Slide 1: Thank you for listening to our talk on pathways to progress, by DataFrontiers.

Slide 2: Our goal was to identify factors that influence decisions to pursue post-school study opportunities. particularly in overlooked, as we view them as untapped sources of talent and potential, where targeted interventions could yield significant educational and economic benefits

To do this we integrated 7 datasets from the Australian Bureau of Statistics, that included over 500 local government areas and 366 features.

Slide 3: At DataFrontiers, we believe it’s essential to look beyond state boundaries and focus on subpopulations and regions that may otherwise be overlooked.

Slide 4: Our goal was to identify areas across Australia with similar characteristics, allowing us to develop more efficient, targeted strategies that address multiple regions simultaneously.

Slide 5: To achieve this, we performed unsupervised clustering to group the LGAs into four distinct clusters, which we can see are not enriched for any particular state. Supporting the importance of identifying heterogenetity at the national level. We also calculate Study progress Indexes which are log ratios that represent the relative difference in those who attend post-school studies and those who do not reach that level in education.

Thus regions with a high SPI have high post-school education seekers relative to those who do not complete their education to this level.

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Slide 6: We observed many national trends that support post-school education, irrespective of SPI category such as having access to the internet. However, the power of this approach is having the ability to identify sub-regions and identify what differential patterns we see so we can better support them.

Slide 7: We were interesting in looking at the regions with low SPI and found that in these regions, Aboriginal and Torres strait Islanders living in over-crowded housing were less likely to pursue post-school education. We compared this to Aboriginal and Torres strait Islanders in high SPI regions and found a much weaker association, suggesting they are less affected and most likely have stronger financial support. This demonstrates educational disparatities within the same group of people due to other factors that drive the resilience of those in high SPIs to difficult financaial situtaions.

Slide 7: Additionally, we found that being married in low SPI regions negatively impacted the probability of pursuing post-school education. While this intuitively makes sense, we found no correlation between marriage status and the pursuit of post-school education in the high SPI counterpoints, further supporting the idea that low SPI regions require additional support and attention.

Slide 8: Finally, we trained two basic models to classify regions into SPI categories or predict their SPI. While the accuracy for classification of the high SPI categories was 95% the models struggled to discriminate between the medium and low SPI classes, suggesting similar features between them.

For future diretions it is important to acquire individual level data as they will provide higher resolution insights into the individual level factors that influence the pursuit of post-school eduaciton.

Slide 10: In summary, we moved beyond state borders to identify subregions that have differential educational outcomes and require unique support strategues. Such as the low SPI regions, which require better housing infrastructure. We have also constructed model which can be extended to make individual level predictions when the data becomes available.