



The Development of the Gippsland Economic Modelling Tool

2014

CRICOS Provider No. 00103D



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The authors acknowledge assistance with data compilation by Ying Wang, and invaluable help with data management and analysis by Ashley McKay.

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Suggested reference:

Lawton, A., Valenzuela, E., Duffy, M., & Morgan, D. (2014). *The Development of the Gippsland Economic Modelling Tool*. A Report Prepared for Regional Development Victoria (Gippsland). Gippsland, Victoria: Federation University Australia.

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Executive Summary

This study develops a measurement tool to assess the economic health, human capital, social well-being and liveability of regional locations. The study is guided by developments in the professional literature related to measuring these four dimensions. Information was compiled from existing databases for 72 indicators used to generate four indices: Economic Health, Human Capital, Social Well-being, and Liveability. Index measures are reported for local government authority (LGAs) and Victorian State levels. The four indices provide a new quantitative tool to capture the effects from, and so reflect, economic, social and policy changes impacting across Victoria. Further application of this tool may be provided through periodic data updates over time using data captured on a national scale.

The regional focus of the present study is the Latrobe Valley located in the Gippsland region of Victoria. The Latrobe Valley encompasses the LGAs of Baw Baw, Latrobe City and Wellington Shires. In addition, index values are reported for 16 towns located within the three LGAs and we include these findings as Appendix 1. For comparative purposes, the study also reports index values for the Gippsland region (comprising LGAs of Baw-Baw, Bass Coast, East Gippsland, Latrobe City, South Gippsland and Wellington Shire), the State of Victoria, and regional (non-metropolitan areas) using averages. Data were gathered for all 79 Victorian LGAs.

The study results provide a measurement framework constructed from a comprehensive application of available databases. The end-product is a significant “tool” that identifies and summates enablers of economic productivity and social and community development. The tool provides evidenced-based measures to inform policy recommendations with regard to strategic intervention options and ensuing impacts on regional sustainability.

Key Findings

Economic Health: Gippsland region average performs at 12% below the State average but at 17% above the regional Victoria average. Baw Baw Shire is performing at 8% above the Gippsland average and 27% above the regional average, but close to the state average. Wellington Shire is performing at the Gippsland average but 15% higher than the regional average. Latrobe City is performing below the Gippsland and state averages.

Human Capital: The Gippsland region on average performs the same as the regional average but far lower than the state average. Latrobe City performs 28% above the Gippsland and regional average. Baw Baw is performing at the same level as the regional average. Wellington Shire is performing at 7% below the Gippsland average.

Social Well-being: The Gippsland region average performs below both the state and regional Victorian average. Baw Baw performs slightly better than the Gippsland regional average whereas Latrobe City and Wellington Shires perform slightly worse.

Liveability: The Gippsland regional average is slightly lower than the regional Victoria average and below the state average. Latrobe City is 32% above the Gippsland average and is higher than regional and state averages. Wellington is equal to the Gippsland average while Baw Baw is below the Gippsland average.

Introduction

The Gippsland region presents particular sets of economic, social and ecological challenges. As the *Gippsland Regional Growth Plan* (2014) reminds us, Gippsland has an economy that relies strongly on natural resources and strong population growth. Gippsland's oil, gas, and coal, water catchments, agricultural produce and nature-based tourism drive not just the region's economy but also that of Victoria, while a projected population growth of 20% in the next 15 years also means a growth in demand for goods and services, residential and industrial space as well as improved infrastructure. Federal and state priorities seek to address Gippsland's ability to capitalise on opportunities around, for example, a low carbon economy transition plan, post-secondary education, sustainable development and technologies and health and wellbeing outcomes. Yet, these strategic drivers also mean increased pressures on the region's liveability and sustainability.

The Latrobe Valley Industry and Employment Roadmap sets the Victorian Government's long-term strategic framework for guiding future investment and collaboration with the region's local governments, businesses and communities. It is the state government's response to locally developed advice for addressing the challenges facing the region's economy. The Roadmap includes early actions and interventions to create employment and to stimulate new investment. The Latrobe Valley includes the councils of Latrobe City, Baw Baw and Wellington Shire.

The Roadmap:

- ✓ Recognises the need to enhance entrepreneurial capacity;
- ✓ Argues for enhancing workforce skills through training and education;

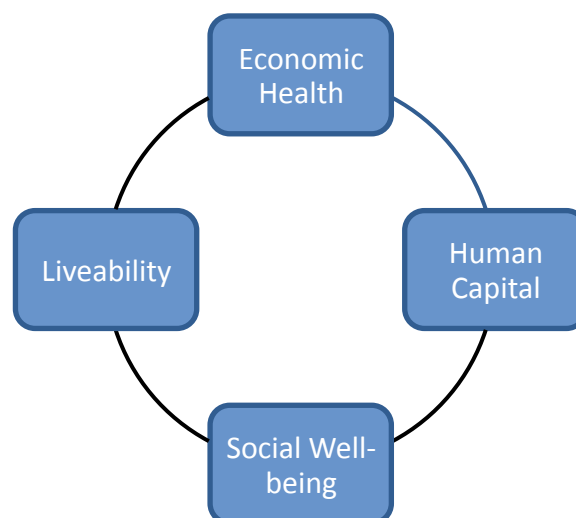
- ✓ Identifies liveability as a key consideration;
- ✓ Promotes the need for a more diverse industry base;
- ✓ Recognises the importance of stakeholder engagement, and;
- ✓ Recognises the contribution that higher education can make.

The purpose of this report is to describe the development of a tool that will identify, and promote discussion of, important trends in key areas, to provide the data that underpins the tool, and to inform policy decisions. The tool identifies key areas that support economic development and provides Key Performance Indicators (KPIs) to enable comparisons to be made between the Latrobe Valley, Gippsland and Regional Victoria. The data provided identify common trends and differences across the three demographics and the tool provides a basis for future policy decisions.

Features of the tool

Economic well-being consists of a number of different dimensions, or indices, that support, and interact with, each other and these are defined as Economic Health, Human Capital, Social Well-being and Liveability (see Figure 1: Regional Indices).

Figure 1: Regional Indices



We describe each of these indices in brief, drawing upon relevant literature.

(i) Economic Health

Economic health is concerned with the extent, and type of, economic activity within a given location and the prospects for economic growth. This is made up of a number of different elements including the level of economic resources, the degree of equality in the distribution of resources and the scale of diversity in economic resources (Sherrieb et al., 2010). It can be measured by employment levels, employment diversity, housing values, number and diversity of businesses, income levels and so on. GDP is used at the national level but is less useful at the regional and local levels.

(ii) Human Capital

The OECD defines human capital as “the knowledge, skills, competencies and attributes embodied in individuals that facilitate the creation of personal, social and economic well-being” (2001: 18). However, human capital is held within the individual skills, knowledge, and capabilities and health status of a workforce, be that of a business or a population more broadly (Stroombergen et al., 2002). Hence, human capital is understood as important to economic health in that it refers to two related ideas; first, that the skills, knowledge and capabilities of workers are critical to production, and second, that resources such as education and training are forms of investment that can be examined in ways similar to material capital such as factories and equipment (Hartog & Oosterbeek, 2007). This approach to defining human capital provides a means for economists and policy makers to consider the value of skills and knowledge – how these are used, the ways in which the market assigns them a monetary value, and how and why industry and workers themselves invest in them (Acemoglu & Autor, 2012). Moreover this framework points to the significance of education

and training as a means to increase skills and knowledge and so to offering an explanation as to the variations in wages and salaries of different workers (Blair, 2011).

(iii) Social Well-being

How well individuals and communities live is not determined by income or wealth alone (Morton & Edwards, 2012). Moreover, while the quality of life index, which links subjective notions of life satisfaction with more quantitative data such as average wage, education and life expectancy, can indicate an individual's quality of life, such measures often fail to understand the significance of community and connection to one's quality of life. Hence factors such as community health and wellbeing (see Cummins & Choong, 2012; Mead & Cummins, 2010), community engagement, social capital and social networks are important contributors to quality of life.

Social well-being results from the frequency of social groupings and the interconnectedness of community relationships within given locations.

(iv) Liveability

Liveability is the ease of access to organisations and facilities within a given location accounting for physical/spatial links or networks and the quality of the physical environment. Liveability is most often associated with the global liveable city rankings of the Mercer *Quality of Living Survey* and the Economic Intelligence Unit's *Global Liveability Report*. These rankings are based on factors such as political stability, health care, infrastructure, education, culture and environment. As pointed out by *The Economist* in 2014, cities ranked highly are those with low population densities, which mean these places are more likely to be associated with low crime rates, functioning infrastructure, and easily available recreational activities.

The concept of liveable cities has been taken up in a range of government and industry contexts. The Planning Institute of Australia (PIA), for example, has released a number of national policy statements that have outlined ways in which the notions of liveable cities can inform urban and regional policy development (2004, 2010), and ways to use these concepts in order to encourage the design, planning and creation of healthy and sustainable communities (2009). In promoting the notion of liveable communities, the PIA has called for government to establish a national charter that would set in place overarching principles on matters of environmental, social and economic sustainability. More recently the PIA has argued for government policy and strategies that address the increasing disparity between urban and regional places that are exacerbated by globalisation processes (PIA, 2010).

Recommendations include considering how smaller towns and regions can be integrated into larger networks; improving localised public transport services, road connections, information and communication technologies; acknowledging that lifestyles outside of the major cities offer many benefits for families and older people and therefore regional centres may offer an attractive alternative to the continued sprawl of the bigger regional and metropolitan centres.

