I just copy the directories of origin TCI to minimize modification of origin R scripts. All files are in TCIPortland\performancemeasures.

1. final\_output

This file contains final outputs of calculating TCI: market cost, TCI and graphics.

1.1 market cost and TCI

All market cost and TCI files are RData ones in TCIPortland\performancemeasures\final\_output\tci. There are three types of market cost: AveMarketCost, BestMarketCost and CompMarketCost. “Ave”, “Best” and “Comp” represent different approaches of combining the mode costs into one representative cost to be averaged.

The “Average” approach is to compute a weighted average cost where the travel cost between each pair of TAZs by each travel mode is weighted by the proportion of travel between those TAZs by each travel mode. TCI (Tci.Zi.RData) RData files are results of using this method to calculate market costs.

“Best” represents the “Minimum” approach, which is to choose the travel cost of the mode that has the minimum travel cost for each pair of TAZs. TCI2 (Tci2.Zi.RData) RData Files are the results of using this method to calculate market costs.

The “Composite” approach is to compute a cost from a composite of the access utilities for the travel modes. TCI3 (Tci3.Zi.RData) RData Files are the results of using this method to calculate market costs.

The abbreviations after the first point in the names of RData files indicates the dimencionality. Zi is a vector of the names of TAZs. Ic is a vector of income group names. Pr is a vector of trip purpose name. Di is a vector of the names of districts.

1.2 graphics

Graphics are stored in TCIPortland\performancemeasures\final\_output\tci\graphics.

2. gis

This file stores the shapefile of TAZ.

3. inputs

There is a CSV file and a file named “Rdata”.

3.1 sizeVarUtils.csv

This CSV file stores formulas of calculating “size terms”, which measures the magnitude of trip attractors within each TAZ.

3.2 Rdata

This folder stores the origin data for TCI, such as employment data, MetroSkims data.

4. intm\_output

This file stores the results during the process of calculating TCI.

4.1 access

This file stores two types of RData files. One is utility RData files, which measures access utility between TAZs. Another is logSum RData, which are results of combined access utilities into a composite value for all modes by calculating the log of the sum of the exponentiated utilities for each mode.

4.2 Reference

This file stores the results of getting reference TAZ. All the RData files are the results of TCIPortland\performancemeasures\rcode\nonnetwork\tci\ P2\_calc\_reference\_attractions.r.

4.2.1. AttractionScore.RData

This R file stores the attraction overall score of each TAZ. The TAZ with highest overall score is chosen as the reference zone. Score are calculated as follows[[1]](#footnote-1):

where

where

p represent purposes

i represent income groups

k represent TAZs

MB represents market basket

size*pik*= the size terms of income group i for purpose p in TAZ k.

4.2.2 AttractionScoreQualified.Zi.RData

This R file in origin TCI store TAZs with at least 10 households and has transit services. In our current stage, this file is the same as AttractionScore.RData.

4.2.3 ReferenceAttractions.RData

This R file stores the market basket of each pair of income group and prupose. Formulas are as follows:

Where

p represent purposes

i represent income groups

k represent TAZs

MB represents market basket

size*pik*= the size terms of income group i for purpose p in TAZ k.

4.2.4 ReferenceZone.RData

This file score the index of reference TAZ.

4.3 sizevars

This folder stores the results of “size terms”, which measures measures the magnitude of trip attractors within each TAZ.

5. rcode

This files stores all R scripts of calculating TCI.

5.1 jemnr

This file stores the R scripts of JEMnR model, which is a four-step disaggregate discrete choice model. Origin TCI scripts use There is a R script file and file names “access”.

5.1.1 PPM\_jemmnFunctions.R

This R scripts defines functions used in JEMnR model.

5.1.2 access

There are two R script file in folder. PPM\_accessUtilities.R calculate access utilities of each mode by purpose and income group. PPM\_accessUtilities.R calculates logSum of all modes for each purpose.

5.2 nonetwork

There is still a folder named “tci” in “nonetwork” folder. All R scripts of calculating TCI are stored in “tci” folder. There are six R scripts files in this folder.

5.2.1 P1\_tci\_setup.r

This script prepares the workspace and file directories for calculating the TCI, and it calculated “size terms” (size variables), access utilities and logSums. The results of this script are stored in two folders “access” and “sizevars” under TCIPortland\performancemeasures\intm\_output.

5.2.2 P2\_calc\_reference\_attractions.r

This script identifies a reference zone for the travel cost index and related measures and computes the reference market place attractions. The results of this script are stored in TCIPortland\performancemeasures\intm\_output\reference.

5.2.3 P3\_calc\_tci.r

This script calculates market costs and TCI. The results of this scripts are stored in TCIPortland\performancemeasures\final\_output\tci.

5.2.4 Pcalc\_size\_vars.R

This script defines the function of calculate the size terms of destination choice utilities by purpose and income group. This R script is sourced by P1\_tci\_setup.r.

5.2.5 Pplot\_log\_sums.r

This script just generates plot of logsums values in decreasing order for each trip purpose examined for the TCI calculations. The plot is named “sorted\_logsumsPortland.jpeg” stored in C:\Users\huajie\Desktop\TCIPortland\performancemeasures\final\_output\tci\graphics.

5.2.6 Pplot\_tci.R

This script generages the maps and charts for TCI. The results of this script are stored in TCIPortland\performancemeasures\final\_output\tci\graphics.

6. tripdist

This folder stores RData files of the trip matrix by purpose and income group.

7. tripgen

This folder stores RData of trip production data by purpose and income group.

1. Transportation Planning Performance Measures Final Report: P40. [↑](#footnote-ref-1)