Future Social Services Institute

Visualising the Victorian Care Sector

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1 Introduction

The Future Social Services Institute (hereon *FSSI*) has been established cooperatively between the Victorian state government, the Victorian Council of Social Service (*VCOSS*), and the Royal Melbourne Institute of Technology (*RMIT*). The objectives of FSSI are wide-reaching, including (but not limited to) designing educational programs, assisting in workplace training, researching reforms for the social services sector, and supporting transformation in not-for-profit organisations. (Glanz, 2016)

There are numerous industries involved in social services, and these industries can differ between countries and cultures. As this project focuses on the social services in Victoria - and more broadly Australia - the Australian federal government website for the Department of Social Services includes the following sectors:

- Communities and Vulnerable People
- Disability and Carers
- Families and Children
- Housing Support
- Mental Health
- Seniors
- Women's Safety
- Working Age
- Welfare Reform

(Department of Social Services, 2019)

In the Victorian government specifically, social services are bundled together with health, but include such services as:

- Ageing
- Alcohol and drugs
- Children and families
- Disability
- Housing and homelessness
- Mental health

(Department of Health and Social Services, 2019)

More broadly, the Australian Association of Social Workers supports the definition of social work as laid out by the International Federation of Social Workers that:

> *Social work is a practice-based profession and an academic discipline that promotes social change and development, social cohesion, and the empowerment and liberation of people. Principles of social justice, human rights, collective responsibility and respect for diversities are central to social work. Underpinned by theories of social work, social sciences, humanities and indigenous knowledge, social work engages people and structures to address life challenges and enhance wellbeing.*
> - International Federation of Social Workers, July 2014

Whilst definitions for which industries comprise social services, the reasons for establishing FSSI and their data needs are much clearer.

1.1 Background

1.1.1 An Ageing Population

According to the Australian Institute of Health and Welfare, the number of Australians aged 65 and over has been increasing steadily since 1927. In 2017, the total number of Australians over the age of 65 made up 15% of Australia's total population, with this proportion only projected to grow over the coming years. (Australian Institute of Health and Welfare, 2018)

Considering Australia's aged population is predicted to increase, it's reasonable to assume that the number of persons in aged care will increase as well.

1.1.2 Royal Commission into Aged Care Quality and Safety

A myriad of scandals were reported in Australian news services regarding the care of residents in aged care facilities between 2015 and 2018, particularly in South Australia. In response to an ABC News Four Corners investigation in 2018, Prime Minister Scott Morrison announced a Royal Commission into Aged Care Quality and Safety. (Hutchens, 2018)

The terms of reference can be viewed on the Royal Commission's government website, and cover 6 main objectives for investigation:

- whether aged care is being provided adequately
- specifically, how to provide the best care to younger persons with disability in aged care and persons with dementia
- what challenges the aged care sector will face with changing demographics and in rural & regional areas
- what can be done to improve aged care provision
- how to improve the autonomy and independence for patients in care
- sustainability and modernisation of aged care provision
- as well as any other matters related to the above terms

(Royal Commission into Aged Care Quality and Safety, 2018)

1.1.3 NDIS

First legislated in 2013, the National Disability Insurance Scheme (hereon *NDIS*) was established to achieve several objectives, but primarily to supply funding given to the provision of disability care (*National Disability Insurance Scheme Act, 2013*). Furthermore, the NDIS also encompasses regulation and reformation of disability care services in Australia. This funding amounts to AU$22 billion per year, which covers half a million Australians with a permanent and significant disability who are younger than 65 years old. This care isn't solely of a medical nature, and can also include services that address emotional health, fitness, education, opportunities to socialise, and more. (National Disability Insurance Scheme, 2020)

1.1.4 Disability Royal Commission

Similar to the Royal Commission into Aged Care Quality and Safety, a separate Royal Commission was established in 2019 to investigate Violence, Abuse, Neglect, and Exploitation of People with Disability (Prime Minister of Australia, 2019). One of the leading causes for this Royal Commission was a report that detailed allegations of abuse and corruption at a Victorian non-profit provider of care for persons with disability (McKenzie & Baker, 2014). However, this was just one example of such allegations, with the Royal Commission hearing that persons with disability in the care of hospitals were vulnerable to misdiagnoses, medication errors, and generally poor understanding of intellectual disability (Brown, 2020).

