



# City of Greater Bendigo Data Co-Op

A Place-based Data Collaboration focused on Community Resilience

# Acknowledgement of Country

We respectfully acknowledge the Wurundjeri People of the Kulin Nation who are the Traditional Owners of the land on which Swinburne's Australian campuses are located in Melbourne's east and outer-east and acknowledge that the City of Greater Bendigo is on Dja Dja Wurrung and Taungurung Country. We pay our respects to leaders and Elders past, present and emerging for they hold the memories, the traditions, the culture and the hopes of all their Peoples.

We express our gratitude in the sharing of this land, our sorrow for the personal, spiritual and cultural costs of that sharing and our hope that we may walk forward together in harmony and in the spirit of healing.

We also acknowledge and respect the Traditional Owners of lands across Australia, and recognise the continuing sovereignties of all Aboriginal and Torres Strait Islander Nations.

## Ethics Statement

This project was approved by Swinburne's Human Research Ethics Committee in line with the National Statement on Ethical Conduct in Human Research, reference number: 20204143-5271.

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## Contributions

We acknowledge the contribution of the Centre for New Energy Technologies (C4Net) to the City of Greater Bendigo Data CO-OP. In Phase 2 of this project, we will report on any associations between socioeconomic variables and energy consumption across the City of Greater Bendigo.

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# Thank You

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We also thank our colleague Tracy De Cotta for stepping up and working her magic on this final report.

It has been a genuine pleasure to work with you all.

## List of Abbreviations

- ABS Australian Bureau of Statistics
- LGA Local Government Area
- SA2 Statistical Area Level 2
- SSC State Suburbs



# Context

Around the world, there is considerable interest in the potential of data science for social good.

Policy institutes are exploring how already existing datasets can be brought together to form data collaboratives that address social challenges like food security and disaster response (e.g., the work of the Governance Lab at New York University [thegovlab.org]). Data can be used for situational awareness or to measure impacts of initiatives or interventions (Verhulst & Young, 2017). Beyond collating data sets and analysing them, some community organisations – such as larger non-profits are looking at how data can be used with artificial intelligence techniques – perhaps to prioritise challenges or to predict high-using consumers or at risk regions (Bernholz, 2019).

In our own work, we have tried to engage with the 'real-life' range of types of organisations working in communities, work with these as partners and explore what data science and working with data means for them.

For example, in previous projects we have shown how non-profit organisations can use even quite small datasets to better quantify and visualise their impacts, and to diagnose what sits at the heart of an organisation's operational challenges (e.g., Farmer et al, 2020; Albury et al, 2021).

Harnessing multiple datasets for collaborations to address place-based issues is an interesting and relatively unexplored challenge. The National Neighborhood Indicators Partnership in the USA supports collaborating organisations in cities, including universities, non-profits and businesses, to work together with data to address local social challenges. However, this concept is relatively unexplored in Australia.

Applying data to address social challenges is recognised as particularly challenging in rural or regional, non-major city, settings due to scarce data at meaningful spatial levels, such as suburb level in regional cities (Aisbett et al 2007, Payton-Scally, Burnstein & Gerken 2020).

Simultaneously, co-located organisations and groups of organisations are encouraged to use place-based collaborative approaches to address what could be locally unique and complex local social, economic, cultural and geographical contexts in 'place-based planning' (Government of Victoria, 2020).

Data collaboratives are a type of initiative harnessing the idea of pooling datasets or enriching information about social phenomena in relation to place, by working with multiple datasets (Susha, Grönlund, & Van Tulder, 2019). They provide groups of place-based organisations with opportunities to better understand local challenges, consider how organisations could work together to move social indicators, and develop local dashboards of indicators that they could influence and measure longitudinally. This happens while also developing the relationships and trust between organisations that is required for collective working to address complex issues.

In the case study reported here, a group of community organisations in the City of Greater Bendigo, a regional city in Victoria, Australia approached our research team to explore the potential of a data collaborative or 'data co-op'. Their ultimate vision was to be able to use their own and already open public data to benefit their community.

The work here reports the participants' journey from aspirations, through some very concrete work with their data, to the endpoint of generating a City of Greater Bendigo Data Dashboard.

While the project produced a professional interactive data dashboard as an output, ultimately participants were perhaps even more excited by the networks and learning they gained from working together to explore and understand each other's data. This report covers Phase 1 of the project. Phase 2 of the Project, with funding from the Centre for New Energy Technologies (C4Net) has commenced.



# Project Goals: City of Greater Bendigo Data CO-OP

The project aimed to assess the feasibility and potential benefits of organisations collaborating with data around the topic of community resilience for the City of Greater Bendigo.

