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YouthView: A platform for interactive visualisations to explore youth disadvantage

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Abstract

In many economies, youth unemployment rates over the past two decades have exceeded 10 percentage points, highlighting that not all youth successfully transition from schooling to employment. Equally disturbing are the high rates of young adults not observed in employment, education, or training, a rate commonly referred to as "NEET." There is not a single pathway for successful transitions. Understanding these pathways and the influences of geographic location, employment opportunities, and family and community characteristics that contribute to positive transitions is crucial.

While abundant data exists to support this understanding, it is often siloed and not easily combined to inform schools, communities, and policymakers about effective strategies and necessary changes. Researchers prefer working with datasets, while many stakeholders favour results presented through storytelling and visualisations.

This paper introduces YouthView, an innovative online platform designed to provide comprehensive insights into youth transition challenges and opportunities. YouthView integrates information from datasets on youth disadvantage indicators, employment, skills demand, and job vacancy at regional levels. The platform features two modes: a guided storytelling mode with selected visualisations, and an open-ended suite of exploratory dashboards for in-depth data analysis.

This dual approach enables policymakers, community organisations, and education providers to gain a nuanced understanding of the challenges faced by different communities. By illuminating spatial patterns, socioeconomic disparities, and relationships between disadvantage factors and labour market dynamics, YouthView facilitates informed decision-making and the development of targeted interventions, ultimately contributing to improved youth economic outcomes and expanded opportunities in areas of greatest need.

JEL classification:

Keywords: youth disadvantage, youth transitions, labour market, integrated data, evidence-based

1. Introduction

The transition from school to employment or further education represents a critical juncture in a young person's life, significantly influencing their long-term economic trajectory (Ananyev et al., 2020; OECD, 2021). This period is characterised by both challenges and opportunities that can have lasting impacts on an individual's career path, earning potential, and overall well-being. However, many young adults encounter substantial barriers that limit their prospects, with these challenges varying considerably across different communities (Lamb & Huo, 2017). Factors such as family circumstances, regional disparities, cultural norms, and educational limitations can constrain opportunities for youth.

Notably, Marchand and Payne (2022) report that in many countries, there are high shares of youth and young adults that are observed not in employment, education, or training (NEET), suggesting unacceptably high rates of unsuccessful transitions from high school. For example, for 20 to 24 year old males, NEET rates exceed 15 percent in countries such as Spain, France, Finland, Israel, Canada, Austria, and Australia. The rates range from 10 to 15 percent in the UK, Belgium, the United States, and other countries. For females, the NEET rates vary relative to man in many of these countries. In some cases, they are higher (e.g. Spain and the UK) and in some cases they are lower (e.g. Finland and Canada).

Like most countries, the landscape of youth disadvantage in Australia is diverse, with some areas experiencing elevated poverty rates and high disengagement from education and training, while others face a scarcity of local employment opportunities that align with young people's skills and interests (Fontenay et al., 2020). This complex interplay of factors underscores the need for nuanced, data-driven approaches to address the challenges facing youth in their transition to adulthood and economic independence.

The complexity of these challenges is compounded by the rapidly changing nature of the labour market, technological advancements, and evolving skill requirements across industries (Foundation for Young Australians, 2015; Buchanan et al., 2017). Young people must navigate this complex landscape while often lacking the experience, networks, and resources that can facilitate successful transitions. Moreover, the impact of socioeconomic background, geographic location, and access to quality education and training opportunities can create significant disparities in outcomes for young individuals (Biddle & Yap, 2010).

To address these challenges effectively, policymakers, community organisations, and education providers need granular, place-based data to fully understand the nuanced challenges

faced by youth and make informed decisions to support positive transitions (Ryan, 2011). However, Australia currently lacks specific tools designed to understand place-based policy needs related to young people who face limited opportunities. While data on youth disadvantage and employment exist, they remain scattered as separate pieces of information and are not readily available for policymakers to interpret or utilize effectively (Fontenay et al., 2020).

This paper introduces YouthView, an innovative online platform that combines rich Australia-wide datasets on youth disadvantage indicators with detailed employment data, skills demand, and job vacancy information at the regional level. YouthView aims to bridge the gap between scattered data sources and policy needs by creating an online platform reflecting community-specific challenges and needs. By integrating multiple data sources and providing user-friendly visualisations, YouthView seeks to democratize access to critical information about youth disadvantage and employment opportunities.

The platform offers two main functionalities, each designed to cater to different user needs and levels of data literacy:

1. **A guided storytelling mode** that highlights key insights through interactive maps and visualisations, illuminating critical spatial patterns and socioeconomic disparities. This mode is particularly useful for users who may not have extensive experience in data analysis but need to understand broad trends and patterns in youth disadvantage across Australia.
2. **An open-ended suite of exploratory dashboards** that allows users to filter, disaggregate, and visualize youth disadvantage metrics alongside employment, skills needs, and business data for any area of interest across Australia. This mode caters to more advanced users who wish to conduct their own analyses and explore specific hypotheses about youth disadvantage and employment.

By integrating data storytelling with self-directed exploration and visualisation of granular community-level data, YouthView empowers data-driven decision-making and planning. It can guide the development of targeted policy responses, interventions, and resource allocation to improve youth economic outcomes and expand opportunities where needed most. The platform's flexibility allows it to serve a wide range of stakeholders, from local community organisations to national policymakers, each able to access the level of detail most relevant to their needs.

In Australia, there are several general visualisation tools available. For example, the soon-to-be-decommissioned National Map¹ and its replacement, the Digital Atlas of Australia², offer broad depictions of various data points, utilizing publicly downloadable data. Additionally, the Breaking Down Barriers project at the Melbourne Institute (University of Melbourne) provides community-based visualisations, such as the Breaking Down Barriers (BDB) Profiles³ and the Taking the Pulse of the Nation (TTPN) Tracker⁴, which capture economic and demographic characteristics of communities and regions across Australia.

The importance of tools such as YouthView is to enable more targeted use of data and analyses that relate to a specific issue, namely youth transitions into employment. The development of YouthView represents a significant step forward to address youth disadvantage and unemployment. By providing a comprehensive, accessible view of the challenges and opportunities facing young people across the country, it has the potential to transform how we approach youth policy and intervention design. While YouthView was developed for better understanding the opportunities and challenges faced by youth and young adults in Australia, its methodology and approach can be applied easily in other countries and adapted to consider other demographics (e.g. older working adults). The remainder of this paper discusses our approach in data development (Section 2), the structure of the platform (Section 3), key insights provided through the platform and discussions on the use, implications, and future of YouthView platform (Section 4), and conclusions (Section 5).

2. Data

The power of YouthView lies in its ability to integrate and visualize data from multiple sources, providing a comprehensive view of youth disadvantage and employment opportunities across Australia. This section details the data sources used, the geographic levels at which data is presented, and the challenges encountered in data integration and curation.

¹ <https://nationalmap.gov.au/>

² <https://digital.atlas.gov.au/>

³ <https://bdbprofiles.melbourneinstitute.unimelb.edu.au/>

⁴ <https://melbourneinstitute.unimelb.edu.au/data/ttpn-tracker>

2.1. *Geographic Levels*

The measures developed for YouthView are geographic-based. We utilize two levels of geography based on the Australian Bureau of Statistics (ABS) definitions of statistical areas. The lowest level of geography used is referred to as SA2 (statistical area 2) and captures approximately 2,450 geographic areas whose boundaries have been set to reflect localities (communities) that interact together socially and economically. The population of these localities ranges from 3,000 to 25,000 individuals. We use information for these localities to capture demographics such as poverty and family composition.

The level of geography that is designed to capture labour markets at a regional level is called SA4 (statistical area 4). There are approximately 108 regions (SA4s) in Australia. The population of these regions ranges from 100,000 to 500,000 individuals. We utilize information at a regional level to focus on employment trends and opportunities.

To avoid confusions, hereafter in the paper, SA2 regions are referred to as “localities” and SA4 regions are referred to as “regions.”

2.2. *Data Sources*

2.2.1 *Census Data*

The Australian Census of Population and Housing for 2021 forms the backbone of YouthView's youth disadvantage measures. This 100 percent population data allows for the creation of granular community-level statistics on a wide range of socioeconomic indicators including:

- educational attainment
- labour status
- personal and family income
- student status
- housing characteristics.

