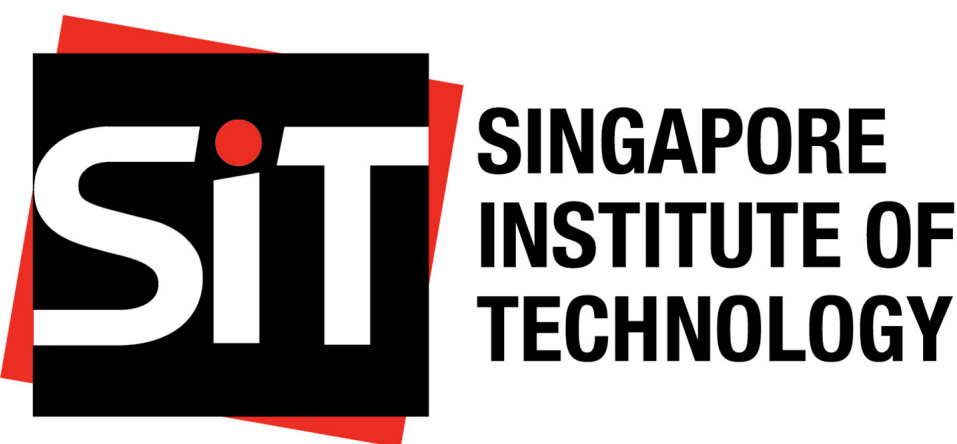


Visualizing Mode of Transport Choices by Employed Residents (2000–2020)

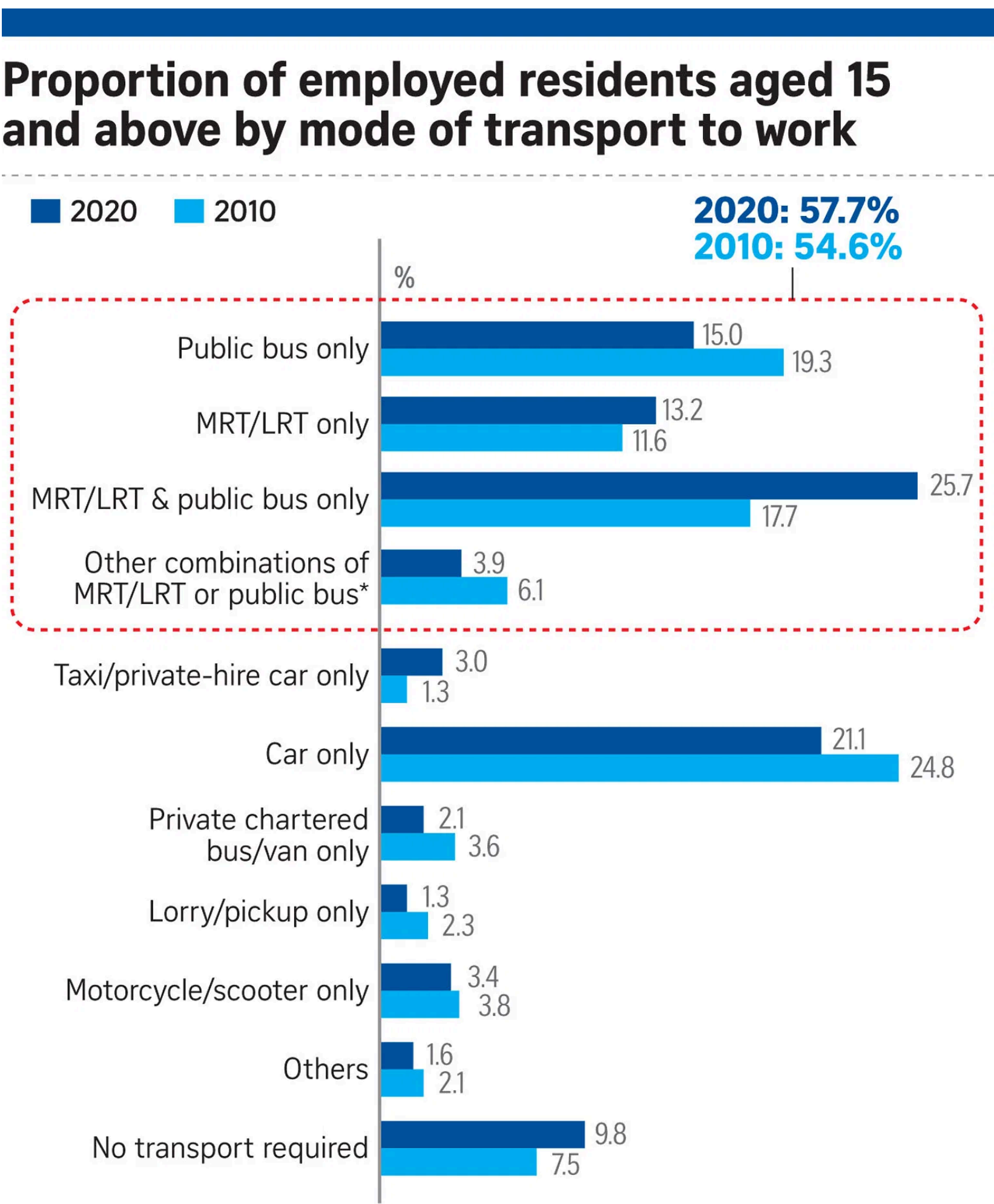
NavyBlue (Computing Science)



