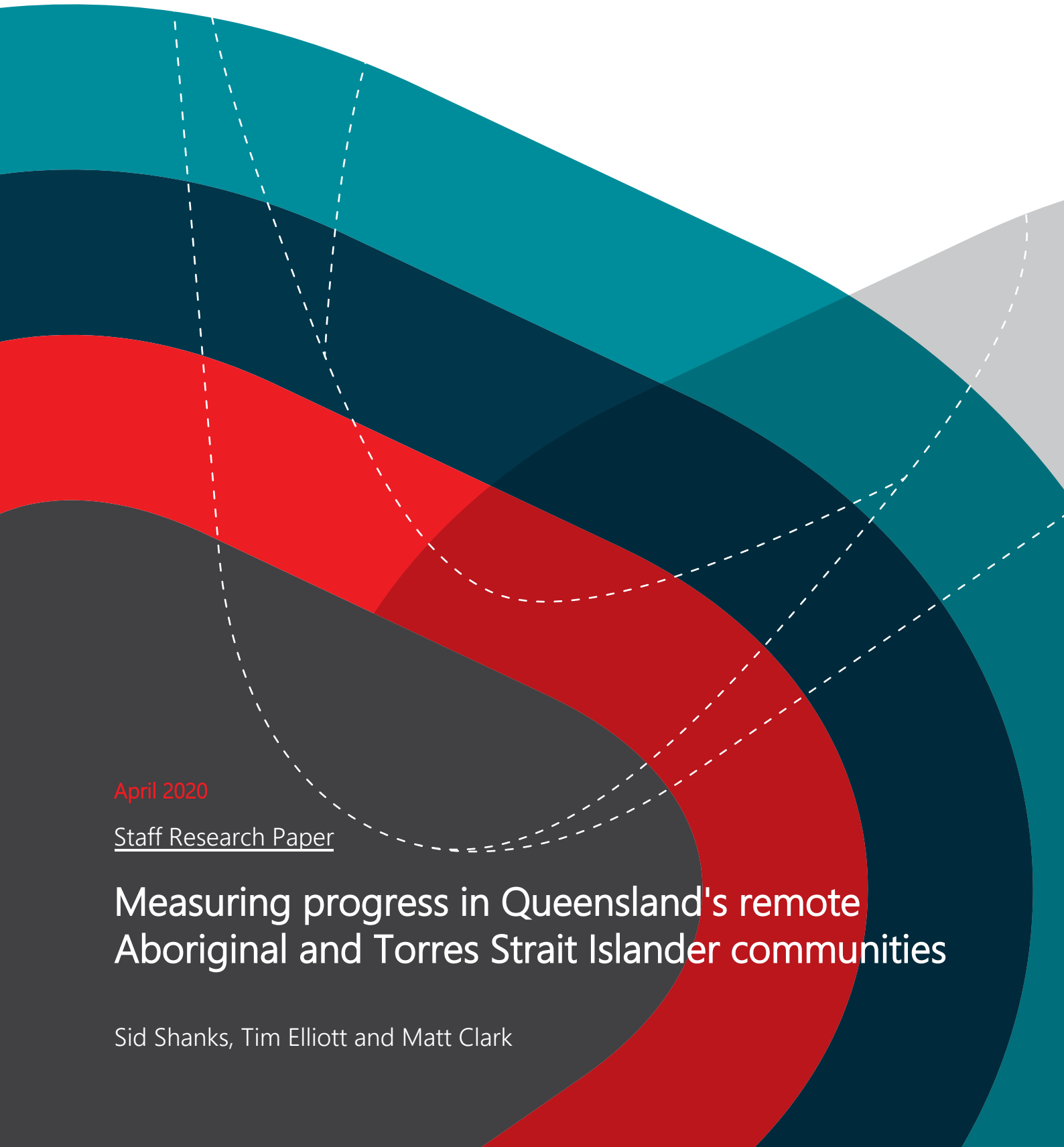

April 2020

Staff Research Paper

Measuring progress in Queensland's remote Aboriginal and Torres Strait Islander communities

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Preamble

One of the legislated functions of the Queensland Productivity Commission is to conduct self-initiated research on productivity, economic development or industry in Queensland. This is a staff research paper, aimed at informing rather than prescribing policy solutions. The views expressed in this paper reflect those of the authors and may not represent the views of the Queensland Productivity Commission.

As the Commission noted in its inquiry into service delivery in remote and discrete Aboriginal and Torres Strait Island communities, fundamental structural and economic changes are required to improve outcomes. Some key reforms, such as community level decision-making and accountability through agreements, would need to be supported through independent monitoring and reporting on progress. More broadly, communities, government and service providers are more likely to achieve progress when there is a shared understanding of outcomes.

This paper provides a first step at measuring and communicating progress in Queensland's discrete Indigenous communities. The framework in this paper is intended to illustrate an approach to measuring progress that can be further subdivided to provide a more detailed analysis of the key drivers of change.

The work in this staff research paper is only a starting point. It attempts to measure progress in a way that has not been done before in Australia. As such, the estimates in the paper should be considered experimental. There is also significant scope for work to further develop the framework.

The paper relies on publicly available data, which excludes some important information. Additional government agency data may enhance the robustness of measured outcomes, as would the inclusion of data from communities themselves.

The framework will also benefit from the involvement of communities—measures of progress need to reflect the priorities of communities. For this reason, the measurement framework in this paper has been structured so that it can easily be modified to incorporate community priorities and knowledge.

We hope it provides a useful contribution to measuring and monitoring progress in the discrete Indigenous communities.

Contents

Key points

- Assessing progress in Queensland's discrete Aboriginal and Torres Strait Island communities is important; however, there is a lack of publicly available information or an agreed framework for measuring and monitoring progress.
- This staff research paper presents an approach for measuring progress in Queensland's seventeen discrete Indigenous communities using a wellbeing framework.
- The paper does not attempt to define Indigenous wellbeing or determine priorities for communities. Rather, it aims to demonstrate how progress could be measured using the Australian Bureau of Statistic's framework for measuring Indigenous wellbeing (which breaks wellbeing into nine domains). This framework adopts a broad view of wellbeing by combining a suite of statistical indicators, including traditional economic indicators such as income and employment, into a single composite measure of wellbeing.
- Estimates of progress are provided in this paper, however, they should be considered experimental. Our estimates of progress were constructed using publicly available information; they therefore omit some important indicators for which data were not publicly available—such as community level information relating to the *Health* and *Family and kinship* domains. Further, a simple weighting scheme has been applied to produce the composite measure and, as a result, weightings used in the construction of the estimates may not reflect community and stakeholder priorities.
- Our estimates suggest measured wellbeing across the discrete communities *in aggregate* increased by almost 9 per cent between 2006 and 2016.
- Significant progress appears to have been made in *Education, learning and skills*, *Housing and infrastructure* and *Culture, heritage and leisure* domains. However, there has been a decline in outcomes relating to *Customary, voluntary and paid work*. Progress in other domains was flat.
- Levels of measured wellbeing vary significantly between the discrete communities. The estimates presented in this report suggest that some communities have levels of measured wellbeing that would compare favourably with non-Indigenous communities across the state. For others, however, measured wellbeing was far below the level in other communities.
- For some discrete communities, measured wellbeing declined materially between 2006 and 2016. While there was no single cause for this decline, key issues include:
  - increases (or smaller than average declines) in overcrowding
  - declines in community participation in education, work and volunteering
  - declines across indicators relating to the *Citizenship and governance* domain.
- There is still significant work that could be done to improve estimates of progress:
  - The development of any formal framework should be undertaken with communities to ensure it is robust and reflects the priorities of stakeholders.
  - Data that are not currently publicly available (for example, government agency data) could be used to support the construction of improved indices of wellbeing.
- For future work, consideration should be given to whether there is a case for additional survey work to collect community-level data.
- Despite their limitations, the estimates of progress outlined in this paper could provide a starting point for improving the accountability required under the agreement-making processes envisaged in the Commission's final report on service delivery in remote and discrete Aboriginal and Torres Strait Islander communities.

1. Introduction

This staff research paper sets out an approach to measuring progress in Queensland's discrete Aboriginal and Torres Strait Islander communities (referred to in this paper as the discrete communities). The paper is intended to promote discussion on how to measure and monitor outcomes in the discrete communities.

1.1 Background

This research paper was developed as a result of the Commission's inquiry into service delivery in Queensland's remote and discrete Indigenous communities (the Inquiry) (QPC 2017).[1] As noted in the inquiry report, fundamental economic and structural reforms are necessary for communities to improve outcomes, and independent monitoring and oversight will be essential to measure progress and keep reforms on track.

An important feature of these reforms is for communities to have real ownership of local and regional priorities, performance monitoring and adaptive practice. It is now widely accepted that effective policy and program design needs to be led by (or at least informed by) Indigenous people rather than government (PC 2012).

Enabling this kind of community-led decision-making can only happen when communities have access to relevant information in a form that is useful to them (Biddle 2014).

It is well known that there is a substantial disparity between outcomes for Queensland's Indigenous communities and the rest of Queensland. It is also well known that there is substantial variation in wellbeing across Indigenous communities—wellbeing is better in some communities than in others. Even where progress is made, we do not have good systems in place to identify those areas where it is occurring. Partly this has to do with a lack of data, but it also has to do with the way that data have been used and presented:

> *Measurement, by itself, has no value. It is simply data. The issue is what to do with this data (King 2019)*

The lack of availability and quality of data on outcomes in Indigenous communities has been recognised since at least the Fitzgerald Report (Fitzgerald 2001), and was also discussed in the Commission's inquiry report (QPC 2017).

There is a body of data available, for example, nationally through the 'Closing the Gap' reports (Department of the Prime Minister and Cabinet 2019) or at the state level, through the Department of Aboriginal and Torres Strait Islander Partnerships (DATSIP), which manages the release of agency data to communities through semi-regular community 'snapshots'.

However, these data do not provide a measure of collective outcomes in communities. Some data, such as the state snapshot reports are not publicly available and must be accessed through departmental field officers. Further, data are often not presented in a way that allows easy comparison, either across time or between communities, and there is little analysis to enable interpretation.

The presentation of data also often focusses on the problems, or levels of harm, rather than on whether communities are making progress.

A lack of informative and regular reporting on community progress creates information gaps between policy makers, service providers and communities—which can make it difficult to establish accountabilities, identify priorities and drive change to improve outcomes.

[1] In December 2016, the Queensland Government asked the Queensland Productivity Commission (the Commission) to conduct an inquiry into service delivery in Queensland's remote and discrete Aboriginal and Torres Strait Islander communities. The Commission publicly released the report on 22 June 2018, following the Government's response to the inquiry.

1.2 Purpose of this paper

This paper sets out an approach for measuring progress in the discrete communities.[2] The approach is intended to complement, rather than replace, existing data, and should be considered as an extra tool in the toolkit for understanding outcomes in communities.

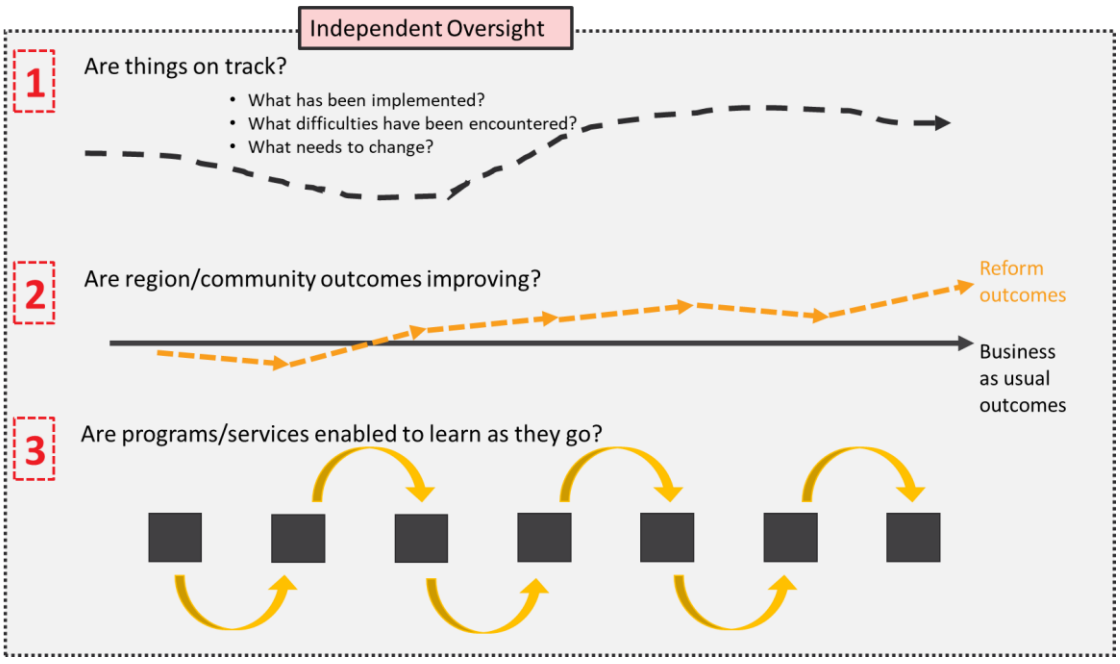
The approach adopted in this paper is a first attempt at measuring progress—as such, its primary goal is to demonstrate how progress can be measured, rather than to provide a definitive statement on progress in the discrete communities.

It is hoped that the approach presented in this paper will aid communities and governments to progress reforms such as those identified in 2017 inquiry report to devolve more authority and accountability over service delivery to communities. To implement these reforms, communities and government will need to understand how reforms are delivering progress in the communities. The inquiry report addressed this issue, recommending the adoption of an evaluation framework with oversight by an independent body.

This evaluation framework (Figure 1.1) consisted of three parts:

- an evaluation of the implementation of the proposed structural reforms using a process evaluation approach
- a community and/or regional-level assessment of outcomes relative to a counter-factual (business as usual)
- support for individual program/service delivery with a focus on enabling adaptive learning (QPC 2017, p. 232).

Figure 1.1 Proposed evaluation framework to support QPC inquiry recommendations



While the inquiry report provided some high-level comments on each of these three parts of the framework, the Commission was unable to provide technical detail on how any assessment might be done. This staff research paper addresses this shortcoming by providing some technical detail on ways to assess the second component of the evaluation framework—a proposed method for assessing jurisdiction level outcomes[3].

[2] While the approach is applied to the discrete communities, it could also be used in other communities.
[3] If it could be made available on a regular basis, the approach to measuring progress may also assist individual programs and services to adapt and learn as they go.

Box 1.1 Why is measuring regional or community outcomes important?

To ensure accountability, and to provide confidence that large expenditures are achieving meaningful change, there must be monitoring of the outcomes in communities and/or regions.

Given the enormous challenges in establishing causal links between individual services or programs, community-level outcomes should often be considered the result of the service delivery system as a whole, rather than linked to any single program or service. Recognising that inter-relationships between the various programs and service providers is crucial to achieving outcomes means that meaningful results will be achieved by looking at outcomes at a region or community level rather than through service silos.

Source: QPC 2017, p. 234.

While the paper proposes that a wellbeing framework should be used to measure progress, it does not attempt to define Indigenous wellbeing or to determine priority areas for communities or government. These are most appropriately determined by communities themselves—for example, in some communities, such as Yarrabah, work is being undertaken to measure wellbeing based on the priorities of the community.

1.3 Limitations

While the paper provides some measurement of outcomes in the discrete communities, these results should be considered experimental.

A primary challenge was the absence of publicly available information to inform the measurement of progress in communities. For this research paper, we were only able to utilise publicly available data. More comprehensive measures of progress could be possible if government agency data could be made available. Further, the indicators outlined in this paper could be supplemented by research or information compiled by communities themselves.

A second challenge is that, even where data are available, the small (and often mobile) populations in the discrete communities create statistical volatility, meaning short-term variations must be viewed with a high degree of caution. Where possible, the authors have avoided the use of indicators with a high degree of volatility and have used techniques to smooth volatility where this makes sense (these are discussed in Appendix A). No formal assessment of the statistical robustness of individual or aggregate indictors has been made in this report.

The authors of this research paper were only able to inform their work through limited, targeted consultation with Indigenous stakeholders (whose generous contributions are acknowledged). As a result, it is likely that some Indigenous stakeholders will hold views that are not represented in this paper.

The data available to support the measurement of progress in the discrete communities are only available infrequently. This means the authors had to extrapolate for missing data points. For this reason, users should avoid comparing changes in community outcomes from year to year—rather, change should be considered as trends over longer time periods.

Finally, some caution should be used when comparing one discrete community with another (Box 1.2).

Box 1.2 Comparing outcomes between communities

Some caution should be used when comparing outcomes between different discrete communities. The observed differences in outcomes are likely to be the result of many different factors such as historical events and/or access to economic resources.

To make a valid comparison of community outcomes, these factors should be controlled for as far as possible. When comparisons are made between communities that are similar, in certain desired characteristics, then the conclusions drawn from comparisons are likely to be more robust. Matching communities can increase the likelihood that the observed comparisons and resulting conclusions are robust and not the result of factors/relationships not captured in the analysis.

White and Maxim (2007) provide an example of a procedure for matching communities based on data from the Canadian Wellbeing Index.

2. Measuring progress

Measuring progress in remote and discrete communities is challenging. There is no agreed framework for assessing progress, and the data needed to measure progress is often incomplete or imperfect.

Progress can be measured in many ways, but will typically involve a range of measures, such as employment, income, health, community safety and housing outcomes. While including a wide range of measures can ensure validity, it can also create problems with interpretation—for example, how does one consider progress if one area is getting better, but another is getting worse?

One way of dealing with this problem is to develop a composite measure of progress. A composite measure takes a range of indicators and combines them into a single measure (OECD et al. 2008). There are advantages and disadvantages of using composite measures (Table 2.1), but they have become a common way of measuring community outcomes because they are relatively easy to interpret (OECD et al. 2008).

Table 2.1 Advantages and disadvantages of composite measures

Advantages	Disadvantages
Can summarise complex, multi-dimensional realities to support decision-makers	Can send misleading policy messages if poorly constructed
Easier to interpret than a multitude of separate indicators	Can invite overly simplistic policy conclusions
Allows an assessment of progress over time	May be misused
Allows the inclusion of detailed information by rolling separate indicators together	Selection of indicators and weighting can be contentious
Allows performance to be discussed in a meaningful way	Can hide failings in key areas if the construction process is not transparent
Allows easily understood narratives to be constructed	May lead to poor policy outcomes if dimensions which are difficult to measure are ignored
Enables users to compare complex data easily	

Source: adapted from OECD et al. 2008.

When choosing which indicators to include in a composite measure of progress, consideration must be given to the various perspectives of stakeholders, including:

- Aboriginal and Torres Strait Islander people living in remote and discrete communities
- governments that provide funding for service delivery
- the general community who may have an interest in outcomes and who subsidise service delivery in the discrete communities.

While some limited consultation with stakeholders was undertaken, we have not been able to consider the full range of stakeholder perspectives. As a result, the focus of this paper is on developing a *method* that can be further informed and refined by communities and other stakeholders.

For this reason, the measurement framework has been structured so that it can easily be modified to incorporate community priorities and knowledge.

When looking at outcomes, it will be important to understand the jurisdiction that authorises service delivery. Under the structural reforms proposed in the Commission's 2017 inquiry, decisions about service delivery should be made at either the community or region level. This means that the appropriate regional level for examining

outcomes may vary depending on the outcome being examined. For example, it might make little sense to examine community employment rates where regional approaches are being used to create employment by encouraging mobility. Similarly, it would not be helpful to examine outcomes at a regional level where different service delivery decisions are being made by each community in the region.

2.2 Frameworks for measuring progress

There are many different frameworks for measuring progress. Traditional frameworks either focus on a narrow set of parameters, such as economic factors (including indicators such as gross domestic product and employment) or attempt to attribute outcomes to a service or program.

Given the difficulties attributing outcomes to any single service or program (for example see Staines & Moran 2019) and the need to include Indigenous perspectives, it would make sense to measure progress against a broader measure of wellbeing than has traditionally been the case (Limerick 2009).

Box 2.1 The Closing the Gap framework

The Closing the Gap framework was established in 2008 to measure progress across seven key areas. It sets out targets for closing the gap between outcomes for Indigenous and non-Indigenous people in Australia across each of the seven areas, and how outcomes will be reported. The Closing the Gap targets have focused attention on outcomes for Aboriginal and Torres Strait Islander communities—for example, the most recent Queensland report card shows that only two of the seven targets are on track (DATSIP 2019).

The Closing the Gap framework has been criticised for:

- Its focus on a narrow set of indicators that may not adequately reflect Indigenous perspectives (Reconciliation Australia 2018)
- its use of relative measures—because the targets are measured against non-Indigenous outcomes, progress on Indigenous outcomes can be hidden by state-wide gains (Altman et al. 2008)
- providing unrealistic targets, with some arguing closing gaps in outcomes may take generations (Altman et al. 2008)
- a lack of focus on improving Indigenous governance outcomes (for example see Graham 2015).

Perhaps the most significant shortcoming of the Closing the Gap indicators is that they are usually only reported at the national or state level. This means that it is difficult to attribute progress to any specific reform or initiative where these are community specific—as a result, the framework provides little information to inform decision-making or establish accountabilities for outcomes in the discrete communities (ANAO 2019; Moran 2018). For example, the Cape York Welfare reforms were an attempt to reform the delivery of welfare services and provide incentives for communities to improve social outcomes (Australian Government & Department of Families 2013). These reforms, however, only applied to select communities on Cape York and so cannot be assessed against current public reporting metrics such as Closing the Gap.

Wellbeing measures take a broader view of progress than typical economic indicators such as GDP, typically combining a series of statistical indicators into a single composite measure (ABS 2001, OECD et al. 2008). The intention is to gauge the level of life satisfaction and emotional wellbeing of the population. Such measures should therefore include the aspects of life that people and societies value, such as notions of freedom, opportunities and capabilities (Gorecki et al. 2011).

