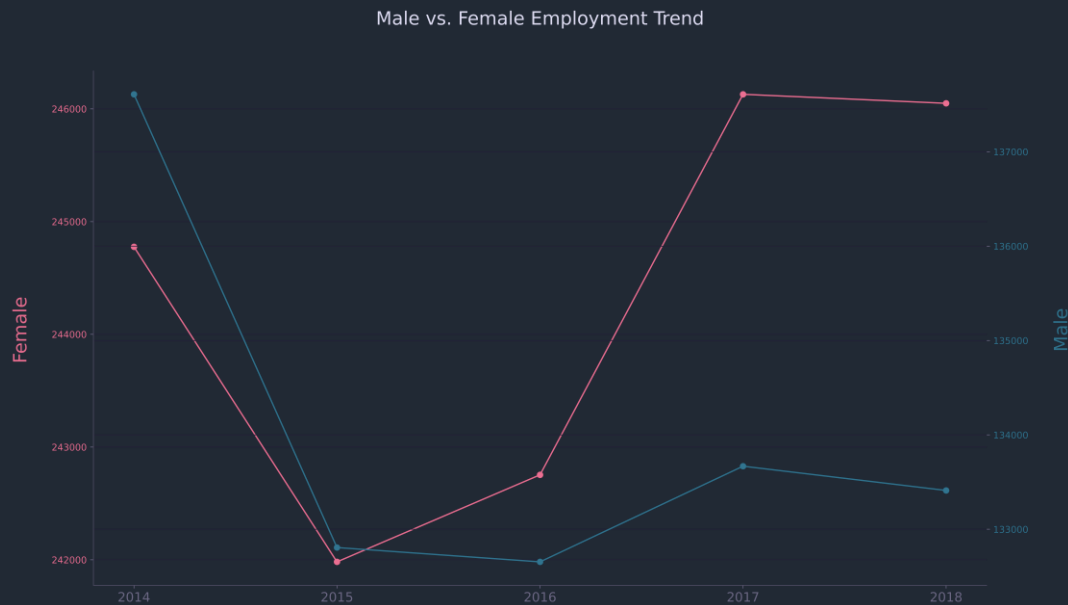


This analysis was conducted by Samer Alhaddad for the NSW Government Virtual Internship Program (Data Analysis Case Study), Australia. During the period between 21 July 2023 – 31 July 2023.