The use of Census data ensures comprehensive coverage of the Australian population, allowing for reliable estimates even for small geographic areas. This is particularly crucial for understanding place-based disadvantage, as it allows for the identification of pockets of disadvantage that might be obscured in more aggregated data. The census data can be linked

across multiple census year for individuals. See Australian Census Longitudinal Dataset (ACLD)⁵ for more details.

2.2.2 Linked Administrative Data

While the Census provides a rich snapshot of the population at a point in time, it has limitations in tracking individuals' trajectories over time. To overcome these limitations, YouthView incorporates linked administrative data through the Person-Level Integrated Data Asset (PLIDA,⁶ formerly known as the Multi-Agency Data Integration Project or MADIP). PLIDA is designed to link individual records. However, it does not facilitate the direct linking of individuals across multiple, separate census datasets. Instead, PLIDA is used to link records from a single census year to other relevant data sources collected before and after that census. The PLIDA datasets we use include:

- Tax filer information: Provides data on individual earnings and occupations before and after the Census years.
- Higher education participation data: Offers insights into post-secondary education pathways.
- Vocational education and training data: Captures participation in vocational training programs.

The integration of these datasets enables the tracking of individuals' outcomes over time, providing crucial insights into the persistence of disadvantage and the effectiveness of interventions. For example, by linking Census information to higher education and training data, it becomes possible to observe the extent of re-engagement with the education system for youth who have dropped out of high school.

2.2.3 Labour Market Data

To capture employment opportunities and labour market dynamics, YouthView utilises:

- Nowcast of Employment by Region and Occupation (NERO⁷): Developed by the National Skills Commission, NERO provides detailed employment counts by region and occupation. It uses big data techniques to exploit various sources of information to predict current employment counts, offering a more up-to-date picture than traditional labour market surveys.

⁵ <https://www.abs.gov.au/about/data-services/data-integration/integrated-data/australian-census-longitudinal-dataset-acld>

⁶ <https://www.abs.gov.au/about/data-services/data-integration/integrated-data/person-level-integrated-data-asset-plida>

⁷ <https://www.jobsandskills.gov.au/data/nero>

- Internet Vacancy Index (IVI⁸): Also from the National Skills Commission, the IVI offers data on job vacancies by occupation. This dataset is crucial for understanding Labour demand and identifying potential mismatches between job seekers' skills and available opportunities.
- Department of Social Services (DSS) JobSeeker and Youth Allowance data (other than students and apprenticeship)⁹: These data are made available at the SA2 level. JobSeeker payments are closely tied to unemployment for individuals between 22 years old and pension age, as payment for unemployed individuals searching for jobs are common. JobSeeker also covers sick or injured individuals. Youth allowance payments cover individuals who are aged less than 22 and looking for work. The data included in YouthView includes only the youth allowance payments for unemployment and excludes the payments for students.

The integration of these labour market datasets with youth disadvantage measures allows for a nuanced understanding of the relationship between local economic conditions and youth outcomes.

2.2.4 Employment and Workplace Relations Data

The Department of Employment and Workplace Relations' (DEWR) Transition to Work program provided three valuable datasets that significantly enhance YouthView's analytical capabilities. These datasets offer detailed information on program participants, job vacancies, and employment outcomes:

- Demographics File: This dataset contains participant-level information, including country of birth, age, gender, education level, and residential address. It also provides details on specific demographic statuses, such as refugee, Indigenous, or ex-offender classification. We use these data to develop measures for labour market regions (SA4). In some instances, these data use a different measure to identify an employment region. We, therefore, used concordance files provided by Jobs and Skills Australia (2024) to convert employment regions to our standard definition used for regions (SA4s).
- Job Vacancies File: This dataset includes information on each job placement, such as vacancy title, ANZSCO occupation classification, work type (e.g., full-time, part-time, or casual), and commencement dates.
- Outcomes File: This dataset contains employment duration outcomes associated with the job vacancies, indicating whether participants reached 12-week and 26-week duration thresholds.

⁸ <https://www.jobsandskills.gov.au/data/internet-vacancy-index>

⁹ This data replaces the Labour Force Survey (LFS) for estimating unemployment in the latest version of YouthView. <https://data.gov.au/data/dataset/jobseeker-payment-and-youth-allowance-recipients-monthly-profile>

These datasets are linked through anonymised individual and job placement identifiers, enabling a nuanced analysis of the relationships between employment outcomes, job placement types, and individual characteristics. The integration of this data into YouthView allows for a more comprehensive examination of factors influencing successful transitions from education to employment for Australian youth, particularly those facing significant barriers.

2.3. Data Challenges and Solutions

Integrating these diverse datasets presented several challenges:

- **Linking individual-level data:** The PLIDA spine was used to connect Census data with other administrative datasets at the individual level. This process involved complex data matching techniques to ensure accurate linkage while maintaining privacy and confidentiality. The data mapping process between data from different sources is depicted in Figure 2.1.

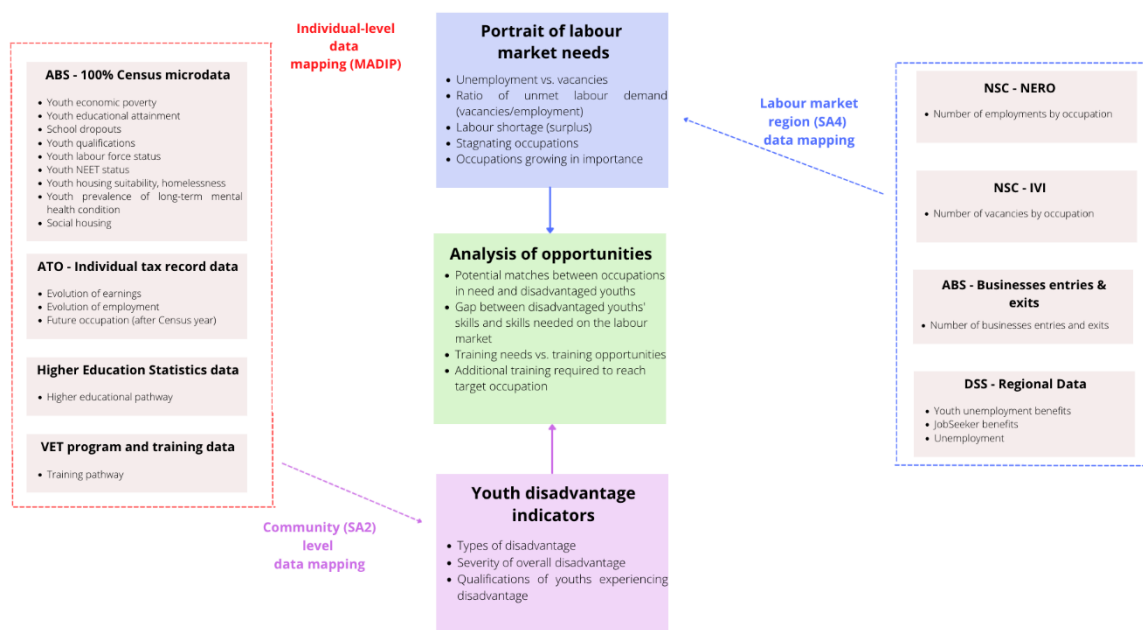


Figure 2.1 Illustration of data mapping process.

- **Geographical mismatches:** Some datasets (e.g., IVI) use different geographical classifications. The data are not accessible at the combined 4-digit occupation – SA4 level. Rather, the IVI regional files only include the broad 2-digit ANZSCO codes. Another challenge is that IVI separates vacancies by geographies (IVI regions) that do not map directly into the ABS Statistical Area Structure. IVI regions reflect the regions as identified in job advertisements. To create measures on vacancies that capture regions, we utilised IVI regional correspondence files which identify the population size in each combination of IVI region and SA4 region. Thus, we observe how the population of each IVI region is spread

across regions. We then use these distributions to approximate the number of vacancies for an SA4 region¹⁰.