The Indicators

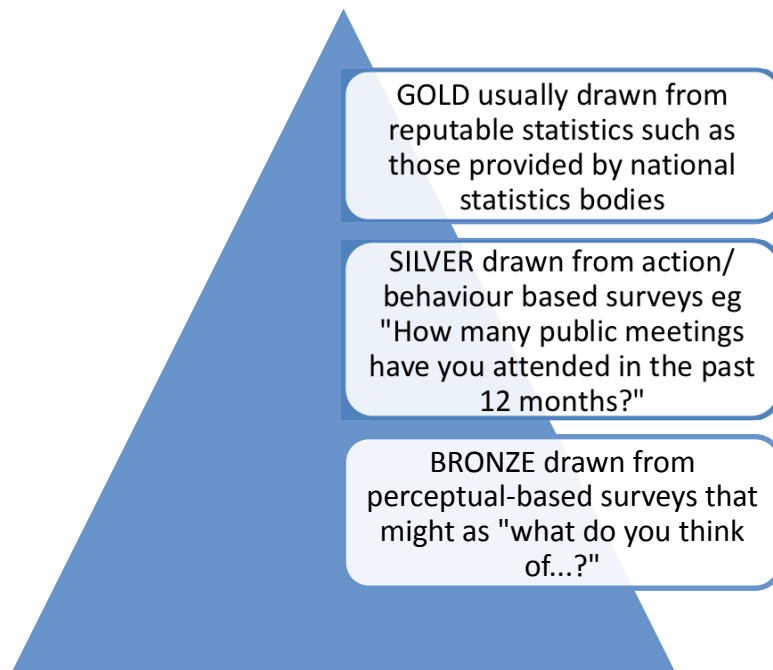
The use of Key Performance Indicators (KPIs) is common in government and business alike as well as frequently used in policy studies. An Indicator provides information that is selected on the basis of objectivity that helps us to understand whether things are getting better or worse. KPIs have a number of features and we have borne these features in mind when choosing the KPIs for our four indices:

1. **Availability** – information may be available at the national level, but not at the local or town level. In order to make fine-grained distinctions at local levels then the lack of data are a problem.

2. **Cost-effective** – collecting data can be very expensive and in this we have tried to utilise existing data as far as possible. Where that information was not available, or not available at a reasonable cost, then we have conducted primary research
3. **Consistent over time** – in order to track progress we need to be clear that the baseline data being collected can also be collected subsequently.
4. **Consistent methodology** – In drawing upon a large number of data sources these will need to be monitored for consistent methodology. For example, The Community Indicators Victoria (CIV) survey, much used in community well-being research, consists of ABS data (20%), telephone survey (29%) local council data collected for other purposes (2%), data collected by state organisations (44%) and data collected by national organisations (5%).
5. **Be substantiated by current research** – we have tried to provide a theoretical framework for our dimensions and this has provided the rationale for the Indicators that we have used.
6. **Credible** – we are mindful of using indicators that are likely to provide information relevant to the domain and also are drawn from credible sources.
7. **Straightforward to interpret**
8. **Sufficient sample size to avoid bias**
9. **Relevance** - Be recognised as relevant and supported by stakeholder groups. We have presented the initial set of indicators to an academic audience and to Regional Development Australia Gippsland Committee and to Latrobe Valley Transition Committee, Senior Officers Group.

There are different data sources for Indicators, each of which might serve a different purpose and be more or less robust.

Figure 2: Gold, silver and bronze indicators



We indicate the source of our indicators and have focused upon Gold standard ones.

Methodology

The purpose of this study was to develop indicators to measure the capacities for economic and social well-being. The report presents the discrete aggregation of extensive and diverse data, drawn from a variety of sources, within four indices relevant to community health and economic performance for the Gippsland region. Each Index is benchmarked against comparable locations to demonstrate performance above or below that location's average.

The four indices were specified based on an extensive review of academic theory plus previous government and community initiatives that inform the measurement of the health, well-being and economic progress relevant to specified geo-political regions. Following this review, four identified indices captured the breadth and scope of community status and performance. Following this initial process, the research programs followed seven steps:

- (1) A working definition was proposed for each index and agreed to by the project team.
- (2) A comprehensive list of all available candidate data sources relevant to the project was compiled. The list was informed by previous work, consultation with Regional Development Victoria, and directed internet searchers. Sources included the Australian Bureau of Statistics, Department of Health, Victoria Police, community organisations, and the Victorian Commission for Gambling and Liquor Regulation.
- (3) Candidate data sources were screened by the research team for currency (data reported for 2006 onwards), and numerical format. Data sources were further characterised according to the standard of validity discussed later.
- (4) Selected data sources were sorted into one of four indices by the project team based on the operational definitions. This process was first conducted by individuals. A group consensus process was then applied. Where disagreement on the categorisation of a data source was found, opposing views were considered followed by a final consensus decision.
- (5) For each index, classified data sources (termed indicators) were listed in tailored spreadsheets allocated to a specified location (e.g., Local Government Area or township). Where data were available for more than one period, the most recent available data were applied.

(6) Indicator data were transformed into standard scores (allowing valid summation). Where necessary this transformation applied a calculation so each indicator moved in the same direction with respect to community benefit (e.g., the measure, *share of people reporting type 2 diabetes*, may be viewed as a community disbenefit – the direction of measure effect was reversed (1 minus the score) with respect to its contribution to the index *Human Capital*.

(7) Transformed indicator data were aggregated by selected location for each index. Each score was then standardised. The standardised score was then compared to a selected benchmark represented by a mean value; this was in most cases a summated regional average. This allowed the relative performance of that index to be compared to that average to provide ready comparisons.

The results that follow are presented in this format, facilitating comparisons within the Latrobe Valley and across regional Victoria.

(i) Economic Health Index

Economic health is concerned with the economic activity within a given location and the prospects for economic growth. It also focusses on the income and employment diversity of a location. Table 1 indicates the targeted dimension and the corresponding used proxy variables. Details on data sources for these variables are included in the appendix.

Table 1: Economic Health Index - Target dimension and corresponding proxy measures

Targeted Dimension	Used proxy measure from existing databases
Income level	Personal income (\$)
Employment status	Employment Participation rate (%) Median house price (\$)
Housing values (stock)	Average rent and mortgage payments (\$) Building approvals
Business conditions	Number of businesses
Size of economic unit	Area of LGA (sq Km)
Employment diversity	Industry of employment by occupation, share of non-dominant industry (%)

Source: Authors' definitions

(ii) Human Capital Index

Human capital is concerned with the knowledge, skills, and health status of the population. In the absence of well-defined measures of human capital researchers have had to appeal to proxy measures, such as years of schooling (Stroombergen et al., 2002). Other approaches acknowledge that an individual's own characteristics and family context and aspirations have a significant impact on that individual's 'holding' of human capital (Schultz, 1961). Different forms of education, for example, provide differing forms of human capital investment; the learning acquired through on-the-job training such as an apprenticeship differs to the more generalised knowledge acquired through schooling (Becker, 1993). In addition the focus on education attainment ignores the complexity of how human capital is attained, that it is composed of 'various intangible dimensions that are not directly observable and cannot be measured with precision by a single attribute, a set of attributes, or their combined sum on individuals or households' (Folloni & Vittadini, 2010, p. 267). As Folloni and Vittadini (p. 272) argue;

Human capital is increasingly recognized as having several sources that are linked not only to formal education and training but also to culture, family background, social context and – to a significant extent – innate and non-cognitive abilities and skills

In considering how education may be facilitated or hindered, researchers have pointed out that nutrition and health care are important. Nordhaus (2002) has demonstrated that health status has an effect on human capital (because of its impact on an individual's earning capacity) that is distinct from the effect of education, although this effect is augmented by education.

Given that human capital is defined as an aggregate of distinct characteristics the problem that arises is that there is no common unit of measurement for these different characteristics (Stroombergen et al., 2002). In determining the value of human capital the authors have drawn on an aggregate of dimensions that capture effects of resources in education and support to education; the effects of health on economic growth; and the impact of demographic shifts on required skills and knowledge.

Table 2 indicates the targeted dimension and the corresponding used proxy variable. Details on data sources for these variables are included in the appendix.

Table 2: Human Capital Index - Target dimension and corresponding proxy measures

Targeted Dimension	Used proxy measure from existing databases
Education/Skills	Population with higher education qualification, (%)
	1-share of population who did not complete year 12, (%)
	FTE students
Support to education	Students & apprentices receiving youth allowance
Labour force	Sum of Estimated Residential Population (ERP) 15-64
Population	Population density (people/sq Km)
Health	1-share of people reporting fair or poor health, (%)
	1-share of people reporting type 2 diabetes, (%)
	1-share of people overweight or obese, (%)
	1-share of low birth weight babies, (%)
Children development	1-share of children developmentally vulnerable in one or more domains, (%)
Language skills	1-share of low English proficiency, (%)
Immigration	New settler arrivals per 100,000 population
Refugees	1-share of humanitarian arrivals, (%)
Relative socio economic disadvantage	IRSD Index

Source: Authors' definitions

(iii) Social Well-being Index

Social well-being is concerned with the frequency of social groupings and interconnectedness of community relationships within the given location. The importance of social and community bonds is recognised along with safety, volunteering and the acceptance of minorities (Markus, 2013). Community health and well-being contribute to overall well-being. Table 3 indicates the targeted dimension and the corresponding used proxy variables. Details on data sources for these variables are included in the appendix.

Table 3: Social well-being Index - Target dimension and corresponding proxy measures

Targeted Dimension	Used proxy measure from existing databases
Community Bonds	People who participated in citizen engagement in the past year, (%)
	Child Care/Kindergarten sites
	Average aged care places per 1,000 eligible population
Family bonding	1-share of people 75+ and living alone, (%)
	People who share a meal with family at least 5 days per week, (%)
Volunteer work	People who are involved in voluntary work, (%)
Density Medical, GPs	General Practitioners per 1,000 population
	Dental services per 1,000 population
	Pharmacies per 1,000 population
Drugs/Alcohol attitudes	Population with private health insurance, (%)
	1/Drug and alcohol clients per 1,000 population
	1/Density of intentional injuries treated in hospital per 1,000 population
	1-share of low English proficiency, (%)
Social assimilation	People receiving support from Centrelink per ERP 15-64
	New settler arrivals per 100,000 population
	Humanitarian arrivals as a share of total arrivals, (%)
Hospital admissions	1/Hospital inpatient separations per 1,000 population
	1/Crime against person per 100,000 people
Criminal activity	1/Crime against property per 100,000 people
	1/Crime rate density per 100,000 people
	People who feel safe on street after dark, (%)
	1/Total criminal offences per 1,000 population
Relative socio economic disadvantage	IRSD Index
Social Housing	Social housing as a share of dwellings, (%)
Gambling attitudes	1/Gaming machine losses per head of population
	1/Gambling venue numbers
Community openness	Community acceptance of diverse cultures, (%)
Schools	Number of schools

Source: Authors' definitions

(iv) Liveability Index

Liveability is concerned with factors such as availability of health care and life expectancy (Olesson et al., 2012), infrastructure and connectivity (Callaghan & Cotlon, 2008), quality of the environment (Hunt et al., 2011) work-life balance, housing affordability (Olesson et al., 2012). Table 4 indicates the targeted dimension and the corresponding used proxy variables. Details on data sources for these variables are included in the appendix.