In practice, however, data that provide direct evidence of wellbeing can be difficult to collect, and as a result most wellbeing frameworks use proxies to measure wellbeing. These proxies might include data related to health, income, education, social relationships, personal safety and the myriad other measurable aspects of life that people have a reason to value.

Wellbeing frameworks have been adopted in several jurisdictions around the world (Box 2.2). Most are constructed from relatively simple metrics that are regularly captured as part of social surveys or through national or state-wide censuses.

Box 2.2 Wellbeing frameworks around the world

There are several wellbeing measures in use around the world. Several of these are considered below.

OECD Wellbeing Indicators—a compendium of indicators that the OECD considers as important measures of wellbeing (OECD 2011). Indicators include measures relating to material living conditions (income and wealth, jobs and earnings and housing) and quality of life (health status, work and life balance, education and skills, civic engagement and governance, social connections, environmental quality, personal security and subjective wellbeing).

The Canadian Community Wellbeing Index (CWB)—a measure of the standard of living and quality of life for all Canadian communities, including First Nations (Flanagan & Beauregard 2013a; Michalos et al. 2011). The index is produced by Indigenous and Northern Affairs Canada (INAC) and is composed of data on income, education, housing conditions and labour force activity.

United Nations Development Programme's Human Development Index (HDI)—the HDI was created on the understanding that people and their capabilities should be the ultimate criteria for measuring the development of a country, not economic growth alone. It combines three key dimensions of human development: a long and healthy life, being knowledgeable and having a decent standard of living (Anand & Sen 1994).

New Zealand Living Standards Framework (LSF)—the LSF was developed by the New Zealand Treasury to provide a broader indicator of progress than traditional indicators such as GDP (New Zealand Treasury 2018). The framework uses 12 domains to measure current wellbeing, but also considers future wellbeing by examining four different capitals (natural, human, social and physical capital). The New Zealand Treasury has attempted to build the framework into its policy cycle and reports outcomes through a dashboard.

Social Progress Index (SPI)—a measure of social progress developed by the non-profit sector as a response to the over-reliance on economic indicators. The index excludes any economic variables and is based on a range of social and environmental indicators based on three dimensions of social progress: basic human needs, foundations of wellbeing, and opportunity (Stern et al. 2016).

Growth and Empowerment Measure (GEM)—the GEM was developed as a tool to measure the progress that various interventions were having on empowerment. It seeks to measure people's perspectives of their psycho-social wellbeing and empowerment at the individual, family and organisational level (Haswell et al. 2010).

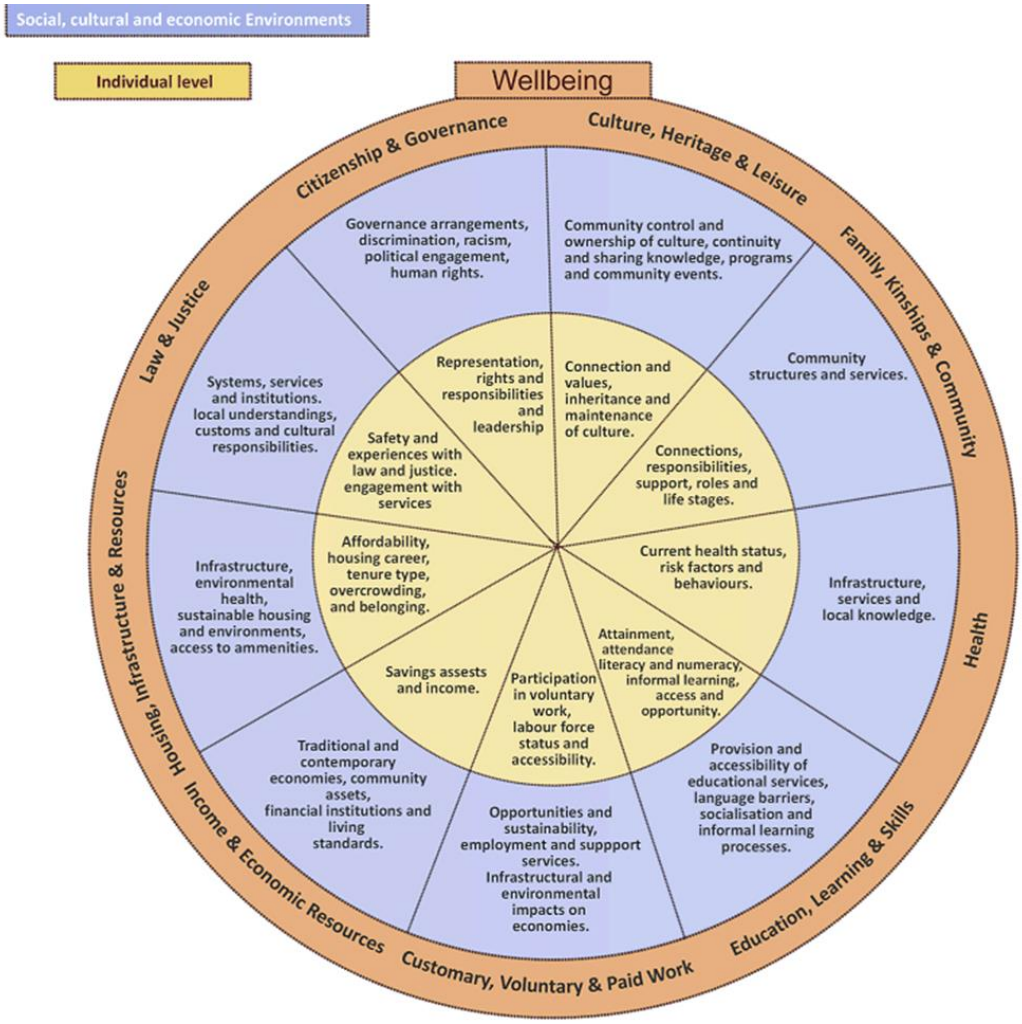
2.3 A framework for measuring wellbeing

Given their focus on individual welfare, wellbeing measures, by definition, need to consider those aspects that individuals consider are important to their welfare. Most wellbeing frameworks are similar[4]—reflecting the common factors that are widely accepted as contributing to individual wellbeing—and are comprised of several 'domains' (such as health, education and income).

Typically, the weightings attributed to each domain reflect the relative importance that individuals give to each of these domains. The relative importance of any given domain is likely to vary across communities and individuals. For example, some communities may give more importance to health outcomes while others may put a higher value on social interactions. As such, Indigenous Australians living in remote or discrete communities are likely to have unique views on the factors that contribute to wellbeing (AIHW 2009; Prout 2012; Salmon et al. 2018).

For the purposes of this paper, we have adopted the Australian Bureau of Statistics' (ABS) framework for measuring the wellbeing of Aboriginal and Torres Strait Islander peoples (ABS 2010a). The framework was developed by the ABS in conjunction with stakeholders. It attempts to provide a holistic approach to the mapping of statistics about the wellbeing of Indigenous Australians (ABS 2010a).

Figure 2.1 ABS framework for measuring wellbeing of Aboriginal and Torres Strait Islander peoples



[4] There is an emerging consensus on the factors that contribute to wellbeing, and most frameworks reflect this.

The framework is organised across nine domains and includes traditional measures of wellbeing such as employment and income. It also includes measures relating to community control, culture and traditional knowledge. The ABS encourages the use of the framework as a 'concept map for measuring wellbeing' (ABS 2010a).

When using the framework, the ABS recommends that the elements are used in reference to individuals rather than households. The ABS also acknowledge:

> *that some elements of the framework may not lend themselves to being collected in traditional statistical collections and some elements may not be able to be measured at all. This in no way means that these concepts are not important to the wellbeing of individuals and communities. (ABS 2010b)*

Some elements of the framework may include items of little relevance to some individuals or communities, depending on their own life circumstances. This means that the framework includes elements that could be interpreted in different ways and can be used selectively as circumstances warrant. An example of this is the importance placed on home ownership—which might be considered very important in some locations, but less so in others.

It should also be noted that there may be significant overlaps between each of the domains in the wellbeing framework. For example, it is likely that increases in paid work (*Customary, voluntary and paid work* domain) would have a strong positive influence on savings, assets and income (*Income and economic resources* domain). The authors have not assessed the extent to which there are overlaps between any indicators in each domain, and how these may affect an aggregate indicator of wellbeing.

More information on the ABS framework for measuring wellbeing of Aboriginal and Torres Strait Islander peoples is provided in Appendix B:.

3. Methodology

3.1 Identifying progress

Progress can be measured in two key ways:

- by comparing a measure/s of wellbeing across time periods (within-community changes in wellbeing)
- by comparing a measure/s of wellbeing across communities (benchmarking). This can involve a comparison of changes over time and/or a comparison of levels of wellbeing at a point in time.

Benchmarking can help a community interpret its own performance. A measured improvement in wellbeing may appear to be a 'good' performance. However, if similar communities are improving at a significantly faster rate, then this may affect how the community views its own performance. On the other hand, a small or nil improvement in performance may be viewed more favourably if the wellbeing of similar communities is deteriorating. This is of particular interest where the communities face similar challenges, but the actions taken to address them differ across communities.

The two approaches are often complementary in that they provide different information that can be used to better understand how a community is progressing in terms of the wellbeing of the members of the community. The two approaches have different data requirements. Across-community comparisons require a uniform (or core) set of indicators common to each of the discrete Indigenous communities, whereas a common set of indicators is not required if the only purpose of the index is to measure within-community change.

The composite index methodology discussed below aims to capture both approaches—a community's progress in improving wellbeing is measured both as within-community changes over time and are benchmarked against 'best possible' outcomes. Where possible, a common set of indicators is used across all communities.

Indices of measured wellbeing have been constructed for each of the discrete communities that exist as a discrete local government area (LGA) (Table 3.1).

Table 3.1 Discrete Indigenous communities that are LGAs

Aurukun	Mapoon	Torres
Cherbourg	Mornington	Torres Strait Island
Doomadgee	Napranum	Woorabinda
Hope Vale	Northern Peninsula Area	Wujal Wujal
Kowanyama	Palm Island	Yarrabah
Lockhart River	Pormpuraaw	

3.2 Subjective versus objective indicator approaches

Wellbeing can be measured using subjective and objective measures.

Subjective measures of wellbeing focus on people's own evaluation of their lives, such as their life satisfaction or happiness. Subjective measures are typically collected by surveying individuals and asking them to self-assess their own wellbeing. This might include questions such as:

- How often have you felt happy in the previous four weeks?
- How often have you felt so sad that nothing can cheer you up in the previous four weeks? [5]

Both the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) and the Household Income and Labour Dynamics in Australia Survey provide information about subjective wellbeing (AIHW 2014b, p. 3).

Subjective measures are seen as important by many practitioners for constructing measures of wellbeing, since they incorporate individual values and preferences, and make a direct assessment of people's emotions and quality of life (Diener et al. 1999, 2016).

Subjective measures of wellbeing, however, also suffer from shortcomings—for example, subjective measures may be affected by transient feelings or factors that may be considered ethically objectional (OECD 2011), and can be difficult to collate and measure in a meaningful way (Stiglitz et al. 2009). For this reason, subjective measures are typically used alongside objective measures of wellbeing.

Objective measures of wellbeing focus on hard data such as income or housing affordability. Objective measures are chosen that are considered to correlate with wellbeing. For example, Amartya Sen's seminal work on welfare economics (for example, see Anand & Sen 1994; Sen 1985) builds a set of objective measures and capabilities (such as education, income and life expectancy) that were considered to be important for allowing individuals to lead fulfilling lives.

While objective measures are easier to collate and measure, they require the compiler to make a judgment about the factors that are important for the wellbeing of the population under consideration.[6] Ideally, this judgment is tested against subjective measures, or is validated through the involvement of the communities being studied.

The wellbeing measures in this paper rely solely on objective indicators of wellbeing. While the authors consider subjective measures important, there are no statistically valid measures available for the discrete communities.[7]

For this paper, data were collected from a range of sources, and for a range of indicators, where each indicator is thought to be correlated with the wellbeing of a community's residents. Changes in the indicator should be capable of being interpreted as leading to or causing an underlying change in wellbeing—which remains unobserved.

As many different factors can influence an individual's wellbeing, and individuals can differ significantly in their characteristics (for example, preferences and values), an indicator approach tends to lead to the use of many individual indicators requiring an organising framework for the indicators—we have used the ABS framework for measuring Indigenous wellbeing (as outlined in section 2.3).

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[5] These questions were used in the 2008 National Aboriginal and Torres Strait Islander Social Survey (NATSISS) conducted by the ABS. The survey is based on personal interviews of Indigenous Australians and collects information on a wide range of areas of social concern including health, education, culture and labour force participation. Another source of self-reported life satisfaction or wellbeing is the Household, Income and Labour Dynamics (HILDA) survey. HILDA is a household-based panel dataset that collects information about economic and personal wellbeing, labour market dynamics and family life. The HILDA survey follows the lives of more than 17,000 Australians each year. The survey started in 2001. HILDA data are not used in this paper, because data are unreliable if disaggregated at the level of LGAs.

[6] Many objective measures, such as life expectancy, are universally regarded as adding to wellbeing.

[7] While the NATSISS captures are range of subjective measures of wellbeing, the survey is not sufficiently disaggregated to make robust estimates at the community or region level.

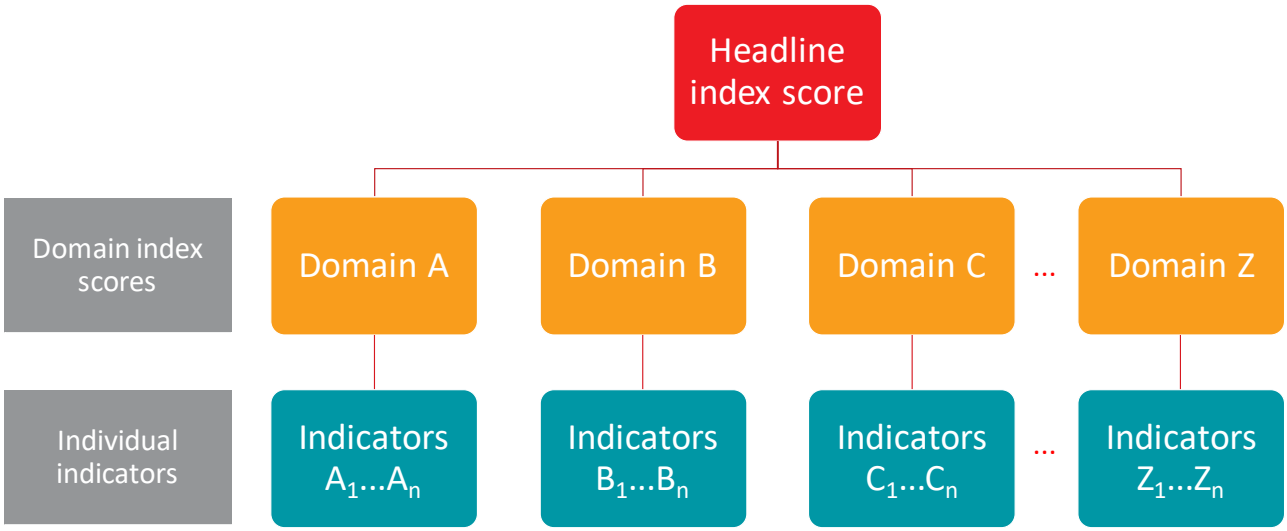
The indicators used in this paper differ by the 'distance' the underlying phenomenon being measured is from a direct measure of wellbeing:

- *Near-direct or proximate indicators*: some indicators are a proximate measure of wellbeing in that they measure an 'input' that directly contributes to wellbeing. An example would be a reduction in violent crime where the absence of harm improves wellbeing. Another example would be the consumption of a good or service where that consumption provides utility to the individual. Where this cannot be measured, income provides a close proxy.
- *Framework conditions indicators*: some indicators affect wellbeing by changing the social, cultural or economic conditions influencing people's behaviours and choices. These indicators often have a less immediate and more indirect influence on wellbeing and may involve more complex causation mechanisms between what the indicator captures and eventual changes in wellbeing. An example is educational outcomes—while these may directly contribute to wellbeing (if education gives an individual satisfaction), they also contribute indirectly to wellbeing by providing an individual with greater choice in employment and income.

3.3 General structure of the composite index

The ABS's Indigenous wellbeing framework provides the structure for the composite wellbeing index in this paper. For each of the nine domains in the framework, one or more indicators are combined to form an index score for each domain for each of the discrete communities. The index scores for the domains are then combined to provide an aggregate or headline wellbeing score (Figure 3.1).

Figure 3.1 General structure of the composite index



3.4 Selection of indicators

An important step in constructing index scores for each domain is deciding which indicators to include in the index.

This is less of an issue for this paper, as the choice of indicators was limited by the availability of data at the local government area (LGA) level. Many variables of interest are only available at higher levels of aggregation (for example, for all of Queensland). Nonetheless, the set of potential variables is wide even at the LGA level.

Theory and empirical evidence can help narrow the list of potential variables by including only those variables that have a strong rationale based on their relationship to wellbeing. However, given the heterogeneity of individuals and the many different channels through which wellbeing can be affected, this can still result in a large set of variables.

The criteria used in this paper to select indicators include[8]:

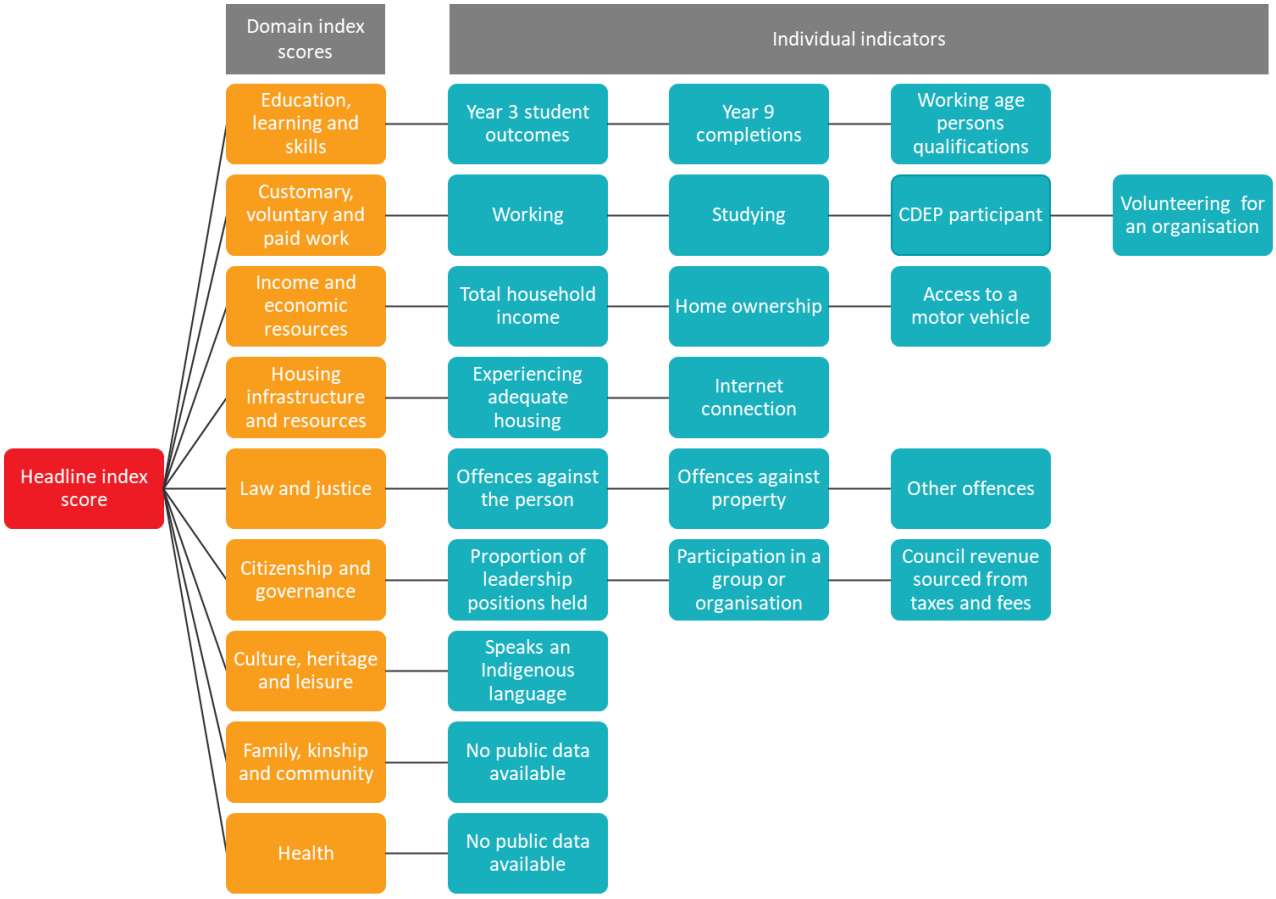
- *proximate indicators*—where possible, indicators that most directly measure progress are preferred. Indicators of progress include those that directly measure current wellbeing, as well as those that are likely to contribute to future wellbeing.
- *relevance*—relevance demands that indicators fit the needs of end users, are representative of Indigenous lived experiences and fit the Indigenous interpretation of the targeted phenomena. For example, Martin et al. (2004) observed that the 2001 Census of Population and Housing (Census) contained some questions that were lacking in cultural relevance and elicited answers close to nonsensical.
- *spatial detail*—one of the intended uses of the index is to assist communities in measuring and comparing progress; therefore, data are needed at the LGA level to allow a community to measure progress over time and to compare itself to other communities.
- *accuracy*—the statistical estimate for an indicator must be as close as possible to the unknown true value of the indicator. Even where all other criteria are fulfilled, accuracy (low sample variation) is required to ensure an indicator is suitable for predicting cause and effect.
- *frequency*—measuring change over time requires repeated measurement. The more frequent the measurement the more detailed the statistical picture, which needs to be balanced with the burden of gathering and processing data.

