

CA 2

IT8701 Introduction to Programming for Data Science

Lecturer's Name
Name
Student ID
Class

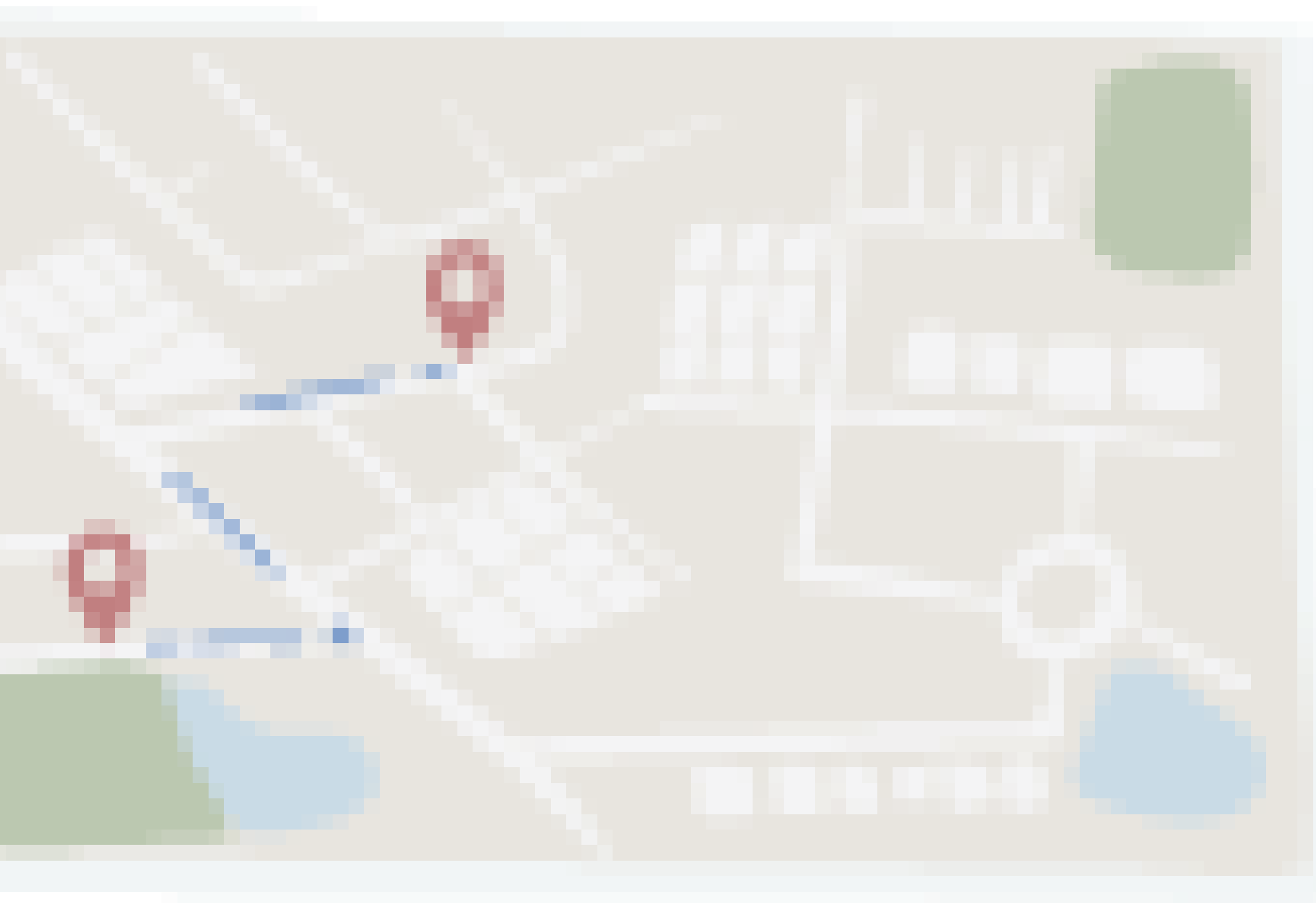
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PROBLEM STATEMENT

You are the head of a family returning to Singapore after living overseas for a few years. You are looking to purchase a resale flat.

You will be living with your spouse, 3 children (ages 5, 8, 12), and an elderly mother. Your eldest and youngest child are going to a Secondary and Primary school respectively in the coming year. You will have 2 children studying in primary school and 1 child studying in a secondary school .



Being a multigenerational household, you are looking for a place to buy a flat with the following requirements:

- 1) Primary schools nearby*
- 2) Secondary schools nearby*
- 3) Library nearby (because middle child loves reading)
- 4) Polyclinic nearby (because elderly mum needs to see the doc)

*The entry to schools should also need to have as little competition from other as possible and you assume that every school is a good school.