## 1. Trends over time in male and female employment

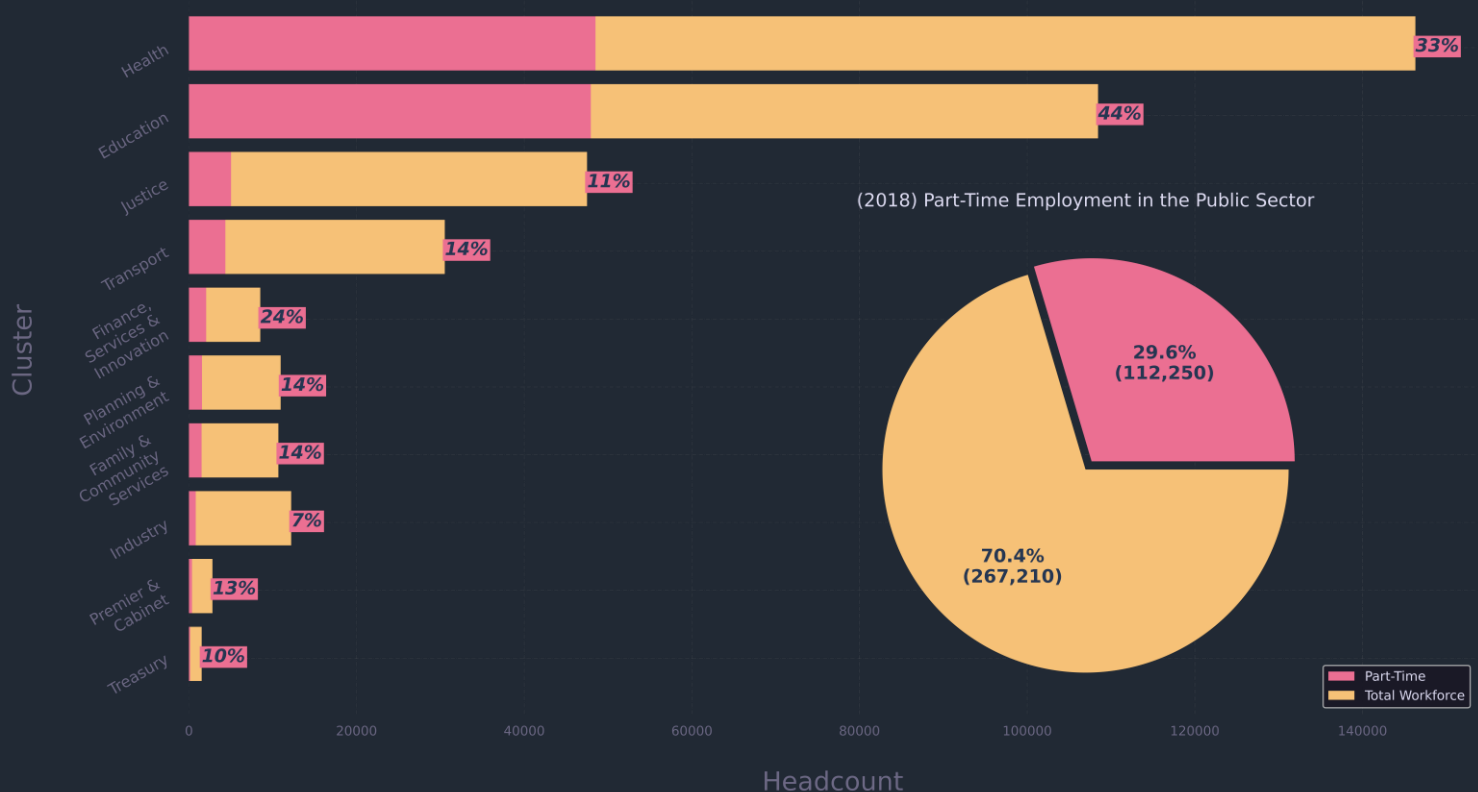
Gender	2015 (%)	2016 (%)	2017 (%)	2018 (%)	Overall (%)
Female	-1.14%	+0.32%	+1.39%	-0.03%	+0.52%
Male	-3.49%	-0.11%	+0.76%	-0.19%	-3.05%

Gender employment percentage change over the years



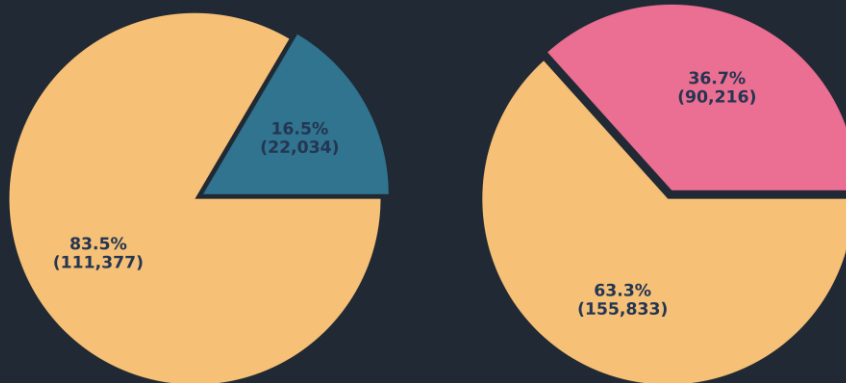
## 2. Current representation of part time employees