## Project Description

Seven community-based organisations partnered with a Swinburne University of Technology (Swinburne University) multi-disciplinary research team to work on the project. The community organisations deliver supports and services and all are based in the City of Greater Bendigo, a regional local government area that is 153kms (nearly two hours' drive) from Melbourne. The City of Greater Bendigo covers an area of 3,000 square kilometres and in 2021, it had a population of almost 124,000 people.

The project involved managers and staff of the seven organisations. They worked together to identify, obtain, analyse and map open public datasets and organisations' own datasets, generally analysing by suburb. City of Greater Bendigo suburbs have a median population of 442 people, and range in population size from five to 10,394 people.



Open datasets and organisations' datasets were generally visualised as geospatial maps.

These mapped visualisations were then workshopped with participant organisation staff to discuss the 'meaning' of the data and different ways to visualise and present data for greatest usefulness. These are termed *co-design workshops* in the rest of this report. Six workshops were undertaken in total and in between workshops, the researchers worked with the organisations' staff to source new and additional datasets and to refine visualisations. Ultimately this process informed the development of a prototype Community Resilience Indicator Dashboard.

## *How the Project Started*

The project had its genesis in a question posed by the service manager of a community health organisation. He asked: Could data that was generated by, and then shared between, local organisations help community organisations to assess the impact of their work on local wellbeing and resilience? The manager said he understood making an impact was complex, probably involving inputs from various services and supports, and would take time to happen.

He wanted to try to understand the contributions of the different organisations and how these could come together to effect population-level change.

This community health service manager helped to mobilise a group of local organisations to form a data collaborative working with Swinburne University researchers.

We first held a workshop with 10 community organisations to introduce and explain the idea of data collaboratives and present interesting international examples of good practice. Within two months, seven organisations had agreed to each contribute a sum of money to fund a collaborative project.

Most of this resource was spent on funding early career data scientists and computing resources as the University researchers were able to contribute their time as part of an Australian Research Council funded Linkage Equipment & Infrastructure grant (LE200100074).

The community-based organisations worked collaboratively from the start to pool the funds themselves and they also nominated a lead organisation to contract with Swinburne University. This arrangement meant that the partners committed to working with each other from the start.

As well as establishing a contract for the overall project between the university and the lead organisation, individual data sharing agreements were established between the university and the community organisations where appropriate.

Researchers provided a standard data-sharing template. Establishing data agreements with the organisations took up to five months. As each organisation signed up, researchers could start working with them and their datasets.

# Project Partners

These organisations were partners in Phase 1 of the project. Not all of the partners were able to provide data, but they all workshopped and participated in discussions about the analysed and visualised datasets.

**Bendigo and Adelaide Bank** is Australia's fifth biggest bank. As well as 500 outlets across Australia, it has 240 community banks where revenue is shared with local communities through a franchise model and 80% of profit is distributed back into community programs and projects.

**Bendigo Community Health Services** is a community-based health and wellbeing organisation with around 200 staff, providing 50 community and preventive health services across the City of Greater Bendigo including medical and allied health services as well as preventive health services.

**City of Greater Bendigo Council** provides services including wellbeing, planning and building control, business and economic development, waste and environmental management, and human and community services for the region.

**Haven Home, Safe** is a homelessness services agency providing support services and social housing including emergency crisis housing, transitional housing and affordable rental housing.

**Heathcote Health** is a public hospital and community health service located in the rural suburb of Heathcote (population 2,800) within the City of Greater Bendigo region and providing acute and emergency health services, residential care for older people, home care and district nursing services.

**Murray Primary Health Network (Murray PHN)** is one of 31 PHNs (Primary Health Networks) in Australia working to increase the efficiency and effectiveness of primary health care and service systems. This includes working closely with primary health providers, such as general practitioners and pharmacies, to improve health outcomes through sustainable models of care that address the health needs of communities. The Murray PHN region covers almost 100,000 sq km of regional Victoria, including the City of Greater Bendigo area.

**Women's Health Loddon Mallee** focuses on sexual and reproductive health and prevention of violence against women and promoting gender equity. It provides services to 164,673 women living across a large rural region that includes the City of Greater Bendigo area.



# Methodology and Methods

While methodologies about the process of data projects and data collaboratives, emphasise the need to start with a specific problem or question (Verhulst et al, 2022), our partners actually found it difficult to agree on a specific shared problem – potentially because they all view the community and its challenges through the lens of the services they provide.

However, all partners were interested in community wellbeing and community resilience. After discussions, it was agreed that each organisation potentially held datasets that could inform an understanding of community wellbeing and/or resilience. Consequently, we suggested developing ‘layers’ of data mapped by suburb (henceforth ‘mapped data’), broadly relating to community resilience factors, with these topics identified as topic layers: social connection/isolation; caring (as in caring roles); financial wellbeing; housing and homelessness; and use of community health services. The nature of these mapped data layers evolved over the course of the project as we collected and analysed different datasets.