(source: <https://www.moe.gov.sg/education/education-system/every-school-a-good-school>)

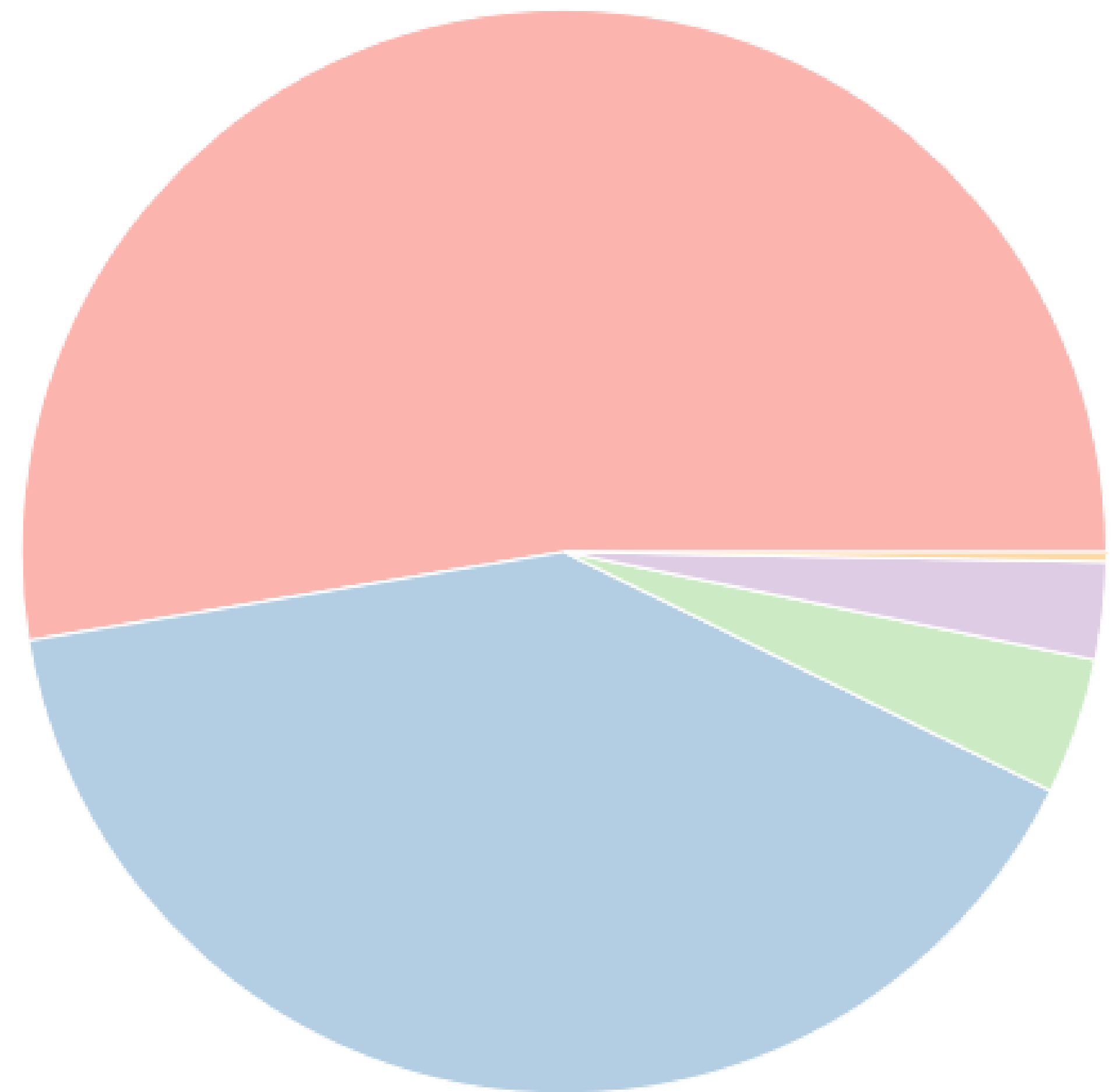
1

To kick start your research, you decide to find out what the distribution of schools are like. From a quick scan you can see that more than half of the MOE schools in Singapore are Primary Schools.

However, you wonder if there these schools are evenly distributed around the island. are there are places with more schools than others?

You decide to map out all the locations of the schools, polyclinics and libraries within the subzones.

