**PyCitySchools Analysis**

**Background**

Students have been tasked with merging and summarising the below data sets and preparing a written analysis summarising the results:

* schools\_complete.csv
* students\_complete.csv

The information contained in the datasets relates to schools within a single local government area (“LGA”) and includes budget and student grade information.

Note: for the purpose of this analysis values have been rounded to the nearest decimal point.

The following summaries were prepared:

1. **LGA summary**

This table provides a high level summary of total number of unique schools within the LGA, total number of students, total budget for each school, average scores for maths and reading, and the percentage of students who passed maths, reading; and combined maths and reading.

A total of 15 schools operate within the LGA, with a total combined budget of approx. $24.5 million. The average scores for both maths and reading is 70. The number of students with a passing grade for maths (86%) is marginally higher than reading (84%). The number of students with passing scores in combined maths and reading is 73%.

1. **Schools summary**

The schools summary organises the foundational data sets into a table which collates information by school providing total number of students, school budget, average academic scores for maths and reading as well as % passing information. An additional column has been added calculating budget per student.

The information necessary to undertake the required analysis is readily available within the summary table, however the size of table remains substantial, and it is helpful to prepare further summary tables which are tailored to highlight trends and / or answer specific questions.

1. **Top 5 performing schools by % overall passing**

The top 5 list in % overall passing grades is comprised of 3 independent schools of medium size student populations and two government schools with large student populations.

The budget per student for the independent schools ranges from $583 - $625. The two government schools have a per student budget of $628 and $637 respectively.

The % overall passing score of the Top 5 schools is 91-92%.

1. **Bottom 5 performing schools by % overall passing**

The bottom 5 list in % overall passing grades is comprised of 1 independent school and 4 government schools. The student population of all 5 schools is large. Per student budget ranges from $578 (independent school) to between $645 and $655 (government schools).

The % overall passing score of the bottom 5 schools is 81-82%.

1. **Summary maths / reading scores by year**

Individual summaries have been prepared for maths and reading. Each table separately provides the academic achievement levels by school for Years 9 through to Year 12. Comments for both are provided in this section.

Average passing scores for math’s and reading remained fairly consistent across year levels 9 to 12 in the majority of schools with a variation of between 1% to 2% between year levels.

Holden High School is worth highlighting within the summary with a greater variation in maths scores from Year 9 to Year 10 (70% to 75%) and from Year 11 to Year 12 (71% to 73%).

No remarkable variation is observed in year on year average grade for reading.

1. **Scores by school spending**

This summary provides a snapshot of average and percentage passing metrics for maths and reading scores per student budget.

It is observed that with schools with a per student budget between $585 to $630 have higher average scores than schools with a larger per student budget.

1. **Scores by school size**
2. This summary provides snapshot of average and percentage passing metrics for maths and reading scores by school size.

The summary tables shows that students attending schools classified as ‘small’ in size, perform better in maths and reading than students attending medium to large sized schools. A stark difference is evidenced in % overall passing grades with a 9% difference between the small and large sized schools.

1. **Scores by school type**

The summary table displaying average academic score by school types shows that on average, students who attend independent schools achieve higher scores than government schools.

**Conclusion**

Within the LGA analysed in this report, government schools tend to have larger student populations and a higher per student budget that independent schools. However, on average, students attending small to medium sized independent schools perform better than students from government schools in maths and reading.