The following criteria for selecting datasets to include (and geospatially map) were established:

- data should align broadly with the ‘layers’ of community resilience identified;
- data should be analysable by suburb;
- either data subjects should be unidentifiable or the data can be aggregated;
- details and caveats around the dataset should be transparent (e.g., the denominator of the dataset and how data was collected must be known).

However, flexibility was required because some datasets were not analysable by suburb, so we had to explore other ways to analyse and present some data.

Once the focus of the project was decided we asked each organisation to identify datasets they held and could share. Managers each ‘went back’ to their organisation to identify datasets with their staff teams, and to examine datasets’ coverage and quality. Organisation staff sometimes requested help from the researchers to export their data or to discuss which attributes would be useful.

Some organisations were able to navigate this stage more quickly than others, depending on data governance practices, availability of dedicated data staff and operational complications around the datasets. Some organisations ultimately did not share any datasets.

## **Data Analysis**

A decision was made to analyse the data from each organisation spatially by suburb, where possible. This was mainly driven by the participants who found this a meaningful way to quickly get a picture of the data as it applied to recognised places in the region. Analysing by suburb meant that datasets that were provided as individual records were aggregated to the suburb level and then combined into a single table using the R programming language. The data was exported, joined to a shapefile of suburbs and displayed as a colour-coded map using PowerBI.

It is interesting to note that grouping organisational data by suburb was not a standard metric for all partner organisations. Some collect data at postcode or local government area (LGA) level, however this was insufficiently granular for the kinds of analyses sought. While there were benefits from a data perspective to using Statistical Areas 2 (SA2s) – an Australian Bureau of Statistics (ABS) structure made up of one or more suburbs and designed to have more uniform population – it was felt that SA2s do not align with recognisable spatial units as people understand them. So, for example, few of us are likely to know which SA2 we live in, but we can generally readily identify our suburb.

In addition to datasets from the partner organisations, we analysed and visualised data generated by the ABS using State Suburbs (SSCs) as our unit of spatial analysis.

SSCs from the ABS are actually approximations to gazetted localities. SSCs are made of mesh blocks, which are very small census reporting units, so any differences between SSCs and localities are very small. Using SSCs allowed us to complement the datasets from the partners with data from the ABS census (General Community Profiles and TableBuilder). ABS data is useful for this project because it is complete and exists for all suburbs. It includes most or all of the population, unlike the datasets provided by the project partners which might be limited to their respective populations served or survey respondents.

To facilitate comparisons between datasets, data were expressed where possible as proportions of people or households. Different datasets had different samples; so, some were reported as a proportion of the entire population while others were reported as proportions e.g., of respondents to the council survey, by suburb.

## **Summary of datasets used**

We used open public datasets as well as 're-used' datasets from partner organisations as shown in Table 1.

**Table 1 Summary of datasets in the City of Greater Bendigo Data Co-op project Phase 1**

<b>Broad topic</b>	<b>Source</b>	<b>Specific topic of data (examples only)</b>	<b>Open public data or re-used organisation data</b>
<b>Social Connection</b>	Australian Bureau of Statistics (ABS) 2016 Census	Cohorts at risk of social isolation e.g., lone households	Open
	Australian Bureau of Statistics (ABS) 2016 Census	Households with no internet access from the dwelling	Open
<b>Caring</b>	Australian Bureau of Statistics (ABS) 2016 Census	People providing unpaid care	Open
	Australian Bureau of Statistics (ABS) 2018 Data by Region	People with disability	Open
<b>Financial wellbeing</b>	Bank	Relative overall levels of government benefits payments compared by suburb	Re-used
	City of Greater Bendigo 2019 Active Living Census	Perceived financial wellbeing Food insecurity	Re-used
<b>Housing</b>	Housing and Homelessness services provider	Social housing locations, type & uptake Services to people at risk of homelessness	Re-used
<b>Health and Wellbeing</b>	City of Greater Bendigo 2019 Active Living Census	Life satisfaction Perceived health	Re-used
	Community Health Services	Demand for types of services	Re-used

## Co-design Workshops

Six co-design workshops with representatives from each partner organisation were held at stages during the project. Early workshops established organisations' missions, topics participants wanted to pursue and potentially relevant datasets.

Discussions with organisations were ongoing between each workshop, particularly around the identification and preparation of the various organisational datasets. Datasets were analysed by the research team and explored by researchers and participant organisation staff through subsequent workshops.

The co-design workshops revealed insights emerging from the analysis for partner organisations, enabled discussion of caveats around the datasets being used and considered useful ways to present the data.