Distribution of MOE schools throughout Singapore



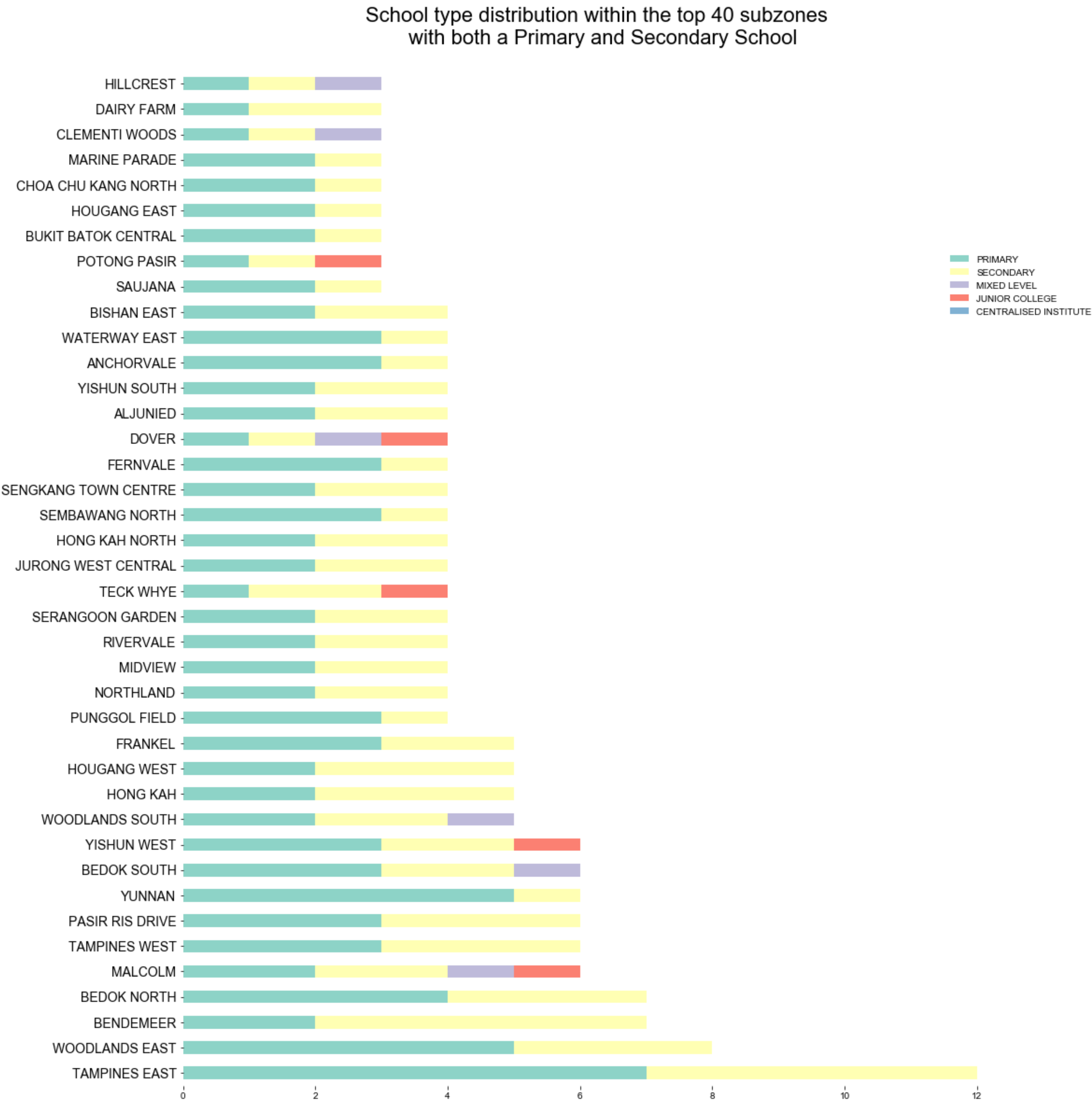
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After doing an environmental scan of the subzones, you find out that there are only 80 subzones that have both a Primary and a Secondary School