Table 4: Liveability Index - Target dimension and corresponding proxy measures

Targeted Dimension	Used proxy measure from existing databases
Road connectivity & geographical remoteness	1/ARIA Index
Internet Access	Households with broadband internet connected, (%)
Employment	Employment participation rate
Employment Diversity	Industry of employment by occupation, share of non-dominant industry, (%)
Smoking preferences	Support smoking ban in outside seating areas, (%) 1-share of males 18+ who are current smokers, (%)
Alcohol	Liquor licenses per 10,000 residents 15+ 1/Alcohol-related hospital admission rate per 10,000
Schools	Number of schools Tafe Institutes University Child Care/Kindergarten sites
Security	People who feel safe on street after dark, (%)
Air quality	1-persons reporting Asthma (%)
Resident perception	People who believe the area has good facilities and services, (%)
Distance to work	1-People with at least 2 hour daily commute, (%)
Distance to Health service	1/Distance to nearest health service, (Km)
Work-Life balance	People with an adequate work-life balance, (%)
Affordability	1/median rent for a 3 bedroom house, (\$) Rental housing that is affordable, (%) 1/Median house price, (,000 \$)

Source: Authors' definitions

Findings

(i) Economic Health

Table 5 shows the values of the individual components of the **economic health index** for the three selected LGAs (Baw Baw, Latrobe and Wellington), the Gippsland average corresponding to the six LGAs, the regional Victoria average, and the state average.

Comparisons across the different components is facilitated by the use of a relative level (a benchmark), the Gippsland average (see Table 6). The entries in Table 6 indicate that personal income in Latrobe City is 16 percent higher than the Gippsland average, 26 percent higher ($1.26 = 1.16 / 0.92$) than the regional Victoria average and 12 percent higher than the state average ($1.12 = 1.16 / 1.03$). Employment participation rates are higher in Baw Baw, and lower than the regional and state average in Latrobe and Wellington. Housing values in Baw Baw are 8 percent higher than the Gippsland average, and values in the Latrobe City are 23 percent lower than the Gippsland average. Values for rent and mortgage payments follow this trend. Baw Baw performs particularly well with respect to building approvals and is higher than the regional averages in the number of businesses. Both dimensions could be explained by the proximity to the metropolitan hub. Data at this level does not indicate a skewed concentration of industry of employment, with all 3 focus LGAs exhibiting only about 5 percent higher concentration than the state average. The most dispersed component of the index is the area of the LGAs. The importance of considering this dimension is to capture actual and potential economic activities available at these locations. For instance, Wellington Shire encompasses large extensions of land suitable to agriculture and tourism, and to potential mining development.

The proposed Economic Health index is able to summarise all these different economic characteristics of a location into a single number, facilitating in this way comparisons across regions. The Economic Health index, reported in the last row of Table 6 and Figure 3, indicates that the Gippsland region average is 12 percent lower than the state average and 17 higher with respect to regional Victoria. Baw Baw is performing 8 percent better than the Gippsland average, 27 percent better than the regional average and close to the state average. The Economic Health index shows that Latrobe City is performing below the Gippsland and state average. This result illustrates the advantages of using a composite index, instead of only income and employment levels, in defining the economic activity and growth prospects of a location.

Table 5: Economic Health Index, values of components, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average	Regional Average	State Average
Personal income (\$)	44,555	51,498	48,243	44,462	41,049	45,843
Employment Participation rate (%)	60.8	56.4	56.2	56.0	57.5	59.6
Median house price (\$)	279,000	200,000	226,500	259,250	247,530	369,066
Average rent and mortgage payments (\$)	1,186	1,054	1,090	1,135	1,073	1,332
Building approvals	679	357	236	412	262	464
Number of businesses	4,876	4,501	4,021	4,062	2,836	6,803
Area of LGA (sq Km)	4,031	1,426	10,817	6,896	4,550	3,153
Industry of employment by occupation, share of non-dominant industry (%)	88.7	87.1	87.5	86.1	82.5	83.9

Source: data sources included in appendix

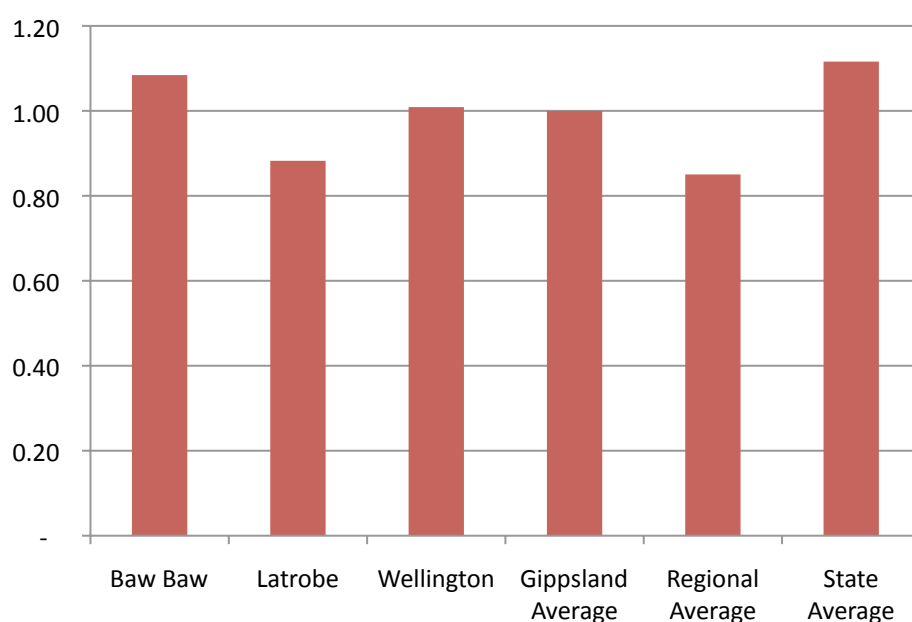
Table 6: Economic Health Index, Gippsland mean standardised values, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
Personal income	1.00	1.16	1.09	1	0.92	1.03
Employment Participation rate	1.09	1.01	1.00	1	1.03	1.07
Median house price	1.08	0.77	0.87	1	0.95	1.42
Average rent and mortgage payments	1.04	0.93	0.96	1	0.94	1.17
Building approvals	1.65	0.87	0.57	1	0.64	1.13
Number of businesses	1.20	1.11	0.99	1	0.70	1.67
Area of LGA	0.58	0.21	1.57	1	0.66	0.46
Industry of employment by occupation, share of non-dominant industry	1.03	1.01	1.02	1	0.96	0.97
Economic Health Index (xi/Mean)	1.08	0.88	1.01	1	0.85	1.12

Source: authors' calculations

^a The Gippsland average is used as the mean value to compute relativities.

Figure 3: Economic Health Index by LGA level (values relative to Gippsland average)



(ii) Human Capital

Data components of the **Human Capital index** calculation are shown in table 7 and mean standardised values are presented in Table 8 (allowing easier relative comparisons). The **Human Capital index** is reported in the last row of Table 8 and Figure 4.

In regional areas, the share of population with higher education qualifications and year-12 completion is significantly lower than the state average (see rows 1 and 2 in Table 7 and Table 8). The Gippsland average of people with higher education qualifications is 8 percent lower than the regional average and 38 percent lower than the state average. Among the three focus LGAs, Baw Baw contains the larger proportion of higher education and year-12 completions.

The estimated working population (ERP from 15 to 64 years) for Latrobe City Council is more than 75% larger than the Gippsland average, and is comparable to the state average. However, Latrobe City Council reports the lowest share of people with good health and is below the Gippsland area and the state averages.

In the state, overall, there are more people overweight or obese than people with a healthy weight (all estimates in row 9 in Table 7 are lower than 0.50). Wellington Shire reports the highest share of overweight or obesity within Gippsland (5 percent higher than the Gippsland average and almost 10 percent higher than the state average).

Latrobe City Council exhibits the largest share of children developmentally vulnerable, with this proportion being 4 percent higher than the Gippsland average and close to 10 percent higher than the state average.

Latrobe City Council is a large immigrant receiving region, with a new settler arrivals share 17 percent higher than the Gippsland average and close to 13 percent higher than the regional average.

The last row in Table 8 presents the calculations of the Human Capital index. This index summarises all different dimensions of human capital into a single estimate, thereby facilitating comparisons across regions. This shows a large gap between the metropolitan areas and the regional locations, 3.8 times larger. This result is driven by the consideration of population density in the Human Capital index. Population density in the metropolitan areas is 1,788 people per square Km, while it is only 29 people per square Km in regional locations. When the population density dimension is excluded from the calculation of the human capital index, this gap is reduced to 1.3 times larger in metropolitan areas than in regional areas. The other large drivers of the differences are immigration and recipients of youth allowance.

The **Human Capital index** indicates that Latrobe City is 28 percent higher (positive) than the Gippsland average, and almost 30 percent higher than the regional average. Wellington Shire performs lower in this dimension (7 percent lower than the Gippsland average and more than 37 percent lower than Latrobe City).