Complete unidentifiability of the data was maintained at all times. There was also discussion about emergent considerations for partners around re-using data. An issue we had not considered before the workshops was the extent to which the workshop process helped to build new relationships between the partner organisations, as well as mutual knowledge and trust, even though most workshops were held online due to the timing during the COVID-19 lockdowns.



# Outputs & Visualisations

As noted, where location data was available, datasets were analysed spatially by suburb. The 3D map format shown in Figures 1-4 was a format favoured by most workshop participants as opposed to flat maps.

It was possible to show one, two or four maps on the screen so simultaneous comparisons could be made between different indicators or datasets.

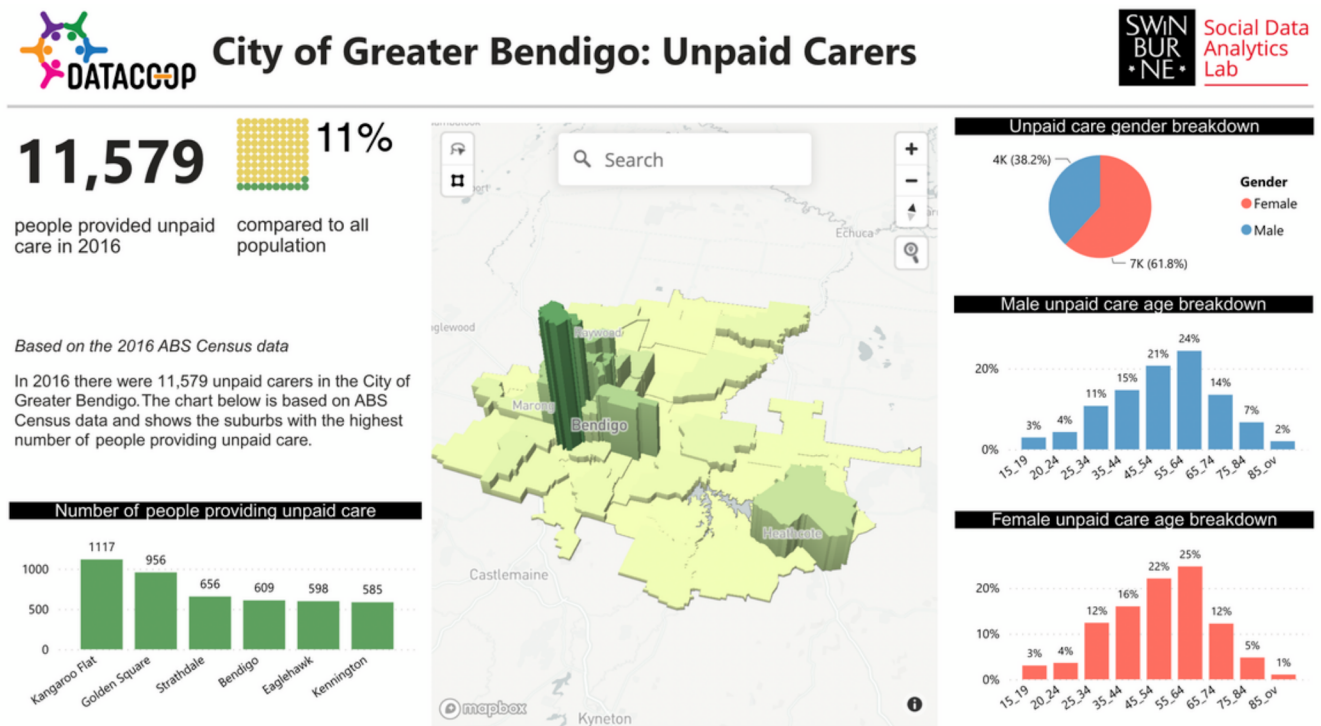


Figure 1 – Visualisations of unpaid carers throughout the City of Bendigo

Ultimately a City of Greater Bendigo Data Co-op data dashboard (<https://datacoop.com.au/bendigo/>) was generated with an opening interface containing five different data layers relating to resilience: Caring, Health and Wellbeing, Social Connections, Financial Wellbeing and Housing. Within these layers a total of 16 different data dashboards were generated – in line with available datasets. Six of the 16 data dashboards are informed by public open datasets, with that data freely available to all.

# Outputs & Visualisations

The remaining ten data dashboards are password protected with access limited to the partner organisations because these are generated from partner organisation data. Dashboard users can click through to different dataset layers organised by resilience topics and can see datasets visualised as 3D maps with other graphical representations also available on-screen for detailed information. So, for example, social connection by suburb also shows a bar graph by age group and suburbs can be clicked on via the map, for more granular information about age group and other demographics, by suburb.