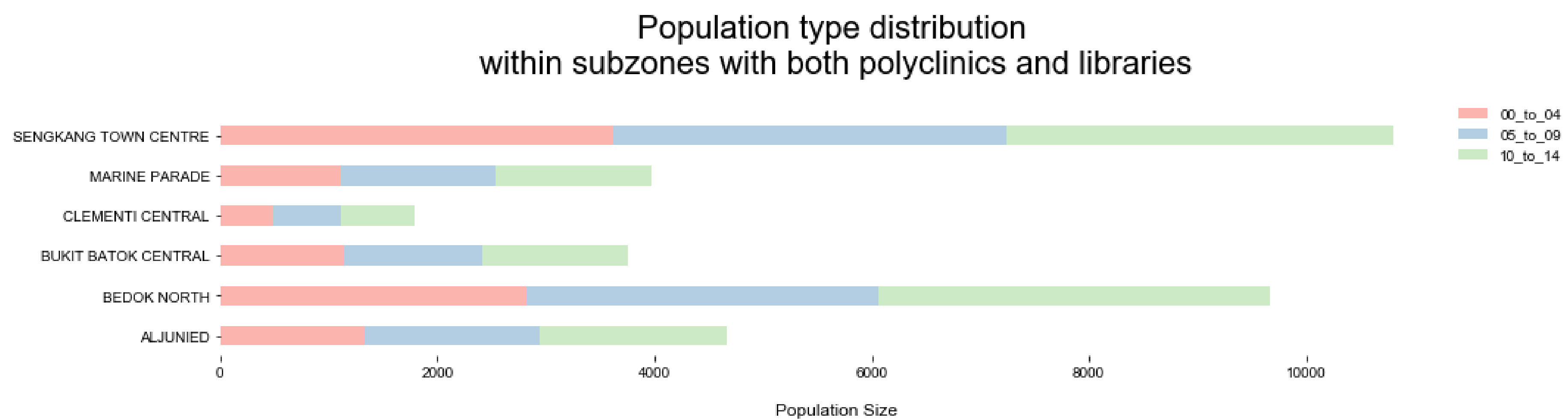
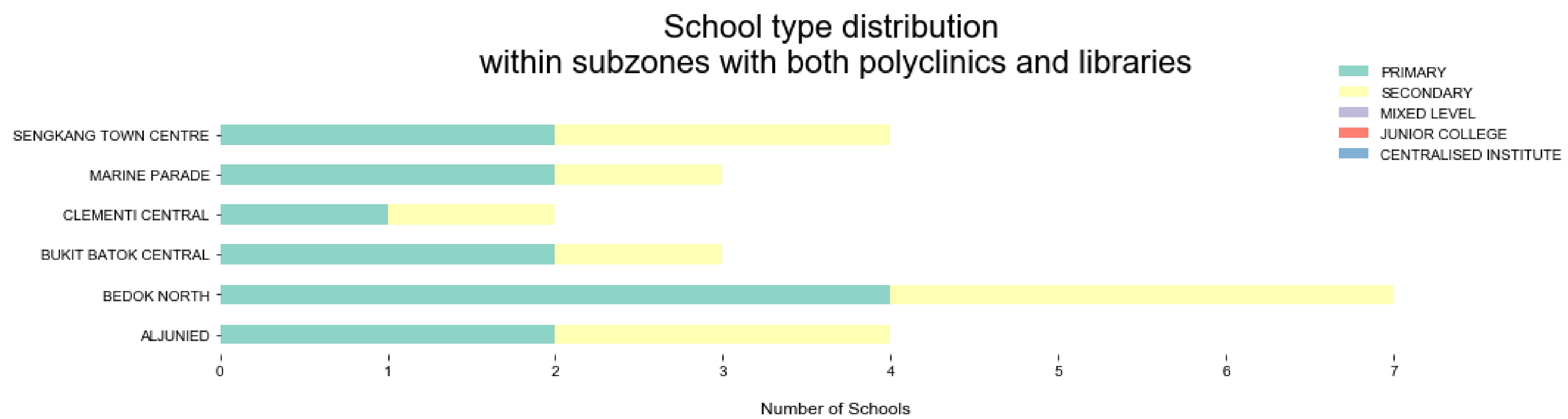
Of these 80 subzones, there are 6 with a Junior college (marked as red on the graph). However you decide not to consider the presence of the Junior colleges as your children might decide to study at a polytechnic. It is more important to have a polyclinic and a library nearby.

You also notice that Tampines East has a large number of schools.

However you still need to consider which of these places have a polyclinic and a library.

