

Distribution of job listings across Australia Peimin Lin

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1 Introduction

Job types, job locations, rising demand for certain job categories, these are just some of the aspects of job hunting that many working people around the world are intrigued by. In this report, you will find an in depth analysis into the distribution of job listings across Australia. The report will analyze 3 main sections of job distribution within Australia, broken down by:

- 1) The change in demand by job category
- 2) The change in demand for jobs by city
- 3) The change in demand by job type

Our motivation to choose this as our research topic is prompted by experiencing first hand the cataclysmic effects of the coronavirus and the impact it has had on the job market globally. It has been an unfortunate scenario to witness unemployment rates skyrocket in major cities around the world. Thus, we want to visualize the changes in demand to jobs of all types and categories in Australia, particularly in the major cities.

2 Dataset and Methodology

- Source of data. (Dewi)
- Limitations (Hanh master)
- Methodology: How we deal with this dataset. (Peimin master)

3 Analysis:

3.0.1 Clean the data:

```
## -- Attaching packages ------ tidyverse 1.3.0 --
## v tibble 3.0.1
                 v dplyr
                        0.8.5
          1.0.3
                 v stringr 1.4.0
## v tidyr
## v readr
          1.3.1
                 v forcats 0.5.0
## v purrr
          0.3.4
## -- Conflicts ----- tidyverse_conflicts() --
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()
                masks stats::lag()
##
```

```
## Attaching package: 'lubridate'
   The following objects are masked from 'package:dplyr':
##
       intersect, setdiff, union
##
##
   The following objects are masked from 'package:base':
##
##
       date, intersect, setdiff, union
##
## Attaching package: 'glue'
## The following object is masked from 'package:dplyr':
##
##
       collapse
  1. isolate the month + year (Hanh - master branch)
  2. Missing values (Hanh - Hanh-Ngo branch)
       Analyze the change in demand by job category) (Peimin-Peimin branch)
##
## Attaching package: 'kableExtra'
## The following object is masked from 'package:dplyr':
##
##
       group_rows
## Selecting by number
```

There are 30 jobs category in this dataset and figure@ref(fig: category_num) list the number of jobs per category from April to November in 2018. The category of trades and services was the most popular jobs category in 2018 in Australia and information and communication technology was the second which almost the same as the first place. From labour market information portal known that those two categories has been in short supply in Australian labour market. For a better timely observation, figure@ref(fig: monthly_dirtribution) shows each jobs category requirement change in difference month which not only show the shortage job, but also show some category is becoming saturated. Meanwhile, figure@ref(fig: Month_numbercreates) a graph list top five jobs category in each month. There are 7 categories became the most frequently appeared in the list, for example accounting, administration and office support, healthcare and medical, hospitality and tourism, information and communication technology, Manufacturing, Transport and Logistics, Trade and Services. In October, there were more vacancy and labour requirement than other

