# Project Proposal

# Indicators of unemployment

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## Rationale/stakeholders/questions

Stakeholders – NSW government policy makers, social welfare groups in NSW

(update from last group meeting here)

Unemployment impacts on the economic, social and mental health of not only the person who is unemployed but their family and their community in the short-term, and can have impact for decades to come. Additionally, the longer a person remains unemployed it can become more difficult to find employment as skills and abilities deteriorate over the time of unemployment. Long term unemployment becomes a cycle that is difficult to break as it can lead a decline into poverty that leads to other issues such homelessness which impacts on the employability of those involved.

For the purposes of this analysis unemployment is defined as a person who has not participated in paid work in a single week. This is different from underemployed which includes people who have participated in at least 1 hour of paid work in a single week.

But what are the causes/indicators of unemployment? Are people in one area, more likely to be unemployed than those in another area? Does gender or race have anything to do with unemployment? Does having a university degree, help or hinder employment? This is what our investigation hopes to find out. On preliminary analysis, we have found that ……….

We would like to have the opportunity to explore this matter further and provide insight into this issue to help social welfare groups focus on the factors that are of most relevance to the issue.

## Data Sources

Our unemployment data was obtained from the Australian Government Department of Jobs and Small Business, SA2 Data tables — Small Area Labour Markets, December quarter 2018. To create a list of indicators/variables we explored data from The Australian Bureau of Statistics (ABS), particularly from the 2016 Census and a range of datasets from other areas of the ABS and non-ABS sources summarised in Table 1.

Table 1 – Sources of Data

|  |  |  |  |
| --- | --- | --- | --- |
| Indicator/variable | Description of dataset | Source | Geographic Level |
| Socio economic status | Socio- economic indexes for areas (SEIFA) 2016 | ABS | SA2 |
| Crime Statistics | Annual incident counts, rates per 100,000 population and ranks for selected offences (2011-2018) | Bureau of Crime and Statistics research (BOSCAR), NSW Department of Justice | LGA |
| Drug and alcohol? |  |  |  |
| Education Level | Census of Population and Housing: Reflecting Australia - Stories from the Census, 2016 | NSW Department of Education?  ABS | SA2 |
| Demographics   * Age * Gender * Dwelling type * Household composition | Estimated Resident Population (ERP) by SA2 (ASGS 2016) Age and Sex, 2001 Onwards | ABS | SA2 |
| Race and Ethnic background | Ancestry, Migrant arrivals, Place of birth, Indigenous population | ABS | SA2 |
| Environment/Air quality data? |  |  |  |
| Access to employment? |  |  |  |
| Family Status | Marriages and divorces, Australia, 2016 | ABS | SA2 |
| Commute to work | Census of Population and Housing: Commuting to Work - More Stories from the Census, 2016 | ABS | SA2 |
| Whatever else we found |  |  |  |
|  |  |  |  |
|  |  |  |  |

To create a cohesive dataset for analysis we aimed to collect data for NSW for the year 2016 and at the SA2 level, a statistical geographic area a defined by the Australian Statistical Geographic Standard (ASGS) used by the ABS. An SA2 has an average population of 10,000 persons and can include one or more related suburbs that interact socially and economically (reference). Some non-ABS datasets were not available in an ABS structure at SA2 level, but instead at a more granular level of Local Government Area (LGA). Aggregation of these datasets was performed by associating the LGA with the corresponding Mesh Block (equivalent ASGS structure) and summarising up to SA2 level.

Reference - <https://www.abs.gov.au/websitedbs/D3310114.nsf/home/Australian+Statistical+Geography+Standard+(ASGS)>

Using data at the SA2 level will allow us to analyse our variables for over 2000 geographical areas in NSW. We could then interpret any trends found for each SA2 to answer our research question. Data from the year 2016 was chosen as it was the year with the most data available.

## Modelling

Regression modelling technique to be used:

An individual that wants to work is either employed or not employed; this is a binary outcome. As such, as part of this project, a multivariate logistic regression on grouped data will be performed in order to help answer the defined research question.

The unemployment data is a proportion of the population that is unemployed for a particular SA2, which is the total number of unemployed over the population as a percentage. Each of the variables chosen is also a proportion of the population within the SA2?

## Issues

* 1. the rationale and stakeholders for the project,
  2. the research questions,
  3. the range of datasets examined as well as those chosen for the analysis (include details about how you merged the different datasets and an assessment on whether the granularity of the data sources is sufficient to answer your research questions),
  4. the regression modelling techniques to be employed and,
  5. any issues that you anticipate might arise in carrying out the project.
  6. Include an Appendix that contains code samples demonstrating the data acquisition and merger processes that you have used to date.

## References

<https://www.theguardian.com/australia-news/2019/mar/20/life-on-the-breadline-poverty-is-not-a-lack-of-character-its-a-lack-of-money>

<https://www.theguardian.com/business/2019/mar/27/teenagers-in-jobless-homes-twice-as-likely-to-feel-sad-or-very-sad-about-their-lives>

<https://www.theguardian.com/commentisfree/2019/feb/19/counting-one-hours-work-a-week-doesnt-skew-the-employment-data>

<https://www.theguardian.com/business/2019/jan/24/unemployment-rate-drops-slightly-to-5-driven-by-rise-in-part-time-work>

<https://smallbusiness.chron.com/overall-effects-unemployment-37104.html>

<https://www.sciencedirect.com/science/article/pii/S0277953615001690>

<https://bmjopen.bmj.com/content/6/5/e009834?utm_source=trendmd&utm_medium=cpc&utm_campaign=jnis&trendmd-shared=1&utm_term=TrendMDPhase4&utm_content=Journalcontent>

## Appendix