INTRODUCTION

This visualization shows how transportation habits of employed residents have changed over the decade. This shows how the residents’ choices of transportation has changed as the public transportation infrastructure evolves over the years.

PREVIOUS VISUALIZATION¹



NOTE: * Refers to travel via the MRT, LRT or public bus combined with another mode of transport, such as cars, motorcycles or bicycles in the same journey.

Source: DEPARTMENT OF STATISTICS STRAITS TIMES GRAPHICS

Figure 1

STRENGTHS AND WEAKNESS

- Strength: The title is clear and concise, clearly describing what the visualization is about. The data is well organized and easy to read. The visualization is simple and easy to understand.
- Weakness: The visualization does not properly indicate the transportation sector (Public/Private/Other). Exact values not included, leading to visual distortion. Range of data insufficient to discern any concrete differences between the years.

SUGGESTED IMPROVEMENTS

- Use *sparkline* to show the change over the years.
- Include a *column* for percentage increase or decrease.
- Use *color* to show the percentage increase or decrease.
- Group the data into public, private and others respectively.
- Usage of *actual values* instead of solely percentage values to properly display the change of values.

IMPLEMENTATION

Data

- Data was collected from 2000 to 2020 from the Department of Statistics Singapore.² Some data were omitted and combined during the cleaning process.
- The data includes rows that are not present in the entire dataset for certain years. Therefore, rows that are not in common throughout the dataset were removed. To better display the data trend from 2000 to 2020, rows with vague or low data counts have been consolidated into a single data row as well.

Software

The Quarto publication framework and the R programming language were used, along with the following third-party packages:

- tidyverse* collection of R packages used in this project like *dplyr* for data import
- gt* is used to create presentation-ready tables
- scales* package provides tools to easily scale variables for visualization (display values in thousand(k))
- gtExtras* for adding sparklines to the table

IMPROVED VISUALIZATION














Percentage Change in Modes of Transport to Work for Residents Aged 15 and Above			
in percentage 2000 - 2020			
Change and Trends (2000 - 2020)			
Categories ¹	Change (%)	Trend	
Public			
MRT & Public Bus Only	▲ 171.7%	205.87k	 559.34k
MRT Only	▲ 124.84%	127.84k	 287.43k
Public Bus Only	▼ 11.97%	370.06k	 325.78k
Public Total	▲ 66.61%	703.77k	 1.17m
Private			
Private Chartered Bus/Van Only	▼ 54.56%	98.78k	 44.88k
Taxi Only	▲ 253.67%	18.41k	 65.12k
Car Only	▲ 30.79%	351.55k	 459.80k
Lorry/Pickup Only	▼ 8.82%	31.69k	 28.89k
Motorcycle/Scooter Only	▲ 3.7%	70.86k	 73.49k
Private Total	▲ 17.66%	571.30k	 672.18k
Others			
No Transport Required	▲ 135.78%	90.30k	 212.91k
Others	▼ 68.42%	110.63k	 34.94k
Others Total	▲ 23.35%	200.92k	 247.84k
¹ Removed Rows: 1. One Mode Of Transport, 2. Two Or More Modes Of Transport, 3. MRT & Car Only, 4. MRT & Another Mode, 5. Other Combinations Of MRT Or Public Bus, 6. Other combinations of MRT/LRT or Public Bus			
Source: Department of Statistics, Singapore			

Figure 2

FURTHER SUGGESTIONS FOR INTERACTIVITY

One other addition we could add figures in the x-axis to visualize how the trend changes overtime

CONCLUSION

We successfully implemented all suggested improvements for the non-interactive visualization. By implementing the percentage change and sparklines, we are able to show a proper visualiaztion to show the visible changes of the transportation habits of employed residents over the years.

¹<https://www.straitstimes.com/singapore/more-spore-residents-take-trains-and-buses-to-work-fewer-drive-to-the-office-population>

²<https://tablebuilder.singstat.gov.sg/table/CT/17607>