Table 1: The number of jobs per category

CEO & General Management Advertising, Arts & Media Farming, Animals & Conservation Science & Technology 108 Sport & Recreation Insurance & Superannuation 133 Consulting & Strategy 139 Design & Architecture Real Estate & Property 352 Legal 385 Human Resources & Recruitment 448 Marketing & Communications 461 Banking & Financial Services 468 Mining, Resources & Energy 492 Community Services & Development 526 Call Centre & Customer Service 534 Engineering 665 Education & Training 723 Retail & Consumer Products Government & Defence 100 Construction 108 Construction 109 Sales 100 Sales	category	number
Advertising, Arts & Media Farming, Animals & Conservation Science & Technology 108 Sport & Recreation 108 Insurance & Superannuation 133 Consulting & Strategy 139 Design & Architecture 247 Real Estate & Property 352 Legal Human Resources & Recruitment 448 Marketing & Communications 461 Banking & Financial Services 468 Mining, Resources & Energy 492 Community Services & Development 526 Call Centre & Customer Service 534 Engineering 665 Education & Training 723 Retail & Consumer Products 766 Government & Defence 810 Construction 894 Accounting Hospitality & Tourism 1141 Administration & Office Support Manufacturing, Transport & Logistics 1523 Healthcare & Medical 1535 Information & Communication Technology 1911	Self Employment	16
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Science & Technology Sport & Recreation Insurance & Superannuation Consulting & Strategy Design & Architecture Real Estate & Property Legal Human Resources & Recruitment Marketing & Communications Banking & Financial Services Mining, Resources & Energy Community Services & Development Call Centre & Customer Service Engineering Education & Training Retail & Consumer Products Government & Defence Construction Sales 961 Accounting Hospitality & Tourism Administration & Office Support Manufacturing, Transport & Logistics Healthcare & Medical Information & Communication Technology 1911	Advertising, Arts & Media	104
Sport & Recreation108Insurance & Superannuation133Consulting & Strategy139Design & Architecture247Real Estate & Property352Legal385Human Resources & Recruitment448Marketing & Communications461Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Farming, Animals & Conservation	108
Insurance & Superannuation Consulting & Strategy Design & Architecture Real Estate & Property Legal Human Resources & Recruitment Marketing & Communications Banking & Financial Services Mining, Resources & Energy Community Services & Development Call Centre & Customer Service Engineering Education & Training Retail & Consumer Products Government & Defence Construction Sales 961 Accounting Hospitality & Tourism Administration & Office Support Manufacturing, Transport & Logistics Healthcare & Medical Information & Communication Technology 133 185 1962 1913 1952 1953 1953 1953 1954 1955 1956 1957 1958 1957 1958	Science & Technology	108
Consulting & Strategy138Design & Architecture247Real Estate & Property352Legal385Human Resources & Recruitment448Marketing & Communications461Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Sport & Recreation	108
Design & Architecture 247 Real Estate & Property 352 Legal 385 Human Resources & Recruitment 448 Marketing & Communications 461 Banking & Financial Services 468 Mining, Resources & Energy 492 Community Services & Development 526 Call Centre & Customer Service 534 Engineering 665 Education & Training 723 Retail & Consumer Products 766 Government & Defence 810 Construction 894 Sales 961 Accounting 1084 Hospitality & Tourism 1141 Administration & Office Support 1250 Manufacturing, Transport & Logistics 1523 Healthcare & Medical 1535 Information & Communication Technology 1911	Insurance & Superannuation	133
Real Estate & Property352Legal385Human Resources & Recruitment448Marketing & Communications461Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Consulting & Strategy	139
Legal385Human Resources & Recruitment448Marketing & Communications461Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Design & Architecture	247
Human Resources & Recruitment Marketing & Communications Banking & Financial Services Mining, Resources & Energy Community Services & Development Call Centre & Customer Service Engineering Education & Training Retail & Consumer Products Government & Defence Construction Sales 961 Accounting Hospitality & Tourism Administration & Office Support Manufacturing, Transport & Logistics Healthcare & Medical Information & Communication Technology 1911	Real Estate & Property	352
Marketing & Communications461Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Information & Communication Technology1911	Legal	385
Banking & Financial Services468Mining, Resources & Energy492Community Services & Development526Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Human Resources & Recruitment	448
Mining, Resources & Energy Community Services & Development Call Centre & Customer Service Engineering Education & Training Retail & Consumer Products Government & Defence Construction Sales Accounting Hospitality & Tourism Administration & Office Support Manufacturing, Transport & Logistics Healthcare & Medical Information & Communication Technology 1266 1526 1627 1728 1739 1740 1750	Marketing & Communications	461
Community Services & Development 526 Call Centre & Customer Service 534 Engineering 665 Education & Training 723 Retail & Consumer Products 766 Government & Defence 810 Construction 894 Sales 961 Accounting 1084 Hospitality & Tourism 1141 Administration & Office Support 1250 Manufacturing, Transport & Logistics 1523 Healthcare & Medical 1535 Information & Communication Technology 1911	Banking & Financial Services	468
Call Centre & Customer Service534Engineering665Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911		492
Engineering Education & Training Retail & Consumer Products Government & Defence Construction Sales 961 Accounting Hospitality & Tourism Administration & Office Support Manufacturing, Transport & Logistics Healthcare & Medical Information & Communication Technology 1911	Community Services & Development	526
Education & Training723Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Call Centre & Customer Service	534
Retail & Consumer Products766Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911		665
Government & Defence810Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911		723
Construction894Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911		766
Sales961Accounting1084Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Government & Defence	810
Accounting 1084 Hospitality & Tourism 1141 Administration & Office Support 1250 Manufacturing, Transport & Logistics 1523 Healthcare & Medical 1535 Information & Communication Technology 1911	Construction	894
Hospitality & Tourism1141Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Sales	961
Administration & Office Support1250Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Accounting	1084
Manufacturing, Transport & Logistics1523Healthcare & Medical1535Information & Communication Technology1911	Hospitality & Tourism	1141
Healthcare & Medical 1535 Information & Communication Technology 1911	Administration & Office Support	1250
Information & Communication Technology 1911		1523
		1535
	Information & Communication Technology	1911
		2056