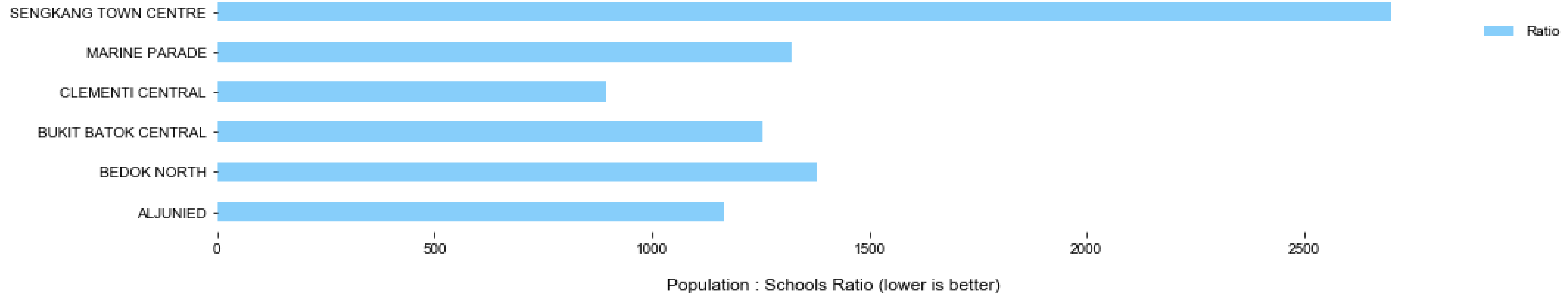


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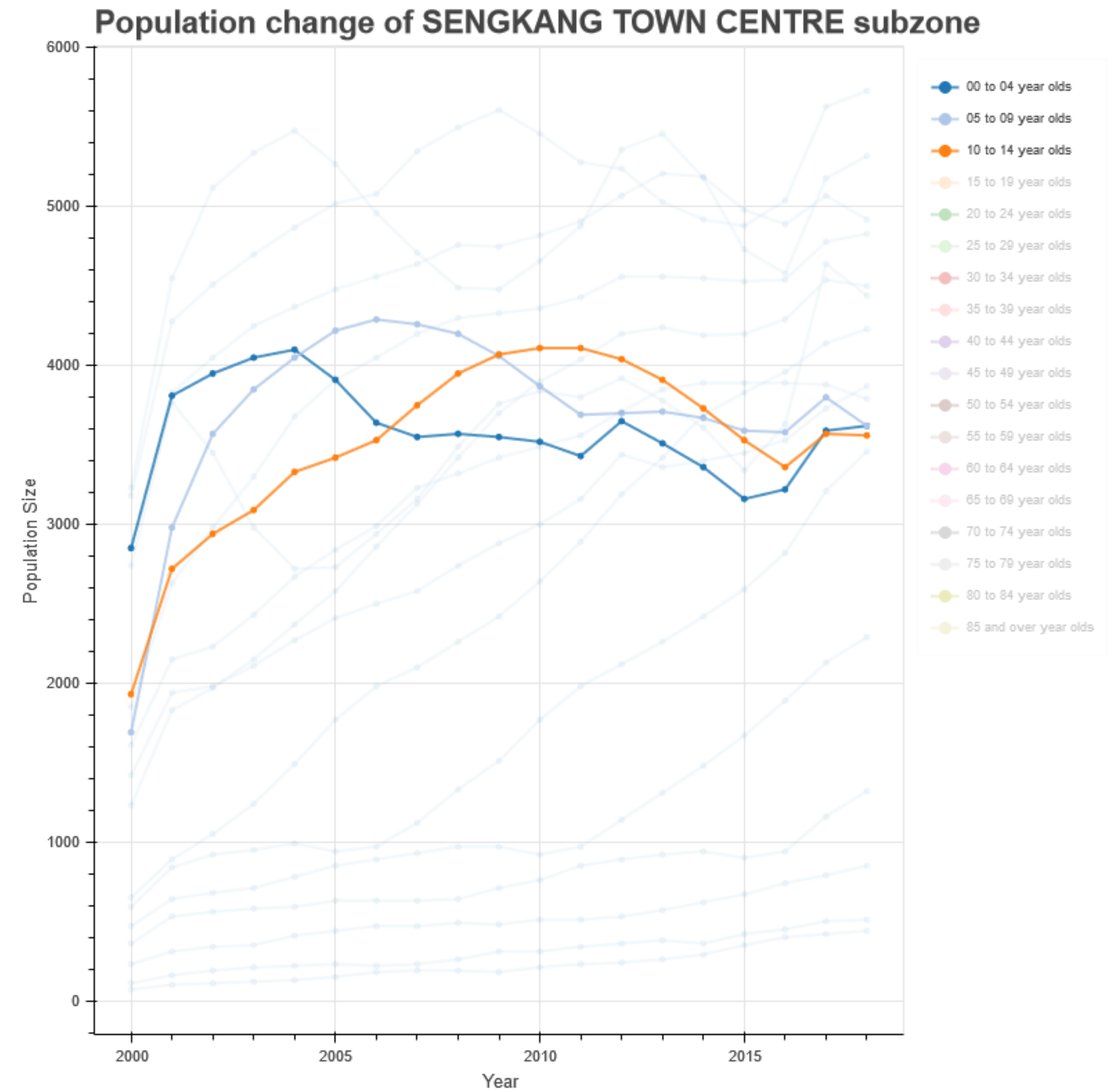
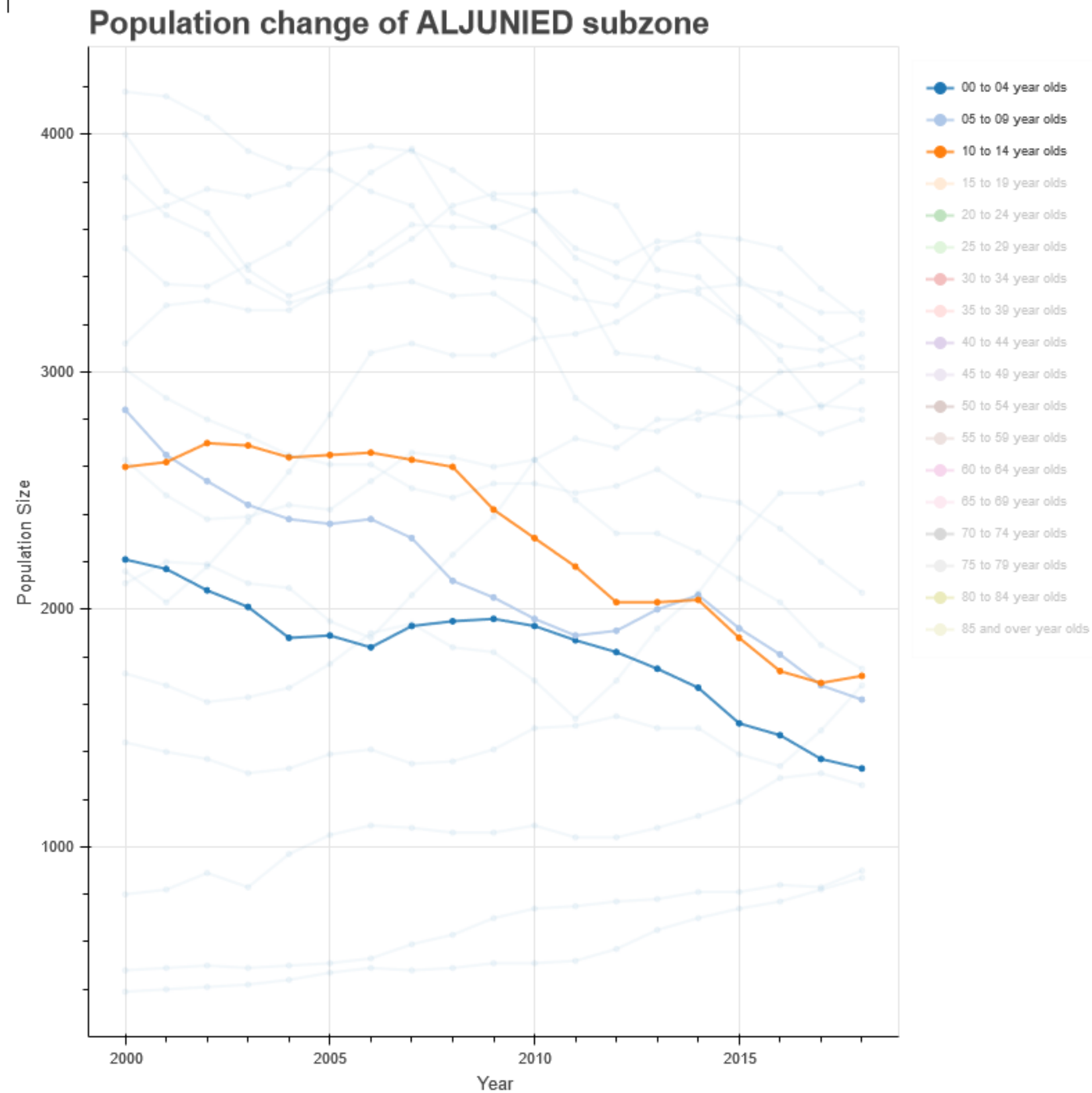
After checking the locations of the polyclinics and libraries across the subzones. You find out that there are only 6 subzones that meets with all 4 of your criteria. You decide to do another check on the distribution of schools and the population within the subzone. You hypothesize that the lower the population size : school ratio, the better your chances of getting a spot in the school for your children.