(2018) Part-Time Employment per Cluster

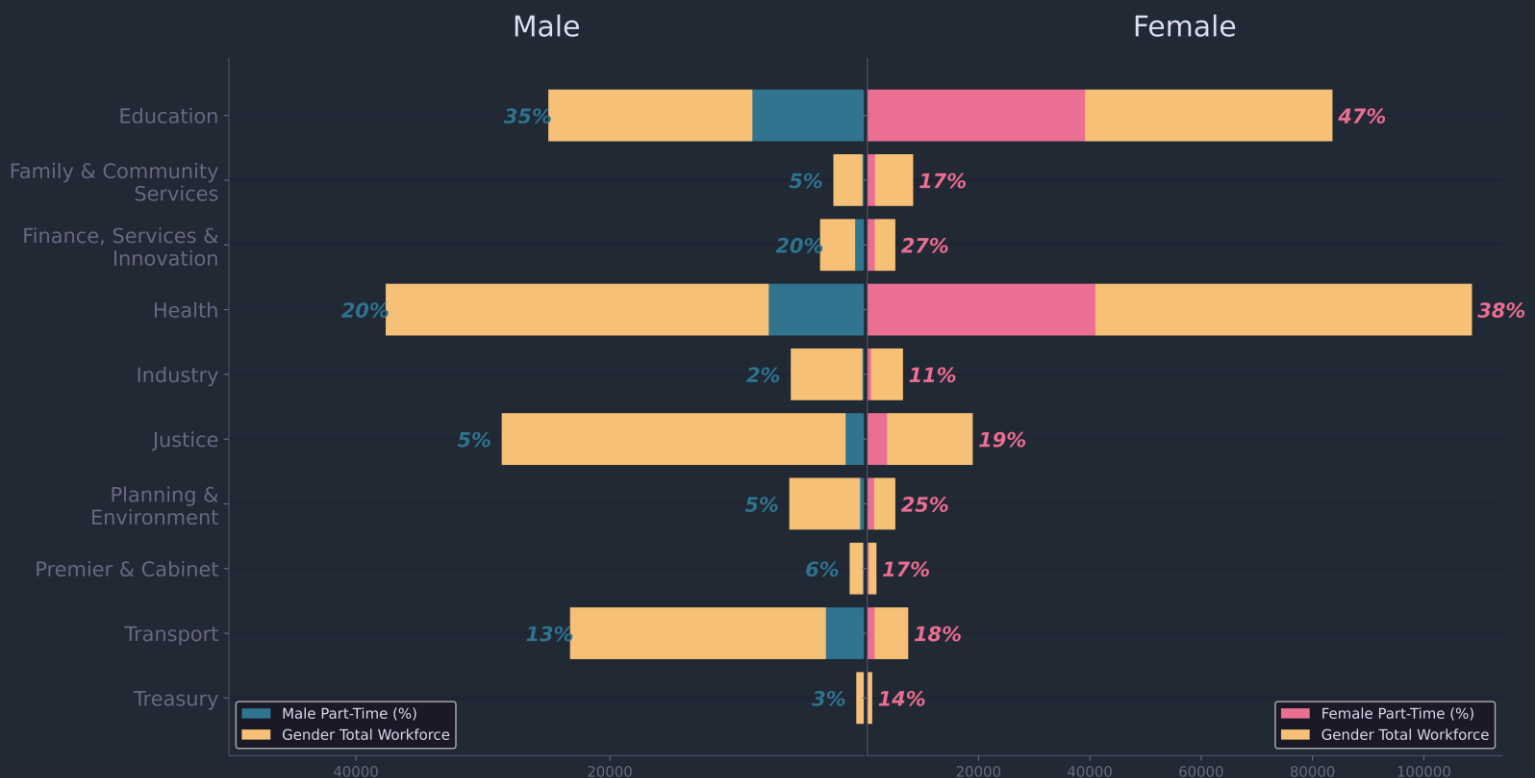


### 3. Current representation of male and female part time employees

(2018) Gender Part-Time Employment in the Public Sector



(2018) Gender Employment per Cluster

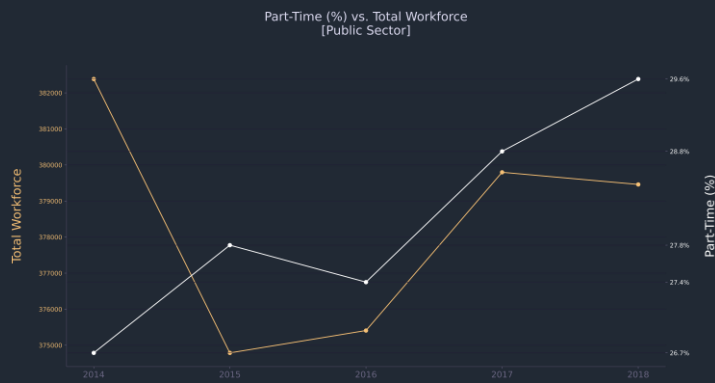


(Note the difference between male and female X axis. This is for visualisation purposes).

This figure shows part-time representation for both genders within each cluster.

We notice that female employees have higher part-time representation than that of male employees among all clusters. Both genders have their highest part-time (%) in “Education” at the top, followed by “Health” and “Finance, Services & Innovation”.