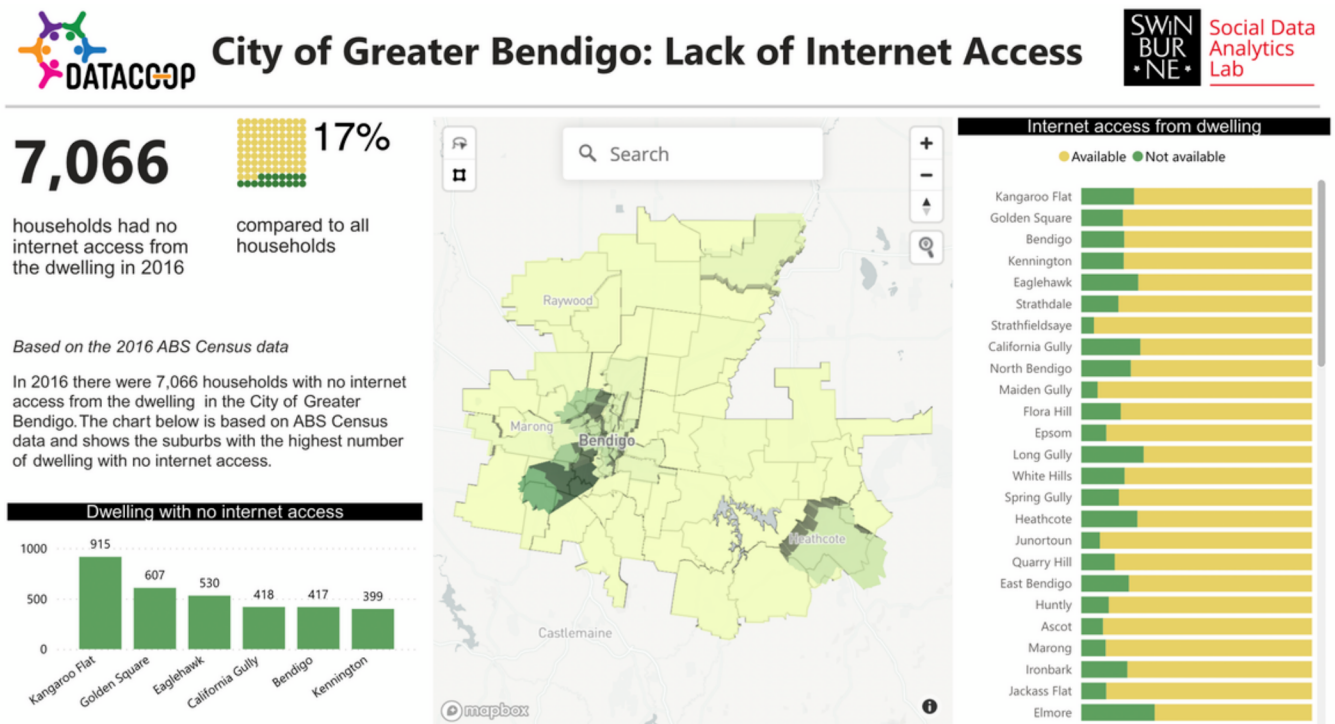



Figure 2 – Visualisation of those with a lack of internet access in the City of Bendigo

# Outputs & Visualisations



## City of Greater Bendigo: Disability



**24K+**  **21%**  
 people with disability in 2018 compared to all population

Based on the 2018 ABS Data by Region, 2014-2019

In 2016 more than 24,000 people reported disability in the City of Greater Bendigo. The chart below is based on ABS data and shows the areas with the highest percentage of people with disability.

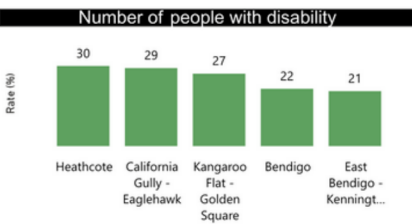
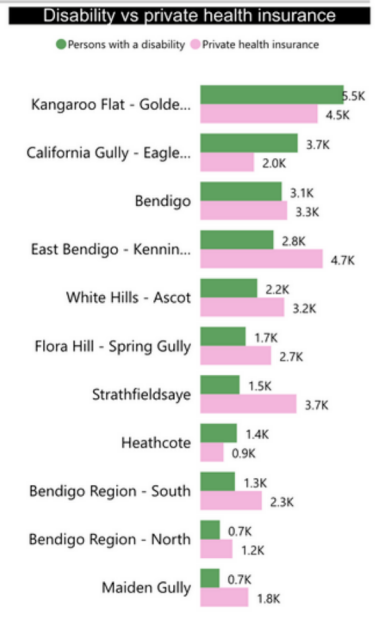
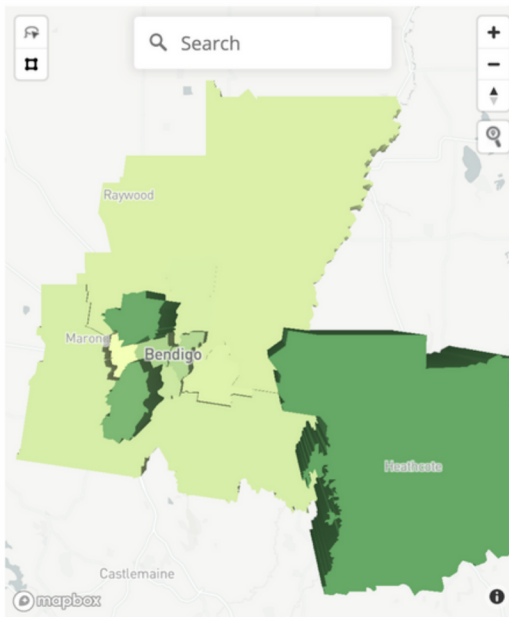