1.1.5 Charitable Organisations

The Australian Charities and Not-for-Profit Commission (*ACNC*) (2019) reported over 57,500 total charities operating or registered within Australia in the year 2017. Australian charities included in the ACNC report recorded 1.26 million employees in paid positions, and 3.3 million volunteer roles. Of those more than 57,500 charities, 10.9% we found to be operating within the social services sector. Furthermore, the ACNC reported that 20.5% of these charities were based in Victoria. Charities make a sizeable contribution to Australia's workforce and an equally important contribution to the delivery of social services.

1.2 Significance

The social services sector is clearly going to change considerably in the next few years, which the FSSI cite as one of the primary reasons for their being established. The FSSI is choosing to focus on 3 pillars of support to the social services sector; growth, quality, and adaption. Data collected from a number of sources - ranging from the Australian Bureau of Statistics to VCOSS to academic studies - will assist FSSI in assessing how the Victorian social services sector will grow over time, how the quality of it's services can be maintained and improved, and how best to both adapt to and inspire the changes that will occur in the future.

2 Brief Literature Review

2.1 Transformation in the Social Services Sector

Kyle et al (2018) identified a number of indicators and predictors for the transformation occurring in the social services sector, as well as the challenges facing the industry. Chiefly among these were that there are many women currently working in care roles that are unpaid and unemployed (United Nations, 2015). Kyle et al (2018) also found that young and less educated persons faced greater difficulties in finding employment in paid roles. Further to this, wage growth has not kept up with rising productivity or salary increases in other sectors, effectively resulting in pay decreases for the social services sector (Dew et al, 2016). This is coupled with an ageing workforce that is exiting the industry, showing real strain on staffing expected for the social services sector both presently and in the coming years (McKinsey Global Institute, 2017). Combined with the expected ageing population stated above, the social services sector needs to embark on rapid change in order to minimise the strain it will endure in the coming years.

2.2 Data Visualisations in the Social Care Sector

In an age of "*big data*" , it is essential that digital transformation be undertaken across social service sectors. Karannasios (2018) demonstrates that data and analytics can be considered as important as labour and capital for modern organisations. Community services sectors should value big data and analytics as currently maintained by many commercial organisations. Young and Wessnitzer (2016) state that a good exploratory data analysis begins with the ability to describe and plot a data set. Thus, visualisations are an effective method for reviewing the data and can provide valuable insights into large data sources.

Visualisation techniques are used to present big data in the form of tables, charts and graphics. It is believed by experts that representing data visually makes it possible to communicate data effectively and gives people the opportunity to analyse and examine various datasets which would otherwise be difficult to understand (Kennedy & Allen 2017). However, not all visualisation tools are useful in analysing large datasets or databases. For example, Tableau is a powerful popularly used visualisation tool but often struggles with complex and large datasets.

A good visualisation tool is able to explore data interactively with end users and also assure the interaction quality of users with data visualisation (Berinato 2016). Tool designers should consider whether the user is able to adjust properties with the tool's interface, explore relationships between attributes of their choice and look for links between different data (Polack 2019). For example, Reinvestment Fund's Policy Map is a web-based mapping application that allows users to generate maps at the USA neighbourhood or national level using datasets on demographics, housing, education etc.

3 Objectives

The objective for this project as defined by primary stakeholder FSSI is to develop an interactive data visualisation tool that explores trends and changes between ACNC datasets for different years. Stakeholders engagement determined the data visualisation tool would be used to answer several guiding questions as laid out in Appendix 1. Consultation sessions with FSSI further defined this objective to comprise two main components: a digital report containing suitable plots for exploring guiding questions, and an interactive web platform for building bespoke data visualisations.

4 Proposed Methodology

4.1 Digital Report

This project is centred on data that has already been collected and warehoused by key stakeholders. As such, steps will need to be taken to verify the data for suitablity, accuracy, and relevance. Once the appropriate data has been defined via discussion with stakeholders, a digital report summarising key findings from the latest ACNC dataset will be compiled. This report will comprise interactive data visualisations with industry analysis. This will be prepared as a .html file with R packages `ggplot2` and `plotly` used for visualisations as required. Please see figure 1 for an example of an interactive `plotly` chart.
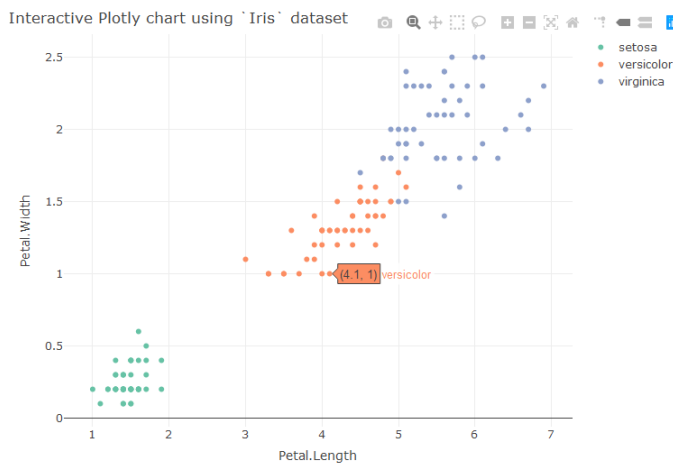