- **Occupation code mismatches:** Different datasets often use varying occupation classification systems. Manual matching and ratio-based distribution methods were employed to align these systems as detailed in KC et al., 2024. For example, IVI occupation codes were manually matched to ANZSCO codes, with vacancies distributed across potential matches based on state-level ratios.
- **Temporal misalignment:** Different reporting periods across datasets posed challenges for creating consistent time series. To address this, data were harmonised to create annual measures, using techniques such as averaging monthly data or interpolating between available time points.
- **Sample size limitations:** For some measures (e.g., LFS data), only the most populous regions could be included due to sample size constraints. This limitation was addressed by clearly indicating data reliability and implementing statistical techniques to improve estimates for smaller areas where possible.
- **Privacy and confidentiality:** Given the sensitive nature of some of the data, particularly linked administrative data, ensuring privacy and confidentiality was paramount. This involved implementing strict data governance protocols, including data suppression for small cell sizes and the use of perturbation techniques to prevent individual identification.

These data integration efforts result in a rich, multifaceted dataset that forms the foundation of the YouthView platform. By overcoming these challenges, YouthView provides a unique, comprehensive view of youth disadvantage and employment opportunities that was previously unavailable to policymakers and researchers.

3. YouthView Platform

YouthView is an innovative, interactive online platform designed to provide comprehensive insights into youth disadvantage and employment across Australia. The platform is accessible at <https://youthview.melbourneinstitute.unimelb.edu.au/>. In addition to its interactive components, YouthView also offers reports and publications related to youth disadvantage and employment.

YouthView offers two primary modes for exploring youth disadvantage data: **the Story Mode and the Dashboard Suite**. Each mode caters to different user needs and levels of data literacy, providing a comprehensive understanding of the challenges facing young Australians.

¹⁰ Assume the following example. There are 10 vacancies in an IVI region for a given 2 digit occupation code. The correspondence file indicates that 10 percent of individuals in this IVI region live in SA4 region A and 90 percent in SA4 B. We allocate 1 vacancy (10 percent) to SA4 region A and 9 (90 percent) to SA4 region B.

3.1. Story Mode

The Story Mode guides users through key insights about youth disadvantage and employment through a series of interactive visualisations and narratives. This mode is particularly useful for users who may not have extensive experience in data analysis but need to understand broad trends and patterns in youth disadvantage. A snapshot of the story mode of YouthView is shown in Figure 3.1.

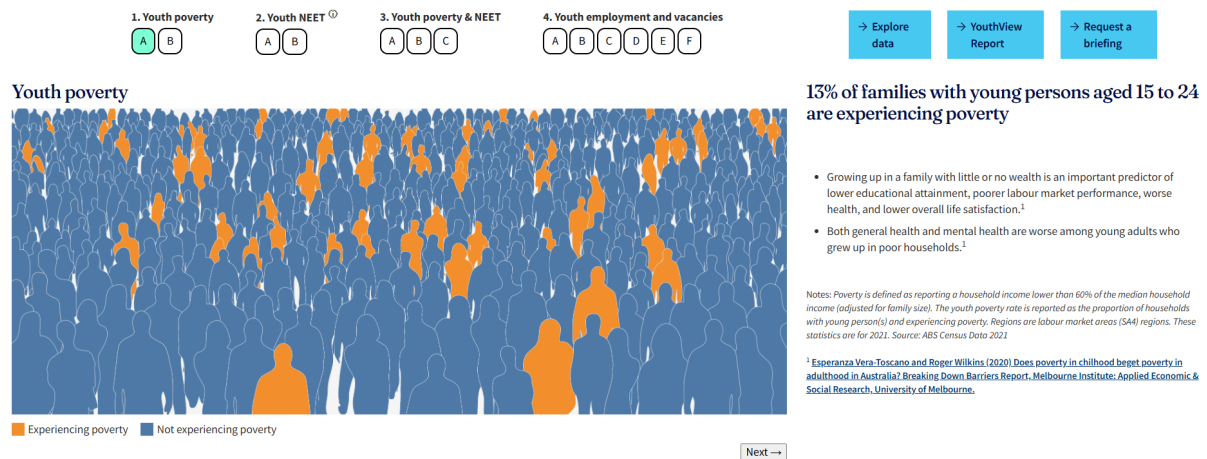


Figure 3.1 A snapshot of YouthView story mode.

The Story Mode consists of four main components:

- **Youth Poverty:** This component visualises the spatial distribution of youth poverty. The visualisation helps policymakers and community organisations quickly assess areas that may require targeted interventions to address youth poverty.
- **Youth NEET:** This section focuses on young people who are Not in Education, Employment, or Training (NEET). This information is crucial for understanding patterns of youth disengagement and identifying areas where support for education and employment transitions may be most needed.
- **Youth Poverty & NEET:** This component combines poverty and NEET data to provide a more comprehensive picture of youth disadvantage. Users can explore the relationship between poverty and NEET status, identifying areas where young people face multiple barriers to economic participation. This integrated view helps in developing holistic strategies that address both economic and educational challenges facing youth.
- **Youth Employment and Vacancies:** The final component of the Story Mode examines the relationship between youth unemployment, employment rates and job vacancies. This visualisation helps users understand the dynamics of local labour markets and how they affect young people. It can reveal mismatches between the skills of young job seekers and the requirements of available positions, highlighting areas where other factors might be preventing young people from accessing available jobs.

3.2. *Dashboard Suite*

YouthView offers a suite of interactive dashboards accessible via the "Explore Data" button on the main page. The suite consists of two main dashboards: the YouthView Dashboard and the Labour Market Dashboard.

3.2.1 YouthView Dashboard

The YouthView Dashboard¹¹ provides a comprehensive overview of youth disadvantage indicators¹². The Dashboard allows one to investigate the issues raised through the story mode in greater detail, including at a regional level. The Dashboard has been designed to capture core statistics and correlations in a first instance but also to permit expansion to more measures and correlations as new data are brought into the dashboard. The Dashboard has also been designed to permit a given region to incorporate measures unique to that region, enabling assessments of targeted interventions and policies introduced to address the opportunities and needs of the particular population in the region.

A snapshot of YouthView dashboard is shown in Figure 3.2.

¹¹ <https://youthview.melbourneinstitute.unimelb.edu.au/newDashboards/dashboard.html>

¹² Please refer to Table 1 in Appendix to see details on all youth disadvantage indicators