Figure 3 - Visualisation of those with a reported disability in the City of Bendigo



## City of Greater Bendigo: Assistance Needed



**6,319**  **6%**  
 people needed assistance with daily activity in 2016 compared to all population

Based on the 2016 ABS Census data

In 2016 more than 6,000 people reported needing assistance with core activities; self-care, mobility and communication. The chart below is based on ABS data and shows the suburbs with the highest number of people needing assistance.

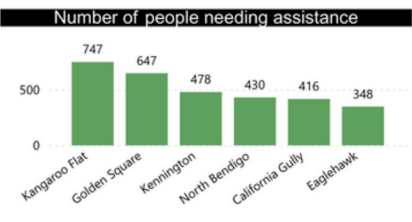
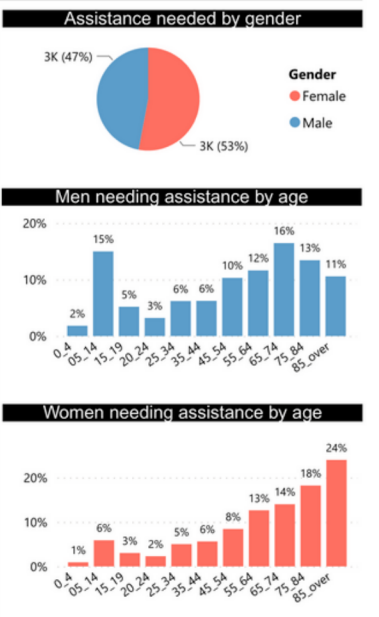
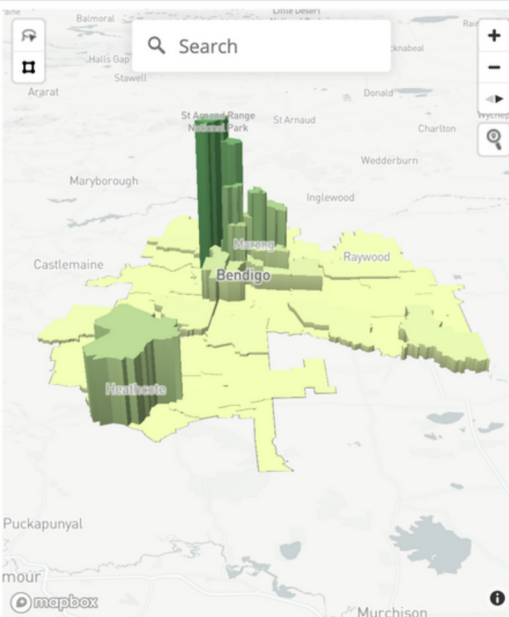


Figure 4 - Visualisation of those that need assistance in the City of Bendigo

# Building Data Capability Through Collaboration: Feedback from partner organisations

To gain understanding of the journey of working with data for our partners, we interviewed representatives from each community organisation at the start and towards the end of the project. Below we summarise the issues that emerged at each stage.

## At the Start

Participants from the seven community organisations were interviewed before the first workshop. Three main themes emerged – general issues about data, connecting with data, and building data capability.

**General issues about data:** Themes mentioned related to technical issues with data, data management and governance. Specific issues included concerns about the currency (or rather obsolescence) of existing external datasets that partners had ready access to, and the impact of out-of-date data on the ability of community-based organisations to advocate on behalf of their clients and the community at large.