#### 4. Change over the last 4 years.



#### Male



**+6.3%**



Up by  
8,039  
from 2014

#### Sector



**+2.9%**



Up by  
10,272  
from 2014

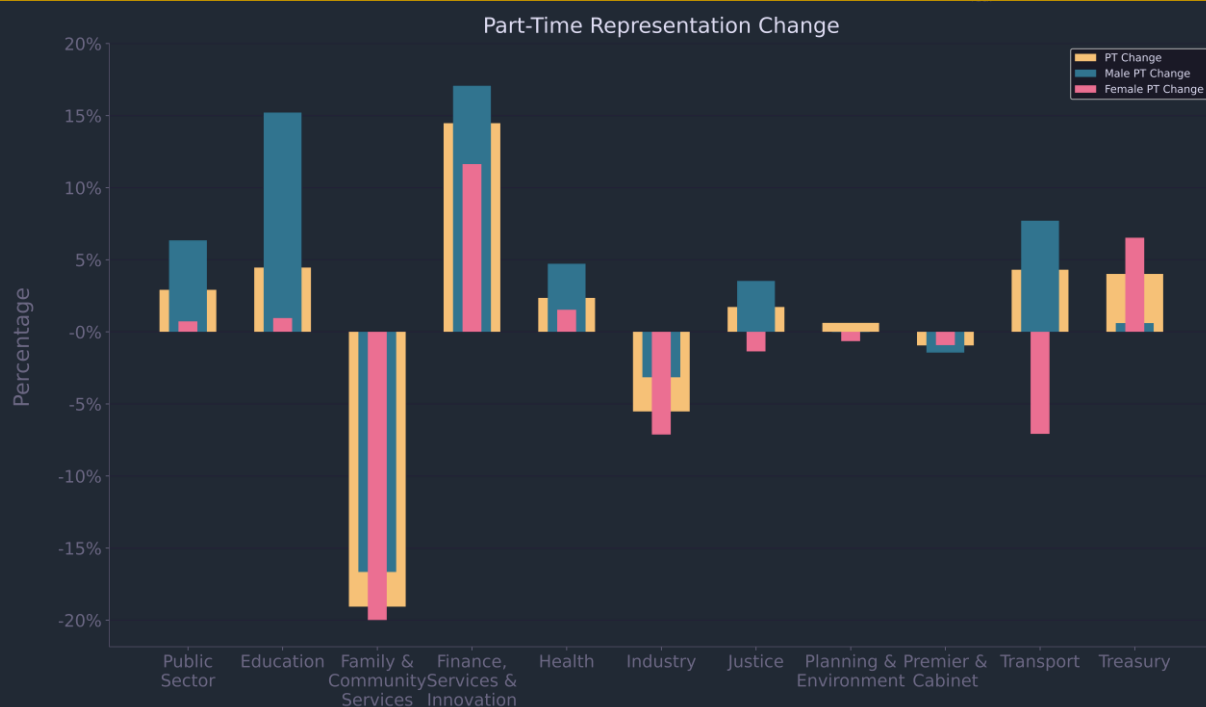
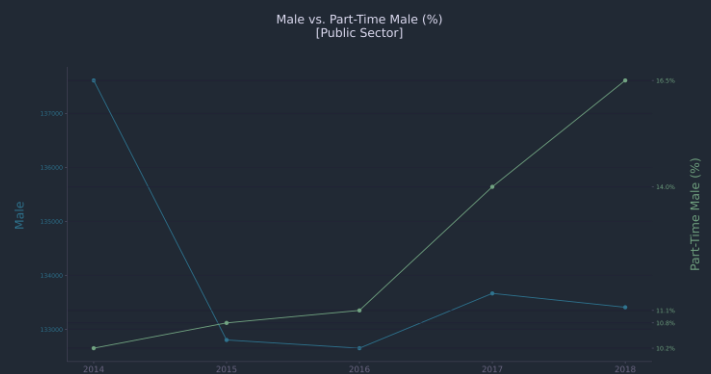
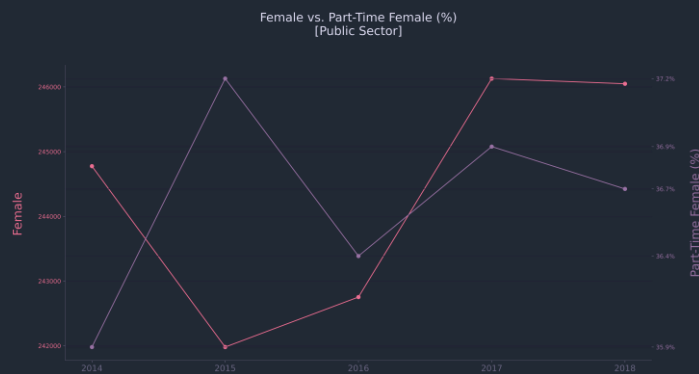
#### Female