Population : School Ratio



After checking the population : schools' ratio, you notice that Clementi Central has the lowest ratio. This is because there are very little young children within the subzone. However there is only one Primary School. It might not be easy to get in if there are parents who are alumni. You decide to focus on the other subzones.

You decide that Aljunied might be a good area with 2 primary and secondary schools each. The population there is also lower as compared to the other areas.

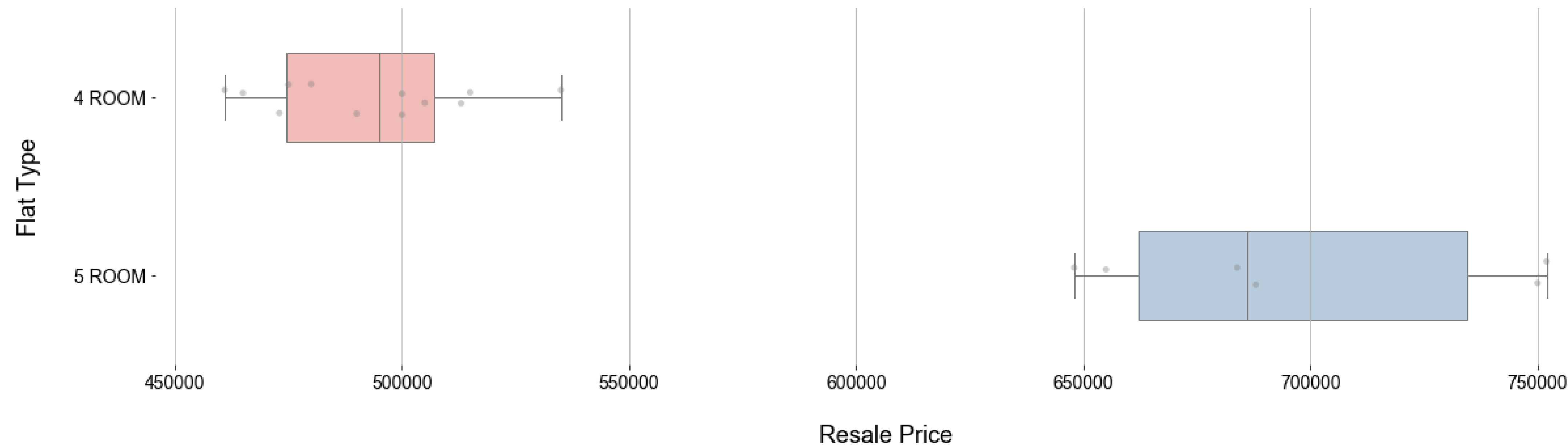


You double check the population growth of the children within the area to see if there is any upward trend in population within the 6 subzones. At the same time, you decided to check out the location of the schools within the selected subzone.