YouthView Dashboard

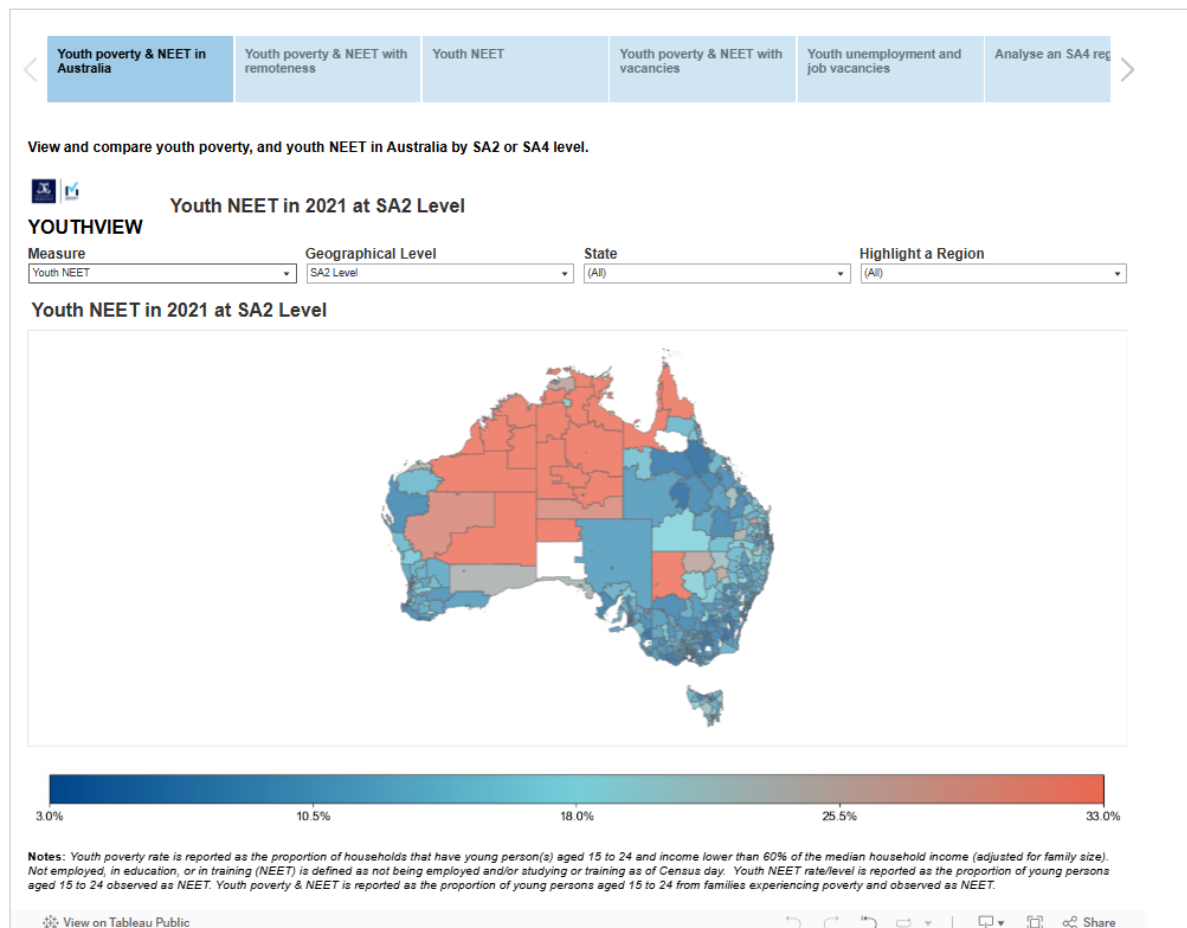


Figure 3.2 A snapshot of YouthView dashboard.

It includes the following components:

- **Youth Poverty & NEET in Australia:** This interactive map visualises the spatial distribution of youth poverty and NEET rates across Australia. Users can toggle between the locality (SA2) and region (SA4), customize the view to focus on poverty rates, NEET rates, or combined measures, and zoom in on specific regions. The color-coded visualisation instantly highlights areas of high disadvantage.
- **Youth Poverty, NEET, and Remoteness:** This component explores the relationship between youth disadvantage and geographic remoteness. Users can filter data by Greater Capital City Statistical Areas or Significant Urban Areas, enabling comparisons across different types of communities. It helps identify disparities between urban, regional, and remote areas in terms of youth poverty and NEET rates.
- **Youth NEET:** This section provides a detailed breakdown of NEET status for two age groups: 15 to 19 and 20 to 24. Users can view the proportion of youth who are unemployed, not in the labour force, or in other NEET categories. The data can be filtered by state and customised for our two geographies (locality and region), allowing for comparison of NEET patterns across age groups and geographies.
- **Youth Poverty & NEET with Vacancies:** This scatter plot visualisation shows the relationship between selected youth disadvantage measures (poverty, NEET, or combined) and job vacancy rates. Users can select data for years between 2015 to 2022 and customize the view

for SA4 regions within or outside Greater Capital City Statistical Areas. This component helps identify potential mismatches between youth skills and labour market demands.

- **Youth Unemployment and Job Vacancies:** This dual-axis chart compares youth unemployment rates with average annual job vacancies at the SA4 level from 2016 to 2020. Users can select specific SA4 regions and view trends over the five-year period, providing insights into labour market dynamics affecting young people.
- **Analyse an SA4 Region:** This comprehensive dashboard allows users to deep-dive into statistics for a selected SA4 region. It shows key statistics including youth poverty and NEET rates, vacancies, employment figures, and population data. Users can also view trends in employment, vacancies, and the ratio of vacancies to employment by skill level and job titles, and benchmark the selected region against state or national averages.

3.2.2 Labour Market Dashboard

The Labour Market Dashboard¹³ offers deeper insights into labour market conditions and needs. A snapshot of Labour Market Dashboard is shown in Figure 3.3.

¹³ <https://youthview.melbourneinstitute.unimelb.edu.au/newDashboards/labourDashboard.html>

YouthView - Labour Market Dashboard

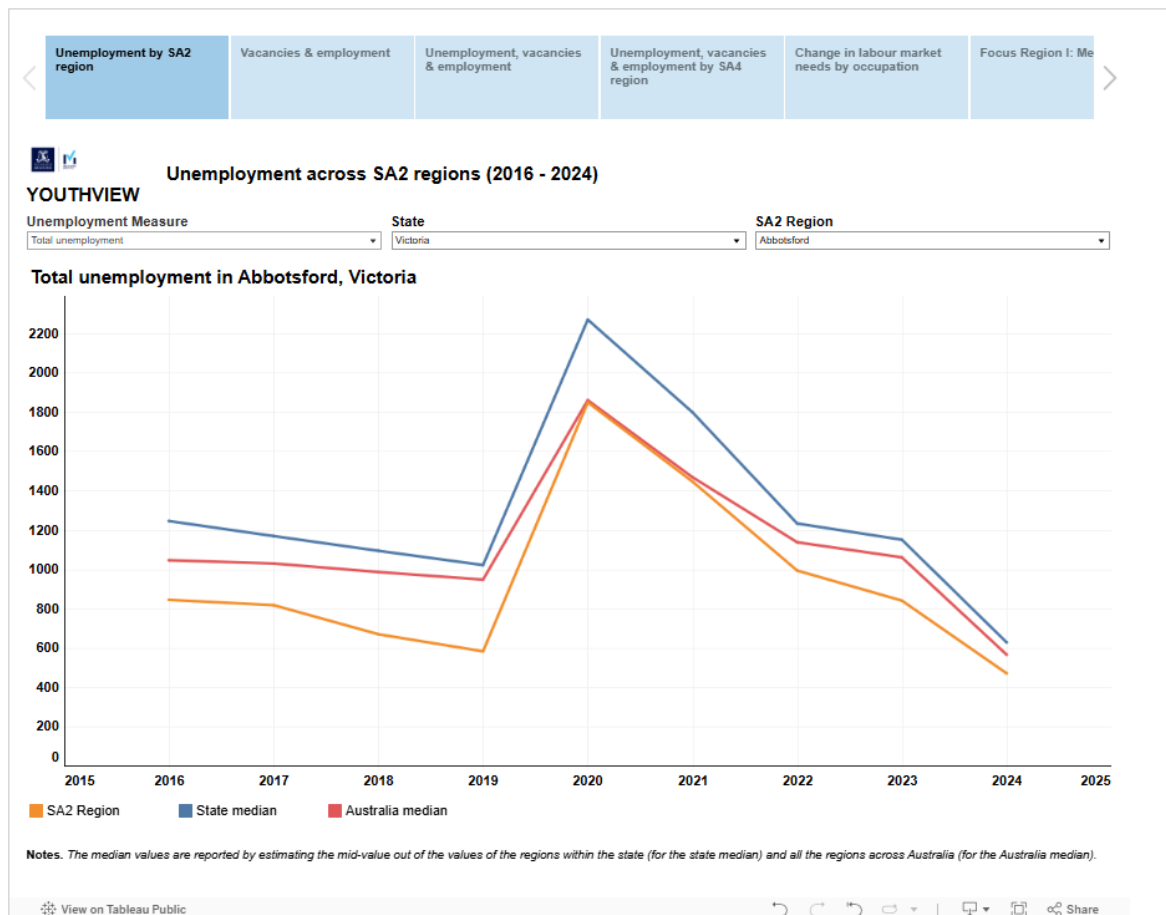


Figure 3.3 A snapshot of Labour Market Dashboard.

It includes several interactive components:

- **Unemployment by locality (SA2):** This component displays unemployment measures (youth allowance, Jobseekers, and total unemployment) for localities from 2016 to 2024. Users can select from the three unemployment measures and choose a specific locality to analyse. The statistics for the selected localities are compared against the median values for the state and Australia, providing a context for understanding local unemployment trends.
- **Vacancies & Employment:** This visualisation shows vacancies and employment data by educational requirements across regions from 2016 to 2024. Users can choose from three labour measures (vacancies, employment, and vacancies to employment ratio) and select specific geographic regions (SA4). When all regions are selected for a given state, the component shows the visualisation for the entire state divided into regions classified and not classified as greater capital city areas.
- **Unemployment, Vacancies & Employment:** This component combines unemployment, vacancy, and employment data for regions from 2016 to 2024. Users can view trends side-by-side to analyse changes in labour market conditions over the years. The visualisation can be customised by selecting different labour and unemployment measures, and specific SA4 regions. An additional view presents this data in a scatter plot format, similar to the one described in Section 3, allowing quick identification of regions with imbalances in job needs and potential workers.