Table 7: Human Capital Index, values of components, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average	Regional Average	State Average
Population with higher education qualification, (%)	28.8	24.8	25.5	26.9	29.0	37.0
1-share of population who did not complete year 12, (%)	39.8	37.6	36.1	37.7	38.4	47.9
FTE students	9,273	11,090	7,162	7,089	5,040	11,009
Students & apprentices receiving youth allowance	524	1,175	534	573	458	1,194
Sum of Estimated Residential Population (ERP) 15-64	27,612	48,284	27,140	27,293	18,940	47,326
Population density (people/sq. Km)	11.0	51.9	3.9	18.8	29.0	719.2
1-share of people reporting fair or poor health, (%)	84.9	78.1	81.8	81.8	82.1	81.9
1-share of people reporting type 2 diabetes, (%)	96.5	94.9	94.8	94.9	95.4	95.4
1-share of people overweight or obese, (%)	48.7	46.3	44.9	47.2	46.1	48.9
1-share of low birth weight babies, (%)	91.9	91.5	93.5	92.7	93.5	93.5
1-share of children developmentally vulnerable in one or more domains, (%)	77.5	73.9	80.7	77.0	79.6	80.0
1-share of low English proficiency, (%)	99.6	99.0	99.6	99.4	99.4	97.7
New settler arrivals per 100,000 population	142.80	148.20	112.05	126.57	131.80	308.63
1-share of humanitarian arrivals, (%)	100.0	96.3	100.0	94.4	93.4	91.7
IRSD index	998	989	942	976	973	996

Source: data sources included in appendix

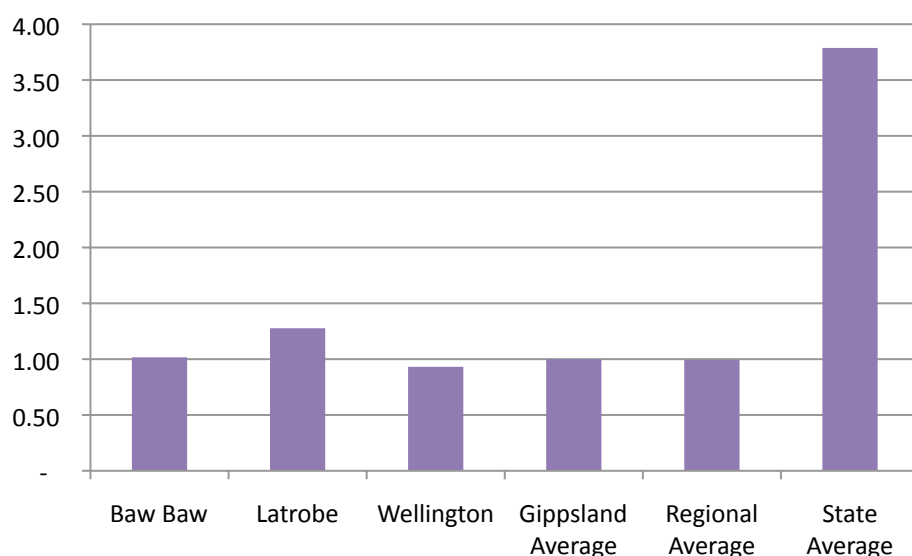
Table 8: Human Capital Index, Gippsland mean standardised values, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
Population with higher education qualification	1.07	0.92	0.95	1	1.08	1.38
1-share of population who did not complete year 12	1.06	1.00	0.96	1	1.02	1.27
FTE students	1.31	1.56	1.01	1	0.71	1.55
Students & apprentices receiving youth allowance	0.92	2.05	0.93	1	0.80	2.09
Sum of Estimated Residential Population (ERP) 15-64	1.01	1.77	0.99	1	0.69	1.73
Population density	0.59	2.76	0.21	1	1.55	38.29
1-share of people reporting fair or poor health	1.04	0.95	1.00	1	1.00	1.00
1-share of people reporting type 2 diabetes	1.02	1.00	1.00	1	1.01	1.00
1-share of people overweight or obese	1.03	0.98	0.95	1	0.98	1.04
1-share of low birth weight babies	0.99	0.99	1.01	1	1.01	1.01
1-share of children developmentally vulnerable in one or more domains	1.01	0.96	1.05	1	1.03	1.04
1-share of low English proficiency	1.00	1.00	1.00	1	1.00	0.98
New settler arrivals per 100,000 population	1.13	1.17	0.89	1	1.04	2.44
1-share of humanitarian arrivals	1.06	1.02	1.06	1	0.99	0.97
IRSD index	1.02	1.01	0.97	1	1.00	1.02
Human Capital Index (xi/Mean)	1.02	1.28	0.93	1.00	0.99	3.79

Source: authors' calculations

^a The Gippsland average is used as the mean value to compute relativities.

Figure 4: Human Capital Index (values relative to Gippsland average)



(iii) Social Well-being

Table 9 shows the components of the **Social Well-being index** calculation and mean standardised values are presented in Table 10. The **Social Well-being index** is reported in the last row of Table 10 and in Figure 5.

Citizen engagement is higher in regional areas, with a regional average participation of 63 percent in comparison to the state average of 57 percent. Latrobe City has the largest number of child care and aged care facilities, with a total higher than the state average. Baw Baw is served with a higher density of general practitioners, while the Latrobe City Council and Wellington Shire are similar to the state average level. The availability of dental services and pharmacies is the lowest in Baw Baw.

The incidence of drug and alcohol, and intentional injuries is the highest in the Latrobe City. These two dimensions show that Latrobe City incidence is in the range of 1.4 to 2 times the Gippsland average, and 2 to 3 times the state average.

Latrobe City attracts a larger share of new immigrants, 17 percent higher than the Gippsland average.

With respect to crime, Baw Baw has the lowest incidence among the focus LGAs, followed by Wellington Shire. Latrobe City falls twice as high as the Gippsland average in this dimension, and more double the state average. This finding is consistent with measurement on perceptions about security, with Latrobe City ranking the worst with respect to the Gippsland area and the state average.

Baw Baw ranks the highest with respect to the index of socio-economic characteristics, with values close to the state average. Latrobe City has the largest proportion of social housing dwellings, almost doubling the Gippsland and state averages. Latrobe City also has a large incidence of gambling, with levels considerable higher than the Gippsland and state average levels.

With respect to community acceptance of diverse cultures, Baw Baw ranks first, followed by Latrobe City, and Wellington Shire. The Wellington Shire levels are 10 percent lower than the state average.

The **Social Well-being index** indicates that the three focus LGAs perform lower than the regional and state averages. In particular, the Baw Baw is 5 percent higher than the Gippsland average, 12 percent lower than the regional average and about 16 percent lower than the state average. Latrobe City is 8 percent lower than the Gippsland average, about 28 percent lower than the regional average, and 32 percent lower than the state average.

Wellington Shire is 9 percent lower than the Gippsland average, about 30 percent lower than the regional average, and 34 percent lower than the state average.

Table 9: Social well-being Index, values of components, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
People who participated in citizen engagement in the past year	0.98	0.97	0.89	1	0.98	0.90
Child Care/Kindergarten sites	1.00	1.56	1.11	1	0.60	1.02
Average aged care places per 1,000 eligible population	0.91	1.18	0.93	1	1.07	1.08
1-share of people 75+ and living alone	1.01	0.98	0.96	1	0.99	1.02
People who share a meal with family at least 5 days per week	1.06	0.94	1.04	1	1.02	0.98
People who are involved in voluntary work	1.01	0.75	1.00	1	1.15	0.97
General Practitioners per 1,000 population	1.01	0.91	0.89	1	0.93	0.95
Dental services per 1,000 population	0.72	1.02	0.89	1	1.06	1.22
Pharmacies per 1,000 population	0.74	0.94	1.32	1	1.30	1.14
Population with private health insurance	1.16	0.94	0.98	1	1.02	1.16
1/Drug and alcohol clients per 1,000 population	1.39	0.71	1.27	1	1.27	1.42
1/Density of intentional injuries treated in hospital per 1,000 population	1.05	0.49	0.70	1	1.64	1.55
1-share of low English proficiency	1.00	1.00	1.00	1	1.00	0.98

Table 10: Social well-being Index, values of components, 2011 (continued).

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
People receiving support from Centrelink per ERP 15-64	0.88	1.00	0.91	1	0.98	0.84
New settler arrivals per 100,000 population	1.13	1.17	0.89	1	1.04	2.44
Humanitarian arrivals as a share of total arrivals	0.00	0.65	0.00	1	1.18	1.49
1/Hospital inpatient separations per 1,000 population	1.22	0.95	0.98	1	1.06	1.09
1/Crime against person per 100,000 people	1.40	0.45	0.70	1	1.46	1.50
1/Crime against property per 100,000 people	1.15	0.61	0.83	1	1.39	1.25
1/Crime rate density per 100,000 people	1.18	0.55	0.81	1	1.38	1.32
People who feel safe on street after dark	1.06	0.82	0.96	1	1.07	1.01
1/Total criminal offences per 1,000 population	1.11	0.53	0.80	1	1.18	1.12
Index of Relative Socio-economic disadvantage	1.02	1.01	0.97	1	1.00	1.02
Social housing as a share of dwellings	0.78	2.07	0.96	1	1.01	1.07
1/Gaming machine losses per head of population	1.55	0.74	0.86	1	1.62	1.65
1/Gambling venue numbers	1.47	0.53	0.82	1	2.92	2.07
Community acceptance of diverse cultures	1.07	0.97	0.89	1	1.00	1.11
Number of schools	1.23	1.23	1.20	1	0.65	0.92
Social Wellbeing Index (Xi/Mean)	1.05	0.92	0.91	1.00	1.18	1.22

Source: data sources included in appendix

Table 11: Social well-being Index, Gippsland mean standardised values, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
People who participated in citizen engagement in the past year	0.98	0.97	0.89	1	0.98	0.90
Child Care/Kindergarten sites	1.00	1.56	1.11	1	0.60	1.02
Average aged care places per 1,000 eligible population	0.91	1.18	0.93	1	1.07	1.08
1-share of people 75+ and living alone	1.01	0.98	0.96	1	0.99	1.02
People who share a meal with family at least 5 days per week	1.06	0.94	1.04	1	1.02	0.98
People who are involved in voluntary work	1.01	0.75	1.00	1	1.15	0.97
General Practitioners per 1,000 population	1.01	0.91	0.89	1	0.93	0.95
Dental services per 1,000 population	0.72	1.02	0.89	1	1.06	1.22
Pharmacies per 1,000 population	0.74	0.94	1.32	1	1.30	1.14
Population with private health insurance	1.16	0.94	0.98	1	1.02	1.16
1/Drug and alcohol clients per 1,000 population	1.39	0.71	1.27	1	1.27	1.42
1/Density of intentional injuries treated in hospital per 1,000 population	1.05	0.49	0.70	1	1.64	1.55
1-share of low English proficiency	1.00	1.00	1.00	1	1.00	0.98
People receiving support from Centrelink per ERP 15-64	0.88	1.00	0.91	1	0.98	0.84
New settler arrivals per 100,000 population	1.13	1.17	0.89	1	1.04	2.44
Humanitarian arrivals as a share of total arrivals	0.00	0.65	0.00	1	1.18	1.49
1/Hospital inpatient separations per 1,000 population	1.22	0.95	0.98	1	1.06	1.09
1/Crime against person per 100,000 people	1.40	0.45	0.70	1	1.46	1.50

