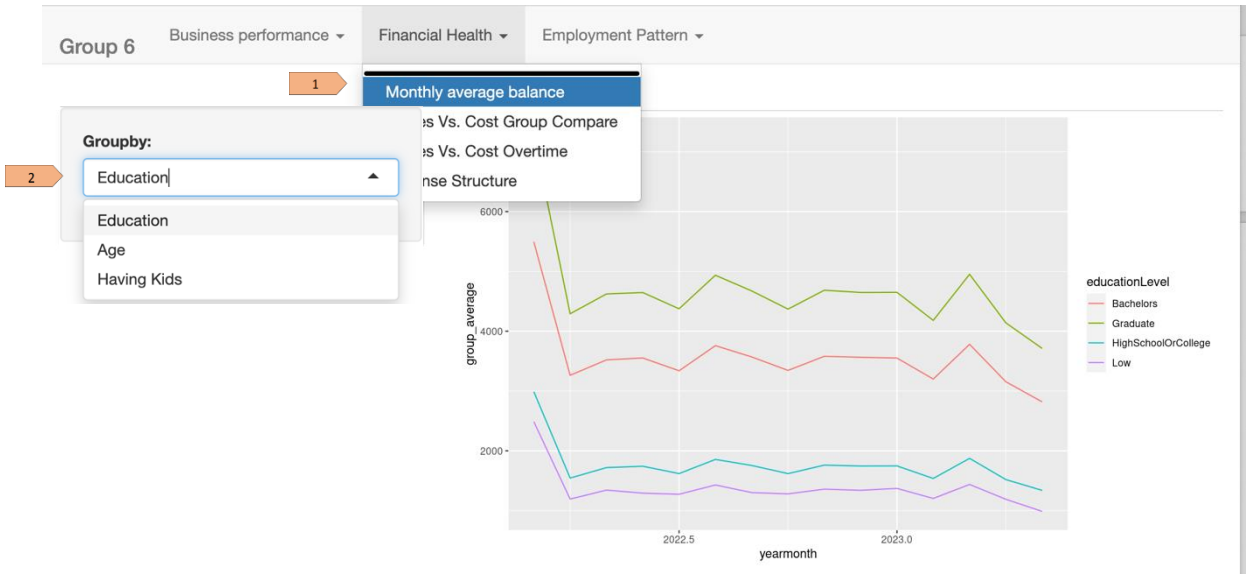
The line chart under this page is to illustrate the total number of visits from the selected business id per day within the selected period. By changing the venue ID and the period from the selection penal, user can see how the number of visits from selected ID change within the selected period. The red line of the cycle plot is the mean of number of visits over the selected period.



2. Financial Health

2.1 Monthly average balance

The line chart calculates the average monthly balance for each sub-categories and display the trend over 15 months from Mar 2022 to May 2023. Users can explore the differences in trend distribution across different features by selecting from the slide baron the left-hand side.