**+0.7%**

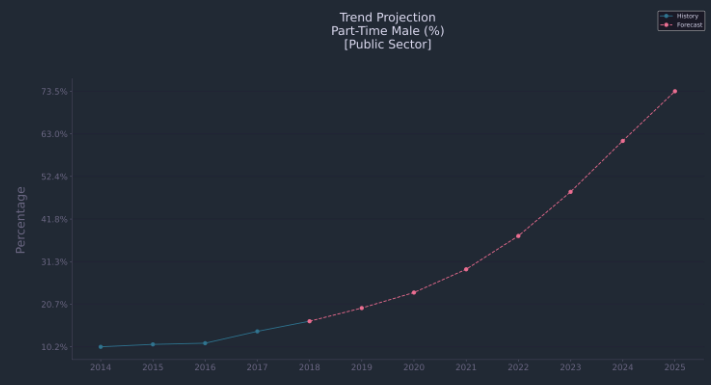
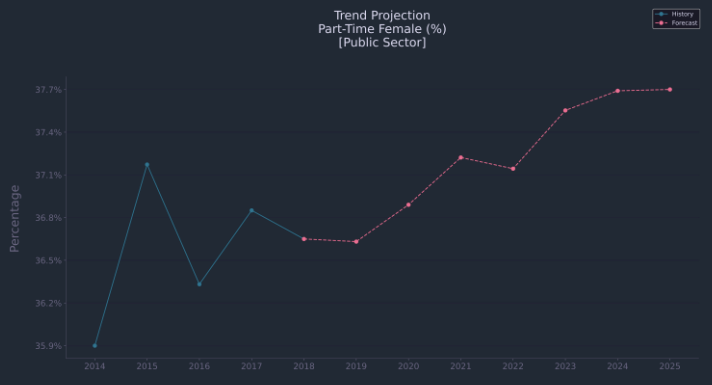
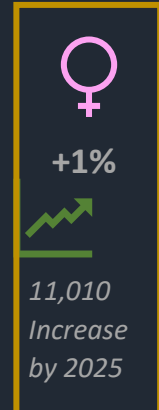
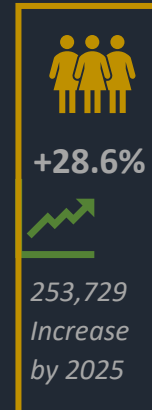
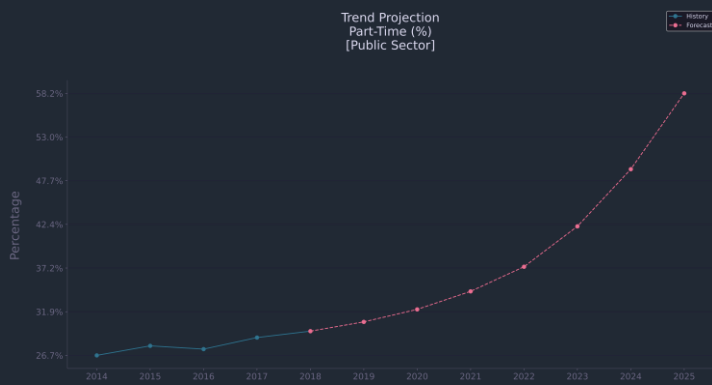


Up by  
2,233  
from 2014



This figure shows part-time representation change in each group since 2014. In general, male part-time has increased higher than female part-time except in "Treasury". "Finance Services & Innovation" has recorded the highest representation among all groups up to ~17% in contrast to "Family & Community Services" which has seen a significant drop down to ~20%. Another major trend takes place in "Education" with ~15% increase in male part-time followed by ~8% in "Transport" where we also notice an opposite trend down to ~7% for female part-time.

## 5. Part-Time Representation Forecast by 2025



Part-Time Change Forecast (2025)



This figure shows part-time representation forecast for each group by the year 2025. In general, male part-time is expected to rise significantly by 57% seeing the most demand in “Justice”, “Finance, Services & Innovation”, and “Health”, whereas female part-time is expected to increase by only 1%.

Forecasts obtained by training a separate ARIMA model for each of the atomic variables: PT/M, PT/F, FT/M, and FT/F, on each cluster, then aggregated to give the final predictions.