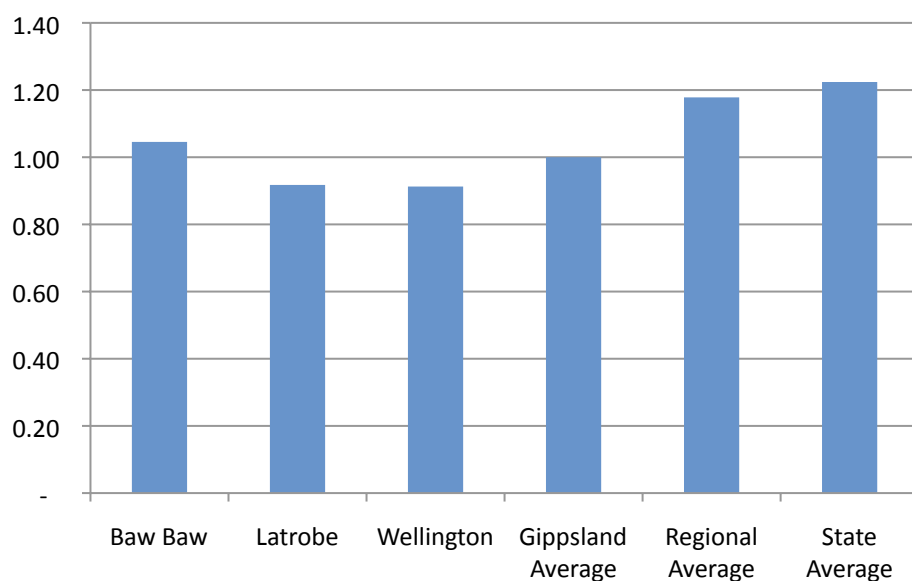
Table 12: Social well-being Index, Gippsland mean standardised values, 2011 (continued).

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
1/Crime against property per 100,000 people	1.15	0.61	0.83	1	1.39	1.25
1/Crime rate density per 100,000 people	1.18	0.55	0.81	1	1.38	1.32
People who feel safe on street after dark	1.06	0.82	0.96	1	1.07	1.01
1/Total criminal offences per 1,000 population	1.11	0.53	0.80	1	1.18	1.12
Index of Relative Socio-economic disadvantage	1.02	1.01	0.97	1	1.00	1.02
Social housing as a share of dwellings	0.78	2.07	0.96	1	1.01	1.07
1/Gaming machine losses per head of population	1.55	0.74	0.86	1	1.62	1.65
1/Gambling venue numbers	1.47	0.53	0.82	1	2.92	2.07
Community acceptance of diverse cultures	1.07	0.97	0.89	1	1.00	1.11
Number of schools	1.23	1.23	1.20	1	0.65	0.92
Social Wellbeing Index (Xi/Mean)	1.05	0.92	0.91	1.00	1.18	1.22

Source: authors' calculations

^a The Gippsland average is used as the mean value to compute relativities.

Figure 5: Social Well-being Index (values relative to Gippsland average)



(iv) Liveability

Table 11 shows the components of the **Liveability index** calculation and mean standardised values are presented in Table 12. The **Liveability index** is reported in the last row of Table 12 and in Figure 6.

Latrobe City performs 55 percent better than the Gippsland average and 26 percent better than the regional average with respect to the dimension of overcoming remoteness and accessibility. Baw Baw is 10 percent better than the Gippsland average and it ranks lower than the regional average. Wellington Shire ranks 32 percent lower than the Gippsland average and 80 percent lower than the regional average.

Broadband internet connectivity is higher in Baw Baw, and the three focus LGAs are slightly above the regional average in this dimension.

Baw Baw has the larger employment participation rate, with levels higher than the regional and state average. There is no greater differentiation among the focus LGAs with respect to a concentration of the industry of employment. Latrobe City has a lower diversification, as

expected given dominance of coal mining and energy generation. However, the diversification is higher than the regional average and the state.

With respect to smoking preferences, Latrobe City has the greater participation and the lowest support to smoking bans in public areas. The alcohol preferences dimension, measured by liquor licenses and alcohol-related admissions, indicate that there is a high incidence in Latrobe City.

The available educational opportunities place Latrobe City as the highest performer with an extensive network of TAFE institutes and the Federation University campus at Churchill.

With regard to the perception of people about the availability of good facilities and services, Latrobe City ranks 6 percent higher than the Gippsland average and about 9 percent higher than the state average. Latrobe City ranks high as well with respect to a reduced work commuting time. This is explained by the availability of local jobs in agriculture, mining, energy, and services. This is linked to a similar finding with respect to an adequate work-life balance. This area also ranks high with respect to house affordability.

The **Liveability index** indicates that Latrobe City ranks 32 percent better than the Gippsland average, about 23 percent higher than regional average, and close to 10 percent higher than the state average. Wellington Shire is in line with the Gippsland average, 7 percent lower than the regional average and 20 percent lower than the state average. Baw Baw performs the lowest, when considering all dimensions of liveability, in the focus LGAs, with a level of 7 percent lower than the Gippsland average, 15 percent lower than the regional average, and close to 30 percent lower than the state average.

Table 13: Liveability Index, values of components, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
1/ARIA Index	0.55	0.77	0.33	0.50	0.61	NA
Households with broadband internet connected, (%)	67.7	65.6	65.1	64.6	63.7	68.3
Employment participation rate	60.8	56.4	56.2	56.0	57.5	59.6
Industry of employment by occupation, share of non-dominant industry, (%)	88.7	87.1	87.5	86.1	82.5	83.9
Support smoking ban in outside seating areas, (%)	71.8	66.3	69.6	68.1	68.5	69.1
1-share of males 18+ who are current smokers, (%)	77.5	69.2	80.8	77.1	78.9	78.9
Liquor licenses per 10,000 residents 15+	28.7	22.7	35.97	35.17	44.65	37.74
1/Alcohol-related hospital admission rate per 10,000	0.0297	0.0250	0.0222	0.0256	0.0254	0.0230
Number of schools	38	38	37	31	20	28
TAFE Institutes	1	4	6	4	1	1
University	0.00	1.00	0.00	0.17	0.42	0.73
Child Care/Kindergarten sites	18	28	20	18	11	18
People who feel safe on street after dark, (%)	80.0	62.1	72.6	75.8	81.0	76.3
1-persons reporting Asthma (%)	87.4	90.9	93.6	90.1	88.7	89.0
People who believe the area has good facilities and services, (%)	80.0	79.7	76.1	74.9	74.3	79.3
1-People with at least 2 hour daily commute, (%)	89.2	100.0	96.8	94.6	95.4	92.0
1/Distance to nearest health service, (Kms)	0.05	0.06	0.04	0.04	0.07	0.11
People with an adequate work-life balance, (%)	45.8	49.3	57.8	49.3	47.9	50.6
1/median rent for a 3 bedroom house, (\$)	0.0038	0.0045	0.0042	0.0040	0.0041	0.0035
Rental housing that is affordable, (%)	67.1	84.5	80.5	70.7	68.1	46.0
1/Median house price, (,000 \$)	0.0036	0.0050	0.0044	0.0040	0.0048	0.0037

Source: data sources included in appendix

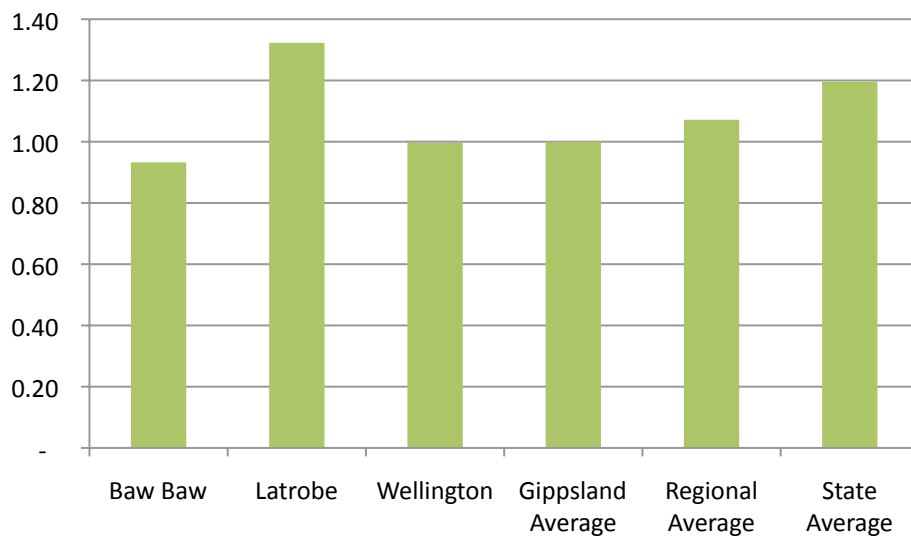
Table 14: Liveability Index, Gippsland mean standardised values, 2011.