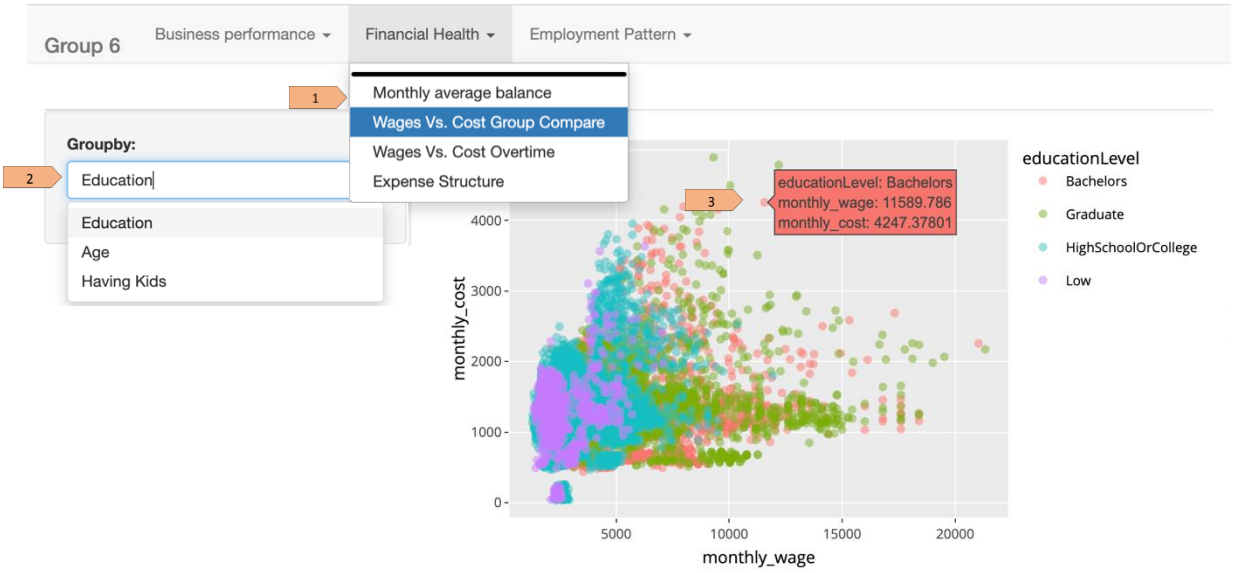


2.2 Wage versus cost of living

In this section, we summed up the monthly cost across 5 different categories and extract the wages for each month.

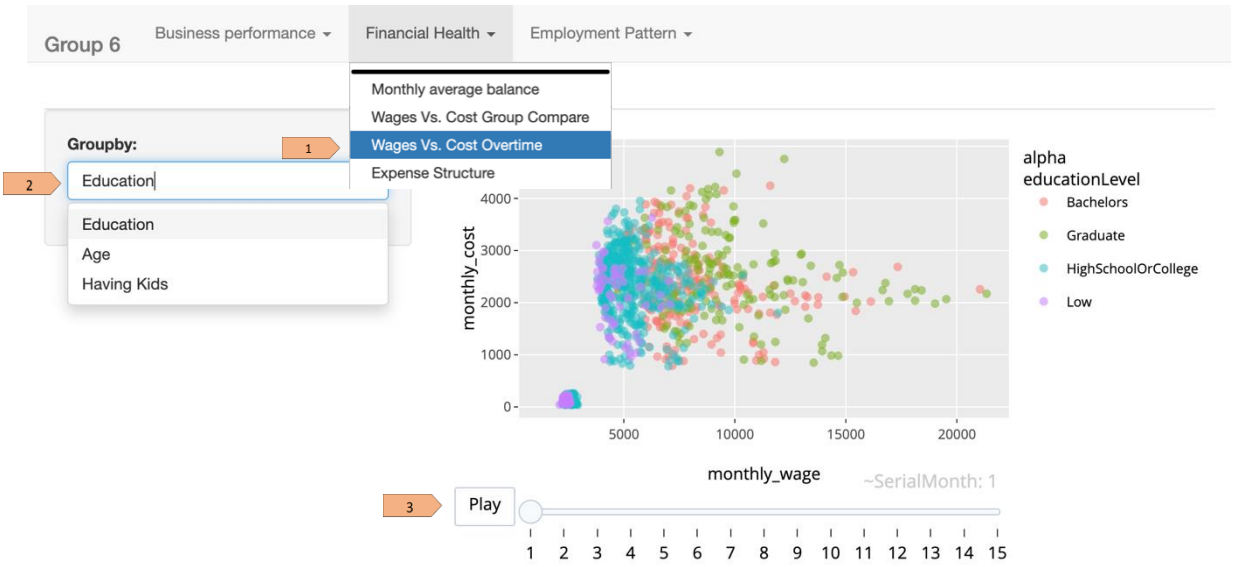
2.2.1 interactive scatter plot

The interactive scatter plot is adopted when users require a **horizontal comparison** of participants with different attributes. Similar to the line chart, users can switch the Grouped by variables to compare the distribution in sub-groups. Samples in different groups would be differentiated with multiple colours. Users can also tap on each single point in the scatter plot to view the detailed values.