There are several empirical methods that can give information on the relative strength of the 'signal' provided by a set of indicators. These methods can further reduce the set of potential indicators, as well as provide information on the weights that might be applied in aggregating indicators.[9] These methods were not employed in this paper. In terms of the selection of indicators, theory and the above criteria reduced the set of potential variables sufficiently given the available data.

The specific structure of the composite index, including indicators used in each of the domains, is shown in Figure 3.2. More detail on the indicators under each domain is provided in Appendix A. Many important indicators could not to be included in this paper because key health, mental health, child protection, juvenile detention and incarceration data, for example, are not publicly available.

[8] The ABS Data Quality Framework (ABS 2009), UK Guidelines for Measuring Statistical Output Quality (ONS (Office for National Statistics UK) 2013), and the Statistics Canada Data Quality Toolkit (Statistics Canada 2019) were reviewed for potential criteria.
[9] The OECD et al. (2008) describes these methods which include: principal components or factor analysis; data envelopment analysis; benefit of the doubt approach (BOD); unobserved components model (UCM); budget allocation process (BAP); public opinion polls; analytic hierarchy process (AHP); and conjoint analysis (CA) (pp. 89–102). Various methodology papers are available providing examples of the application of these methods (for example, see ABS (2018b) in the context of the SEIFA indices, or Kaufmann et al. (1999) for the World Governance Indicators (WGI) project).

Figure 3.2 Specific structure of composite index



3.5 Data normalisation

The indicators used can differ in their unit of measurement:

- Some indicators take the form of integers (or real numbers), such as income data specified as dollars per week (for example, $300 per week).
- Many indicators are expressed as a proportion or per cent, such as home ownership rates (for example, 3.5 per cent).
- Other indicators can take the form of rankings or scores (for example, an indicator on devolution of services could take a score of between 1 and 5).[10]

Given the widely divergent form that indicators can take, some form of normalisation is required before indicators can be combined into a common index.

In this paper, all indicator data are transformed using a min-max approach (OECD et al. 2008). Under this approach, indicators are transformed by comparing community-specific outcomes with a minimum (or worst outcome) and a maximum (or best outcome) across all communities. Minimum and maximum values are estimated from data across all communities in Queensland across the time period of interest (2006 to 2016).[11]

In mathematical terms, this transformation can be expressed as:

$$I_{i,t} = \frac{X_{i,t} - X_{min}}{X_{max} - X_{min}}$$

Where $x_{i,t}$ is the observed outcome in community i, at time t, and x_{min} and x_{max} are the minimum and maximum observed outcomes across all communities across time.[12]

Where the minimum and maximum values are set this way the index scores are bound between 0 and 1, no matter the unit of measurement. These index scores can then be combined into a common score. This is illustrated in Table 3.2.

Table 3.2 Illustration of transforming different units of measurement into a common wellbeing score

Indicator	Unit	Observed outcome	Min	Max	Index score
X_1	Real number	450	200	900	0.36
X_2	Percentage (%)	35%	10%	90%	0.31
X_3	Categorical (1-5)	3	1	5	0.50
	Unweighted average score				*0.39*

The process for setting minimum and maximum values is described in Box 3.1.

[10] For example, an option that was considered (but not included) for this paper was a categorical variable representing the devolution of governance authority to LGAs for certain services from either the Queensland or Australian governments (such as primary health services and job placement services). Further development of the index in this paper might specify a range of services that could be run locally and count the number of such services transferred if it is believed that the transfer of the services would (or could) increase the wellbeing of local residents.

[11] The authors have adopted a methodology outlined in Anand & Sen (1994) that allows comparison of indices across time by determining fixed minimum and maximum values.

[12] Based on the approach used in Anand & Sen (1994), the authors modified this technique for some indicators by developing a hypothetical upper and lower bound of outcomes based on historical observations.

Box 3.1 Setting the minimum and maximum values

The higher that maximum values are set, the larger is the denominator relative to the numerator resulting in the index scores declining towards zero. Where there are a small number of outlier LGAs that have very high values for a particular indicator, this can result in a 'bunching' or compression of scores. At least on some indicators, Indigenous indicator values are significantly below that of other LGAs and exhibit this bunching pattern.

In transforming the data, there is no requirement that the minimum and maximum values must be the absolute minimum and maximum values in the data.

Reducing the maximum below the absolute maximum in the data has the effect of increasing the index scores for every LGA. As the maximum value continues to be reduced, the index score can move above a value of 1.0 (say, 0.9 to 1.2). There is nothing wrong with this as it affects the scores of all LGAs and does not alter the ordering of scores across LGAs. However, it can make interpreting results more confusing for users of the index.

Setting the minimum value above the absolute minimum value means that the index score for some communities—those communities who have a minimum that is below the absolute minimum—will be negative (say, –0.3). Again, there is nothing wrong with this other than the confusion it may introduce in interpreting results.

Given the inclusion of non-Indigenous LGAs for some domains to form a rest of Queensland score, some of which may perform significantly better on an indicator, the approach adopted to setting minimum values and maximum values is:

- *minimum value rule*—minimum values are set to the actual minimum values in the data (to avoid negative scores)
- *maximum value rule*—depending on the individual indicator, maximums may be set below the maximum value in the data. Values are not set so low that the composite index scores for each domain for the LGA aggregates of 'all discrete communities and 'rest of Queensland' rise above a value of 1.0. In practice, this means that the maximum used in creating the index scores is closer to the maximum for discrete communities.

3.6 Aggregation and weighting of indicators

Given that each indicator is transformed using the min-max process described above, it is straightforward to aggregate the index scores for individual indicators within a domain to a domain index score. The default approach is to take the simple average of the individual indicator scores—that is, indicators are given equal weighting. If a domain comprises two indicators with scores of 0.2 and 0.6, a simple average approach provides a domain score of 0.4. Likewise, domain scores can be aggregated into an overall wellbeing score for the community.

An equal weighting approach implies that changes in the indicators of a similar magnitude have an impact of a similar size on wellbeing. Or, it may be that there is a lack of evidence on the magnitude of impacts, so that there is no clear justification for deviating from equal weighting. In the latter case, unequal weighting is subject to the criticism of being arbitrary.

Equal weighting is applied in this paper as the default. Unequal weighting is chosen in those instances where there is strong change in an indicator that clearly has a stronger/weaker linkage with wellbeing than the other indicators of the domain. These exceptions are discussed where they occur under each domain (see Appendix A).

Where an indicator was unavailable for a community, it was omitted from the weighting. That is, if seven indicators were available, each would receive a weighting of 1/7. However, if only six indicators were available, each would receive a weighting of 1/6. This allows each community to be assigned a comparable score between 0 and 1.

This may result in bias from omitted variables. For example, if the omitted indicator was one that had a very positive outcome, it would make measured wellbeing lower than it should be.

Further development of the index could investigate the scope for greater use of differential weights—this might reflect community priorities or perceptions about the extent to which the different indicators affect wellbeing.

3.7 Interpolation and smoothing of data

Most of the indicators rely on census data, which is only available every five years. Other indicators are available annually. For census data, the between-census year estimates are interpolated using straight-line methods.

Some indicators are highly variable. Where it is suspected that variability is not the result of true underlying changes in the indicator, time series are smoothed using a simple moving average.

The min-max normalisation procedure can produce distorted results in the presence of extreme values. However, examination of the data did not raise significant concerns in this regard.

3.8 Reliability of population estimates

The reliability of population estimates has been of concern to communities, researchers and statistical agencies for some time. The principal sources of error in census data include:

- significant volatility in Aboriginal and Torres Strait Islander counts between censuses and within age–sex structures at the LGA level
- undercount of the total population, and for persons identifying as being of Aboriginal and/or Torres Strait Islander origin
- a partial response to the question on Aboriginal and Torres Strait Islander origin
- processing error related to the data capture of males and females in corrective institutions in Queensland at the time of the 2001 census
- introduced random error in census output (QGSO 2017).

Undercounts

Indicator ratios for the wellbeing index are constructed using population estimates that are based on usual place of residence. The ABS takes the census counts from the night of the census based on place of enumeration and adjusts the data taking account of residents absent interstate, interstate visitors and overseas visitors (Harding et al. 2017, p. 51).[13] Persons counted at a usual place of residence include both those who partially or fully completed their census form.

Based on 2006 census data, Taylor and Biddle (2010, p. 480) found that the populations of 49.4 per cent of Indigenous towns[14] in Australia were undercounted and 12.7 per cent were undercounted by 25 per cent or more. Undercounts are the persons missed in a census (who have no processed census form).

[13] See also 'Understanding population statistics' at https://www.qgso.qld.gov.au/about-statistics/analysing-data/understanding-population-statistics

[14] 'Indigenous towns' were defined as Indigenous Areas (IAs) in remote Australia where the Indigenous population is predominantly resident in urban centres and localities that have predominantly Indigenous populations. IAs were defined by the Australian Indigenous Geographic Classification.

An evaluation of the 2016 census found:

> *The 2016 Post Enumeration Survey estimated that 786,689 Aboriginal and Torres Strait Islander people should have been counted in the Census, compared to the 648,939 people who were actually counted. This is equivalent to a net undercount of 137,750 people, or a rate of 17.5 per cent of the estimated Post Enumeration Survey population count. (ABS 2017, p. 16)*

Our assessment of the census undercount in Queensland shows that undercounts are relatively small in the discrete communities (Table 3.3) and have been reasonably consistent through time. While undercounting is likely to introduce some error into the estimates of wellbeing (especially those derived from census data), these should be relatively insignificant.

Table 3.3 Usual place of residence estimates versus estimated residential population, 2016

Discrete community	Adjustment (%)	Discrete community	Adjustment (%)
Aurukun	3.6	Palm Island	6.1
Cherbourg	2.3	Pormpuraaw	4.1
Doomadgee	5.2	Torres	4.7
Hope Vale	5.0	Torres Strait Island	5.6
Kowanyama	4.1	Woorabinda	3.2
Lockhart River	4.4	Wujal Wujal	5.1
Mapoon	3.4	Yarrabah	5.3
Mornington	4.4	*Weighted averages*	
Napranum	4.6	All discrete communities	4.2
Northern Peninsula Area	5.3	Rest of Queensland LGAs	3.3

Notes: The difference between population counts are based on usual place of residence estimates and ERP estimates. The population counts include all persons (both Indigenous and non-Indigenous persons). Percentage change is the adjustment in the population count as a per cent of the ERP estimate. The adjustment includes the Post Enumeration Survey adjustment (under- or over-count), plus adjustments to obtain a population count based on usual place of residence, plus adjustments for backdating from census night to 30 June.
Source: ABS, Census of Population and Housing, 2016, TableBuilder.

Weighting for an 'all discrete communities' score

Population estimates are used in several ways in the composition of wellbeing indicators in this paper. One way they are used is as a weight when aggregating community scores to form a score for 'all discrete communities'. For aggregation, weights are based on estimated resident population (ERP).

Given the small undercounts, population weightings are not expected to result in significant error in the all communities score for a particular year, or for trends observed across all communities over time (for example, the headline index presented in Figure 4.2).

Indicators expressed as rates

Many individual indicators constructed in this paper are based on rates or ratios (for example, the proportion of the population obtaining a certain level of educational qualification). For this purpose, population estimates are based on place of usual residence and not on updated ERP estimates. That allows both the numerator of an indicator and the denominator to be measured on an equivalent basis.

The numerator and denominator of any indicator are usually based on the same underlying data (such as census data). In this case, the main potential source of error relates to whether the measured ratio differs from the ratio

for the 'true' population. Where there is a population undercount, a ratio may differ for those persons who were counted and those who are not counted (for example, the share of persons achieving Certificate III qualifications). If they do not differ, then under/over-counts do not distort the indicator for a given census year, or comparisons across years.

Propensity to identify as Indigenous

Several indicators used in this paper are based solely on the characteristics of Indigenous people in a community (not the total population including non-Indigenous people). An example is the proportion of Indigenous residents holding leadership positions.

Even if the total population in a community is measured accurately, indicators can still be distorted if there is a change over time in persons identifying themselves as Indigenous. The number of individuals identifying as Indigenous in the census has increased by approximately 300 per cent since 1971, well beyond the bounds of natural growth. The ABS attributes the unexplained component to a changing propensity to identify as Indigenous (ABS 2009), while some unofficial views contend it reflects variable census coverage (Taylor 2013).

An evaluation of the 2016 census stated that the change in the propensity to identify as Indigenous may in part be due to persons obtaining new knowledge during census periods concerning their ancestry:

> *[I]t is possible that a person's response to a question may change across Censuses because they gain knowledge that they did not have at the previous Census. For example, a person may discover a new line of their ancestry and, as a result, change their answer across the Censuses to either the Ancestry question or the Aboriginal or Torres Strait Islander Origin question. The proportion of Australians identifying as Aboriginal and Torres Strait Islander origin has increased in recent Censuses for reasons of knowledge and acknowledgement. This appears to have occurred again in 2016, especially in the three largest states where the intercensal growth rates of the Aboriginal and Torres Strait Islander population are well above likely levels of natural increase by birth or interstate migration. (Harding et al. 2017, p. 36)*

This argument, and potential source of distortion to some indicators, appears weak in the context of discrete communities, where ancestry is likely to be more clearly evident to residents (and those persons conducting the survey).

In Queensland's discrete communities there is little evidence of an increased propensity to identify as Indigenous (measured by the rate at which Indigenous status is 'not stated'). In the 2006, 2011 and 2016 censuses, Queensland discrete communities recorded an average rate of Indigenous 'status not stated' at 1.3 per cent, 1.4 per cent and 2.1 per cent, respectively. These rates are lower than corresponding averages for the rest of Queensland at 5.8 per cent, 5.2 per cent and 6.5 per cent, respectively.

The propensity to identify as Indigenous varies across datasets as well as within them. In the census there are no explicit incentives to identify either way, but Indigenous persons may be incentivised or disincentivised to identify as such where there is access to Indigenous-specific programs or a fear of discrimination (Biddle & Wilson 2013). A degree of caution is therefore advised when interpreting short-term changes in indicators expressed as rates where the numerator and denominator come from different datasets.

3.9 Census non-response rates

Indicators based on census data could be mis-measured due to non-responses. As an example, the indicator for the proportion of the population achieving Certificate III status is the proportion of *those who responded to the question*.

Similar to the discussion above, if the rate of non-response is high and non-responders are materially different in the characteristic being measured, then the indicator will not provide an accurate measure of the characteristic for the community as a whole.

One source of non-response error is where census forms are only partially completed. Another source is refusal by people to participate in the census or people not returning their census forms in time for their data to be processed.

For partially completed census forms, the ABS codes the response to missing data items as 'not stated' or 'status not stated'. As an example, 'not stated' responses for the landlord type by dwelling structure indicator, used in the income and economic resources domain, exhibited a rate ranging from a low of 0.0 per cent to 21.7 per cent for discrete communities in the 2016 census (Table 3.4). The average rate for the discrete communities was 9.6 per cent—not dramatically greater than the rest of Queensland at 8.0 per cent. For many communities, the non-response rate was small enough that even if non-responders had dramatically different characteristics to responders, the impact on the indicator would not be significant, particularly if this pattern was held across censuses so that trends over time were unaffected.

Table 3.4 Non-responses ('not stated') for landlord type by dwelling structure indicator, 2016

Discrete community	Not stated (%)	Discrete community	Not stated (%)
Aurukun	4.6	Palm Island	3.2
Cherbourg	3.1	Pormpuraaw	6.8
Doomadgee	12.4	Torres	21.7
Hope Vale	8.9	Torres Strait Island	9.4
Kowanyama	5.4	Woorabinda	7.4
Lockhart River	14.5	Wujal Wujal	0.0
Mapoon	9.4	Yarrabah	4.9
Mornington	3.6	*Weighted averages -*	
Napranum	2.4	All discrete communities	9.6
Northern Peninsula Area	16.6	Rest of Queensland LGAs	8.0

Source: ABS, Census of Population and Housing, 2016.

4. Aggregate community results

The results presented in this section primarily relate to outcomes aggregated across the discrete Aboriginal and Torres Strait Islander communities. Community-specific results are provided in Appendix C:.

Where data were available to support their construction, results are provided for each of the domains that make up the composite measure of wellbeing. More information on the construction of the indicators for each domain, as well as their limitations, is provided in Appendix A.

While every effort was made to compile indicators relating to each domain, we were able to access only public information. While community level data relating to the *Health* and *Family, kinship and community* domains were not publicly available (Table 4.1), data held by government agencies may provide useful insights on these domains.

Table 4.1 Domains making up the composite measure of wellbeing

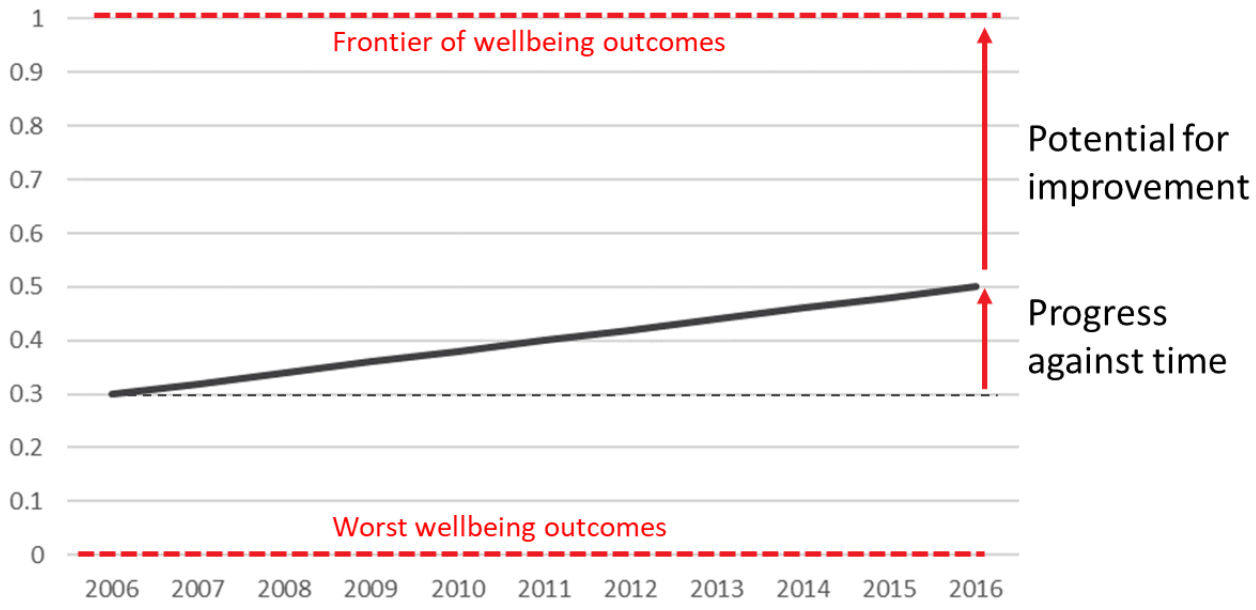
Domain	Used in composite measure?	Number of Indicators	Comments
Education, learning and skills	Yes	3	Adequate community level data publicly available
Customary, voluntary and paid work	Yes	5	Adequate community level data publicly available
Income and economic resources	Yes	3	Adequate community level data publicly available
Housing, infrastructure and resources	Yes	2	Adequate community level data publicly available
Law and justice	Yes	3	Adequate community level data publicly available
Citizenship and governance	Yes	3	Adequate community level data publicly available
Culture heritage and leisure	Yes	1	Limited community level data publicly available
Family, kinship and community	No	nil	No community level data publicly available
Health	No	nil	Indicative agency data available. Not used in the composite wellbeing measure

4.2 Interpreting the results

All results presented in this report should be considered experimental. While we have made every effort to ensure the data used are robust and representative of progress in the discrete communities, there are inherent uncertainties and gaps in the data. We recommend that users read the limitations relating to each domain (outlined in Appendix A).

All results are presented as relative to the 'best' and 'worst' outcomes that were identified for each domain indicator in the discrete communities (Box 4.1). This way of presenting results allows progress to be tracked both against time, as well as against a 'frontier' of best possible outcomes. For example, in the hypothetical example below (Figure 4.1), measured wellbeing increased by 67 per cent (from 0.3 to 0.5) between 2006 and 2016, but still has significant potential for improvement.

Figure 4.1 Interpreting the results



Box 4.1 Estimating the 'frontier' of wellbeing outcomes

The frontier is broadly benchmarked to the 'best' observed outcomes for each indicator. Generally, the 'best' possible outcomes reflect observed outcomes in non-Indigenous communities. However, there are some variations to this approach across the indicators.

For example, 'best' outcomes for council sustainability are benchmarked against remote communities rather than all communities since, under current policy settings, it would be unlikely that even the best performing remote council could be completely self-funding. Employment outcomes, on the other hand, are benchmarked to average non-Indigenous employment outcomes across Queensland, since it would not be reasonable to expect that a discrete community could achieve employment outcomes similar to remote or regional communities whose existence is centred almost solely around work opportunities (such as mining).

Worst expected outcomes are generally benchmarked to worst observed outcomes across the discrete communities. More information is provided in Appendix A.

4.3 Results

Headline measured wellbeing

The headline result for all discrete communities are presented in Figure 4.2. It shows that measured wellbeing across all communities increased by almost 9 per cent over the period 2006 to 2016, but from 2011 onwards little progress has been made. It also shows that much remains to be done in the discrete communities, with measured wellbeing across all discrete communities around half that of a community on the frontier of wellbeing.[15]

Figure 4.2 Trends in measured wellbeing, all discrete communities

Source: QPC estimates.