	Baw Baw	Latrobe	Wellington	Gippsland Average ^a	Regional Average	State Average
1/ARIA Index	1.10	1.55	0.68	1	1.23	NA
Households with broadband internet connected	1.05	1.02	1.01	1	0.99	1.06
Employment participation rate	1.09	1.01	1.00	1	1.03	1.07
Industry of employment by occupation, share of non-dominant industry	1.03	1.01	1.02	1	0.96	0.97
Support smoking ban in outside seating areas	1.05	0.97	1.02	1	1.01	1.02
1-share of males 18+ who are current smokers	1.00	0.90	1.05	1	1.02	1.02
Liquor licenses per 10,000 residents 15+	0.82	0.65	1.02	1	1.27	1.07
1/Alcohol-related hospital admission rate per 10,000	1.16	0.98	0.87	1	0.99	0.90
Number of schools	1.23	1.23	1.20	1	0.65	0.92
TAFE Institutes	0.26	1.04	1.57	1	0.35	0.38
University	0.00	6.00	0.00	1	2.50	4.40
Child Care/Kindergarten sites	1.06	0.82	0.96	1	1.07	1.01
People who feel safe on street after dark	0.97	1.01	1.04	1	0.98	0.99
1-persons reporting Asthma	1.07	1.06	1.02	1	0.99	1.06
People who believe the area has good facilities and services	0.94	1.06	1.02	1	1.01	0.97
1-People with at least 2 hour daily commute	1.02	1.32	0.87	1	1.67	2.57
1/Distance to nearest health service	0.93	1.00	1.17	1	0.97	1.03
People with an adequate work-life balance	0.94	1.13	1.04	1	1.03	0.88
1/median rent for a 3 bedroom house	0.95	1.19	1.14	1	0.96	0.65
Rental housing that is affordable	0.90	1.26	1.11	1	1.21	0.94
Liveability Index (Xi/Mean)	0.93	1.32	1.00	1.00	1.07	1.20

Source: authors' calculations

^a The Gippsland average is used as the mean value to compute relativities.

Figure 6: Liveability Index (values relative to Gippsland average)



Conclusions

The Regional Economic and Social Modelling Tool provides a new tool to assess the relative performance of local government areas in Victoria. The tool has been developed in the context of current academic knowledge and informed by comparable, though less comprehensive, initiatives in other Australian states and elsewhere. Initial findings reported here demonstrate the feasibility of compiling and synthesising a diversity of data sources into four key indices: Economic Health, Human Capital, Social Well-being, and Liveability.

Compilation of findings, benchmarked against selected local averages, indicates the relative strengths of locations on each index and potential opportunities for improvement. The value of the tool will become apparent through collection and application of longitudinal data over time. This will allow evaluation of policy and programs designed to improve community health and economic well-being.

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Appendix 1

Town Level Results and Discussion

We calculated the economic health, human capital, social-wellbeing, and liveability indices for 16 towns within the three specified LGAs. These are Drouin, Trafalgar, Warragul, Longwarry, and Yarragon within Baw Baw Shire. Churchill, Moe, Morwell, Traralgon, and Yallourn North within Latrobe City. Mafra, Rosedale, Sale, Heyfield, Stratford and Yarram within Wellington Shire.

In calculating the four proposed indices, modifications in the data proxies selection are required given data availability characteristics and differences with respect to the reporting area.

The economic health index shows an accurate depiction of the assumed economic performance differentials, with larger economic hub towns achieving a high value in this scale and other towns performing in line with their population mass (Figure 7). These findings suggest that this index is particularly relevant when considering comparisons across areas of similar geographic extent or similar economic base for tracking economic health differentials.

The human capital index identifies important differences across the focus towns (Figure 8). In this metric, larger towns as Drouin and Warragul do not score as high as expected with respect to their economic size. For Drouin, the explanation is a relatively low density in population and a relatively small number of children facilities. Warragul's score is high with respect to its labour force but decreased by the dimensions of health (measured by number of presentations to emergency departments) and a relatively small number of immigration for

the region. For Sale, its score is diminished by the dimensions of health and a relatively smaller number of childcare facilities.

The Human Capital Index shows that towns within the jurisdiction of Latrobe City show a high value, with Traralgon being the top performer of all the studied towns in Gippsland. Warragul, Traralgon and Sale exhibit a relatively larger support to education, a larger number of full time students, a higher available labour force, relative higher number of childcare facilities.

The Social Well-being Index shows large towns in the sample such as Sale, Warragul, and Traralgon performing high. Towns within the Latrobe City jurisdiction, such as Moe and Morwell perform relatively high in this Social Well-being composite measure (Figure 9). The components of these calculations indicate that these towns are served by a relatively higher number of schools, public housing, medical facilities, and childcare and aged care facilities.

The Liveability index shows a high value for major hub towns and other towns performing in line with their population mass (Figure 10). Sale is the top performer in this scale, with Latrobe City, Moe, Morwell and Traralgon performing comparably to Warragul. These results in general correspond to the availability of schools and TAFE centres, child care facilities, and tourist accommodation. In addition, for Sale facilities situated at a closer distance to medical centres leading to a high result. For Latrobe City towns, housing and rent affordability is a main driver of scoring high values (positive) in the liveability index measure.

Figure 7: Economic Health Index, town level (values relative to overall town average)

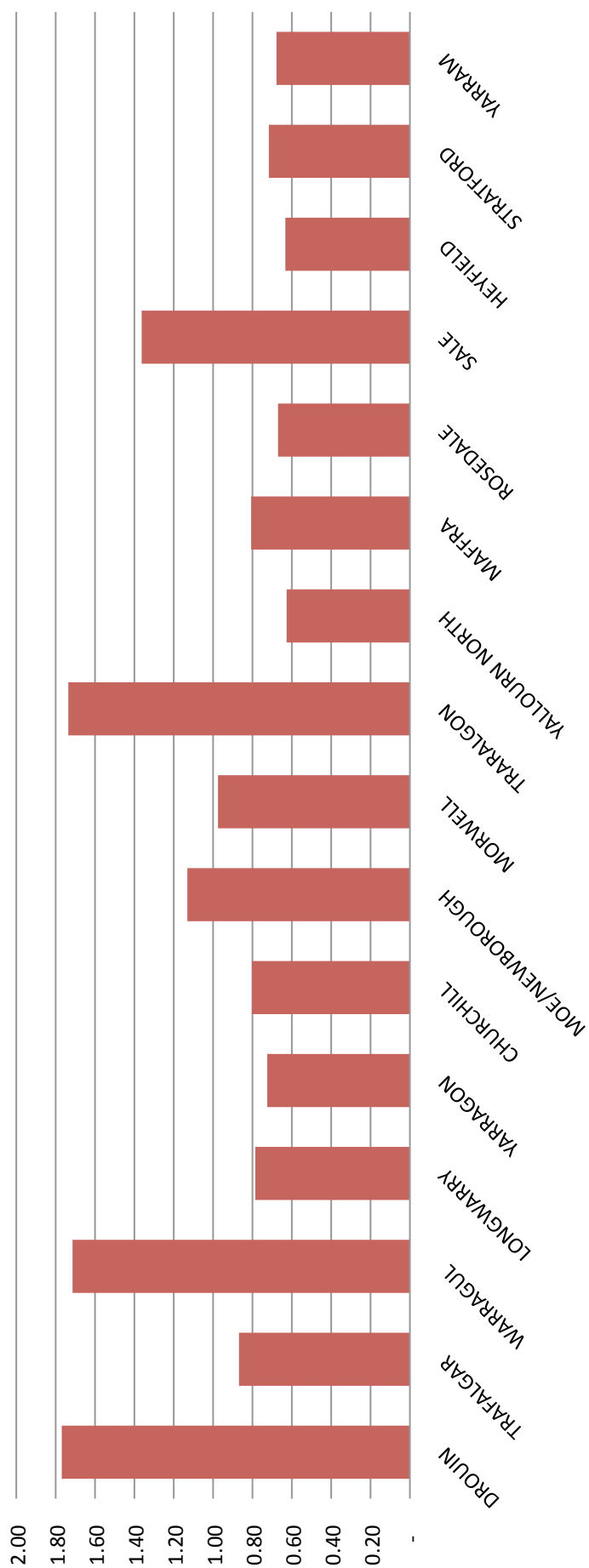
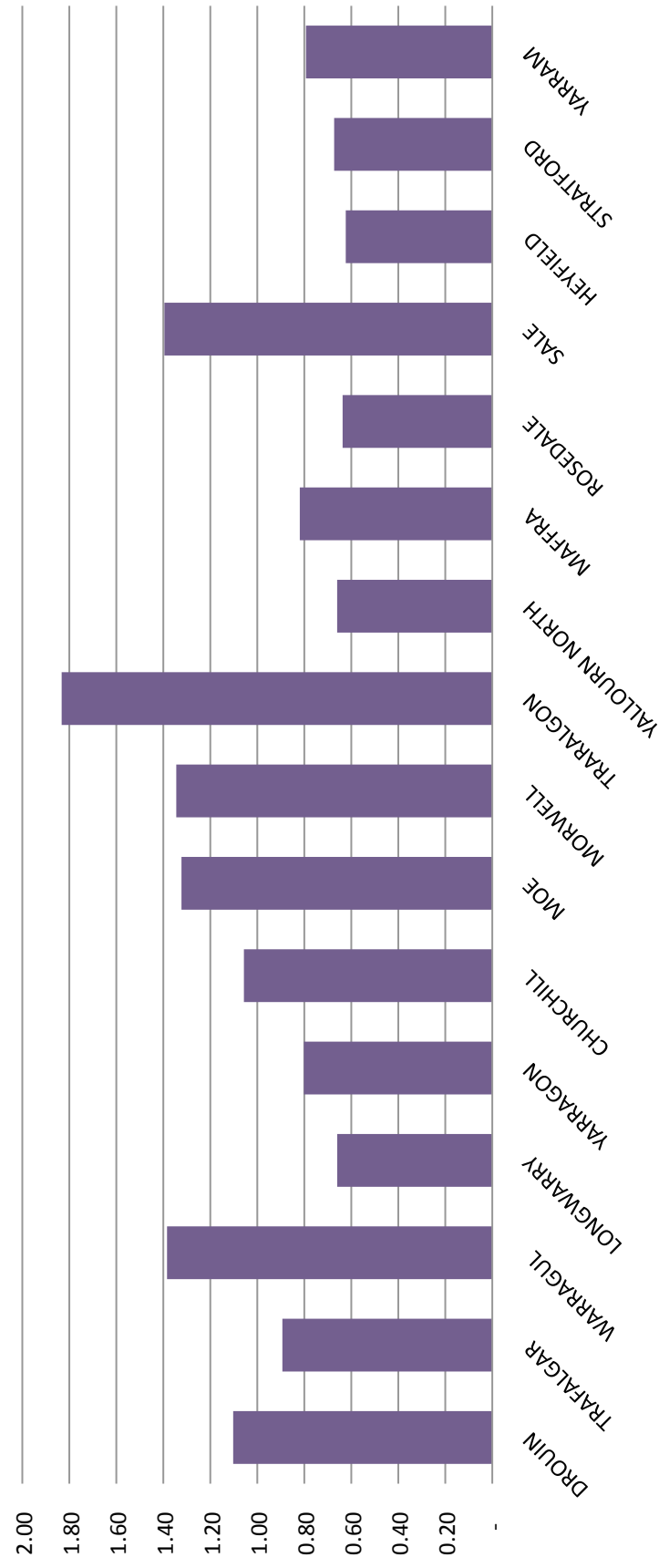
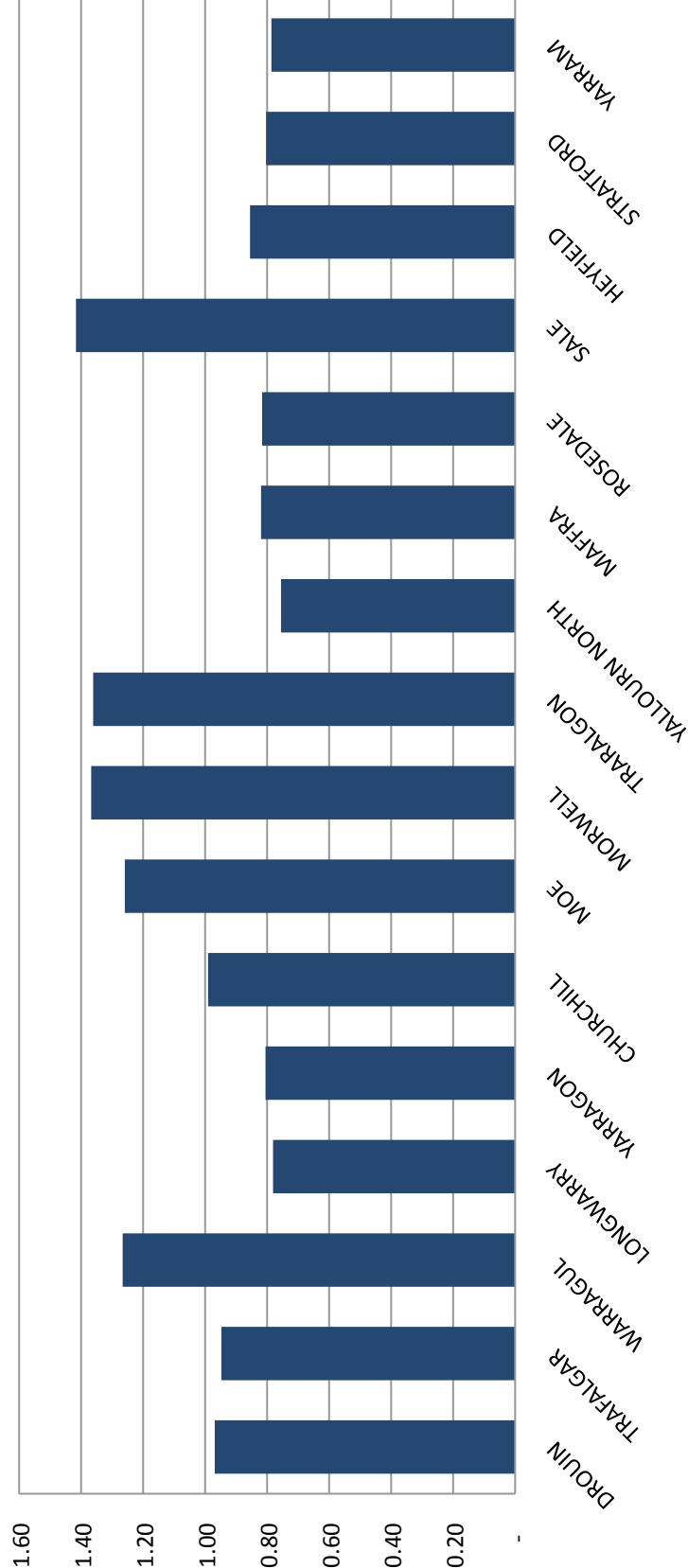