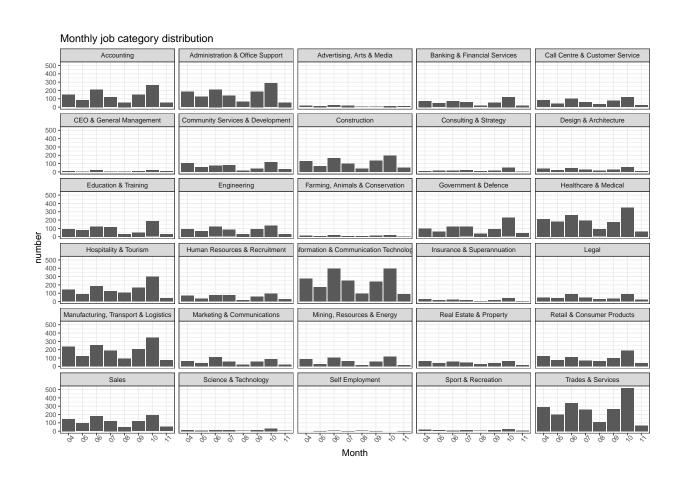


Figure 1: Monthly job category distribution

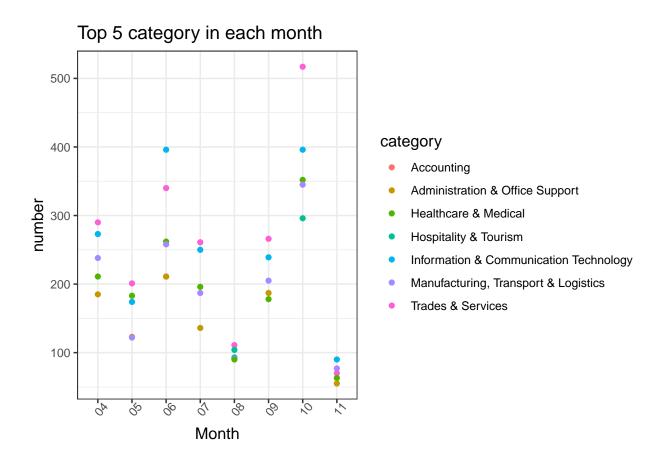


Figure 2: Top 5 category in each month

month. Forbes shown a statistics report that most industries would figure out what they need in September because holiday was coming and finish job before year-end. Thus, October became the most busiest month for recruiting.

3.0.3 Analyze the change in demand by city + life quality

- 1. Change in demand (Hanh)
- 2. How does it reflect life quality? (Dewi)

3.0.4 Analyze the change in demand by job type (Justin's branch)

4 Conclusion: (Justin - master branch)