Contributions from each domain

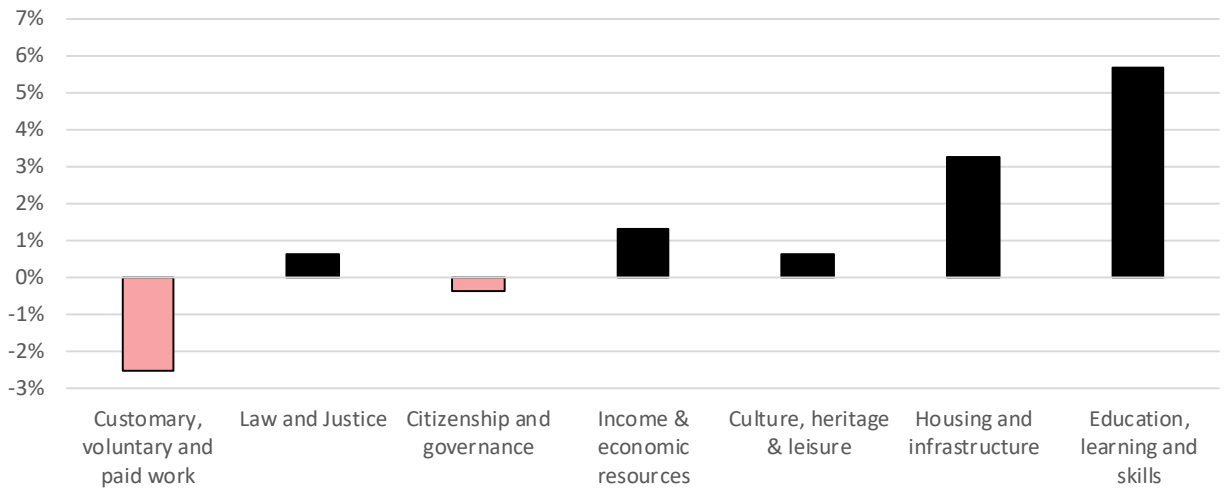
The growth in measured wellbeing can be decomposed into the contribution that each of the individual domains makes towards measured wellbeing. This decomposition is presented in Figure 4.3. It shows:

- The largest contribution to improved wellbeing came from the *Education, learning and skills* domain. The increase in this domain was supported by increases in the proportion of students achieving Year 9 or above, increases in Certificate III attainment and improvements in the achievement of minimum learning standards for Year 3.
- There were also significant gains from the *Housing, infrastructure and resources* domain. These gains were due to:
  - increases in housing outcomes, with significant reductions in the number of people in unsuitable accommodation
  - increases in internet connectivity.

[15] Another way of thinking about this is that wellbeing levels in the discrete communities could theoretically improve by 100 per cent (although there may be significant impediments to achieving this).

- There were small gains in measured wellbeing from the *Culture, heritage and leisure* and *Income and economic resources* domains, each contributing around 1 percentage point.
- The *Law and Justice* and *Citizenship and governance* domains did not make a significant contribution to the change in measured wellbeing.
- The *Customary, voluntary and paid work* domain detracted significantly from measured wellbeing, reducing growth by around 2.5 percentage points.

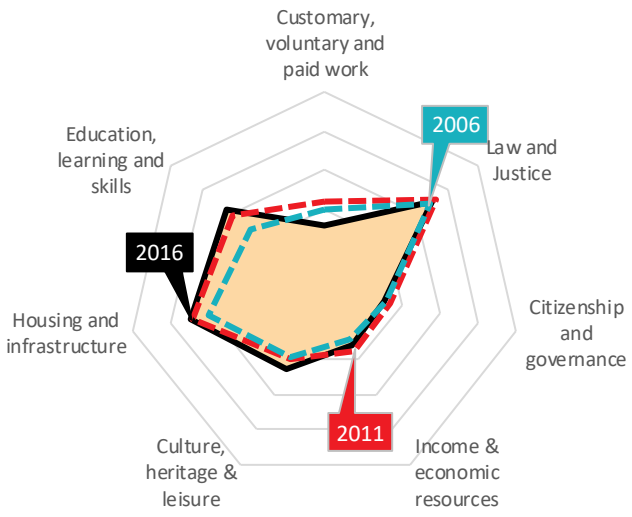
Figure 4.3 Percentage point contribution to change for each domain—all discrete communities, 2006 to 2016



Source: QPC estimates.

An alternative way of examining each domain's contribution to wellbeing is provided in Figure 4.4. It shows how measured wellbeing for each domain changed across three points in time (2006, 2011 and 2016).

Figure 4.4 Domain outcomes, 2006, 2011 and 2016.



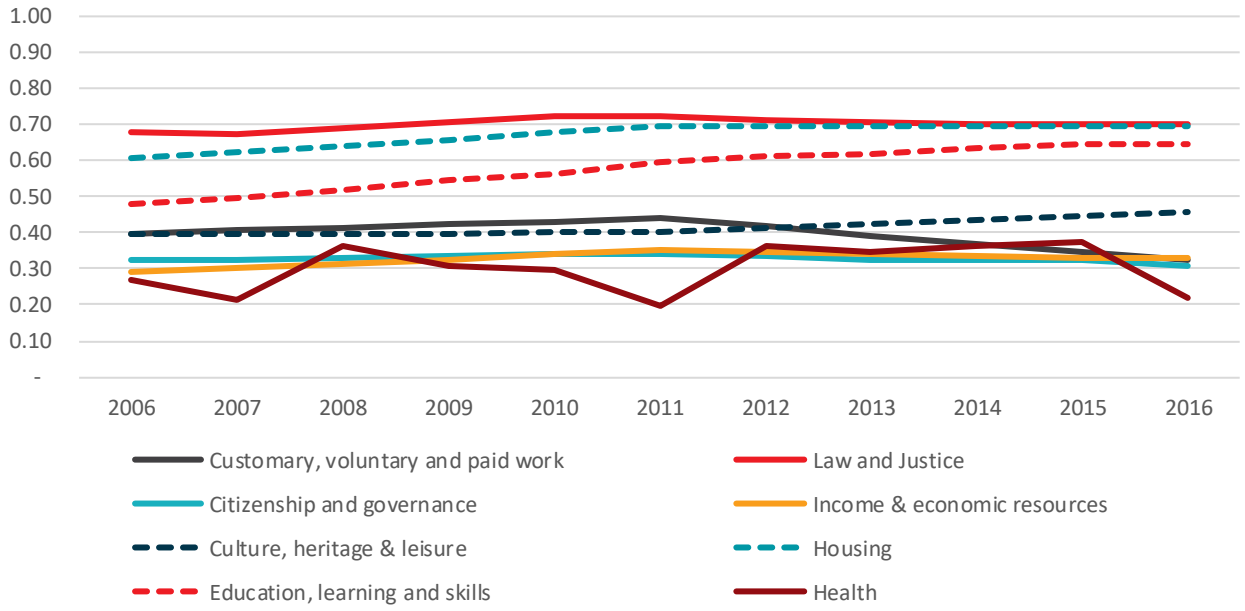
Note: Domain outcomes are unweighted.
Source: QPC estimates.

Measured outcomes for each of the domains are provide in Figure 4.5. It shows how measured outcomes for each of the domains has changed over the period 2006 to 2016.

Key messages include:

- Although measured outcomes for the *Income and economic resources* domain increased, outcomes remain at low levels, indicating significant room for improvement remains.
- Housing outcomes increased, but progress seems to have stalled after 2011.
- Measured outcomes for *Education, learning and skills* increased noticeably, increasing from 0.5 to around 0.65.
- Measured outcomes for *Citizenship and governance* remain at low levels.
- Measured outcomes for *Customary, voluntary and paid work* declined by around a third between 2006 and 2016.
- There would appear to be large opportunities to improve outcomes in relation to *Citizenship and governance*, *Income and economic resources*, *Customary, voluntary and paid work* and *Health* (note that health outcomes are included for illustrative purposes but have not been used in the calculation of aggregate wellbeing).

Figure 4.5 Progress against each domain—all discrete communities



Note: Health outcomes are included here for illustrative purposes but are not included in the calculation of aggregate measured wellbeing.
Source: QPC estimates.

A more detailed discussion of the results for each of the domains (including limitations) are provided in Appendix A.

Community outcomes

Figure 4.6 shows both the levels and changes in measured wellbeing for each of the discrete communities. It shows that there was significant variance in measured wellbeing across the discrete communities, with the best performing community scoring more than double the measured wellbeing of the worst performing community.

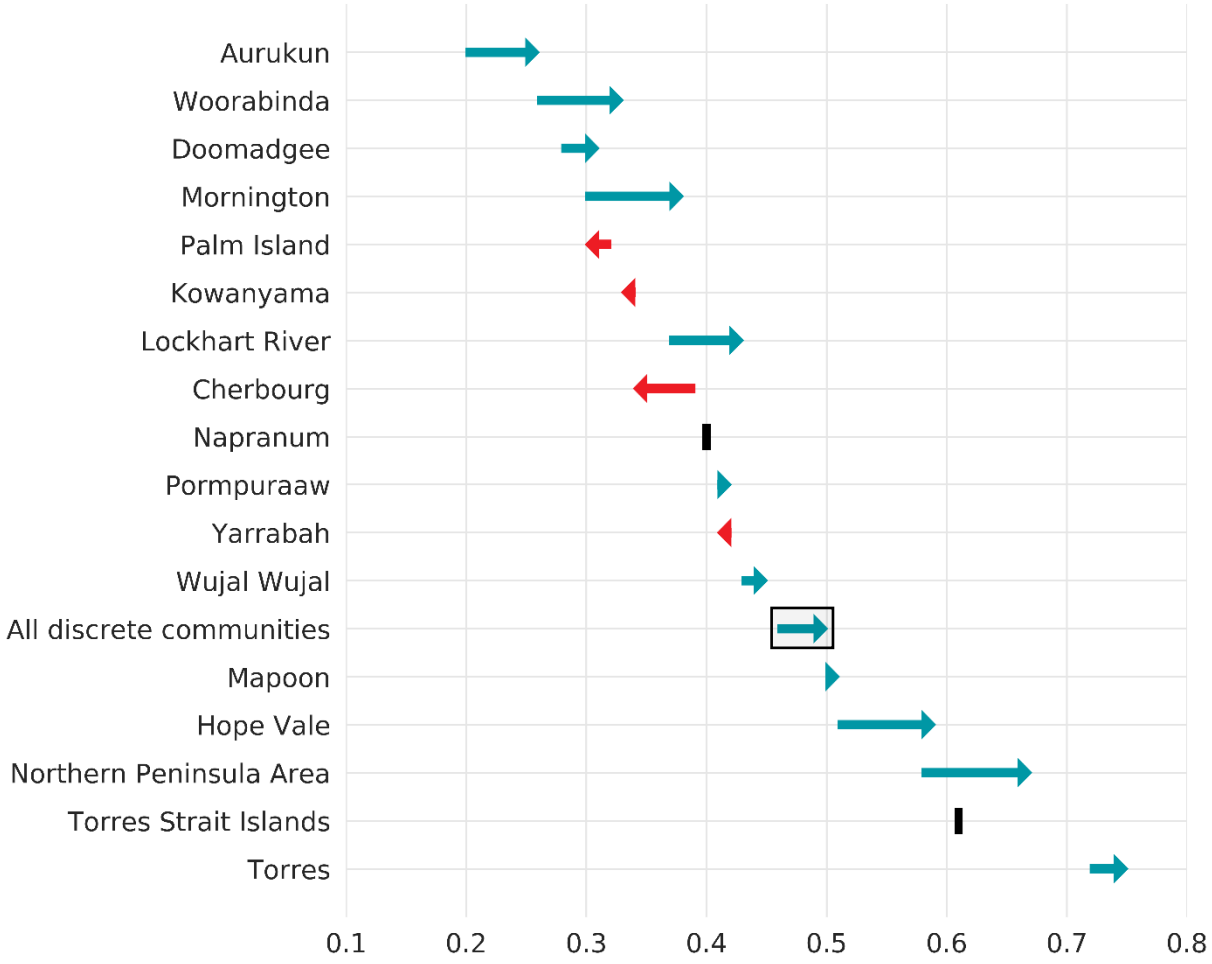
There were also significant differences in the growth in measured wellbeing between communities, but most communities experienced some increase in measured wellbeing between 2006 and 2016. Of those communities

experiencing significant increases in wellbeing, most experienced a reduction in overcrowding as well as gains in educational outcomes.

Of those communities that experienced a decline in measured wellbeing:

- most experienced either below average growth or a decline in measured wellbeing in the *Housing infrastructure and resources* domain—this may reflect differences in funding provided to communities.[16]
- many saw a larger than average decline in measured wellbeing in the *Customary, voluntary and paid work* domain—for some communities, such as Yarrabah and the Torres Strait Islands, this appears to be driven by a decline in participation following the abolition of the Community Development Employment Scheme (this is discussed in Appendix A).

Figure 4.6 Experimental estimates of community wellbeing—levels and growth, 2006 to 2016



Note: Estimates of wellbeing are experimental and only include publicly available data. As such they may significantly overstate or understate community wellbeing.
Source: QPC estimates.

[16] For example, since Yarrabah and Cherbourg are not classified as remote, we understand that they were not eligible for housing provided under the National Partnership Agreement on Remote Indigenous Housing.

More detailed results for each community are provided in Appendix C. These detailed results provide a breakdown of results for each domain, as well as a brief explanation of the key drivers of changes in wellbeing for each community.

4.4 Sensitivity analysis

To assess the robustness of the results, the authors conducted sensitivity analysis on some of the key assumptions and parameters used in the construction of the composite wellbeing indicators.

Inclusion of indicative health outcomes

While the authors were unable to access community level data for the discrete communities[17], Queensland Health was able to provide some indicative estimates across all (combined) communities for:

- proportion of babies born at a healthy birthweight (only available from 2010–11)
- intentional injury hospitalisations
- proportion of mothers avoiding smoking (only available from 2010–11)
- potentially preventable hospitalisations (only available from 2013–14).

The inclusion of the indicative health data had a small impact on outcomes with measured wellbeing at 2016 (across all communities) changing from 0.50 to 0.46. This implies that the exclusion of health data is likely to overstate the level of wellbeing across the discrete Indigenous communities.

Changing weightings

Inclusion of CDEP in the Customary, voluntary and paid work domain

There is some controversy in how the Community Development Employment Scheme[18] (CDEP) should contribute to the construction of the *Customary, voluntary and paid work* domain. The scheme employed around 34 per cent of working age residents living in the discrete communities in 2006 (Figure 4.7), but the scheme was progressively unwound in most communities from 2009.

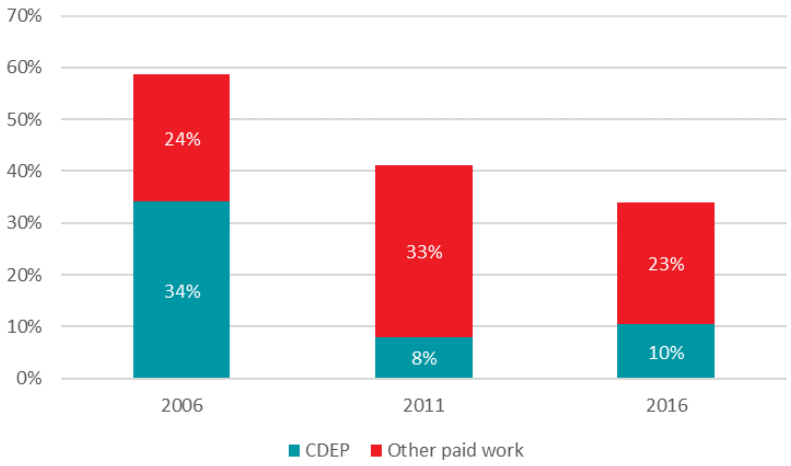
Stakeholders have differing views on the value of work undertaken through CDEP, with some considering it of little value (Cape York Institute 2007; Hudson 2008) while others argued it made a significant contribution to community wellbeing (Altman 2016; Jordan 2016) (discussed in Appendix A).

The authors allocated CDEP participation a weighting of one half, relative to participation in full-/part-time work.[19] This assumption was partly based on the observation that at least some workers employed under CDEP appeared to have transitioned to standard employment between 2006 and 2011 (Figure 4.7).

It is possible, however, that this weighting is too high or too low.

[17] Some key technical issues make it difficult to construct estimates of health outcomes in the discrete communities. The biggest of these is that the small population sizes make the construction of robust estimates for typical health indicators (such as burden of disease, life expectancy, healthy birthweights) impossible. Other issues include difficulties disaggregating community specific information from data collated at a regional level.
[18] The CDEP program was established in 1977 and was provided as block funding to Indigenous organisations to employ local residents in Indigenous communities. It was progressively unwound from 2009, with remote area projects ceasing in 2011. The program was replaced with a new Community Development Program in remote areas with a focus on skilling people for work.
[19] Since most CDEP work was part-time, CDEP was weighted at 0.25.

Figure 4.7 Proportion of working age Indigenous residents engaged in employment



To test the impact of this assumption, results were generated using two additional weightings:

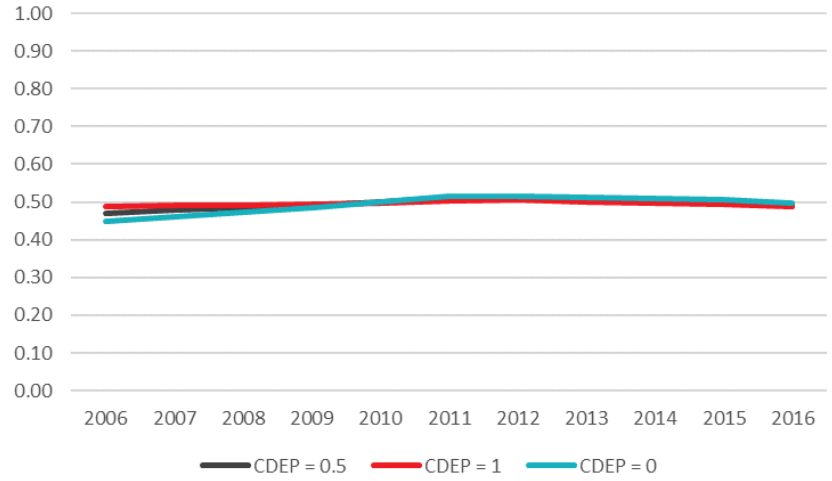
- one where CDEP participation is weighted the same as full-time work
- one where CDEP participation is excluded.

The results show that different assumptions had a small, but significant impact on measured wellbeing (Figure 4.8).

Where CDEP is weighted the same as full-time work, measured wellbeing is higher in 2006 (since CDEP participation is now assumed to contribute more to wellbeing) but lower in 2016 (since the CDEP program was reduced in scale by then). As a result, measured wellbeing declines slightly between 2006 and 2016.

Where CDEP participation is excluded, wellbeing is lower in 2006 (since a large proportion of residents were participating in CDEP) but around the same (as the central scenario) in 2016. As a result, measured wellbeing increases by almost 11 per cent when CDEP is excluded from the analysis.

Figure 4.8 Aggregate wellbeing outcomes—sensitivity to weightings on CDEP participation



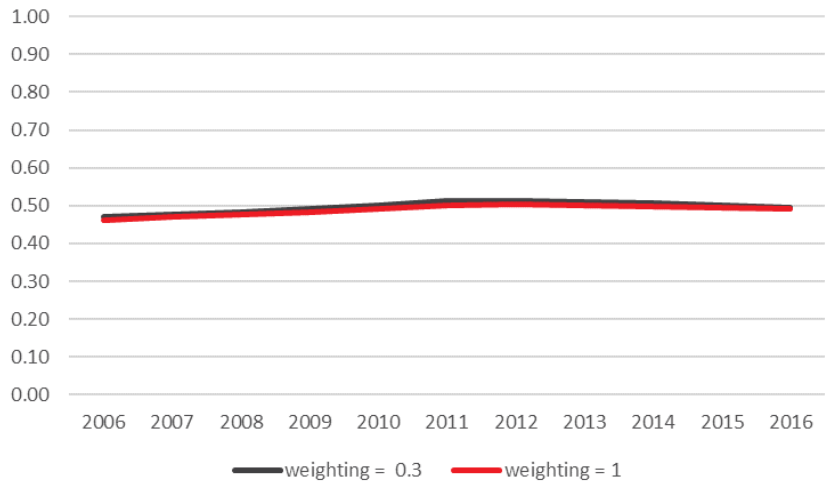
Source: QPC estimates.

Culture, heritage and leisure domain

We gave a lower weighting to the domain relating to *Culture, heritage and leisure* (0.3, compared to 1 for the other domains). This was because we could only find one indicator relating to this domain (speaks an Indigenous language) and it was felt that this indicator only partially covered outcomes relating to this domain.

To test the effect this had on the aggregate results, we gave the *Culture, heritage and leisure* domain a weighting of 1 (like all other domains). Changing the weightings on this indicator had only a very small impact on aggregate measured wellbeing (Figure 4.9).

Figure 4.9 Aggregate wellbeing outcomes—sensitivity to weightings on the Culture, heritage and leisure domain



Source: QPC estimates.

4.5 Comparison of findings to those from other studies

One way to identify potential problems with the index is to compare the index results to other findings. Even if the results were to be significantly different from other studies this does not necessarily mean that they are wrong, but it does highlight the need for further investigation.

This strategy immediately runs into the difficulty that none of the available studies are based on data disaggregated to the level of individual communities (or to the discrete communities in aggregate). Further, many of the publicly available data used to construct indicators for the discrete communities cannot be disaggregated by indigeneity at the state level (and so cannot be easily compared with findings from other studies).

Nevertheless, data from the Queensland Government Closing the Gap Report Card 2018 (DATSIP 2019), Manning et al. (2016) and results from NATSISS are presented below (Table 4.2 provides background on each of these studies).

Table 4.2 Other studies used for comparing results

Study	Jurisdiction	Data sources and time period	Nature of wellbeing indicators
Closing the Gap Report Card 2018	National and by state, territory	Varied. ABS for many indicators	Objective indicators of wellbeing
Manning et al. 2016	National	HILDA panel, 2001 to 2012	Subjective indicators of wellbeing. Objective indicators for analysing determinants of subjective wellbeing measures
ABS	National by non-remote and remote	NATSISS surveys, 2002, 2008 and 2014-15	Subjective and objective indicators

Sources: Department of Aboriginal and Torres Strait Islander Partnerships 2018; Manning et al. 2016; ABS cat. no. 4714.0.