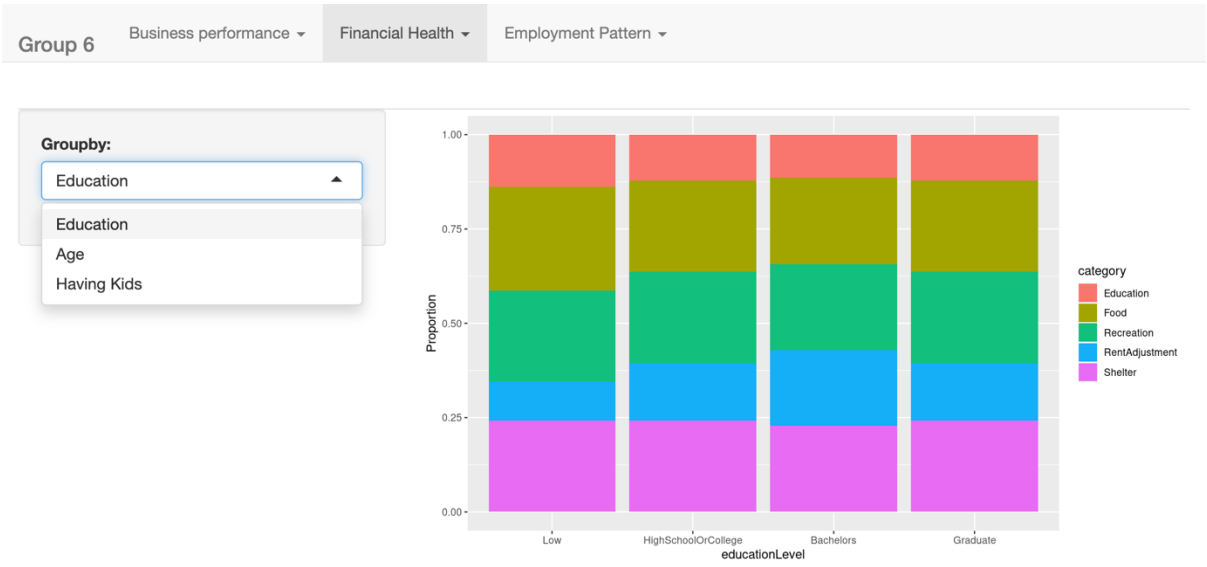
2.2.2 Animated bubble plot

The animated bubble plot is recommended when users are exploring the monthly trend overtime. Similar to the interactive scatterplot, animated bubble plot offers comparison in different colors. Lastly, clicking on 'Play' would start the animation if variation over 15 serial months.



2.3 Expense Structure

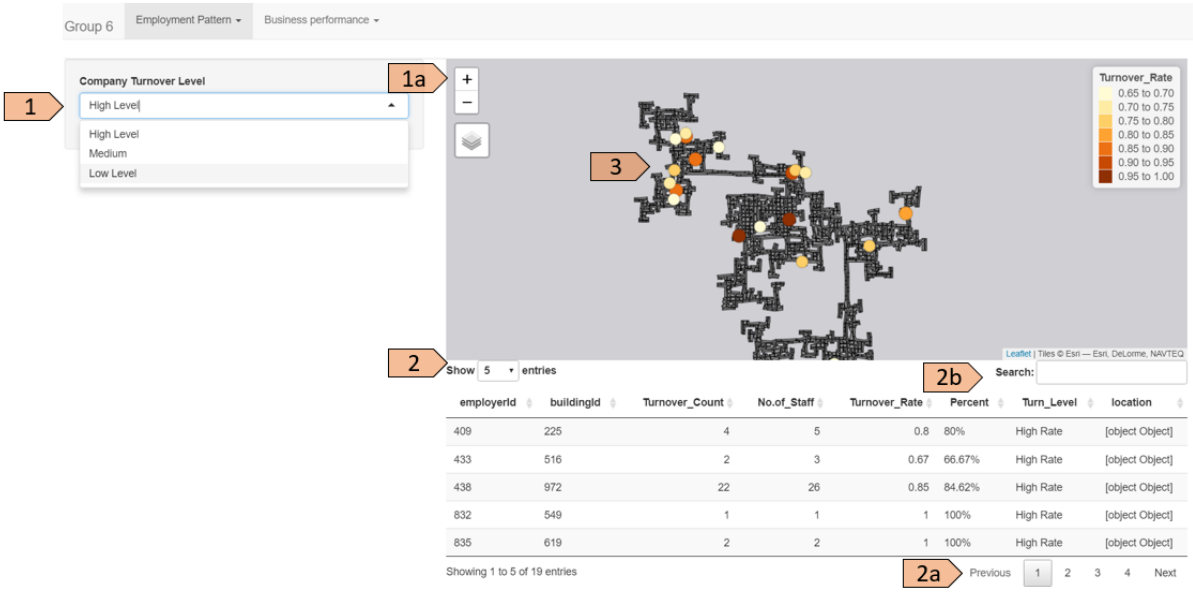
The expenses table calculated the monthly individual average expenditure in education, food, recreation, rent adjustment, and shelter across different groups. By selecting variables in the sidebar, users are able to obtain an overview of the cost structure.