- **Change in Labour Market Needs by Occupation:** This visualisation displays vacancy and employment trends for different job titles in selected regions from 2015 to 2024. The measures are reported relative to their values in 2016. Users can follow trends while sliding through years, highlight specific job titles, and view data categorised by skill level. This component helps identify growing and declining occupations in different regions.
- **Focus Regions:** This section provides analysis for custom-defined larger regions based on service providers' interests. Currently, it includes a focus on Melbourne, comprising four regions (Melbourne Inner, Melbourne North West, Melbourne North East, and Melbourne South East). It features three main visualisations: annual changes in vacancies and employment by job title and skill level, measures of vacancies and employment by education qualifications, and unemployment trends. This component is designed to be expanded in the future to include more regions and in-depth analyses.

4. Key insights and discussions

4.1. *Spatial Patterns of Disadvantage*

One of the most striking revelations from YouthView is the significant variation in youth poverty and NEET rates across regions:

- **Hotspots of disadvantage:** Certain areas consistently show higher rates of youth poverty and disengagement, often clustered in specific geographic regions. These hotspots may indicate entrenched, place-based disadvantage that requires targeted, long-term interventions.

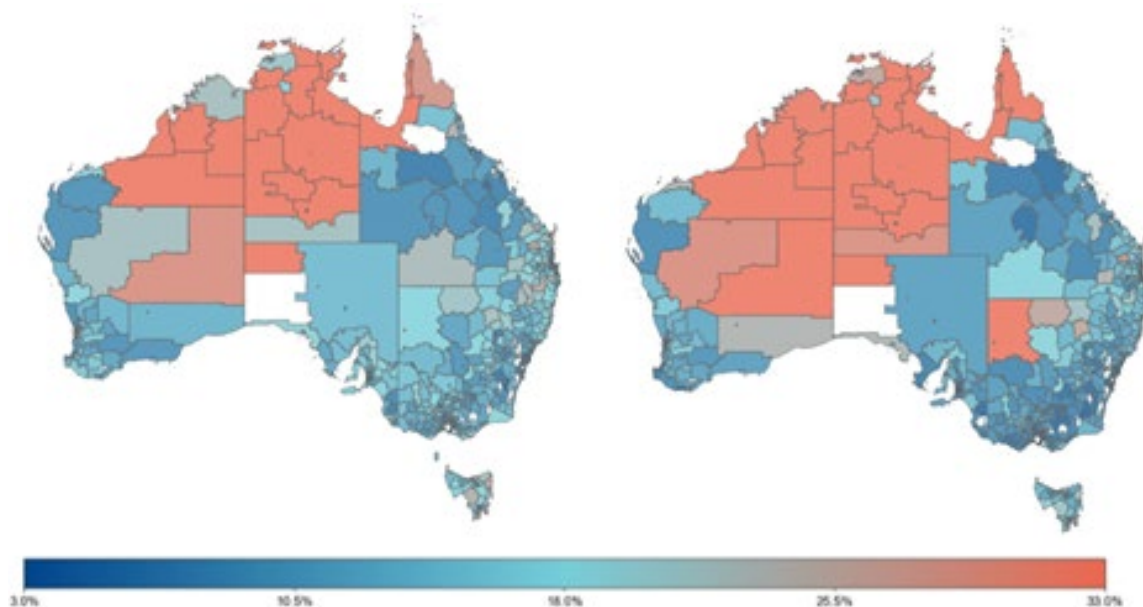


Figure 4.1 Spatial pattern of youth poverty rate (left) and youth NEET rate (right) at SA2 level

- **Urban-rural divide:** There is a clear disparity between urban and rural areas, with many remote regions showing higher rates of youth poverty and disengagement from education and employment. The median regional youth poverty rates for areas outside of the capital cities

area stand at 14 percent while the median rates for the regions considered within capital cities are 12 percent. Similarly, median youth poverty rates for communities within urban localities are at 11 percent but communities in rural areas are higher, at 14 percent.

- The NEET rates also vary based on the population density of the area under study. More urban areas exhibit lower NEET rates (an average of 8 percent), and more rural areas exhibit higher NEET rates (an average of 12 percent).
- Higher poverty and NEET rates for more rural areas highlight the need for policies that address the unique challenges faced by young people in rural and remote areas.
- Intra-region variations: A feature of the YouthView is that it can highlight differences within areas for a given region. There are significant variations in poverty and NEET. Thus, even though these areas are considered to fall within the same region as it relates to labour market opportunities, it appears the opportunities and/or challenges faced by youth vary significantly. For example, we illustrate for two different regions, one in New South Wales, and one in Western Australia – the NEET rates range from 7 to 40 percent (NSW) and 9 to 42 percent (WA). This illustration underscores the importance of neighbourhood-level interventions and the need to look beyond broad metropolitan statistics.

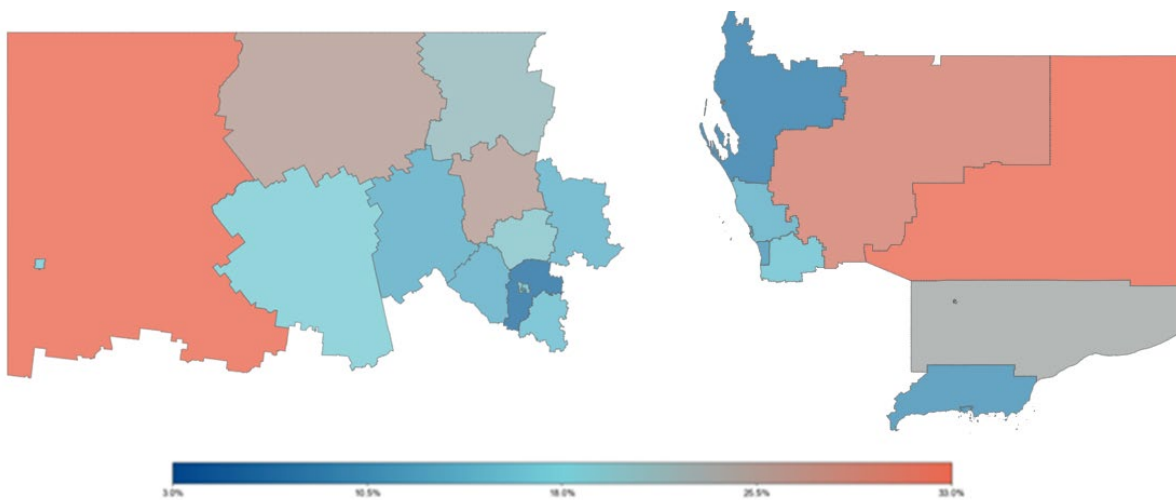


Figure 4.2 Intra-SA4 region variations (left: NSW and right: WA) for youth NEET at locality (SA2).

4.2. Age-Related Trends

YouthView focuses on two age ranges – youth, aged 15-19, and young adults, aged 20-24. These two age ranges support a better understanding of how poverty and NEET can lead to differential perceptions of the challenges youth and young adults face for transitioning to successful employment opportunities.

- Higher NEET rates in 20-24 age group: NEET rates tend to be higher for the 20-24 age group compared to the 15-19 age group. The national median NEET rate for 15-19 age group is 7 percent while the same for 20-24 age group is 14 percent. This suggests that the transition from education to employment remains a significant challenge for many young Australians.

- **Varying NEET composition:** The composition of NEET youth exhibits significant variation across age groups and regions, revealing complex patterns of disengagement from education and employment. Analysis of the data reveals distinct profiles within the NEET category, with notable differences between the 15-19 and 20-24 age groups. For instance, in certain areas, the 15-19 NEET cohort is predominantly composed of early school leavers, while the 20-24 NEET group shows a higher proportion of unemployed graduates. This heterogeneity is exemplified in the highlighted region (Figure 4.3), which exhibits a youth NEET rate of 14 percent, surpassing the state median of 11 percent, despite having a relatively high number of job vacancies (31 per 1,000 employed individuals, compared to the state median of 19). Such discrepancies between NEET rates and job availability suggest the presence of significant skills mismatches or other barriers to employment, underscoring the need for targeted interventions that address the specific factors contributing to youth disengagement in different regions.