“*They [datasets from the Australian Bureau of Statistics] are about a year or two behind what’s really going on. So that makes it really difficult to advocate with the government for funding.*

– Ellis, Community Housing Organisation

Similarly, a lack of granularity in external data sets was also identified as a barrier to understanding the needs of the community

“*The LGA [local government area] data that is available to us is almost completely useless to us. It tells us virtually nothing about our community.*

– Jac, Community Health Organisation

In addition to the challenge of accessing community-relevant data sets, partners spoke about feeling overwhelmed by the task of using their own datasets.

“*We have just so much data that’s in our systems, but actually being able to pull it out and make sense of it and gain insight and intelligence from it is a continuous challenge.*

– Ellis, Community Housing Organisation

### **Creating knowledge and community**

**connection:** Regarding the benefits of collaboration, partners looked beyond immediate challenges with using data and spoke about opportunities to explore and understand the changing data environment. They were also interested in data sharing as a way to build connection between the different community organisations.

“ A lot of transformational initiatives at the moment are driving material change in how we manage data as an organization. Open banking and consumer data rights have opened up a whole lot of new capabilities for us around how we expose and share data and work into partnerships with data to drive mutual benefit.

– Parker, Community Bank

“ For the health services and other providers as part of the co-op, it might just actually make a difference and be a way in which we can all collectively advocate for a more interconnected service system. We know at the moment there's a lot of wasted time and effort and money for the service providers, but also the clients who just get shunted from one place another.

– Ellis, Community Housing Organisation

**Building data capability:** Generating greater data capability for individuals and community organisations in order to create better outcomes for clients and the community, was a goal highlighted by most of the participants.

“ It's actually about growing some capacity in our region to use data together

– Morgan, Community Health Organisation

## **At the End**

We carried out another set of interviews after workshop 5 – towards the end of the project. At this point there was a perceptible sense of working with partners who were more confident about their ability to use data within their own organisations. This came across in their ease of discussion with each other about data, and their reflective comments.

“ I've found it really riveting. The first time you showed us those 3D maps. The mapping was great. I can't wait to see more. It's been a really interesting journey. We definitely know a lot more about our data platforms than we did when we started and we'll be using the data for ourselves, beyond this project, definitely.

– Taylor, Community Health Organisation

While partners noted insights they had gained about their community from data analyses, their main reflections were actually about developments in their, and thus their organisations', data capability. They also commented on the relationships built through the process of exploring data with other community organisations.

### **Insights about the community:**

Participants noted their perceptions of the relative strengths and challenges at the suburb-level were not always borne out in the data. One suburb that had not been on their radar previously, was suggested, in data, to have multiple resilience challenges, while another suburb perceived as wealthy showed as low on social connection and low on financial wellbeing. Participants noted this made them want to find out more about what was happening in these suburbs – i.e., to get some ground-truthing of the data analyses.

**Confident and pro-active regarding data:** There was considerable discussion around increased data capability. One participant said the project had given her appreciation of the governance matters to be addressed to use and share data, while another said she had started working with her organisations' data specialist and was already working more with data herself.

Solutions that participants developed to deal with challenges around sharing potentially sensitive data, were noted; for example, making indices to show levels of indicators in different suburbs as relative, emerged as an acceptable solution for two of the participating organisations. The power of sophisticated visual displays was highlighted.

“ I think the other surprise has been how cool it looks. You know when it's all there, when it's overlaid and you can look at in 3D and certain areas of the LGA [local government area] start to pop up. Well, it's just really inspiring. A lot of people are often quite visually driven so it's quite powerful in that sense

– Spencer, Community Health Organisation

**Relationship-building:** All participants agreed the process had helped to build relationships and better understanding of each organisation's role and their potential to work together to address community challenges as a collective.

“ I guess the other positive thing I take away is, you know, it's really great to talk to other people about their data. And even though we might not have had too many meetings together, the opportunity to pick each other's brains, to think about what other data could be used, what could you add to it – has been great ... I think that the power in the sharing of the data is tremendous. Data sharing, if done properly is just so powerful

– Spencer, Community Health Organisation

“ I guess I've become more aware of the value of the process, perhaps even more so than the value of the outcome. The willingness of different partners to share their data has been really surprising. The relationships and the opportunity to identify shared agendas is potentially a big side of the data CO-OP.

– Spencer, Community Health Organisation

# Implications for practice, policy, research and community

## Practice

This work shows that it is possible for community partners to come together and learn together with data. However, it requires certain attitudes from the start and continuing over some period of time – these are curiosity, patience, willingness to – in respects – ‘open up to’ other organisations and colleagues working in the community.

Overall, this work probably requires organisations where the culture sits at ‘Innovators’ – that is, at the top of the ‘S’ shaped innovation curve and where there are strong, trusting relationships between staff at different levels. Regarding the latter, this is because managers need to be able to engage freely with data specialists or those ‘responsible for data’ in their organisations.