Figure 8: Human Capital Index, town level (values relative to overall town average)



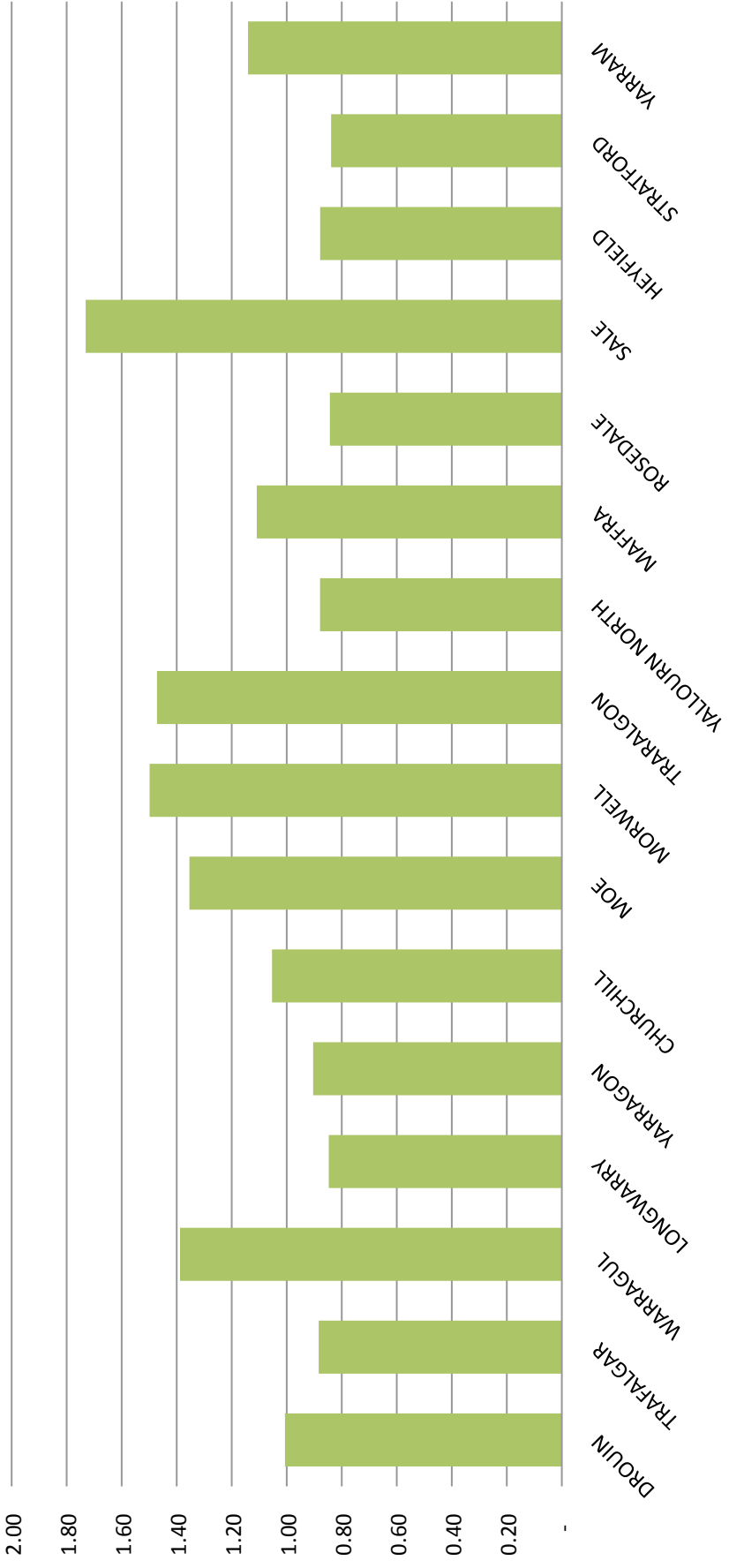
Source: authors' calculations

Figure 9: Social Well-being Index, town level (values relative to overall town average)



Source: authors' calculations

Figure 10: Liveability Index, town level (values relative to overall town average)



Source: authors' calculations

Appendix 2

Data Sources

Local Government Authority (LGA) level

Economic Health

<u>Variable</u>	<u>Source</u>
Personal income (\$)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Employment Participation rate (%)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Median house price (\$)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Average rent and mortgage payments (\$)¹	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Building approvals²	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Number of businesses	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Area of LGA (sq Km)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Industry of employment by occupation, share of non-dominant industry (%)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Industry"

Human Capital

Variable	Source
Population with higher education qualification, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of population who did not complete year 12, (%) ³	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
FTE students	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Students & apprentices receiving youth allowance	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Sum of Estimated Residential Population (ERP) 15-64 ⁴	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Population density (people/sqKms)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
1-share of people reporting fair or poor health, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of people reporting type 2 diabetes, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of people overweight or obese, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of low birth weight babies, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of children developmentally vulnerable in one or more domains, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of low English proficiency, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
New settler arrivals per 100,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of humanitarian arrivals, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Index of Relative Socio-economic Disadvantage ⁵	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm

Social Wellbeing

Variable	Source
People who participated in citizen engagement in the past year, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Child Care/Kindergarten sites	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Aged care places per 1,000 eligible population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of people 75+ and living alone, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People who share a meal with family at least 5 days per week, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People who are involved in voluntary work, (%)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
General Practitioners per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Dental services per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Pharmacies per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Population with private health insurance, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Drug and alcohol clients per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Density of intentional injuries treated in hospital per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of low English proficiency, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People receiving support from Centrelink per ERP 15-64 ⁶	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
New settler arrivals per 100,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Humanitarian arrivals as a share of total arrivals, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm

Social Wellbeing (continued)