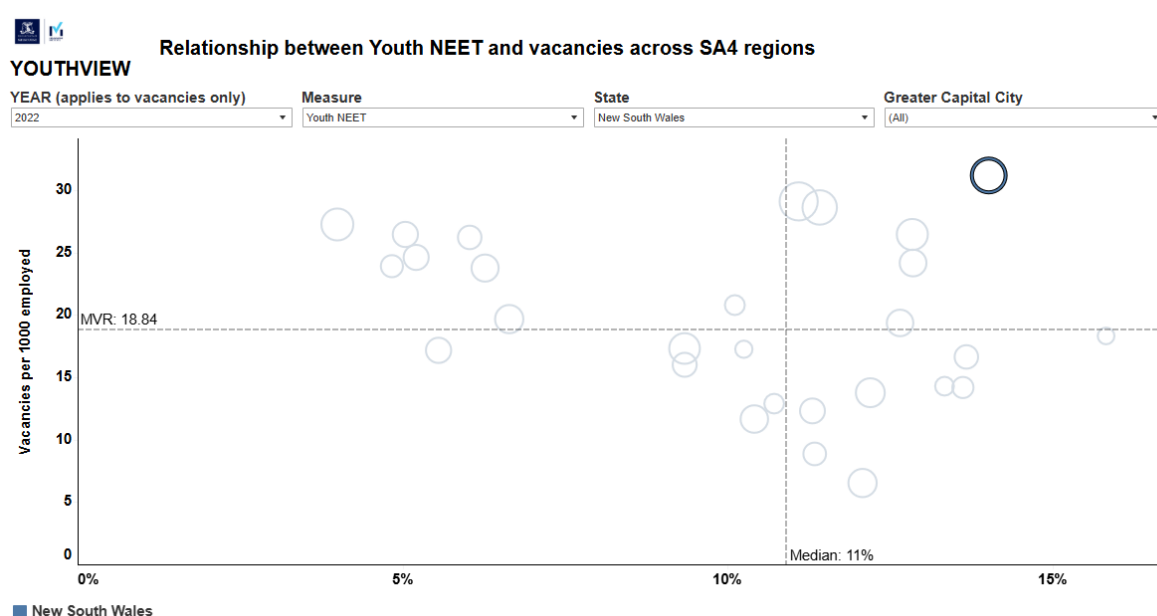


Figure 4.3 Varying NEET composition. The highlighted SA4 region has higher youth NEET rate despite having relatively higher vacancies, thus indicating to skill mismatch in the region.

- **Critical transition points:** The age-based youth NEET analyses highlight critical transition points, such as the period immediately after high school completion, where targeted support could have significant impact in preventing long-term disengagement.

4.3. Labour Market Dynamics

Thus far we have focused on depicting poverty and NEET rates. But key to YouthView is the consideration of how changes in the labour market in terms of employment on occupation can support developing new policies or trying interventions that will support what we observe in the regional dynamics for employment and occupational needs. While not all youth will remain in the region in which they grow up, Australia is known for limited inter-country migration.

There is a high probability of one remaining in the same region where they grew up. Thus, linking an understanding of the economic circumstances and the observations about transitions beyond schooling (e.g. NEET rates) to labour market conditions is critical for enabling successful transitions for students from high school to employment.

The integration of youth disadvantage data with labour market information reveals existing complexities:

- **Skills mismatch:** There is often a mismatch between areas of high youth unemployment and regions with high job vacancy rates. As illustrated in Figure 4.4, the highlighted region has higher unemployment rates despite having vacancies that are higher than those observed in other regions. This points to potential skills mismatches or other barriers to employment, such as lack of transportation or limited access to job search resources. Thus, observing this positive correlation between vacancies and unemployment rates can serve as a starting point for identifying why there appears to be a mismatch and whether the correlation is attributed more towards education and training mismatches or other factors such as the lack of viable transportation for getting to and from work.

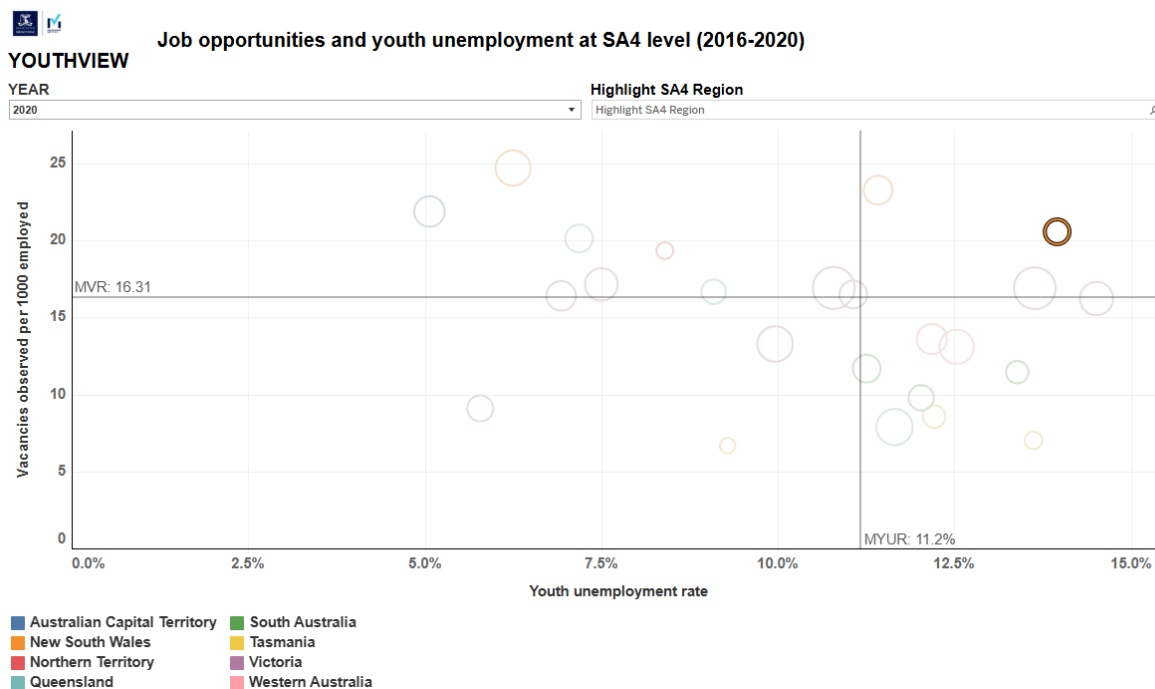


Figure 4.4 Skill mismatch for an SA4 region in 2020.

- **Growth sectors:** Certain occupations and skill levels show consistent growth in vacancies across regions, highlighting opportunities for targeted skills development programs. For example, educational professionals showed highest annual change in vacancies in Australian Capital Territory in 2022 (about 4 times) as illustrated in Figure 4.5, suggesting potential areas for youth training and education initiatives.