Closing the Gap

While progress against Closing the Gap targets in Queensland has been mixed, education-related targets show the most progress (Table 4.3). This outcome is broadly consistent with the positive contribution of the *Education, learning and skills* domain to the overall wellbeing index score discussed in this report. It should be noted that the construction of the *Education, learning and skills* domain in this paper does not include an indicator for school attendance (which is included in the Closing the Gap) and results in a more positive story here that may overstate wellbeing.

While the *Customary, voluntary & paid work* domain captures a broader set of mechanisms influencing wellbeing, its result is broadly consistent with the lack of progress against the employment target under Closing the Gap.

As discussed above, results for the *Health* domain are indicative only. In terms of Closing the Gap targets, neither of the targets are on track to being achieved. This is consistent with the indicative data provided by Queensland Health.

Table 4.3 Key results from Closing the Gap Report Card 2018, Queensland

Domain	Target	Reported progress
Education	95 per cent of all Indigenous four-year-olds enrolled in early childhood education by 2025	On track
	Halve the gap for Indigenous children in reading, writing and numeracy achievements within a decade by 2018	Mixed progress
	Halve the gap for Indigenous people aged 20–24 in Year 12 attainment or equivalent attainment by 2020	On track
	Close the gap between Indigenous and non-Indigenous school attendance within five years by 2018	Not on track
Employment	Halve the gap in employment outcomes between Indigenous and non-Indigenous people within a decade by 2018	Not on track
Health	Close the gap in life expectancy within a generation by 2031	Not on track
	Halve the gap in mortality rates for Indigenous children under five within a decade by 2018	Not on track

Note: Multiple indicators may be used for assessing progress against a Closing the Gap target. Available time series vary by indicator.
Source: Department of Aboriginal and Torres Strait Islander Partnerships 2018.

HILDA

HILDA includes subjective wellbeing questions concerning life satisfaction, happiness and sadness. Respondents are asked: 'All things considered, how satisfied are you with your life?'. Response options range from 0 (meaning 'completely dissatisfied') to 10 (meaning 'completely satisfied'). Respondents are also asked to indicate how much of the time, during the previous four weeks:

- they have been a happy person
- they have 'felt so down in the dumps' that nothing could cheer them up.

There are six response options ranging from 1 (meaning 'all of the time') through to 6 (meaning 'none of the time').

Using HILDA data, Manning et al. (Manning et al. 2016) found a sharp decline in life satisfaction for Indigenous persons over the period 2003 to 2012:

> *[I]t is evident that life satisfaction for both Indigenous and non-Indigenous Australians peaked in 2003, and Indigenous life satisfaction declined sharply between 2003 and 2012. This decline is despite significant investment by all levels of Australian government in addressing Indigenous disadvantage and suggests that existing policies are having little effect. (Manning et al. 2016, pp. 2519–20)*

The scope of the survey excludes households living in very remote parts of Australia (Watson & Wooden 2004). In Queensland, almost all the discrete communities are classified as very remote. Therefore, it is not clear whether the trends found by the authors also apply to these communities. If those trends are a fair reflection, then the constructed index in this paper based on objective indicators may be biased upwards, although the periods being compared differ (2003 to 2012 versus 2006 to 2016). For the period 2006 to 2012, the Manning et al. (2016) results show little change in life satisfaction (a flat trend line (see Figures 3 & 4 in their study), consistent with the objective index of this study.

NATSISS

The NATSISS is conducted by the ABS on a six-yearly basis on key areas of social interest for Aboriginal and Torres Strait Islander people (ABS 2016c). The latest was conducted between September 2014 and June 2015. There have been changes in the data available between surveys; while several items have been added after consultation with key stakeholders, several data items have been omitted to ensure the revised survey did not impose additional burden on respondents (ABS 2016a). Further, the survey sample size means that it is not possible to examine outcomes by community or even for the discrete communities in aggregate—the smallest geographic area that provides any meaningful trends is Australian remote communities (in aggregate).

Box 4.2 Background on NATSISS

The most recent National Aboriginal and Torres Strait Islander Social Survey (NATSISS) was conducted from September 2014 to June 2015 with a sample of 11,178 Aboriginal and Torres Strait Islander people living in private dwellings across Australia. The 2014–15 NATSISS is a multidimensional social survey which provides broad information across key areas of social concern for Aboriginal and Torres Strait Islander Australians, nationally, by state and territory and remoteness area.

The NATSISS is conducted every 6 years with previous surveys in 2002 and 2008. A survey was also conducted in 1994.

The 2014–15 NATSISS was conducted in remote and non-remote areas in all states and territories of Australia, including discrete Aboriginal and Torres Strait Islander communities.

The 2014–15 NATSISS was designed to produce reliable estimates at the national level and for each state and territory as a whole, but not for lower levels of regional aggregation. For persons aged 15 years and over, the sample was allocated to produce estimates with a relative standard error (RSE) of no more than 25% for NSW, Vic, Qld, SA, WA, Tas, and NT, for characteristics that at least 3% of the population would possess. For selected states and territories (NSW, Qld, WA and NT) the sample for children aged 0–14 years was allocated to produce estimates that have an RSE of no greater than 25% for characteristics that at least 5% of these populations would possess.

As with previous ABS Aboriginal and Torres Strait Islander surveys, additional sampling was conducted in the Torres Strait Area, to ensure data of sufficient quality would be available for the Torres Strait Area and the remainder of Queensland.

The sample design incorporated a random selection of:

- discrete Aboriginal and Torres Strait Islander communities (including any out-stations associated with them—16 communities in Queensland);
- dwellings in areas not covered by the community sample (1,300 dwellings in Queensland).

The survey is conducted using personal interviews at selected private dwellings. For the 2014–15 survey, 1,967 Queensland Indigenous persons responded fully to the survey.

Source: ABS 2016d.

As such, historical comparison between NATSISS surveys are limited to the data sets described in Table 4.4. It shows that, across all remote communities in Australia:

- outcomes worsened for employment
- there were some gains in indicators relating to education
- most other indicators had no obvious trend.

These results are broadly consistent with the findings in this research paper.

Table 4.4 Trends in wellbeing from NATSISS, percentage of remote Indigenous Australians over 15 years

Indicator	2002 (%)	2008 (%)	2014–15 (%)
Employed	51.8	49.8	35.6
Currently enrolled in formal study	11.2	12.5	11.8
Experienced physical or threatened physical violence in last 12 months	22.7	21.4	23.3
Main language spoken at home is an Australian Indigenous language	38.8	41.7	40.7
Has a non-school qualification	17.3	21.4	33.8
Highest year of school completed is Year 12 or equivalent	12.6	15.5	18.2
Current daily smoker	50.5	49.2	47.2
Excellent/very good self-assessed health	44.2	43.8	42.0

Note: Proportions are non-age standardised.
Source: ABS cat no. 4714.0.

5. Conclusions and moving forward

The aim of this paper is to make a first step in developing a framework for measuring progress in Queensland's discrete Aboriginal and Torres Strait Islander communities.

The estimates in this report suggest that, while there have been some improvements in wellbeing across the discrete communities between 2006 and 2016, there is significant variance in outcomes and much work remains to be done.

Significant progress appears to have been made in outcomes relating to education and housing, but there is little evidence there has been significant progress against any of the other domains included in this report. Of particular concern is the apparent reduction in community wellbeing arising from a decline in community engagement, observed as declines in both the *Customary, voluntary and paid* work and *Citizenship and governance* domains.

It should be noted, however, that the estimates of progress in this paper are experimental and are likely to need further development before they are fit to be used as a tool to support the transition of decision–making and accountability to communities.

The estimates only include publicly available information, and so omit some important indicators—for example, we were not able to access important community level information relating to the *Health* or *Family and kinship* domains. This may bias the estimates of wellbeing, although without further information it is impossible to know the extent or direction of this bias.

Initial discussions with some stakeholders suggested that administrative data are a significantly under-exploited resource that could address many of the data gaps identified in this paper. Communities could also provide much of the primary data to improve the construction of estimates of progress. For example, the methodology used in this paper could easily accommodate simple ranking exercises undertaken by community stakeholders (such as a community's thoughts on governance or community engagement) to provide additional information on community wellbeing. More formal survey work, such as extending the NATISISS, could also be used to extend the range of indicators used to measure progress (although this may be expensive).

Further development of the index should involve communities. Benefits would include achieving community ownership by building familiarity and trust, road-testing the choices made here and identifying options to improve the index. One option would be to actively engage with a pilot community to develop the index further, before rolling out to other communities for consideration.

There is a range of options for taking the work in this paper forward, including further development as part of an evaluation framework for assessing the broader reforms set out in the Commission's inquiry into service delivery in remote and discrete Indigenous communities. As noted in that inquiry report, an independent body would need to be authorised to collect and collate data and report to communities and government.

The framework presented in this paper also has potential broader applications. It could be adapted to other communities where there is a need to evaluate, monitor and communicate progress.

Appendix A: Domain indicators

Education, learning and skills

The *Education, learning and skills* domain includes the provision and accessibility of educational services, language barriers, socialisation and informal learning processes (ABS 2010a). Indicators can include educational attainment, attendance, literacy and numeracy, informal learning, access and opportunities.

Indicators used

Three indicators are included for this domain covering early years learning through to adulthood:

- Australian Curriculum, Assessment and Reporting Authority (ACARA) Year 3 NAPLAN results for numeracy and reading
- Year 9 completion rates
- Certificate III or above attainment rates (Table A.1).

As discussed later in this section, a developmental/learning indicator prior to Year 3 would ideally be included, however public data were not available for a number of discrete communities (see the discussion on the Australian Early Development Census (AEDC) data below).

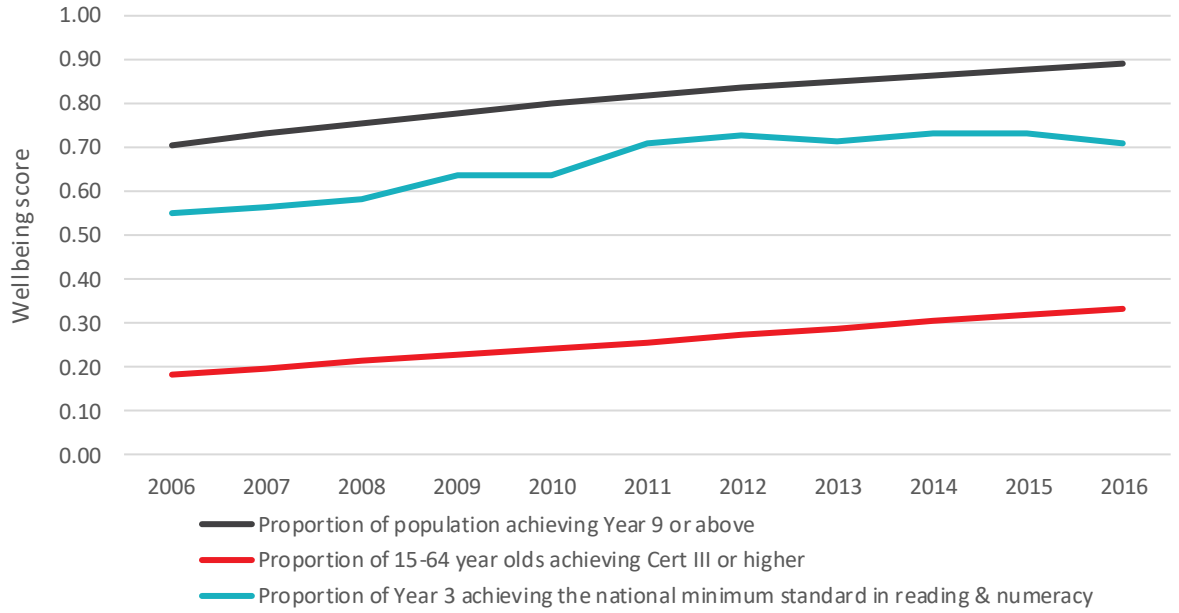
Table A.1 Education, learning and skills

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Year 3 student outcomes	ACARA	Annual	2008	1	Proportion of Year 3 students achieving at or above the national minimum standard for reading and numeracy
Year 9 completions	Census	5 years	2006	1	Proportion of persons (all ages) achieving Year 9 (or equivalent) or above
Working age person qualifications	Census	5 years	2006	1	Proportion of working age adults (15–64 years) who have completed Certificate III or above

Results

For discrete communities as a whole there have been solid gains across all three indicators over the period 2006 to 2016 (Figure A.2). In terms of the underlying data, the proportion of the Year 3 population achieving the national minimum standard in reading and numeracy increased from 56.5 per cent in 2006 to 66.1 per cent in 2016. Proportions achieving Year 9 and Certificate III similarly increased with increases of 73.7 to 86.5 per cent and 18.7 to 27.3 per cent, respectively.

Figure A.2 Education, learning and skills indicator scores, 2006 to 2016



Source: QPC estimates.

Issues

Use of national minimum standards for literacy and numeracy may set a low bar

The annual National Assessment Program - Literacy and Numeracy (NAPLAN) tests student educational attainment in Years 3, 5, 7 and 9 (0). NAPLAN results are reported in six bands for each year of testing, with the lowest band representing students below the national minimum standard (NMS) and the second-lowest band being students at the NMS. The NMS is intended to represent a time-consistent level of understanding, below which students have not achieved the learning outcomes expected for their year level (ACARA 2016). Their satisfactory progress at school, to further education and future functioning in society is at risk without targeted intervention, while students at the NMS may require additional assistance to progress.

Some stakeholders have expressed concerns that the use of NMS is not an ideal indicator since it sets a low standard of attainment. However, given that almost half of year 3 students from the discrete communities did not achieve NMS in 2006, the authors have assessed the use of NMS as suitable for assessing wellbeing in the discrete communities.

Certificate III or above

The Closing The Gap and Overcoming Indigenous Disadvantage reports include measures of the proportion of adults who have completed Certificate III or above in vocational or higher education.[20] This indicator is selected as Indigenous Australians with Certificate III or above achieve, on average, better employment and earnings outcomes than those with lower levels of qualifications and non-Indigenous people with similar qualifications (SCRGSP 2016). Employment of Indigenous workers in remote areas is increasingly contingent upon the attainment of accredited vocational training (Kral 2010).

[20] The draft COAG target as part of the CTG refresh includes the target '47 per cent of Aboriginal and Torres Strait Islander peoples (aged 20-64 years) have completed Certificate III or above, including higher education, by 2028' (COAG 2018).

Certificate III data can be obtained from a number of different sources. Closing the Gap and Overcoming Indigenous Disadvantage reports use data from the NATSISS (see Box A.1 for background on NATSISS) and National Aboriginal and Torres Strait Islander Health Survey (NATSIHS), supplemented by the Census of Population and Housing (SCRGSP 2016). For his paper, census data are used as they provide data for individual discrete communities.

Box A.1 NAPLAN and National Minimum Standards

The National Minimum Standards (NMS) was the basis of one of the original six Closing the Gap targets announced in 2008. As outlined in successive Closing the Gap reports since then, the target to halve the gap in the share of Indigenous children at or above NMS in reading and numeracy is not on track and Queensland is currently only on track for Year 9 numeracy (Department of Aboriginal and Torres Strait Islander Partnerships 2018).

The draft targets in the Closing the Gap refresh (COAG 2018) continue applying the NMS, but adopt slightly different targets:

- Increase the proportion of Aboriginal and Torres Strait Islander students in the top two bands of NAPLAN reading and numeracy for years 3, 5, 7 and 9 by an average of 6 percentage points by 2028.
- Decrease the proportion of Aboriginal and Torres Strait Islander students in the bottom two bands (i.e. at or below NMS) of NAPLAN reading and numeracy for years 3, 5, 7 and 9 by an average of 6 percentage points by 2028.

Several issues arise from using NAPLAN NMS data:

- The NMS is set at a low level, so only a small number of students fall below the standard—this reduced sample size generates volatility.
- NAPLAN tests do not accommodate Indigenous students who use English as a second language, which is most relevant in discrete communities (Price & Rogers 2019; Wigglesworth et al. 2011).
- The Cape York Aboriginal Australian Academy (CYAAA) school communities plus Cherbourg, Pormpuraaw and Wujal Wujal do not currently provide secondary schooling—the focus on Year 3 results in the Overcoming Indigenous Disadvantage (OID) reports may be more suitable for remote and discrete communities (SCRGSP 2016).
- NAPLAN results are attributed to individual schools and fail to account for students who travel outside their home community to schools in other Indigenous communities, regional centres or Brisbane.

Moving away for school

Half of Queensland's discrete communities do not provide schooling from early years all the way through to Year 12. More than 2,100 Aboriginal and Torres Strait Islander students in Queensland attended schools away from home, representing 38 per cent of Indigenous secondary boarders nationally (Department of the Prime Minister and Cabinet 2017).

As noted in DPC (2017), students from discrete communities must overcome many barriers if they wish to continue their education elsewhere including gaps in policy responsibility and funding, inadequate travel support, overly complex ABSTUDY application processes and communities not knowing how to prepare students for boarding away from home (Department of the Prime Minister and Cabinet 2017).

Ideally, a secondary school level indicator would be included based on year 9 NAPLAN results, similar to the year 3 indicator. However, NAPLAN data cannot be adjusted to assign boarding students to their 'home' community. Therefore, the indicator would only be available for those discrete communities where secondary schooling is

offered. The proportion of persons (all ages) achieving year 9 (or equivalent) or above is used as an alternative. It has the advantage that data are available for each discrete community.

Traditional knowledge

To provide a more comprehensive picture of Indigenous wellbeing an indicator capturing the acquisition of traditional knowledge by children should be included.

Traditional Aboriginal and Torres Strait Islander learning is rooted in cultural continuance by the practice of language, storytelling, spirituality, art, ceremony, song, dance, healing interventions, hunting, gathering and all aspects of traditional life on country.[21] It can be a powerful component of individual identity and subjective wellbeing. There can sometimes be a disconnect between this traditional Indigenous education and formal mainstream education.

NATSISS provides a number of indicators capturing a broader conception of knowledge. For example, NATSISS collects data on whether Aboriginal and/or Torres Strait Islander culture is being taught at school. However, NATSISS data are not available at the level of individual communities.

Although passing on traditional knowledge is generally agreed by Indigenous people to be important, any attempt to measure such traditional knowledge may be a sensitive issue and would require community-level discussion to ascertain the best way forward.

Other indicators that could be used

Childhood development outcomes

The Australian Early Development Census (AEDC) provides a picture of early childhood development outcomes for Australia through a nationwide data collection conducted every three years with the most recent being the 2018 data collection.[22] AEDC data by LGA are publicly released. It provides the number and proportion of children scoring in the categories developmentally vulnerable, developmentally at risk and developmentally on track in the following domains:

- Physical health and wellbeing
- Social competence
- Emotional maturity
- Language and cognitive skills (school-based)
- Communication skills and general knowledge.

AEDC indicators would be a useful addition to measuring wellbeing (and are included in the CTG refresh). However, data are absent or suppressed for enough Queensland Indigenous LGAs that the indicators cannot be included at this time.[23] However, data are publicly available for some discrete communities for at least three of the four test years to date (2009, 2012, 2015 or 2018—see notes to Figure A.3 for a list of the communities).

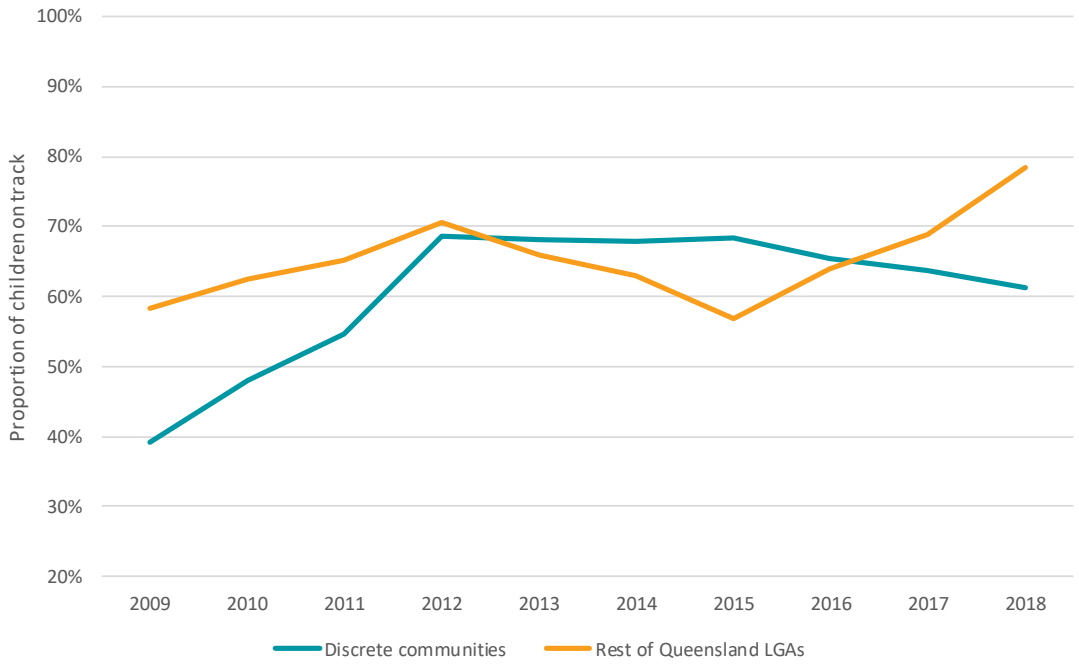
[21] See for example Colquhoun & Dockery 2012, King 2011, Kral 2010 and Lee-Hammond & Jackson-Barrett 2018.
[22] In Queensland, 64,721 children in their first year of full-time school participated in the AEDC in 2018—a participation rate of 98.1 per cent (AEDC 2019, p. 10).
[23] Reasons for suppression include: one or more of: data are not reported for locations in which three or fewer children had been assessed; fewer than fifteen children had valid AEDC scores; less than two teachers had completed instruments for children in that location; and/or instruments were completed for less than 80% of all non-special needs children. Additional minor suppressions have occurred where necessary to preserve confidentiality of related suppressed cells (see https://www.aedc.gov.au/data/downloads).