1/Hospital inpatient separations per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Crime against person per 100,000 people	Victoria Police (2014). Crime Statistics by LGA 2011/2012---2012/2013. Data for 2013. Available at http://www.police.vic.gov.au/content.asp?Document_ID=782
1/Crime against property per 100,000 people	Victoria Police (2014). Crime Statistics by LGA 2011/2012---2012/2013. Data for 2013. Available at http://www.police.vic.gov.au/content.asp?Document_ID=782
1/Crime rate density per 100,000 people	Victoria Police (2014). Crime Statistics by LGA 2011/2012---2012/2013. Data for 2013. Available at http://www.police.vic.gov.au/content.asp?Document_ID=782
People who feel safe on street after dark, (%)	Victoria Police (2014). Crime Statistics by LGA 2011/2012---2012/2013. Data for 2013. Available at http://www.police.vic.gov.au/content.asp?Document_ID=782
1/Total criminal offences per 1,000 population	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Index of Relative Socio-economic disadvantage ⁵	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Social housing as a share of dwellings, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Gaming machine losses per head of population ⁷	Victorian Commission for Gambling and Liquor Regulation (2014). Historical LGA population density and gaming expenditure statistics. Data for 2011. Available at http://www.vcglr.vic.gov.au/home/resources/data+and+research/data/
1/Gambling venue numbers ⁷	Victorian Commission for Gambling and Liquor Regulation (2014). Historical LGA population density and gaming expenditure statistics. Data for 2011. Available at http://www.vcglr.vic.gov.au/home/resources/data+and+research/data/
Community acceptance of diverse cultures, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Number of schools	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm

Liveability

<u>Proxy Variable</u>	<u>Source</u>
1/ARIA Index ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Households with broadband internet connected, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Employment participation rate	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Industry of employment by occupation, share of non-dominant industry, (%)	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Support smoking ban in outside seating areas, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of males 18+ who are current smokers, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Liquor licenses per 10,000 residents 15+	Department of Health (2014). Victorian alcohol statistics series. Data for 2010. Available at http://www.health.vic.gov.au/aod/pubs/statistics_series.htm
1-Alcohol-related hospital admission rate per 10,000	Department of Health (2014). Victorian alcohol statistics series. Data for 2010. Available at http://www.health.vic.gov.au/aod/pubs/statistics_series.htm
Number of schools	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
TAFE Institutes ⁹	Australian Government data (2013). TAFE Institute locations (Victoria). Data for 2014. Available at http://data.gov.au/dataset/tafe-institute-locations-victoria
University ¹⁰	Universities Australia (2014). University Profiles. Data for 2014. Available at https://www.universitiesaustralia.edu.au/australias-universities/university-profiles#.U8IXrECvE_Y
Child Care/Kindergarten sites	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People who feel safe on street after dark, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-persons reporting Asthma (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People who believe the area has good facilities and services, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-People with at least 2 hour daily commute, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Distance to nearest health service, (Km) ⁵	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
People with an adequate work-life balance, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/median rent for a 3 bedroom house, (\$)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Rental housing that is affordable, (%)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Median house price, (,000 \$)	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm

Data notes – LGA level

¹Average of the figures reported.

²Total new private sector houses.

³Divide total completed up to year 11 by overall total.

⁴Sum of the 15 to 64 ERP age brackets.

⁵LGA level calculated by averaging town level data.

⁶All recipients except Newstart allowance and Family Tax Benefit A and B.

⁷Derived from Victorian Commission for Gambling and Liquor Regulation data.

⁸Values not used for metropolitan LGAs due to incomplete data.

⁹Derived from a Government data map corresponding to LGA areas.

¹⁰Derived using an Universities Australia map corresponding to LGA areas.

Town level

Economic Health

<u>Proxy Variable</u>	<u>Source</u>
Personal income (\$)	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/community_profiles , "Search for Town (UCL)"
Employment Participation rate (%) ¹	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
Median house price (\$)	Realestate.com.au (2014). Median property price. Data for 2014. Available at http://www.realestate.com.au/neighbourhoods
Average rent and mortgage payments (\$) ¹	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
Building approvals ^{2,3}	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
Number of businesses ²	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
Area of LGA (sq Km)	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/community_profiles , "Search for Town (UCL)"
Industry of employment by occupation, share of non-dominant industry (%) ⁴	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Industry"

Human Capital

Variable	Source
Population with higher education qualification, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1-share of population who did not complete year 12, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
FTE students ⁵	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
People with TAFE qualifications	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/communityprofiles , "Search for Town (UCL)"
Students & apprentices receiving youth allowance ⁶	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for LGA", "Economy"
Sum of Estimated Residential Population (ERP) 15-64 ⁷	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
Population density (people/square Km)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1/Public hospital separations per ERP 15-64	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1/Primary care type ED presentations per ERP 15-64	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Childcare facilities	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1-share of low English proficiency, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Born overseas (% of population)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Index of Relative Socio-economic Disadvantage	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm

Social Wellbeing

<u>Proxy Variable</u>	<u>Source</u>
People who participated in citizen engagement in past year, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Child Care/Kindergarten sites	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Licensed aged care places ⁹	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1- share people aged 75+ who live alone, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Number of bowling clubs ¹⁰	Bowls Australia (2014). Find bowling clubs. Data for 2014. Available at http://www.bowlsaustralia.com.au/Get-Involved/Find-a-Club
People who are involved in voluntary work, (%) ¹¹	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/communityprofiles , "Search for Town (UCL)"
Number of General Practitioners	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Number of Dental services	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Number of Pharmacies	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Population with private health insurance, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Drug and alcohol clients per 1,000 population ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/share of ED presentations as a result of injury, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1-share of low English proficiency, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
People receiving support from Centrelink per ERP 15 -64 ¹²	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", " Search for Town", "Economy"
People born overseas, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1/Primary care type ED presentations per ERP 15-64	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1-Criminal offences per ERP 15-64 ¹³	Victoria Police (2012). Crime Stats 2011-12 19-11-12. Data for 2012. Available at http://www.police.vic.gov.au/crimestats/ebooks/1112/files/assets/basic-html/page95.html
Index of Relative Socio-economic disadvantage	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Public housing as a share of dwellings, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm

Social Wellbeing (continued)

1/Electronic gambling machines per 1,000 (18+) ¹⁴	Victorian Commission for Gambling and Liquor Regulation (2014). Gaming venue details. Data for 2014. Available at http://www.vcglr.vic.gov.au/home/resources/data+and+research/data/
1/Gambling revenue (\$M) ¹⁴	Victorian Commission for Gambling and Liquor Regulation (2014). Gaming venue details. Data for 2014. Available at http://www.vcglr.vic.gov.au/home/resources/data+and+research/data/
1/Number of gambling venues	Victorian Commission for Gambling and Liquor Regulation (2014). Gaming venue details. Data for 2014. Available at http://www.vcglr.vic.gov.au/home/resources/data+and+research/data/
Number of schools	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm

Liveability

<u>Proxy Variable</u>	<u>Source</u>
1/ARIA Index	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Households with broadband internet connected, (%)	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/communityprofiles , "Search for Town (UCL)"
Employment participation rate	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", "Search for Town", "Economy"
Industry of employment by occupation, share of non-dominant industry, (%) ⁴	Australian Bureau of Statistics (2014). National Regional Profile, 2008-2012. Data for 2011. Available at http://stat.abs.gov.au/itt/r.jsp?databyregion , "National Regional Profile", "Search for Town", "Industry"
Tourist accommodation establishments ¹⁵	Yellow Pages (2014). Restaurants. Data for 2014. Available at http://www.yellowpages.com/
People who support smoking ban in outside seating areas, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-share of males 18+ who are current smokers, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
Liquor licensing per ERP 15-64 ¹⁶	Victorian Commission for Gambling and Liquor Regulation (2014). Current Active Liquor Licences in Victoria. Data for 2014. Available at http://geomaps.vcglr.vic.gov.au/
1-Alcohol-related hospital admission rate per 10,000 ⁸	Department of Health (2014). Victorian alcohol statistics series. Data for 2010. Available at http://www.health.vic.gov.au/aod/pubs/statistics_series.htm

Liveability (continued)

Primary schools	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
Secondary schools	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
TAFE Institutions	Australian Government data (2013). TAFE Institute locations (Victoria). Data for 2014. Available at http://data.gov.au/dataset/tafe-institute-locations-victoria
University ¹⁷	Universities Australia (2014). University Profiles. Data for 2014. Available at https://www.universitiesaustralia.edu.au/australias-universities/university-profiles#.U8IXrECvE_Y
Child Care/Kindergarten sites	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1-Criminal offences per ERP 15-64 ¹³	Victoria Police (2012). Crime Stats 2011-12 19-11-12. Data for 2012. Available at http://www.police.vic.gov.au/crimestats/ebooks/1112/files/assets/basic-html/page95.html
1-persons reporting Asthma (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
People who believe the area has good facilities and services, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1-People with at least 2 hour daily commute, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Distance to nearest health service, (Km)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
People with an adequate work-life balance, (%) ⁸	Department of Health (2014). 2012 Local Government area profiles. Data for 2012. Available at http://www.health.vic.gov.au/modelling/planning/lga.htm
1/Median rent (\$)	Australian Bureau of Statistics (2014). Community Profiles. Data for 2011. Available at http://www.abs.gov.au/websitedbs/censushome.nsf/home/communityprofiles, "Search for Town (UCL)"
Households occupied, (%)	Department of Health (2014). Town and community profiles. Data for 2014. Available at http://www.health.vic.gov.au/modelling/planning/community.htm
1/Median house price, (,000 \$)	Realestate.com.au (2014). Median property price. Data for 2014. Available at http://www.realestate.com.au/neighbourhoods

Data notes - Town level

¹Available combined town level information used from NRP data when there is no specific town data available.

² Town level figures are calculated by using ERP, NRP area and population.

³Total new private sector houses.

⁴Calculated from NRP-ABS data.

⁵Sum of primary, secondary, TAFE and University students.

⁶Town level figures are calculated by using parental LGA data and ERP (15-64) by town.

⁷Calculated at town level using labour force of towns.

⁸Parental LGA value used due to town data unavailability.

⁹Calculations added a unity for index calculations.

¹⁰Calculated by using total number of clubs reported by town.

¹¹Only include those who have begun work as a percentage of total.

¹²Calculated at town level using ERP data.

¹³Calculated using total crime per post code adjusted by labour force of towns.

¹⁴Null values = 1 for index calculations.

¹⁵Calculated by using number of restaurant venues (retrieved June 2014).

¹⁶Derived from Victorian Commission for Gambling and Liquor Regulation data maps at LGA levels and adjusted.

¹⁷Derived using a Universities Australia map corresponding to town areas.

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