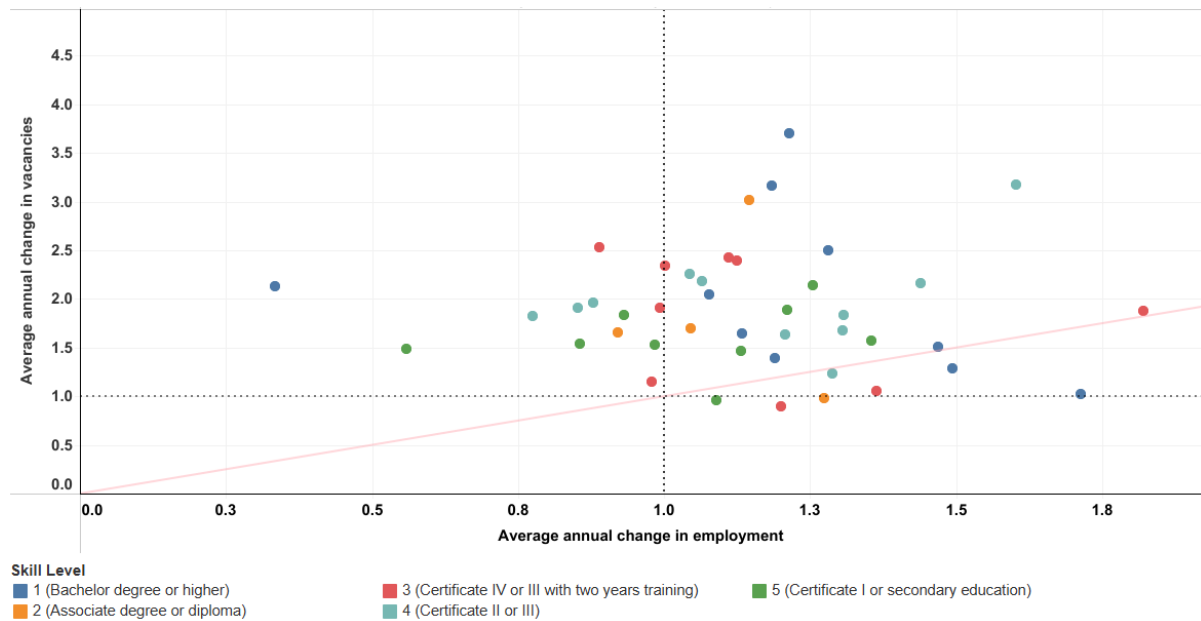


Figure 4.5 Variations of growth of occupations in 2022. The annual changes reported are expressed relative to their values in 2015.

- Regional variations: The relationship between youth unemployment and job vacancies varies significantly across regions. Some areas show high youth unemployment despite abundant job opportunities, while others have low unemployment but limited job openings. As illustrated in Figure 4.6 for all regions in New South Wales, there is a discernible difference in how different occupations have grown over time. This is particularly evident for areas within and outside of Sydney. The figure underscores the need for tailored, place-based strategies to address youth employment challenges.

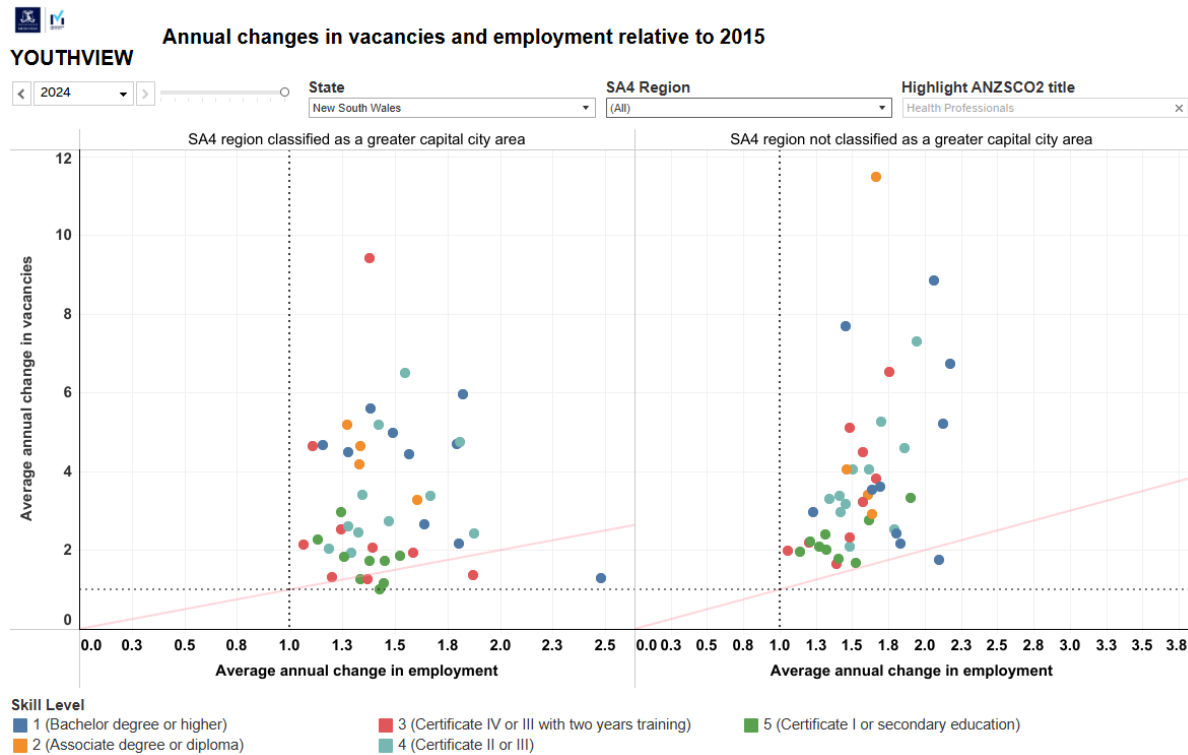


Figure 4.6 Regional variations in the growth of occupations.

4.4. Discussions

4.4.1 Key Contributions of YouthView

1. Comprehensive data integration: By bringing together Census data, administrative records, and labour market information, YouthView provides a holistic view of youth disadvantage that was previously unavailable. This integration allows for a more nuanced understanding of the interplay between various factors affecting youth outcomes.
2. Granular, place-based analysis: The platform's ability to present data at different geographic levels, down to localities (SA2), enables the identification of localised patterns of disadvantage that might be obscured in more aggregated data. This granularity is crucial for developing targeted, place-based interventions.
3. Temporal perspective: YouthView incorporates time-series data on employment, unemployment, and vacancies, allowing for the analysis of trends and patterns over time. This temporal dimension provides valuable insights into the dynamics of labour market conditions and their impact on youth outcomes. While current longitudinal data on individual youth trajectories is limited, the platform lays the groundwork for future incorporation of linked administrative data. This future enhancement will enable more

comprehensive studies on the persistence of NEET status and the long-term outcomes of disadvantaged youth, potentially offering crucial insights into the effectiveness of interventions and the trajectories of young people facing barriers to education and employment.

4. Interactive visualisation: By making complex data accessible through user-friendly, interactive visualisations, YouthView democratises access to critical information about youth disadvantage. This can facilitate broader engagement with these issues across different stakeholders and the general public.

5. Multi-dimensional analysis: The platform allows users to explore the relationships between different aspects of youth disadvantage, such as education, employment, and poverty. This multi-dimensional approach supports a more comprehensive understanding of the challenges facing young people.

4.4.2 Implications for Policy and Practice

The insights generated and facilitated through YouthView have significant implications for policy and practice in addressing youth disadvantage and employment challenges. The platform's granular, place-based data enables the design of highly targeted interventions that address the specific needs of different communities, potentially leading to more efficient use of resources and more effective outcomes. For instance, the platform's ability to visualize youth poverty and NEET rates alongside job vacancy data at the regional levels allows policymakers to identify regions where high youth disengagement coexists with available job opportunities. This could indicate a skills mismatch or other barriers to employment, prompting targeted interventions such as specialised training programs or initiatives to address specific local challenges.

YouthView's comprehensive data integration supports early identification of at-risk youth and the development of preventive strategies to interrupt cycles of disadvantage. By combining data on education levels, employment status, and demographic factors, the platform allows for a nuanced understanding of the factors contributing to youth disadvantage in different regions. For example, areas with high rates of early school leaving among the 15-19 age group might benefit from targeted educational support and retention programs, while regions with high unemployment among university graduates in the 20-24 age group might require initiatives focused on graduate employability and industry partnerships.

The multi-dimensional nature of the data presented in YouthView encourages a holistic approach to addressing youth disadvantage, potentially fostering greater collaboration between education, employment, and social services sectors. The platform's ability to showcase the interplay between various factors affecting youth outcomes – such as education levels, job market conditions, and regional economic indicators – highlights the need for coordinated, cross-sector responses. For instance, addressing high NEET rates in a particular region might involve collaboration between local schools, employment services, and community organisations to create comprehensive support pathways for young people.

YouthView provides a robust evidence base for policy development, allowing policymakers to ground their decisions in comprehensive, up-to-date data on youth outcomes and labour market conditions. The integration of diverse datasets, including Census data, administrative records, and labour market information, offers a more complete picture of the challenges facing young Australians than was previously available. This can lead to more informed policy decisions and better-targeted interventions. For example, the platform's Labour Market Dashboard, which combines unemployment data with vacancy and employment trends, can inform the development of regional economic strategies that align with the needs of young job seekers.