Figure 1: A `Plotly` interactive plot using the Iris dataset

4.2 Visualisation Platform

In addition to this, the ACNC data sets will be used to develop an interactive Shiny applet that allows users to choose from ACNC data tables and variables to build their own visualisations. Similar to the digital report, this solution will also frequently use R packages `ggplot2` and `plotly` for visualisation as well as `shiny` for the reactive applet itself.

4.3 Stakeholder Engagement Workshops

During project planning meetings, FSSI stakeholders suggested following a co-design process to engage key contributors from both FSSI and VCOSS throughout the development stages to ensure the project is fit for purpose at all stages of development. Whilst weekly meetings with FSSI are planned for the remainder of the project, workshops will also be arranged with VCOSS to offer industry knowledge and advice on tailoring the project to target audiences. The dates of these workshops are to be confirmed and will be driven by project progess.

5 Project Design

This project proposal is the first piece of documentation to be vetted to FSSI for review. Pending approval from FSSI, the project will comprise data preparation and cleaning, a digital report, an interactive visualisation platform, and ultimately a final project report.

5.1 Timeline

Task	Progress Status	Expected Completion
Project Proposal submitted to FSSI	Completed	25/04/2020
Data Preparation	To be commenced	30/04/2020
Digital Report	To be commenced	24/05/2020
Interactive Visualisation Platform	To be commenced	06/06/2020
Project finalisation and report	To be commenced	07/06/2020

5.2 Collaboration Plan

Regular consultation between the project developers and stakeholders will be required. Prior to the finalisation of this proposal, several discussions were had between project developers, FSSI, and VCOSS, and regular meetings will be carried out approximately weekly for the remainder of the project timeline.

Collaboration within the project development group will be more regular and less formal, requiring members to regularly communicate when designing and constructing the above solutions outlined in **section 4**.

6   References

Please note that while a few of the below hyperlinks bleed off the page, clicking the link will take you to the source of the reference

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7   Appendices

7.1   Appendix 1: Guiding Questions

- Are some types of organisations categorised as community services growing more quickly than others?
- Has there been a change in the size of organisations over time? Has the proportion of small to large sized organisations changed or remained constant? Is the change more apparent among some types of organisations?
- How many workers are employed in the community services industry? What is the breakdown of part-time/full-time/casual? Can we get this data by type of organisation? Are the proportions of casual and part-time employees growing faster in some types or sizes of organisations than others?
- Has the number of volunteers or - who they are employed by - changed over time?
- What proportion of services are providing NDIS services? Has this changed since 2017? Are large or small organisations more likely to provide NDIS services?
- Has there been a change in the source of income for community service organisations? Is this change more apparent by organisation size or type?
- Is the proportion of income being spent on employee expenses changing or remaining constant?
- What size or type of organisations are most likely to have a deficit budget?

7.2   Appendix 2: ACNC Datasets

The most recent ACNC dataset available is can be found at https://data.gov.au/dataset/ds-dga-a1f8626c-fefb-4c4d-86ea-deaa04fb1f6e/details?q=, which includes 2017 data at the time of producing this proposal. FSSI have stated that is anticipated that a 2018 data will be made available by the end of the project. If not, the 2017 dataset can be compared to 2016 and other previous years.

7.3   Appendix 3: Student Contribution Statement

Both student members of the project development team have and will continue to contribute to the project equally. Below is what each member contributed to the proposal.

Section	Contributing Students
1 Introduction, 1.1 Background, 1.2 Significance	Ben Cole
2 Brief Literature Review, 2.1 Transformation of the Social Services Sector	Ben Cole
2.2 Data Visualisations in the Social Care Sector	Xuejiao Zhou
3 Objectives	Xuejiao Zhou
4 Proposed Methodology, 4.1 Digital Report, 4.2 Visualisation Platform, 4.3 Stakeholder Engagement Workshops	Ben Cole
5 Project Design, 5.1 Timeline	Xuejiao Zhou
5.2 Collaboration Plan	Ben Cole
6 References	Xuejiao Zhou and Ben Cole
7 Appendices	Xuejiao Zhou and Ben Cole