You find out that Aljunied has an area where there is a primary school, secondary school, polyclinic and library all close to each other. The population change for children in the area is on a downward trend as well, this might imply that the ratio of the population : schools might be lower in the future.

Resale prices of units within GEYLANG EAST CTRL

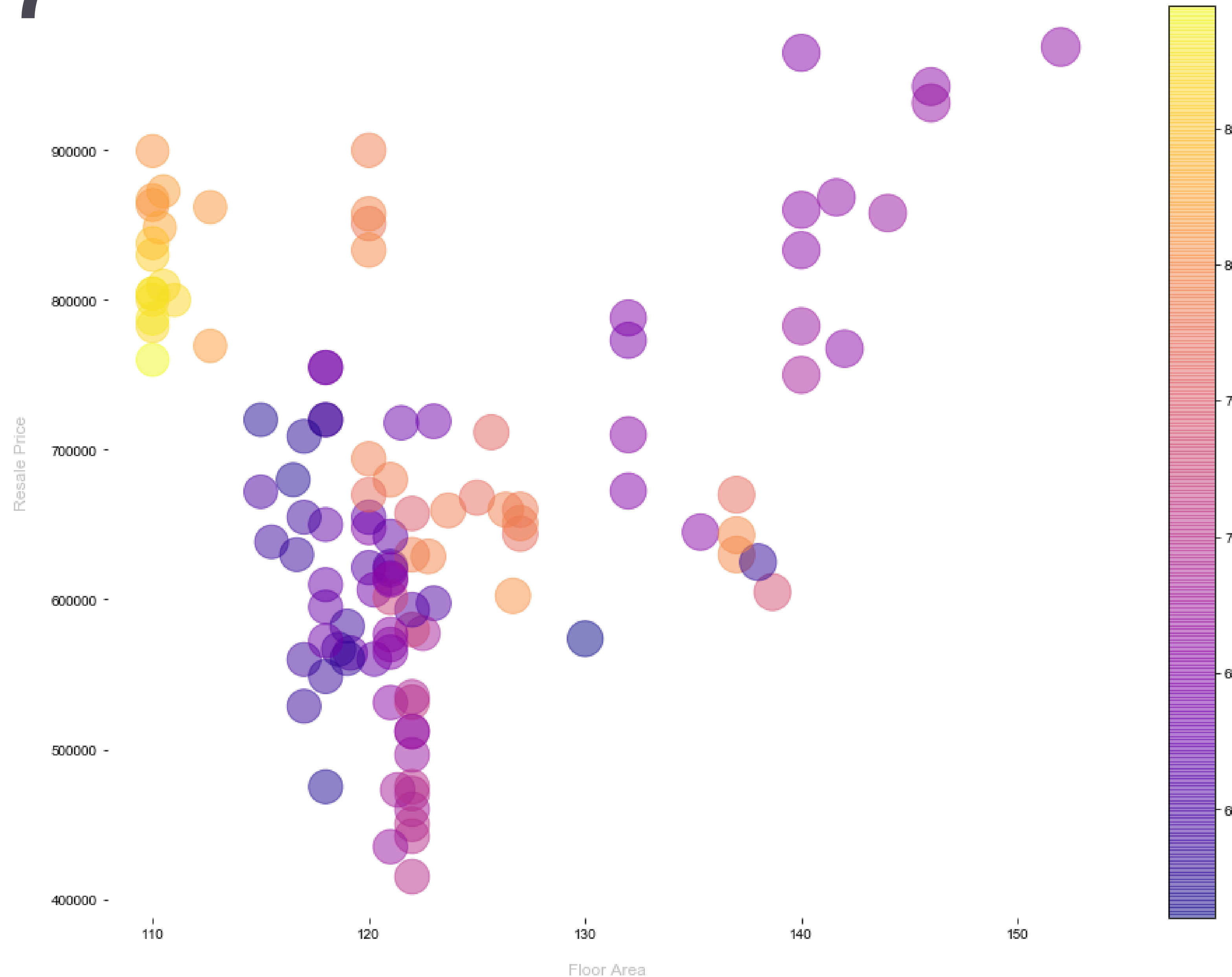


| | | Mean Floor Area | Mean Remaining Lease | Mean Resale Price | Mean Price/Sqm |
|------|-----------|-----------------|----------------------|-------------------|----------------|
| Town | Flat Type | | | | |
| | GEYLANG | | | | |
| | 4 ROOM | 91.17 | 63.58 | 492666.67 | 5403.8 |
| | 5 ROOM | 121.50 | 63.00 | 696148.00 | 5729.6 |

You decide to look at the prices of the resale units within the Geylang planning zone, specifically focusing on the Geylang East Central area. The past resale data shows that the units in the area are 4 and 5 room units. You realized that that it might be worth getting a 5 room as a 5 room has around 33% more sqm and costs 20k more.