3. Employment Pattern

3.1 Turnover Status Distribution

The Employer Turnover Distribution by variables allows you to explore the geographic graph and DT table of employer detail information.



Step 1 : Select Company Turnover Level by click the triangle button on the right and hover over the option of interest in a drop-down menu. The default selected level is High Level to focus on employers with high turnover rate.

Step 1a : Click on Plus or Minus on top left of the geographic plot zooming in or zooming out to view the plot clearer so as to identify which area gets particularly high or low turnover.

Step 2 : Click the triangle button to select preferred value to display more entries of DT table to explore more detail information about specific turnover level of employers. The default selected value is 5.

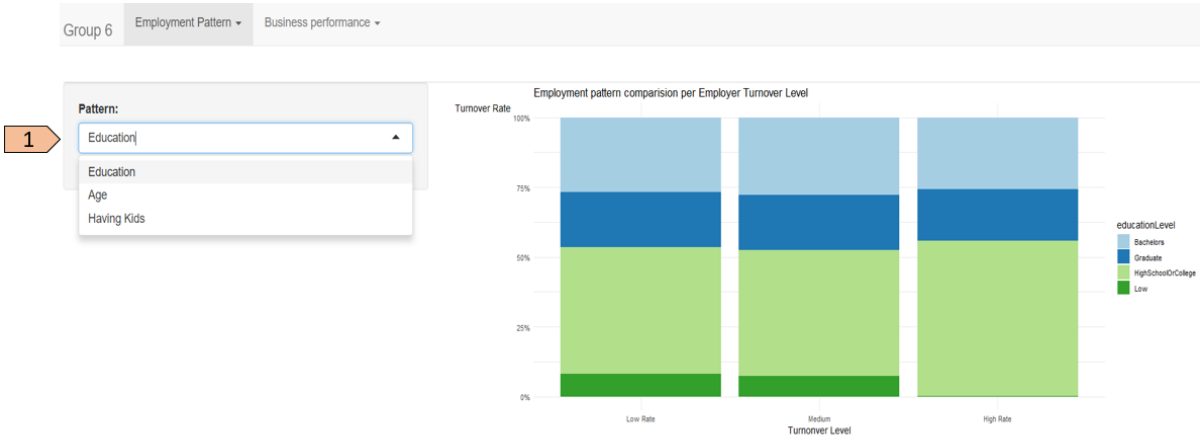
Step 2a : Select page number on right bottom of the page to extend more employer entries of the specific turnover level

Step 2b : Input interest text or value in search space to explore entry detail of specific aspect.

Step 3 : Hover over the circle on geographic map to display specific Employer ID. And click on the circle to display turnover rate.

3.2 Employment Factor Ratio

The Employer Factor Ratio by variables allows you to explore the stacked plot of employment factors based on turnover.



Step 1 : Select Company Turnover Level by click the triangle button on the right and hover over the option of interest in a drop-down menu. The default selected level is Education to focus employers based on education level.