For the subset of discrete communities, the language and cognitive skills indicator shows improvement over the surveys with an increase in the proportion of Queensland children being developmentally 'on track'. This is defined as:

> *Children will be interested in books, reading and writing, and basic math; capable of reading and writing simple sentences and complex words. Will be able to count and recognise numbers and shapes. (AEDC 2019, p. 32)*

The language and cognitive skills domain measures children's basic literacy, advanced literacy, basic numeracy, and interest in literacy, numeracy and memory.

Figure A.3 AEDC developmentally on track, language & cognitive skills (school-based), 2009 to 2018



Notes: Discrete communities include Cherbourg, Mornington, Northern Peninsula Area, Palm Island, Torres, Torres Strait Island, Woorabinda and Yarrabah. For Mornington, Palm Island and Woorabinda data were missing for a single test year and required interpolation.
Source: AEDC 2019; QPC estimates.

The inclusion of AEDC data for the full range of discrete communities might be possible in the future development of the wellbeing index. Options would need to be discussed with AEDC but might include rolling the data together (creating an 'Other' council) for those councils where data is suppressed.

School attendance rates

School attendance rates are an 'input' measure, whereas the indicators used are 'output' measures. They provide an indicator of, while imperfect, the knowledge and skills acquired at different points in a person's life.

Improving school attendance rates has been an important objective of policy as a means to improve educational outcomes. Differences in school attendance rates may help explain differences in measured educational outcomes, such as NAPLAN results.

Customary, voluntary and paid work

This domain includes the activities through which an individual contributes to the functioning of their society or community. It covers the standard measures of economic activity (such as labour force participation), but also covers an individual's participation in other activities (such as voluntary work) that contribute to the functioning of their community, as well as those areas with an Indigenous-specific focus, such as cultural obligations, customary activities and traditional economies (ABS 2010a).

Indicators used

We have been able to access five indicators that are suitable for this domain (see Table A.2). These indicators are all sourced from the Census.

All indicators are reported as a proportion of the working age population (15 to 64 years). Working age population was chosen as the denominator for these indicators since participation is typically highest over an individual's working age.

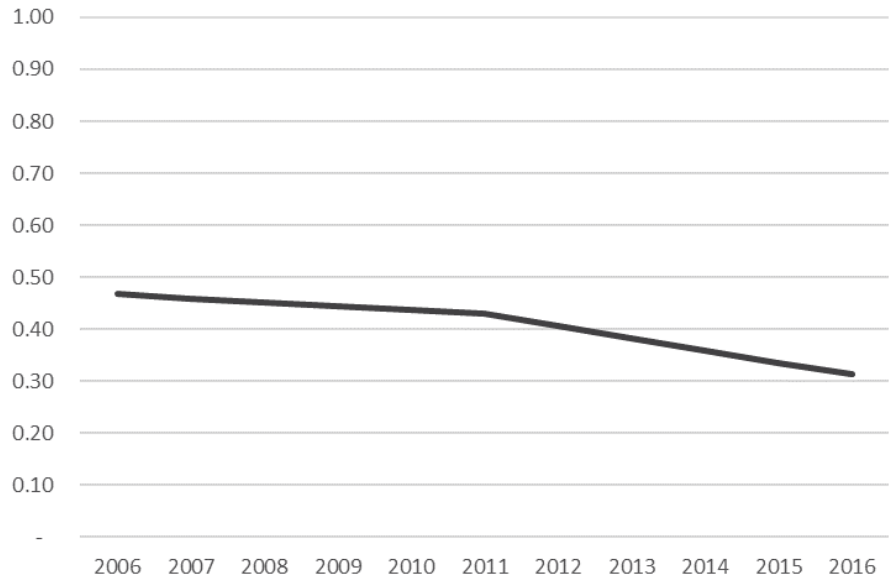
Table A.2 Customary, voluntary and paid work indicators

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Working full time /working age population	Census	5 years	2001	1	Working full time estimates exclude CDEP participants
Working part time (not CDEP)/ working age population	Census	5 years	2001	0.5	Working part time estimates exclude CDEP participants
Volunteers for an organisation or group/ working age population	Census	5 years	2001	1	Only includes volunteers of working age
Student/ working age population	Census	5 years	2001	1	Only includes students of working age
CDEP participant/ working age population	Census	5 years	2001	0.25	Only includes CDEP participants of working age. Weighted at 0.5 of part-time work due to stakeholder concerns about the coercive nature of CDEP and its contribution to 'real' outcomes.

Results

Over the period of analysis there was a significant decline in the measured outcomes for this domain, with measured outcomes declining by almost one third (Figure A.4). As noted in section 4.3, this domain significantly detracted from measured wellbeing.

Figure A.4 Customary, voluntary and paid work domain



Note: Results between the census years 2006, 2011 and 2016 are interpolated using a simple linear relationship.

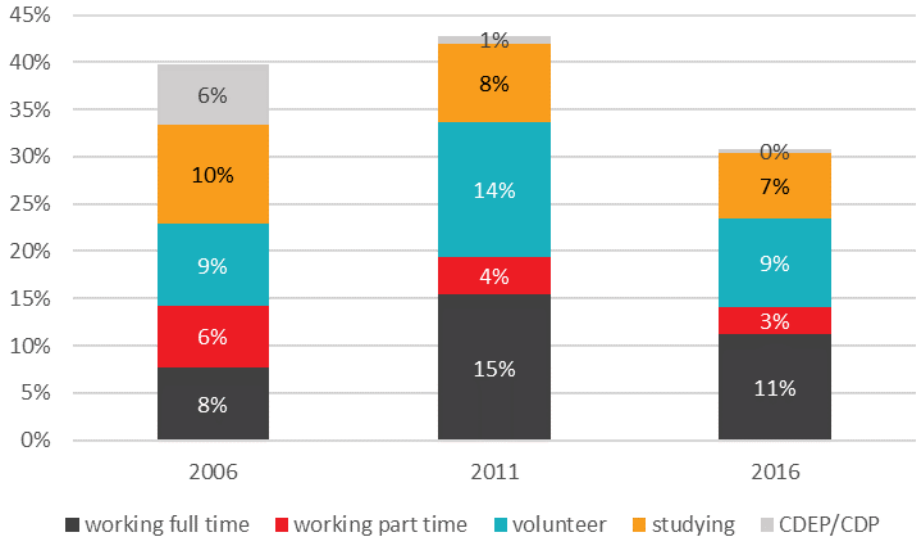
A primary driver for the decline in measured wellbeing for this domain was the reduction in participation in the Community Development Employment Program[24] (CDEP). The CDEP program is discussed more below (see limitations section), however, between 2006 and 2011, while some CDEP participants appear to have transitioned to a standard form of work, aggregate engagement fell significantly.

After 2011 there was a significant decline in paid employment. It is difficult to know why this is the case, but it may be due a downturn in the mining sector from 2011.

Overall, it would appear that the removal of CDEP in communities has not been replaced with other forms of community engagement, with the proportion of working aged residents engaged in voluntary work and/or study remaining flat over the ten years to 2016 (Figure A.5). Although there was a slight increase in the proportion of working age residents engaged in standard forms of paid work, this was not sufficient to offset the decline in CDEP participation.

[24] The Commonwealth's CDEP program was established in 1977 and was provided as block funding to Indigenous organisations to employ local residents in Indigenous communities. It was progressively unwound from 2009, with remote area projects ceasing in 2011. The program was replaced with a new Community Development Program in remote areas with a focus on skilling people for work.

Figure A.5 Contribution of indicators to outcomes for domain



Note: contributions include indicator weightings. For example, CDEP's contribution is weighted at 0.25. CDEP transitioned to CDP after 2016.

Key limitations

The limited economic activity in many discrete communities may inhibit the ability of residents to work locally. This means that residents of many discrete communities will have to travel away from their communities to work (Cape York Institute 2007). Where individuals move away from community to work or study for extended periods, census data will not recognise these individuals as residents of their original communities (ABS 2016b).[25] As such, the census data may underestimate the extent of activities in this domain. Where individuals may compromise between determinants of wellbeing, such as where cultural participation and continuance is foregone in order to move away for work, this will also not be captured by the census data employed here or in other domains.

There are no indicators currently available which adequately capture cultural obligations, customary activities or traditional economies. While the National Aboriginal and Torres Strait Islander Social Survey (NATSISS) has a range of data relevant to these activities, the survey does not currently include enough detail to provide robust estimates at a community level.

The Community Development Employment Program (CDEP) has been included in the suite of indicators for the customary, voluntary and paid work domain.

CDEP was a Commonwealth program, established in 1977 to replace the unemployment benefits for many Aboriginal and Torres Strait Islander people living in remote communities, and was provided as block funding to Indigenous organisations to employ local residents (Jordan 2016). Under CDEP, participants were classified as working since they received a formal wage in return for some level of effort. Some argue that, because CDEP was controlled by local communities (including deciding which projects received funding), participation should be counted as contributing to the functioning of local communities (Jordan 2016, Altman 2016). Others, however, are highly critical of the program, arguing that CDEP often contributed little more than 'sit down' money and encouraged a dependence on passive welfare (Hudson 2008, Cape York Institute 2007).

[25] The ABS Census counts a person's usual residence as the place where they lived or intend to live for a total of six months or more during the census year.

A further complication is that CDEP is classified as work in the 2006 and 2011 census, but its successor program (CDP) is not counted as work in the 2016 census. For this reason, CDEP (and CDP) participants have been separately identified from those who participated in other forms of paid work.

Given the concerns raised in the literature, and the fact that the majority of CDEP work is part-time, we have weighted the contribution of CDEP to this domain at half the weighting given to part-time work. Users may wish to give CDEP a different weighting.

Indicators in this domain are not age-standardised. Ideally, indicators would be age-standardised since this would allow for more valid comparisons across time and between communities (AIHW 2011).[26] To some extent this limitation has been minimised by only including working age population in each of the indicators. This helps to minimise the confounding effects of age differences since it removes differences from very young or old age groups from the analysis. As discussed in Appendix D:, the size of the remaining errors is negligible.

Other indicators that could be included

We are not aware of any existing data that could be used to extend the indicators for this domain.

The NATSISS contains a range of data that could be used to compliment this domain. These data include:

- the extent to which work allows for cultural activities
- barriers to employment.

However, the sample sizes in the NATSISS are not large enough to allow robust estimates at an individual community (LGA) level.

[26] Age standardisation refers to techniques used to remove the differences in observed outcomes for different populations that arise from differences in their age profile. For example, comparing employment outcomes for a population with a large proportion of retirees with a population with a younger age profile would reveal differences in employment outcomes that are related to the differences in age profiles.

Income and economic resources

The income and economic resources domain includes aspects of traditional and contemporary economies, such as, community assets, institutions and living standards (ABS 2010a).

Indictors used

The indicators used for this domain include:

- real household incomes: income is needed to purchase valued goods and services
- home ownership: a person may value home ownership compared to renting. Home ownership is also a means for saving and wealth accumulation, as well as providing greater independence
- access to a motor vehicle: apart from any utility obtained from the direct use of a motor vehicle, a vehicle can assist with accessing services and securing employment (Table A.3).

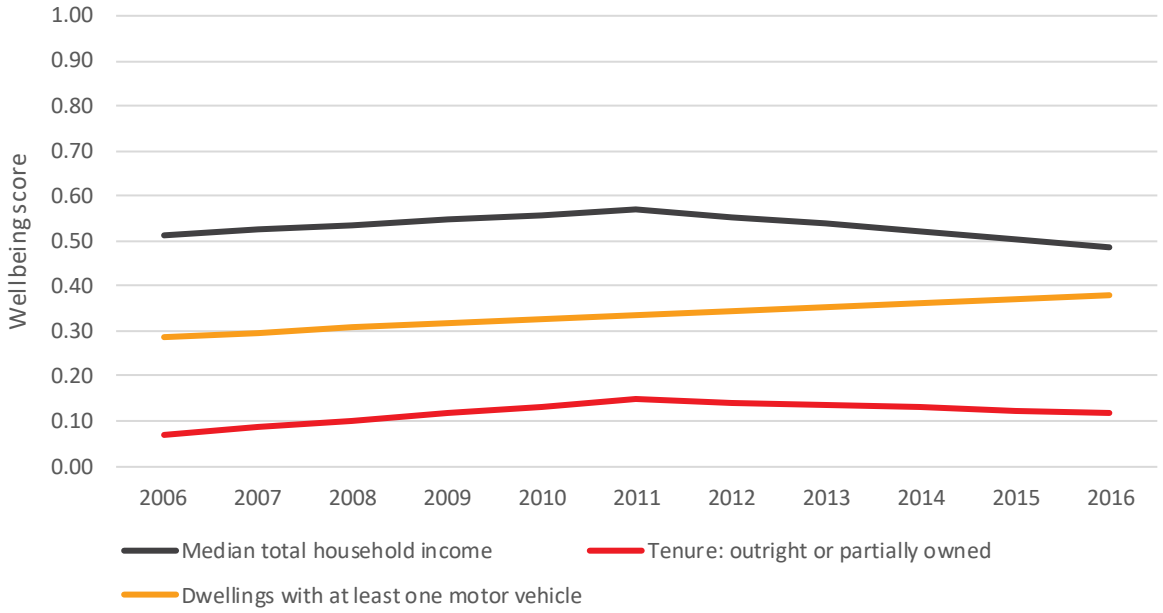
Table A.3 Income and economic resources

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Median total personal income (weekly)	Census	5 years	2006	1	Income is adjusted for regional retail price differentials and deflated using CPI All Groups Brisbane excluding housing.
Home ownership	Census	5 years	2006	1	Proportion of total occupied private dwellings fully owned and/or being purchased
Access to motor vehicle	Census	5 years	2006	1	Percentage occupied private dwellings which at least one motor vehicle

Results

Median real household income in Indigenous communities does not appear to have increased over the period 2006 to 2016 (Figure A.6). Data suggest a slight decline with income reducing from $1,028 per week in 2006 to $1,007 in 2016 (specified in 2016 dollars). For households identifying as Indigenous, incomes declined by 7 per cent between 2006 to 2017, while non-Indigenous household incomes within communities increased by 24 per cent. As non-Indigenous persons form a small percentage of total employed persons in communities, the increase in non-Indigenous incomes has less of an effect on median household incomes than it otherwise would have. For the rest of Queensland, household incomes (Indigenous and non-Indigenous combined) increased from $1,332 to $1,427 over the same period.

Figure A.6 Income and economic resources indicator scores, 2006 to 2016



Source: QPC estimates.

The proportion of total occupied private dwellings fully owned and/or being purchased increased in discrete communities from 4.8 per cent in 2006 to 8.2 per cent in 2016. For the rest of Queensland, there was a decline from sixty-seven per cent to sixty-four per cent over the same period. The increase in Indigenous communities is from a 'low base'.

Households with access to at least one motor vehicle in discrete communities increased from 49 per cent to 56 per cent from 2006 to 2016. For the rest of Queensland, a more modest increase occurred given the already high levels of access, increasing from 92 per cent to 94 per cent over the same period.

Issues

Regional differences in the purchasing power of income

For a given level of income lower retail prices allow additional goods and services to be purchased—enhancing wellbeing (i.e. the purchasing power of income is increased). Retail prices can differ between population centres due to differences in, for example, transport costs and market characteristics (such as, the degree of competition in wholesale and/or retail markets, and scale/scope economies achieved through population densities).

The Queensland Government Statistician released a report comparing retail price levels for a range of Queensland areas based on 2015 prices. Prices are indexed against prevailing prices for the Brisbane area which is indexed and set equal to 100.0. Regional price differentials for all items less housing varied from 11.5 per cent higher than Brisbane in Weipa to 5.1 per cent less than Brisbane in Maryborough (Table A.4). The areas surveyed did not include communities in Indigenous LGAs.

To make some attempt to account for differences in retail price levels, each Indigenous LGA was paired with an area that was surveyed. In most cases, geographic distance was the criteria used to select a corresponding surveyed area. In the case of Cape York, Torres, and Torres Strait Island communities the price level used was for Weipa. This has the effect of lowering measured real incomes for these communities by 11.5 per cent compared to the Brisbane area. The pairing procedure may understate the price differentials applying between Indigenous LGAs and other LGAs where, for example, the costs of transporting goods to communities is higher.

The distances between some Indigenous communities and a surveyed area was very large. In the case of the Mornington council, a judgment had to be made on whether retail prices were likely to be more similar to Mount Isa or to Weipa—both a significant distance from Mornington Island.

Table A.4 Queensland regional retail price differentials, selected areas, all items less housing, 2015

LGA	Mapped area	Index	LGA	Mapped area	Index
All of Brisbane		100.0	Mornington	Weipa	111.5
Weipa		111.5	Napranum	Weipa	111.5
Maryborough		94.9	Northern Peninsula Area	Weipa	111.5
Aurukun	Weipa	111.5	Palm Island	Townsville	102.6
Cherbourg	Gympie	98.8	Pormpuraaw	Weipa	111.5
Doomadgee	Mount Isa	100.2	Torres	Weipa	111.5
Hope Vale	Weipa	111.5	Torres Strait Island	Weipa	111.5
Kowanyama	Weipa	111.5	Woorabinda	Emerald	98.7
Lockhart River	Weipa	111.5	Wujal Wujal	Cairns	106.8
Mapoon	Weipa	111.5	Yarrabah	Cairns	106.8

Notes: Retail prices for each area measured relative to all of Brisbane retail prices which is set equal to 100.0. All of Brisbane includes Brisbane, Ipswich, Logan, Moreton Bay and Redland LGAs. The weights used to combine the prices of the large number of items included in the index were derived from weights used in the Consumer Price Index. However, these weights are not based on expenditure patterns at the level of LGAs and do not take into account differences in consumption patterns.
Source: QGSO 2016.

Opportunity costs and interpreting trends in income

Being employed involves a trade-off between hours devoted to leisure (for example, time spent with family) and hours devoted to employment (earning income that can be exchanged for goods and services). The choice is constrained by the preferences of the individual or household, their income earning capacity (access to employment opportunities and the hourly wage that can be earned) and the scope for sources of income which do not force a trade-off (for example, income support payments to households and sharing across households).

Household real income can rise when nominal wage rates rise faster than prices of goods which the income purchases (perhaps due to workers becoming more productive). Household incomes can also rise if household members are able to and choose to work more hours (to forego additional leisure). Changes in household formation can also affect estimates of median household incomes (for example, changes in the average number of people employed within a household).

Interpreting median income trends in communities (both Indigenous and non-Indigenous LGAs) is difficult given that there is a lack of data on the factors contributing to the measured changes in income (for example, data on hours worked).

There is some evidence that the strength of the relationship between income and wellbeing may be less in remote Indigenous communities compared to elsewhere:

> *for males living in non-remote areas of Australia, there is a strong positive association between subjective wellbeing and income for the Indigenous population. For those living in remote Australia, however, the relationship was less apparent. These findings may be explained, at least partly, by economic resources being shared more widely beyond the household in many remote Indigenous communities and by there being other activities outside the mainstream economy that support Indigenous livelihoods in these areas. (AIHW 2014b, p. 6)*

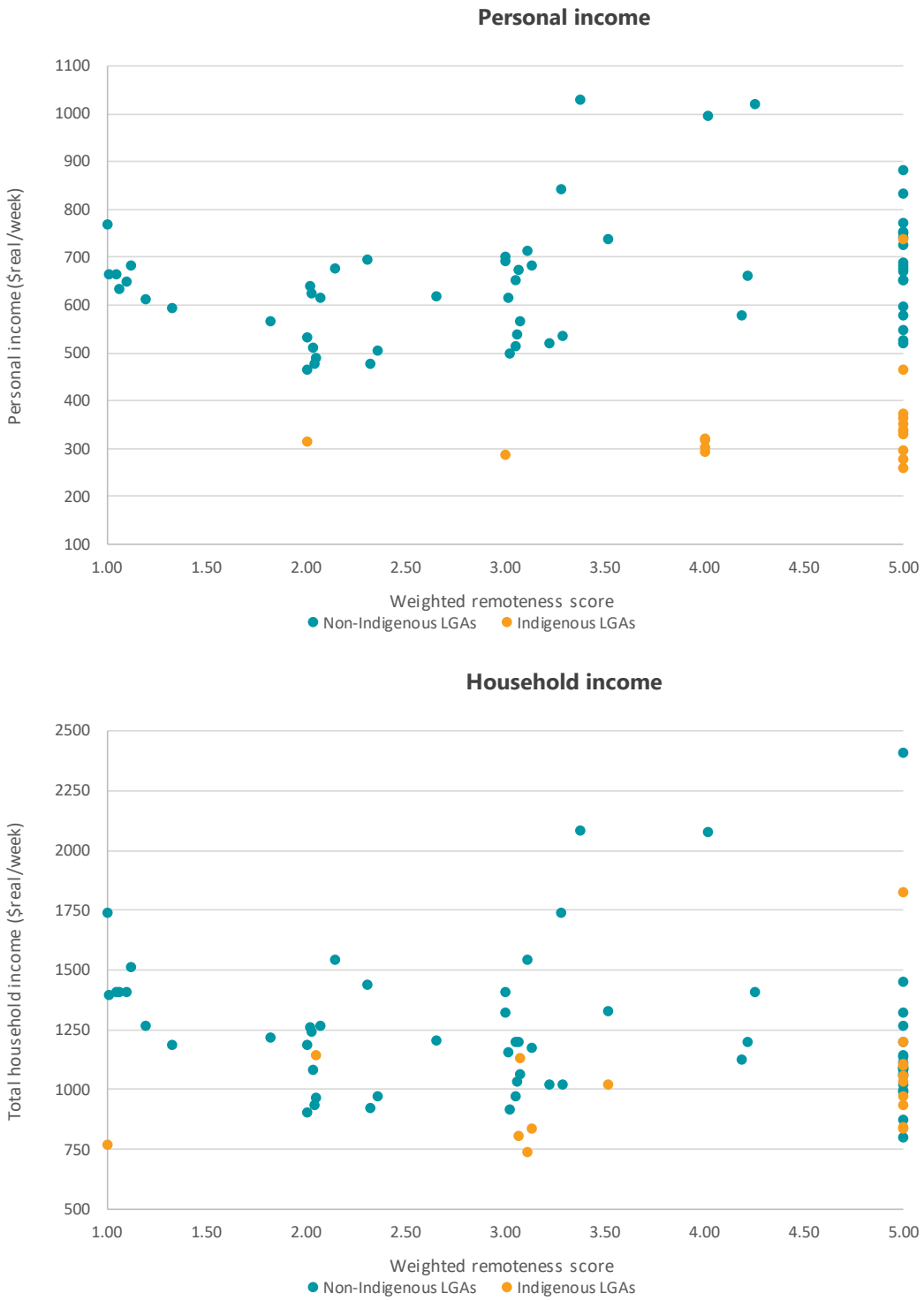
Where there is more intensive sharing of resources across households and greater non-market opportunities to obtain goods (for example, traditional hunting practices), then changes in income may have less effect on the range of choices available to households (higher incomes expand the range of choices).