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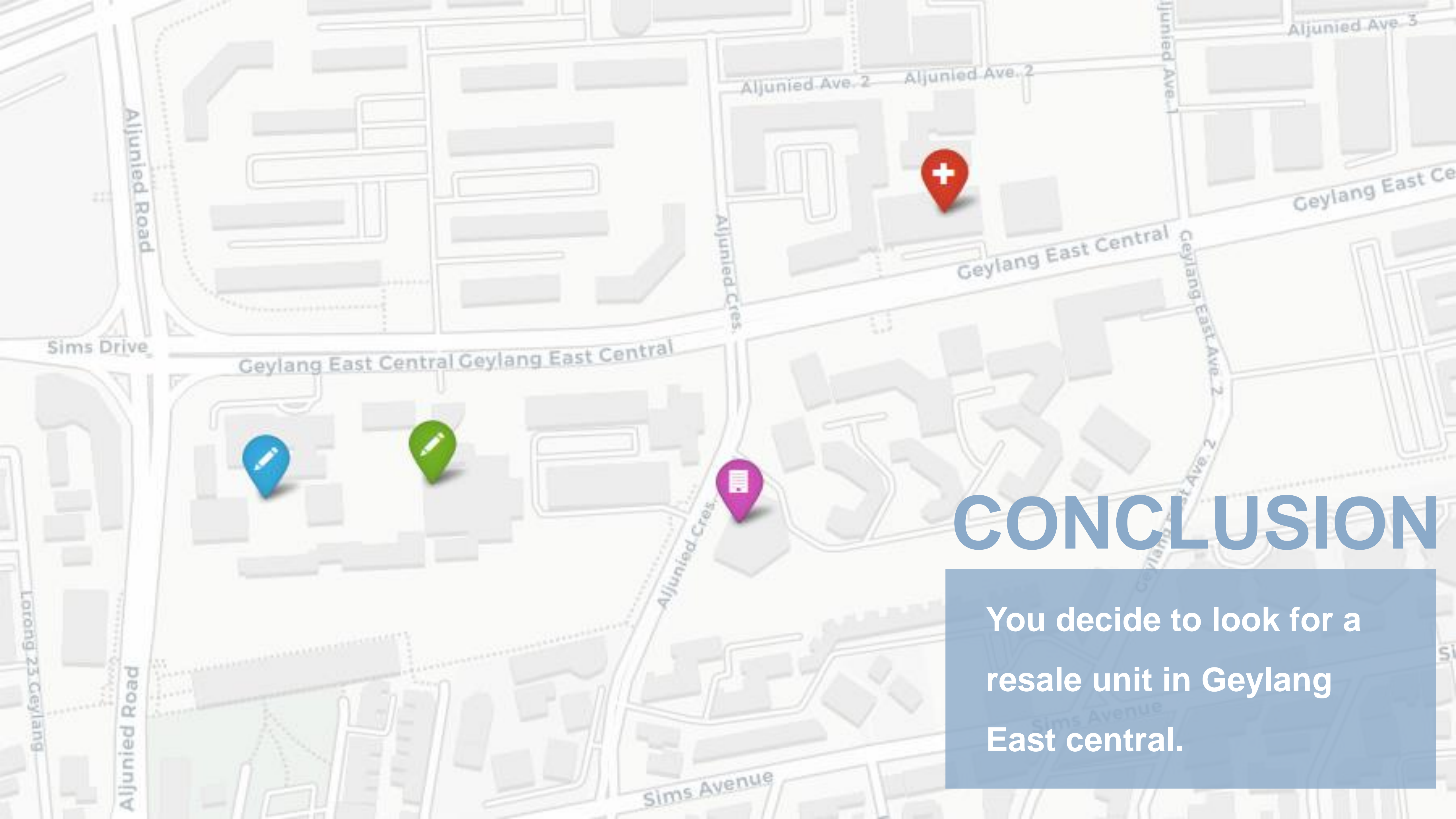
Scatterplot of Resale Price / Area / Remaining Lease
in : GEYLANG for 5 ROOM flats



From the previous check of resale prices in the Geylang East Central, the average price of a 5 room flat is around 690k.

Just for good measure, you decide to check the resale prices of the 5 room flats in Geylang to see if you are getting a good deal.

The scatterplot shows that the price is about average.



CONCLUSION

You decide to look for a
resale unit in Geylang
East central.

END