Children (0-4)

Young adults (5-29)

Working age (18-59)

**Bangkok Metropolitan Region** (BMR)

* To visualize the spatio-temporal dynamics of road traffic accidents in BMR using appropriate statistical graphics and geovisualization methods.
* To conduct detailed spatial analysis of road traffic accidents using appropriate Network Spatial Point Patterns Analysis methods.
* To conduct detailed spatio-temporal analysis of road traffic accidents using appropriate Temporal Network Spatial Point Patterns Analysis methods.

Previous studies have demonstrated the significant potential of Spatial Point Patterns Analysis (SPPA) in exploring and identifying factors influencing road traffic accidents. However, these studies often focus solely on either behavioral or environmental factors, with limited consideration of temporal factors such as season, day of the week, or time of day.

This exercise will be graded by using the following criteria:

* **Geospatial Data Wrangling (20 marks):** This is an important aspect of geospatial analytics. You will be assessed on your ability to employ appropriate R functions from various R packages specifically designed for modern data science such as readr, tidyverse (tidyr, dplyr, ggplot2), sf just to mention a few of them, to perform the entire geospatial data wrangling processes, including. This is not limited to data import, data extraction, data cleaning and data transformation. Besides assessing your ability to use the R functions, this criterion also includes your ability to clean and derive appropriate variables to meet the analysis need.
* **Geospatial Analysis (25 marks):** In this exercise, you are expected to utilize the geospatial analytics methods introduced in class, along with the R packages provided during the hands-on exercises, to perform your analysis. You will be assessed on your ability to apply these methods correctly and to provide accurate interpretations and discussions of the analysis results.
* **Geovisualisation and Geocommunication (25 marks):** In this section, your ability to effectively communicate complex geospatial analysis results through user-friendly visual representations will be assessed. Since this course is focused on geospatial analysis, it is crucial that you demonstrate proficiency in using appropriate geovisualization techniques to clearly convey the findings of your analysis.
* **Reproducibility (20 marks):** This is a key learning outcome of this course. You will be assessed on your ability to thoroughly document the analysis procedures using code chunks within Quarto. It is important to note that simply providing the code chunks is insufficient; you must also include explanations of the purpose behind each step and the R function(s) used.
* **Bonus (10 marks):** Demonstrate your ability to employ methods beyond what you had learned in class to gain insights from the data. The methods used must be geospatial in nature.