In terms of sharing across households, a reduction in one household's income will have a greater restriction on that household's choices when the incomes of sharing households are also reduced.

Differences in remoteness and real incomes

Although most Indigenous communities are classified as very remote, whichever remoteness category is examined Indigenous communities have median real personal income levels well below equivalently remote non-Indigenous LGAs (Figure A.7 upper figure). However, this is not necessarily the case for total household incomes. For very remote LGAs many discrete Indigenous communities have similar median total household incomes as mainstream LGAs (lower figure).

Figure A.7 Income and remoteness



Notes: Remoteness scores defined as: Major cities (=1); Inner regional (=2); other regional (=3); remote (=4); and very remote (=5). Remoteness classification boundaries do not fully align with LGA boundaries so that the population of some non-Indigenous LGAs reside in two or more remoteness classifications (for example, 81 per cent of the Sunshine Coast's population live in a location classified as a major city and 19 per cent as inner regional).
Sources: ABS 2018b; Queensland Government Statistician's Office 2019a, 2019b.

In the case of Canadian first nation communities, differences in Canadian Wellbeing Index scores (which is broader than income) were found only to be partially explained by their remoteness and small size:

> *The impetus behind this analysis was to ascertain whether the negative relationship between reserve status and community well-being reported by McHardy and O'Sullivan (2004) was spurious. That is, were the lower levels of well-being found on-reserve attributable to the fact that more reserves are remotely situated and sparsely populated, rather than to the fact that they are reserves per se? Overall, our matched analyses, which controlled for differences in location and population size between reserves and non reserves, produced similar results to analyses that did not control for these factors. Evidently, there is something about reserves, apart from their isolation and small size, that has inhibited their ability to achieve levels of well-being akin to those observed in other Canadian communities. (White & Maxim 2007, p. 12)*

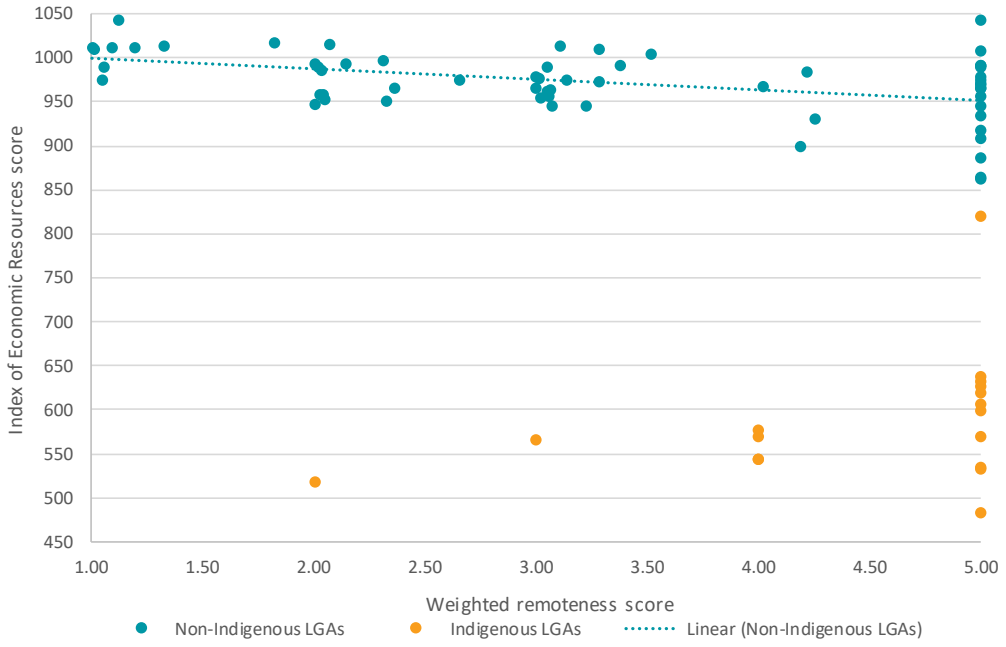
Other indicators that could be used

ABS Index of Economic Resources

The ABS Index of Economic Resources (IER) for 2016 is comprised of fourteen variables with data drawn from the 2016 census. Variables are related to income and wealth and include indicators of advantage and disadvantage. Some examples of indicators are: income (percentage of people with stated annual household equivalised income between $1 and $25,999); percentage of private dwellings with no cars; percentage of occupied private dwellings paying rent less than $215 per week, and percentage of people 15 years and over who are unemployed (ABS 2018b, pp. 21–22). A high score on the index indicates relatively greater access to economic resources in general, and a low score a relative lack of access.

Even taking account of remoteness there is a very large difference in IER index scores between Indigenous and non-Indigenous communities (Figure A.8).

Figure A.8 Remoteness and ABS Index of Economic Resources



Notes: For background on the remoteness scores see the notes to Figure A.7.
Sources: ABS 2018b; Queensland Government Statistician's Office 2019b; Queensland Government Statistician's Office 2019a.

The methods used to construct the IER make its use in this exercise problematic particularly in relation to time series analysis (which underpins analysis of within-community changes in wellbeing—see Box A.2). If the index was included, then the separate indicators for real incomes and motor vehicles would need to be removed.

Box A.2 Interpreting the IER and other Socio-economic Indexes for Areas (SEIFA)

Some important characteristics of the IER include:

- The IER and other SEIFA indexes are assigned to areas, not to individuals. They indicate the collective socio-economic characteristics of the people living in an area.
- As measures of socio-economic conditions, the indexes are best interpreted as ordinal measures that rank areas. The index scores are based on an arbitrary numerical scale and do not represent a quantity of advantage or disadvantage.
- Each index is constructed based on a weighted combination of selected variables. The indexes are dependent on the set of variables chosen for the analysis. A different set of underlying variables would result in a different index.
- The indexes are primarily designed to compare the relative socio-economic characteristics of areas at a given point in time. It can be very difficult to perform useful longitudinal or time series analysis, and this sort of analysis should be undertaken with care.

Source: ABS 2018b.

Productivity, wealth and living standards

The statistical infrastructure typically used to measure productivity, economic growth, wealth and changes in living standards at the national and state/territory level is not available at lower levels of regional aggregation. At the LGA level the missing data includes: annual measures of output and the value created by economic activity within the LGA; and measures of hours worked. This means that important aspects of economic development cannot be measured.

Measures of industry output (value added[27]) provide a measure of local 'wealth creation'. A lack of local economic activity and wealth creation directly leads to greater dependence on external sources of income. In contrast, increased local wealth creation generates income and can contribute to positive changes within communities—both changes due to the increased purchasing power of households and changes associated with generational welfare dependency. Income data at the LGA level relies on the 5-yearly estimates from the census.

Measures of labour productivity provide information on how employment (labour inputs) are contributing to the process of wealth creation. For market sector industries, there is a strong link over time between labour productivity and wages so that measuring labour productivity is part of the process of understanding changes in personal and household incomes. A measure of labour productivity based on value added per hour worked (rather than value added per employed person), takes better account of the hours worked-leisure trade-off when considering the linkage between income and wellbeing.

[27] Value added based measures of industry output capture the difference between the value of outputs produced and the inputs used in production.

Housing, infrastructure & resources

This domain is intended to capture the affordability, appropriateness, adequacy and sustainability of living environments. Housing and the wider environments within which it sits influences the health and overall wellbeing of individuals. Communities depend on the land, infrastructure and services for sustenance, tools, housing and the ongoing sustainability of a community (ABS 2010a).

Indicators used

We were only able to find two indicators to support analysis in this domain (Table A.5):

- Proportion of residents with adequate housing
- Percentage of dwellings with an internet connection

Table A.5 Housing, infrastructure & resources indicators

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Percentage of dwellings connected to the internet	Census	5 years	2006	0.1	
Percentage of population experiencing adequate housing	Census	5 years	2006	1	Estimated using ABS methodology for calculating homelessness

The indicator relating to the proportion of residents with adequate housing has been estimated using ABS estimates of homelessness (ABS cat. no. 2049.0). ABS estimates of homelessness are derived from census data, and take a broad view of homelessness—individuals are considered homeless if their living arrangements fall into one of six categories:

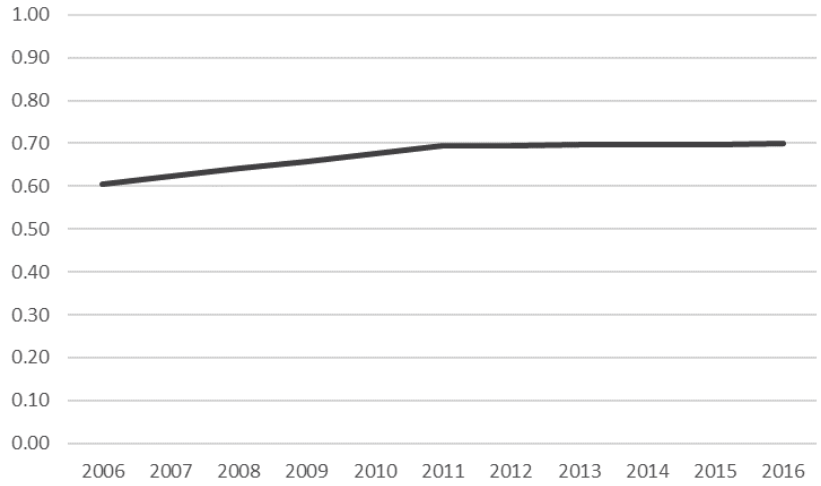
- persons living in improvised dwellings, tents or sleeping out
- persons in supported accommodation for the homeless
- persons staying temporarily with other households
- persons living in boarding houses
- persons in other temporary lodging
- persons living in 'severely' crowded dwellings (ABS 2012).

Rates of internet connectivity have been collected as part of the Census of population and housing since 2006. The Census records whether any household member of an occupied private dwelling accesses the internet from the dwelling (from any device or connection type).

Results

There has been a significant improvement in measured housing outcomes (Figure A.9). While housing outcomes in the discrete communities remain significantly below those in the rest of the state, measure outcomes improved by around 16 per cent between 2006 and 2016.

Figure A.9 Housing, infrastructure and resources domain

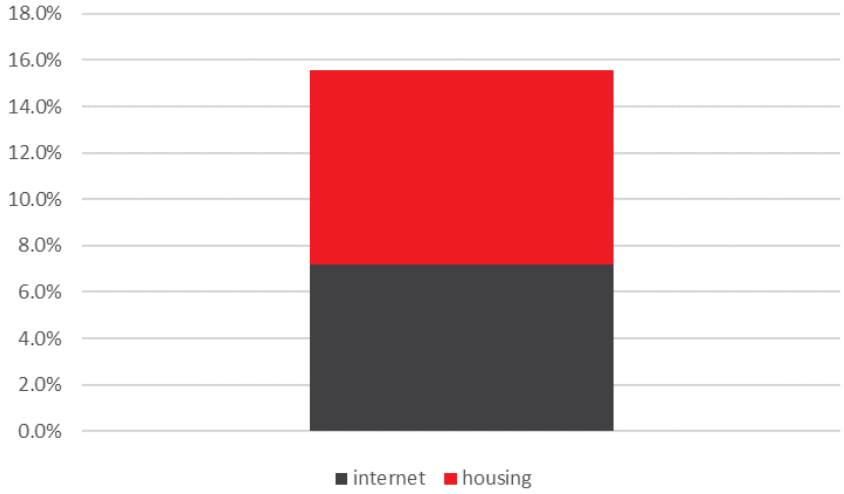


Source: QPC estimates.

The results for this domain can be decomposed into the contributions each indicator made towards the final result (Figure A.10). Internet connectivity made a large contribution to growth, contributing 7.2 percentage points of the 16 per cent growth in this domain. Although internet connectivity was given a small weighting (0.1 out of a possible 1), the internet connectivity grew by more than 400 per cent. The housing component of this domain grew by only 8.5 per cent and contributed 8.4 percentage points to the outcome for this domain.

The housing results are somewhat surprising given the large increase in funding for housing between 2007 and 2018 under the National Partnership Agreement for Remote Indigenous Housing (QPC 2017).

Figure A.10 Contributions to domain results (weighted)



Source: QPC estimates.

Key limitations

Given it is constructed from a range of indicators, ABS estimates of homelessness are likely to provide a robust methodology for this domain. However, there are concerns that the census significantly undercounts overcrowding in some remote communities. This may occur where the census excludes visitors when calculating household size (QPC 2017). As discussed by Memmott et al. (2013), residential mobility is high amongst Aboriginal communities and long-term visitors are common. Yarrabah's submission to the Commission's inquiry into service delivery in remote and discrete Aboriginal and Torres Strait Islander communities suggested that their unofficial population may be significantly higher than official estimates (QPC 2017, p. 275).

The indicator regarding internet connectivity may not be available in the next census release.

Other indicators

Including a measure of housing affordability would improve the reliability of this domain. The authors have not been able to construct estimates of housing affordability because the small population sizes in the discrete communities raise confidentiality issues. Nevertheless, while complex, these could be constructed from non-confidentialised census data.

Law and Justice

The law and justice domain includes individual feelings of safety and experiences with law and justice (ABS 2010a). Under the ABS framework for Indigenous wellbeing (ABS 2010a), the domain is intended to cover more than policing and formal corrective services, and should include individual and community perspectives and experiences relating to fair and just treatment, legal and customary obligations, community initiatives and legal representation.

Indicators used

Given the paucity of data available, wellbeing indicators for this domain focus on offence data. While offence data are imperfect measures (see limitations, below), they capture the underlying levels of criminal activity in a community that might contribute to its citizens feeling unsafe or suffering the effects of being a victim of crime.

Three indicators are used (Table A.6):

- Reported offences against the person—includes homicide, acts intended to cause injury, sexual assault, dangerous and negligent acts and domestic violence offences
- Reported offences against property—includes unlawful entry, property damage, fraud and deception and vehicle theft
- Other offences—include illicit drug offences, public order offences, traffic and regulatory offences and offences against justice proceeding.

For each community, the total offences under each category are summed from publicly available data from the Queensland Police Service.

Table A.6 Law and Justice indicators

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Reported offences against the person	Queensland Police Service	Annual	2001	1	Most serious category of offences
Reported offences against property	Queensland Police Service	Annual	2001	0.5	Middle level seriousness
Other offences	Queensland Police Service	Annual	2001	0.1	Least serious category of offences

Given that offences vary by seriousness (see Box A.3), it would not make sense to rank all offence categories equally—for example, one would expect violent offences to have a larger impact on wellbeing than procedural offences. For this reason, the indicators in this domain are weighted as follows:

- Offences against the person—weighting of 100 per cent
- Offences against property—weighting of 50 per cent
- Other offences—weighting of 10 per cent.

Given the small size of most communities, indicators from offence data are estimated from four year rolling averages from each of the offence categories described above.

As the indicators provide a negative contribution to wellbeing, the results are inverted to provide a positive contribution to wellbeing. That is, a decline in offences provides a positive contribution to wellbeing.

Box A.3 Determining the seriousness of offences

The Australian and New Zealand Standard Offence Classification (ANZSOC) was developed for use in the compilation and analysis of crime and justice statistics in Australia and New Zealand, and is used in the statistical collections constructed by Queensland Police (ABS 2011). It classifies offences using a number of criteria including whether violence was involved, if property acquisition was a motivation, the nature of the victim, the seriousness of the offence and the level of intent involved in the offence.

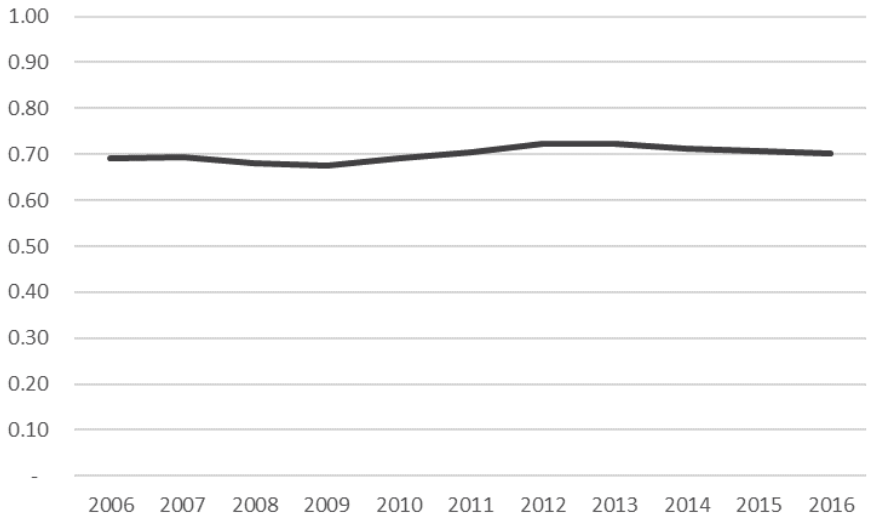
The National Offence Index (NOI) was developed by the ABS, and provides an ordinal ranking of offences from ANZSOC according their perceived seriousness (ABS 2018a). Seriousness rankings are based on an intuitive synthesis of information about maximum sentences, as well as public and expert opinion.

While the NOI rankings cannot be used to weight offence groupings (since they do not provide an absolute level of seriousness), they infer that 'offences against the person' are generally more serious than 'offences against property'. In turn 'offences against property' generally rank as more serious than 'other offences'.

Results

Over the period of analysis there was little movement in outcomes for this domain (Figure A.11). Outcomes for this domain are relatively high, with the measured wellbeing index for this domain sitting at around 0.7.

Figure A.11 Law and Justice Domain

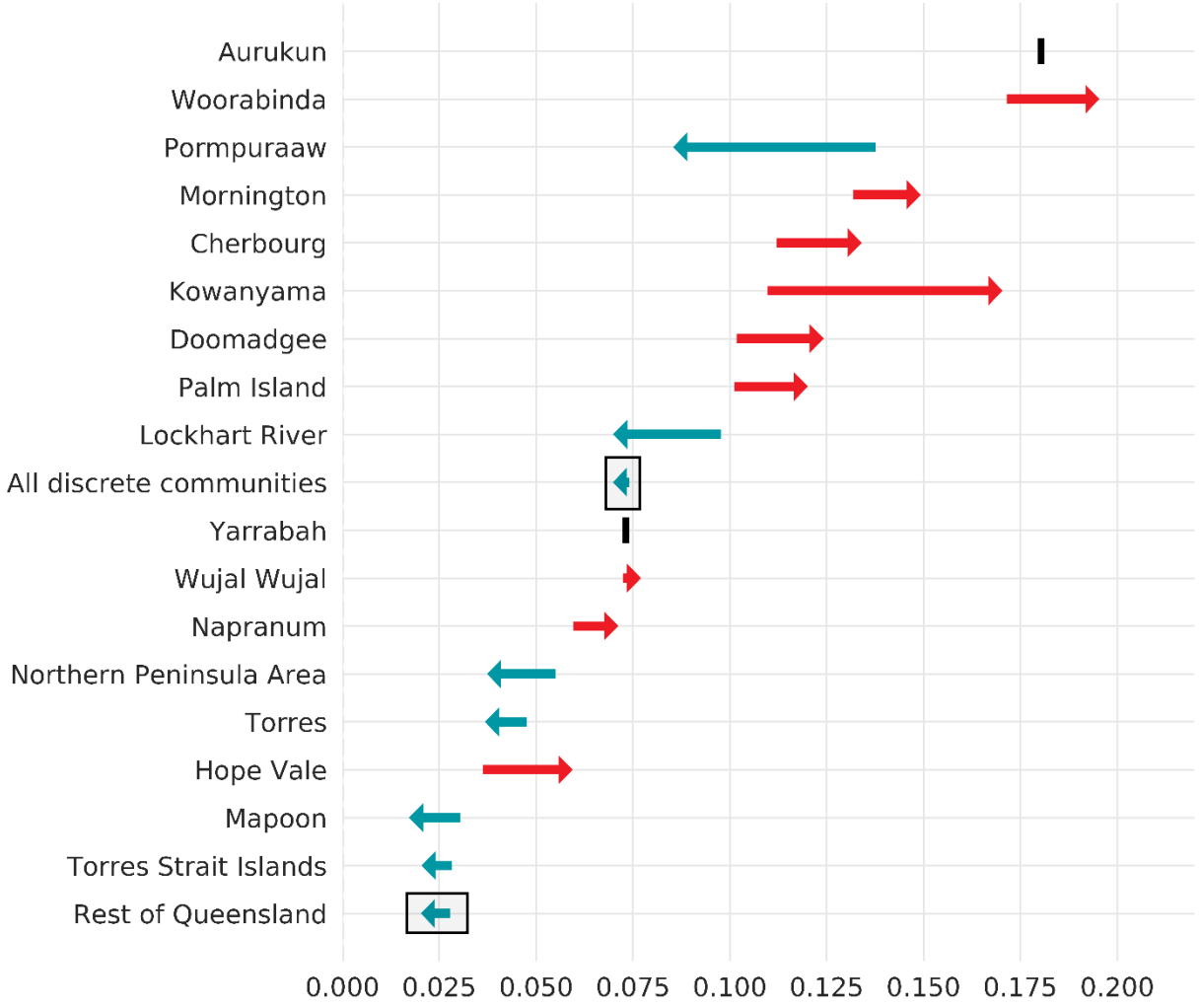


Source: QPC estimates.