The platform's ability to track changes over time supports more adaptive program design, allowing interventions to be adjusted based on observed outcomes and changing conditions. This is particularly valuable given the dynamic nature of youth transitions and the rapidly evolving labour market. The temporal data on employment, unemployment, and vacancies enables policymakers and program designers to monitor the effectiveness of interventions and make data-driven adjustments. For instance, if a region shows persistent high youth unemployment despite increasing job vacancies over time, it might indicate a need to reassess and modify existing employment programs or skills training initiatives.

Furthermore, YouthView's focus on specific regions, such as the custom analysis for Melbourne comprising four SA4 regions, demonstrates the platform's potential to support tailored, place-based strategies. This approach recognises that the challenges facing young people can vary significantly even within metropolitan areas and allows for the development of interventions that are sensitive to local economic and social contexts.

4.4.3 Limitless Future Directions

YouthView represents a significant advancement in understanding youth disadvantage. It has been designed to permit cross-region and cross-neighbourhood analyses while also permitting

one to dig into a particular region or neighbourhood and explore how that geographic area has evolved over time as it relates to metrics tied supporting positive youth transitions from schooling to work.

YouthView represents, however, the first step for providing tools and information to support the design of targeted interventions, the evaluation and refinement of existing policies and practices, and the development of new policies. Critical to its success are (a) remaining attentive to the opportunities for including new and updated information, (b) considering how to address heterogeneous data differences or gaps across geographies, and (c) enabling regions to include region specific measures and assessments. One of the key limitations of the current YouthView platform is the absence of relevant data capturing youth interests and aspirations, which may not always align with existing market opportunities. The integration of such datasets, if available, would enable a more comprehensive representation of youth perspectives, allowing for more targeted and effective intervention recommendations.

Future development of YouthView will focus on expanding its capabilities. Plans include incorporating additional datasets, such as more detailed educational data, health information, and social service utilisation data, to provide a more holistic view of youth circumstances. Enhancing the platform's predictive capabilities will enable better anticipation of future trends in youth disadvantage. In our future development roadmap, the plan is to incorporate advanced features such as predictive modelling and intervention scenario simulations. These enhancements will transform YouthView from a primarily statistics-oriented tool into a comprehensive platform that not only visualises current data but also supports the testing and evaluation of potential interventions. Expanding the platform's analytical tools will empower users to conduct more sophisticated analyses directly within YouthView, further supporting evidence-based decision-making in youth policy and interventions.

5. Conclusions

The YouthView platform represents a significant advancement in our ability to understand and address youth disadvantage and employment challenges. By integrating diverse datasets and providing user-friendly, interactive visualisations, YouthView empowers policymakers, community organisations, and researchers to develop more effective, evidence-based strategies for supporting young Australians in their transition to adulthood and economic independence. The platform's comprehensive, granular data, combined with its temporal and multi-

dimensional approach, offers a valuable resource for developing targeted, place-based interventions. It facilitates nuanced, cross-sector collaboration and enables the design of programs that are adaptable to evolving youth transitions and labour market conditions.

YouthView not only lays the groundwork for more effective policy development but also represents a forward-looking tool that will evolve alongside emerging trends and new datasets. With its potential for continuous improvement, the platform stands as a powerful tool for future research and decision-making in the field of youth disadvantage. Its ability to incorporate real-time data, track regional variations, and foster localised solutions ensures that YouthView will remain a critical resource in the effort to bridge gaps in youth education, employment, and well-being.

As YouthView continues to expand and refine its capabilities, its impact on policy and practice will only grow. The future of YouthView holds immense promise, particularly in its potential to drive proactive policy decisions and refine existing interventions, ultimately creating a more inclusive and equitable future for young individuals.

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Appendices

Appendix 1: Locality statistics used to construct youth disadvantage indicators

		Disaggregation		Person file		Family file					
Variable	Description	Gender	Census year	Census 2016	Census 2021	Census 2016 2	Census 2021 2	ATO	HS	VET-program	VET-training
pop_15_19	Number of individuals aged 15-19	yes	yes	yes	yes						
pop_20_24	Number of individuals aged 20-24	yes	yes	yes	yes						
hh_15_19	Number of households with someone aged 15-19	yes	yes	yes	yes	yes	yes				
hh_20_24	Number of households with someone aged 20-24	yes	yes	yes	yes	yes	yes				
emp_15_19	Number of individuals employed aged 15-19	yes	yes	yes	yes						
emp_20_24	Number of individuals employed aged 20-24	yes	yes	yes	yes						
stud_full_15_19	Number of individuals studying full-time aged 15-19	yes	yes	yes	yes						
stud_full_20_24	Number of individuals studying full-time aged 20-24	yes	yes	yes	yes						
stud_part_15_19	Number of individuals studying part-time aged 15-19	yes	yes	yes	yes						
stud_part_20_24	Number of individuals studying part-time aged 20-24	yes	yes	yes	yes						
educYr10_20_24	Number of individuals who completed Year 10 aged 20-24	yes	yes	yes	yes						
educYr12_20_24	Number of individuals who completed Year 12 aged 20-24	yes	yes	yes	yes						
neet_15_19	Number of individuals Not in Education,	yes	yes	yes	yes						

	Employment or Training aged 15-19										
neet_20_24	Number of individuals Not in Education, Employment or Training aged 20-24	yes	yes	yes	yes						
uemp_15_19	Number of individuals unemployed aged 15-19	yes	yes	yes	yes						
uemp_20_24	Number of individuals unemployed aged 20-24	yes	yes	yes	yes						
nilf_15_19	Number of individuals Not in the Labour Force aged 15-19	yes	yes	yes	yes						
nilf_20_24	Number of individuals Not in the Labour Force aged 20-24	yes	yes	yes	yes						
povl_15_19	Number of individuals aged 15-19 in a household experiencing poverty	yes	yes	yes	yes	yes	yes				
povl_20_24	Number of individuals aged 20-24 in a household experiencing poverty	yes	yes	yes	yes	yes	yes				
povH_15_19	Number of households with someone aged 15-19 experiencing poverty	yes	yes	yes	yes	yes	yes				
povH_20_24	Number of households with someone aged 20-24 experiencing poverty	yes	yes	yes	yes	yes	yes				
mhealthcond_15_19	Number of individuals aged 15-19 reporting having being diagnosed with a mental health condition, including depression and anxiety	yes	yes		yes						

mhealthcond_20_24	Number of individuals aged 20-24 reporting having being diagnosed with a mental health condition, including depression and anxiety	yes	yes		yes						
neetime_15_19	Average time spent while NEET since census day for individual aged 15-19	yes		yes				yes	yes	yes	yes
neetime_20_24	Average time spent while NEET since census day for individual aged 20-24	yes		yes				yes	yes	yes	yes
endneet_occup1_15_19	Most common 2-digit occupation that ends a period of NEET for individual aged 15-19	yes		yes				yes			
endneet_occup1_20_24	Most common 2-digit occupation that ends a period of NEET for individual aged 20-24	yes		yes				yes			
endneet_occup1_mean_15_19	Mean annual earnings (second year observed with employment) for those who follow a period of NEET with endneet_occup1_15_19	yes		yes				yes			
endneet_occup1_mean_20_24	Mean annual earnings (second year observed with employment) for those who follow a period of NEET with endneet_occup1_20_24	yes		yes				yes			
endneet_train_15_19	Number of individuals aged 15-19 who ended NEET with further higher education or training	yes		yes					yes	yes	yes

endneet_train_20_24	Number of individuals aged 20-24 who ended NEET with further higher education or training	yes		yes					yes	yes	yes
endneet_emp_15_19	Number of individuals aged 15-19 who ended NEET with employment	yes		yes				yes			
endneet_emp_20_24	Number of individuals aged 20-24 who ended NEET with employment	yes		yes				yes			
neet_remain_15_19	Number of individuals aged 15-19 who are likely still NEET at the last observed period	yes		yes				yes	yes	yes	yes
neet_remain_20_24	Number of individuals aged 20-24 who are likely still NEET at the last observed period	yes		yes				yes	yes	yes	yes