During the project, organisation participants were interested in what data was available, visualisations of data and in having discussions about what data was showing in respect of different suburbs or suburbs relative to each other. They also enjoyed the collaboration and finding out more about each other’s organisations.

At the same time, it is probably safe to say that managers learned a lot about the limitations of obtaining data, sharing data and what data can be used for. At the end, there were still questions about what this kind of work would be used for, other than as stimulating discussions about the community.

To use a place-based data collaborative, beyond exploring data for curiosity about the locale, would probably require a set of steps. These would be: identifying a community goal to be addressed; understanding how each organisation could contribute to change in respect of the goal; identifying how that would be ‘measured’ (in terms of datasets, changes that would be expected in data and over what timescales); and then planning and undertaking activities that would change the dial on indicators. In other words, identifying a theory of change and a program logic to support change.

Challenges would be agreeing on a topic, getting funding and having an organisational and governance structure to underpin such a project (or ongoing collaboration). You could imagine this kind of work could happen if the community had the opportunity to drive a Social Impact Bond e.g., on community mental health, education outcomes, homelessness amelioration, etc.

### **A challenge to philanthropy or governments that seek to activate community organisations to work together with data is:**

*set up and fund a collaboration of organisations to address a social or community health challenge, and request that it is underpinned by a theory of change and a data dashboard.*

## Policy

Does government want non-profits to explore data in relation to local challenges and understand how data already collected could be used to make change? Sometimes it seems the aspects needed to enable this are not in place.

Non-profits are set up to compete not collaborate, in many situations, and have a 'nose to the grindstone' mentality. Time and resource poor, they focus on getting on with the immediate priorities rather than examining how learning about using data could benefit organisations and communities quite widely.

Governments tend to focus on telling non-profits what to collect and not necessarily generating theories of change based on evidence to underpin the development of indicator frameworks and dashboards.

**A challenge to governments and agencies is:** *Fund non-profits to build their internal data capability.*

This will lead to a much more savvy and agile sector that can think about data, data systems and data management. Rather than turning to a consultant to do data work for them 'in a black box' how much better for government to support the community and non-profit sector in developing data skills. This would ultimately lead to a whole new generation of data workers in non-profits and the public sector.

## Research

The City of Greater Bendigo Data CO-OP Project was fascinating to run and observe as a kind of participatory action research project. As we've mentioned here, the organisational partners learn about the opportunities of working with data and the limitations, and then take this back to their organisations to make changes. Often these changes were potentially subtle and 'slow-burn' – like participants starting to use data more in their work, learning techniques of data science themselves, working more with their data staff and frontline workers with data. Ultimately, how this manifested was that people who were operational leaders increasingly embedded thinking about data in their work.

**A challenge for researchers is:** *Explore ways to engage consumers, clients and citizens in this place-based data work.*

How can this be done? Through data walks, through advisory groups, through hackathons, through new but complementary data projects that build on the successes of earlier community data collaborations while at the same time exploring additional areas of common interest. Engaging consumers more in data work will help to set the boundaries around data sharing and inform best practice in consumer and citizen data sovereignty.

# Community

We think people living in the community could be interested in the kinds of data we explored with the managers of community organisations, but we aren't sure how to do this and it wasn't an original goal of the City of Greater Bendigo CO-OP project. Clearly some of the data we worked with only 'belong' with/to the participating organisations and their clients and consumers so perhaps only the open data could be shared with community. Then, what is an appropriate way to engage citizens with this data? Through existing groups, through exhibitions, maybe even through art and creative projects? Our project was limited by the funds available and its original parameters around working with a collaboration of organisations.

**A challenge to the participating organisations, researchers and funders is:** *Experiment with ways to engage communities with place-based data.*

This might be merely a project of passing interest or curiosity, or could it stimulate and activate new spin off ventures and initiatives.



# Next Steps

The next cohort of people to engage in data work and thinking will be community organisations' frontline staff, but beyond that how to engage clients and consumers in working with data is very significant. Clients and consumers need to be drawn into data governance and conversations around what data means and says. At present, there is quite a big gulf between the community sector organisations involved in our project and the citizens whose presence in data was being explored.

The City of Greater Bendigo Data CO-OP has moved into Phase 2, a stage that involves exploring energy data, funded through the Centre for New Energy Technologies. Phase 2 uses data generated by energy wholesalers to understand how energy is used and how renewable energy is generated, across the City of Greater Bendigo. Once again spatial mapping by suburb underpins the data analysis providing an additional energy data layer of insights to the [City of Greater Bendigo Data Co-op](#).

Overall, we hope this project inspires other community and place-based collaborations to work together with data. Such work appears to offer a range of benefits that support community-building and resilience, sometimes through surprising outcomes like getting to know other organisations, their people, their goals and the work they do in communities.



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