As shown in Figure A.12, there are large differences in outcomes between communities, with several experiencing measured crime rates[28] similar to the state average and some much higher. This implies that these are large differences in outcomes between communities, with a small number of communities experiencing very poor outcomes in relation to law and justice.[29]

[28] Measured crime is a rolling four-year weighted average of reported offences against the person, offences against property and other offences.
[29] A small number of communities with very poor outcomes establishes a floor that is very low.

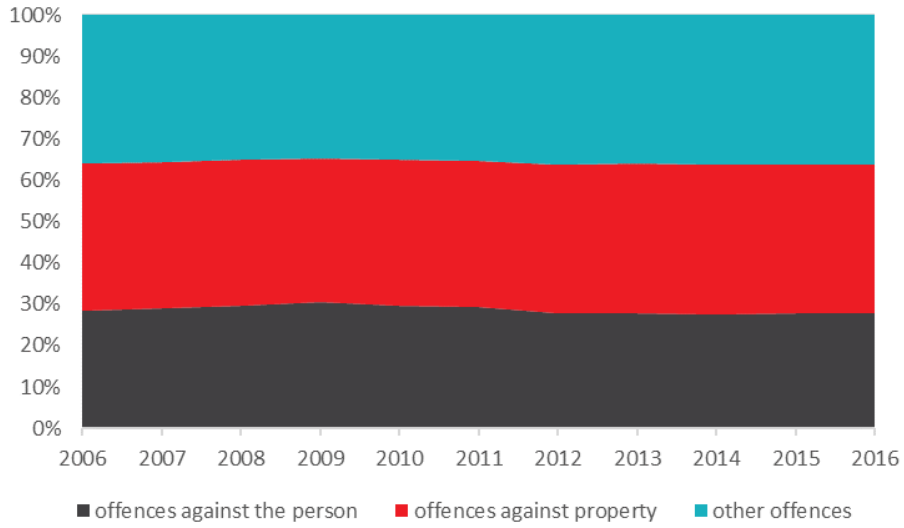
Figure A.12 Measured crime—rates and growth, 2006 to 2016



Note: measured crime is a rolling four-year weighted average of reported offences against the person, offences against property and other offences.
Source: QPC estimates.

The relative contribution of each of the indicators in this domain (reported offences against the person, reported offences against property and other offences) did not change significantly over the period of analysis (Figure A.13).

Figure A.13 Relative contributions of each indicator to the Law and Justice domain



Source: QPC estimates.

Limitations

Key limitations include:

- Using broad aggregates for offence data may hide any compositional changes within the aggregates. For example, it is possible that, within any aggregate there could be a decline (or increase) in the seriousness of offending. Where this is the case, this would result in under-reporting (or over-reporting) of community wellbeing.
- Ideally, more disaggregated offence data would be used to overcome this problem. However, this cannot be done for two reasons. Firstly, using more disaggregated data would present small number problems, making it difficult to infer trends in the data. Secondly, the National Offence Index rankings used are ordinal—that is, they provide a simple ranking of the seriousness of offences—making it impossible to attach weightings to individual offences.
- Reported offences are only a proxy for the underlying level of crime in a community. Not all crime is reported and the rate at which reporting occurs can change over time. If reporting rates in a community increase (or decrease), the indicators would under-report (over-report) the change in wellbeing.
- The offence data have not been age standardised. This is unlikely to be significant when making comparisons between communities since their age structures are broadly similar (see Appendix D:). However, it would be an issue when comparing the discrete communities with outcomes in the rest of the state.

Other indicators that could be used

The domain only includes indicators relating to offences. The domain, as envisaged by the ABS, would encompass a broader set of considerations. However, there are a paucity of publicly available data that could be used at the community level.

Indicators relating to incarceration and juvenile detention could be constructed from agency data (not currently publicly available). Constructing these indicators for individual communities it likely to be problematic because the small numbers involved are likely to be subject to significant volatility from period to period.

The National Aboriginal and Torres Strait Islander Social Survey contains a range of survey questions that could be extended to Queensland's remote communities if further data is considered important. These include questions relating to:

- experience of stressors relating to violence or drug and alcohol problems
- experiences of racism and fair treatment
- feelings of safety and access to social supports.

Citizenship and Governance

The citizenship and governance domain covers understandings of citizenship and the interaction between individuals and governance processes (ABS 2010a). It includes the ability to make decisions, have appropriate representation of views and to have the ability to exercise rights and responsibilities. Individual characteristics include participation in community organisations, active citizenship, exercise of leadership and responsibility and control over decision-making.

Indicators used

Two indicators from the Census are used for this domain:

- the proportion of Indigenous residents holding leadership positions
- the proportion of residents volunteering in a community organisation or group.

A third indicator is the proportion of LGA revenue sourced from rates and charges (Table A.7).

Table A.7 Citizenship and Governance

Indicator	Source	Frequency	First year available	Indicator weighting	Comments
Proportion of Indigenous residents holding leadership positions	Census	5 years	2001	1	Controlled for share of residents that are Indigenous.
Volunteering in a community organisation or group	Census	5 years	2001	1	Only captures those who volunteer for an organisation or group.
Proportion of LGA revenue sourced from rates and charges	Local Government comparative reports	annual	varies	1	Data only recently available for many discrete communities

Leadership positions are classified as those occupations that are involved in planning, directing, controlling or coordinating the operation of organisations (government and non-government) as well as professional occupations that could be seen by community members as influential, or holding a high level of knowledge or expertise.

All occupation data from census are on a place of work basis. That is, the data relate to the number of individuals in leadership positions within the community, regardless of whether the individuals reside in the community.

A complete list of occupations included in the domain indicator are provided in Table A.8.

Table A.8 List of occupations included in domain indicator

Occupation
Chief Executives, General Managers and Legislators
Farmers and Farm Managers
Specialist Managers
Hospitality, Retail and Service Managers
Managers, not further defined
Arts and Media Professionals
Business, Human Resource and Marketing Professionals
Design, Engineering, Science and Transport Professionals
Education Professionals
Health Professionals
ICT Professionals
Legal, Social and Welfare Professionals
Office Managers and Program Administrators
Professionals, not further defined

Volunteering was included as an indicator for this domain since it provides an indication of citizenship and participation in community. Only working age individuals were included in the construction of the volunteering indicator.

The proportion of LGA revenue sourced from rates and charges has been included as the final indicator for this domain. It provides an indication of the community's reliance on outside funding for its sustainability. A lack of own-sourced funding was considered to reduce autonomy over decision-making since it implies a reliance on outside funds, which are often tied to conditions and can only be used for selected purposes.

The maximum value for LGA revenue is defined as 40 per cent, since this approximates the share of revenues for the best-performing (in terms of own-source revenue) local governments in remote areas in Queensland.

Revenue data for many of the discrete communities were only available for the last few years. For all the communities where historical data were missing, own-sourced revenues were a very small share of total revenue (typically between 0 and 3 per cent of income). For these communities, historical data were interpolated using averages from available recent data.

Results

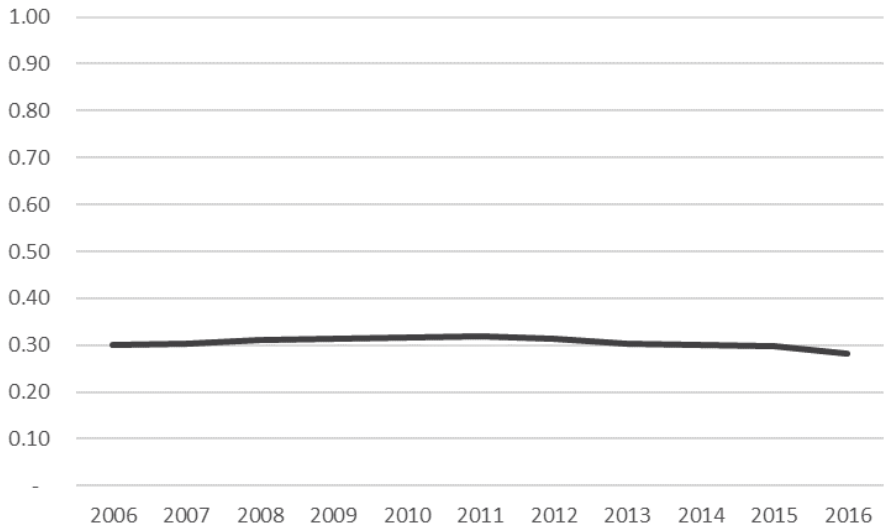
Outcomes for the Citizenship and Governance domain were largely unchanged over the period of analysis (Figure A.14). Outcomes for this domain were relatively low because outcomes for the remote communities on most indicators were low relative to the rest of the state.

For example, the maximum value for the leadership indicator is 100 per cent[30] (that is, the proportion of Indigenous people holding leadership position is equal to their population share in the community), but

[30] Technically, this ratio could be greater than 100 per cent, if the ratio of leadership positions held by Indigenous residents was greater than the population share.

communities are a long way from this outcome. Similarly, while the maximum share of own-sourced LGA revenue is set at 40 per cent, a large proportion of the discrete communities generate only 1 to 3 per cent of income from fees and taxes.

Figure A.14 Citizenship and Governance Domain

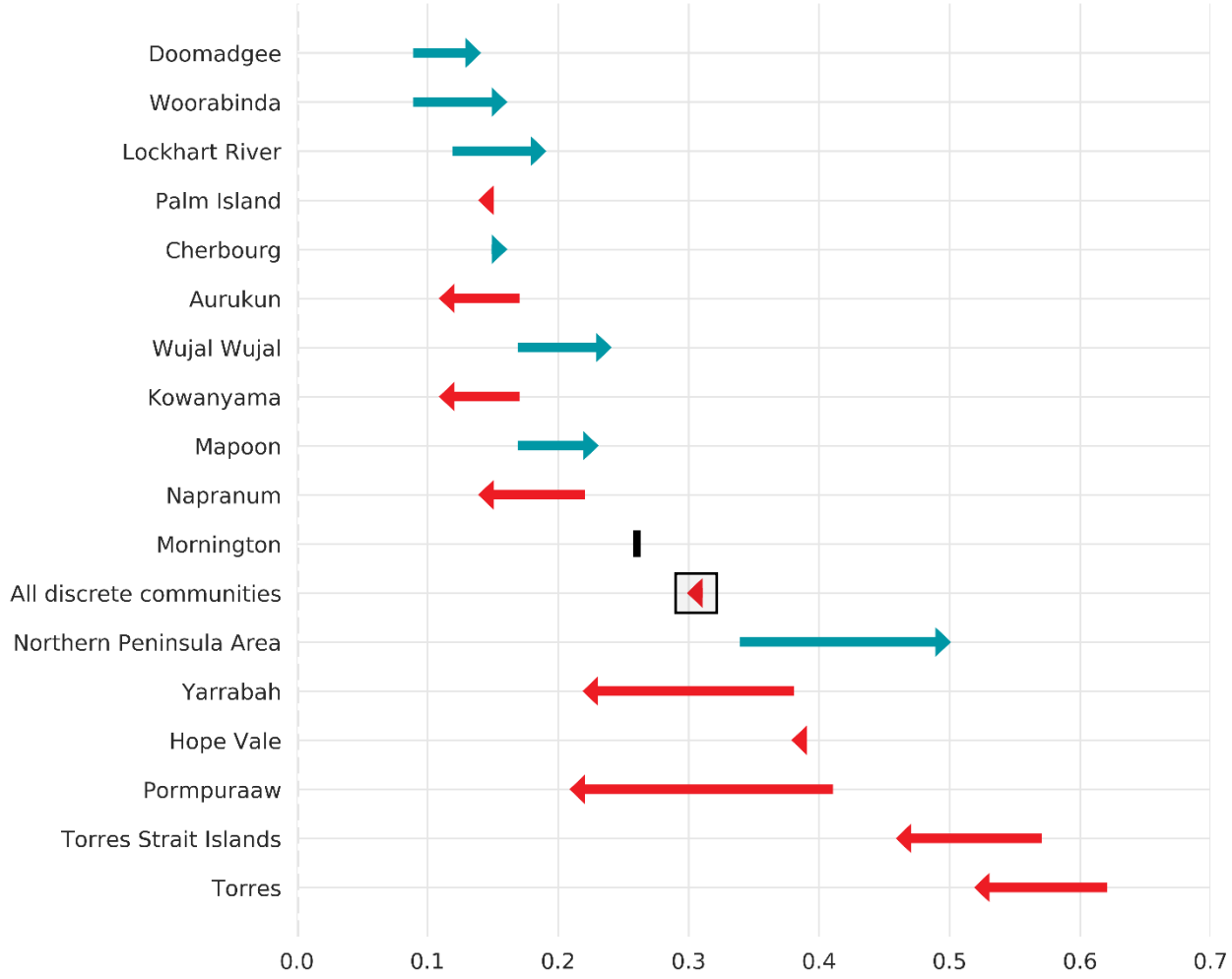


Source: QPC estimates.

There was little change in the contribution each indicator made to this domain. LGA revenue made the smallest contribution to the indicator, reflecting the small amount of revenue collected by the discrete communities relative to other remote communities. The leadership and volunteering indicators contributed roughly equally to the overall domain (just over 40 per cent each).

Measured outcomes varied considerably between communities (Figure A.15). Some communities performed significantly higher that other communities, however no community scored more than 0.55, indicating that there remains considerable room for improvement across all communities.

Figure A.15 Measured governance - rates and growth, 2006 to 2016



Source: QPC estimates.

Limitations

The key limitation for this domain is a paucity of data available relating the governance in communities.

Within the indicators included in this domain, the key limitations include:

- Uncertainty regarding the occupations to include as leadership positions. An alternative would have been to separately identify management and professional occupations and attach weightings on their relative contribution to this domain.
- It is possible that historical own-source revenue data are significantly different for some communities where this was assumed to be similar to current shares of own-source revenue (see Box A.4).

Box A.4 Local government revenue indicators

The revenue ratio presented in the Local Government Comparative reports shows the percentage of a council's total operating income (excluding items like capital grants) that is derived from rates and utilities charges. It is a commonly used measure of council-controlled revenue, including by the Queensland Audit Office.

The revenue ratio does not account for all possible own-source revenue streams (for example interest and income from commercial activities). Each Council will have a different capacity to earn revenue from other own-source income streams and this may change over time. As DLGRMA note, it may not be appropriate to compare councils' revenue ratios without examining underlying factors.

By way of example, the Local Government Comparative information shows Hope Vale derived nil income from rates and charges in 2017–18 and 2016–17. However, examination of the Council's financial statements in their audited Annual Reports indicates other recurrent own-source revenue (i.e. excluding grants and subsidies) accounted for around 70 per cent of all Council's operating income in 2017–18 and 2016–17. Income included rental income, interest, revenue from services including construction income and contracts for roads and earthworks, income relating to the Aged Person's Hostel and contributions from Cape Flattery Mines. The ongoing reliability of these income sources is unknown.

Other indicators that could be used

It is likely that community perceptions about governance would provide important information on progress against this domain. This data could be collected in-community.

The NATSISS has a range of survey questions that could assist to construct indicators for this domain. These include:

- trust in community governance, including perceptions of community leadership
- access to, and trust in services
- say within the community on issues.

Like other domains, the survey does not currently provide enough coverage for data to be robust at a community level.

Culture, heritage & leisure

This domain embodies the symbolic and learned aspects of Aboriginal and Torres Strait Islands society, including social norms, accepted behaviours and customs. The importance of cultural heritage to an Indigenous individual's wellbeing is widely acknowledged. While language and connection to land are prominent issues for some people, they may not be uniformly applicable to life circumstances across individuals or communities (ABS 2010a).

Indicators used

We have only been able to access one indicator suitable for inclusion in this domain, sourced from the Census of population and housing (Table A.9). As such, the results for the culture, heritage & leisure domain are based on this indicator only.

Indigenous language use at home is reported as the percentage of individuals usually resident in the community who identify as speaking an Australian Indigenous language at home. This percentage increased from 36.2 per cent in 2006 to 41.7 per cent in 2016.

Table A.9 Culture, heritage & leisure

Indicator	Source	Frequency	First year available	Comments
Indigenous language use at home	Census	5 years	1991	Possible under-reporting and volatility

Key limitations

The key limitation of the reporting on this domain relates to the paucity of data available relating to culture, heritage and leisure. We could only find a single data series for this domain (Indigenous language spoken at home). The culture, heritage and leisure domain would ideally include a wider spectrum of outcomes. As such reporting against this domain may not be representative of progress against this domain.

There are also some problems inherent in the ABS census data relating to Indigenous language. These include:

- Underreporting of Indigenous language use—because it is focussed on language spoken at home, the census data may omit those who speak an Indigenous language outside the home but do not have another speaker of the relevant language to converse with at home.
- The numbers reported in some communities (for example, Lockhart River or Napranum) display a level of volatility across censuses that can only be explained by external factors influencing the likelihood or disposition for residents to identify as speaking Indigenous languages.

Other indicators that could be included

NATSISS includes several indicators which are suitable but not available at the level of LGAs:

- Number of types of cultural events, ceremonies or organisations attended in last 12 months.
- Ability to attend or participate in cultural events as often as wanted.

The definition of these indicators includes sporting events and organisations. Participation in Indigenous sporting clubs offers culturally safe-spaces that reinforce cultural values and identity, positively influencing physical health and mental wellbeing (Thorpe et al. 2014). The first indicator listed is limited in interpretation, as there is no correct number of types of cultural events, ceremonies or organisations someone should attend. Greater wellbeing may be obtained by having deep participation in one item, rather than less notable participation across many.

Family, kinship & community

This domain describes the relationships fostered between people and how those relationships provide support. Family and community are often considered distinct spheres, but in many Indigenous communities they may be considered overlapping and interwoven. It is therefore acknowledged that these social structures are not accurately captured by the statistical classification of the non-Indigenous nuclear household. The aim is not to classify or count families, rather, it is about understanding how social transactions and interactions impact on wellbeing (ABS 2010a).

Indicators used

We were unable to identify any indicators for this domain which are publicly available at the community level. Given the high levels of Indigenous children in out-of-home care, this should be a priority area for improving the measurement of progress in discrete communities.

Possible indicators that could be used

Table A.10 represents the most granular publicly available data from the Department of Child Safety, Youth and Women (DCSYW)—who are responsible for child safety in Queensland. The number of substantiated notifications of harm and finalised child protection orders have historically been reported annually at the community level from unpublished data (DATSIP 2017), demonstrating that desirable levels of detail and frequency are achievable with existing administrative data.

Table A.10 Percentage of Aboriginal and Torres Strait Islander children in out-of-home care placed with kin, other Indigenous carers or Indigenous residential care services, by region

Region	As at 30 June 2015	As at 30 June 2016	As at 30 June 2017	As at 30 June 2018	As at 30 June 2019
Central Queensland	51.9	55.0	54.1	51.4	50.2
Moreton	61.8	58.7	60.8	65.0	63.4
Northern Queensland	59.0	60.4	58.4	57.4	53.4
South East	48.5	51.3	52.0	49.3	50.2
South West	54.2	53.5	56.5	57.4	58.1
Queensland Total	55.9	56.5	56.7	56.4	55.1

Source: DCSYW.

Outcomes across Queensland's regions show considerable variation, with South East Queensland improving 7.2 per cent over the reporting period, while Northern Queensland saw a 9.5 per cent decline in children placed according to the Aboriginal and Torres Strait Islander Child Placement Principle. Many of the communities within the scope of this paper are within the Northern region, suggesting were suitably granular data available, it may indicate declining wellbeing in a considerable proportion of these communities.

A child's kinship relationships can only be defined by those who possess cultural knowledge from within their cultural and family groups, and the interpretation of such definitions can be a matter of contention between communities and service providers (Family Matters 2018). At the community level, the numbers of substantiated notifications of harm and finalised child protection orders vary markedly across reporting periods for reasons including small populations and the number of children per substantiated household. This would be a key limitation of any future work in this domain.

NATSISS includes several indicators which are suitable but not available at the community (LGA) level:

- Number of selected types of sporting, social or community activities participated in, in last 12 months.
- Number of days per week spent with Aboriginal/Torres Strait Islander leaders or elders in the community (by those aged 3–14 years).

Physical & mental health

This domain reports health status and determinants of health, including related beliefs and knowledge systems. The ability for physical and mental health to interact and be co-determinants of wellbeing is acknowledged. Some environmental health characteristics, such as water, power and sanitation, may increase in importance with remoteness (ABS 2010a).

Indicators used

There were no publicly available data to support the construction of indicators at the community level for this domain. However, Queensland health was able to provide us with selected data that were indicative of outcomes in the discrete communities.

Table A.11 Physical & mental health

Indicator	Source	Frequency	First year available	Comments
Proportion of babies born at a healthy birthweight	QPDC	Annual	unknown	Community level data are not publicly available and there would be issues with small numbers
Intentional injury hospitalisations	QHAPDC	Annual	unknown	Community level data are not publicly available and there would be issues with small numbers
Proportion of mothers not smoking	QPDC	Annual	unknown	Community level data are not publicly available and there would be issues with small numbers

Low birthweight (defined as less than 2,500 grams by the World Health Organisation) is correlated with the health of the mother during pregnancy, including her nutritional and smoking status (UNICEF & WHO 2019). It is also a powerful determinant of health outcomes throughout the life-cycle of the newborn (AIHW 2014a). The strength of the relationship decreases as a cohort ages, from a strong causal relationship with foetal and neonatal morbidity, through inhibited growth and cognitive development in childhood, to a weaker link with adult-onset chronic health conditions such as obesity, diabetes and heart disease (Goldenberg & Culhane 2007; Wilcox 2001).

The Queensland Perinatal Data Collection (QPDC) records all births in Queensland, generating a dataset that is accurate and detailed to Australian Statistical Geography Standard SA2 (Queensland Health 2019).

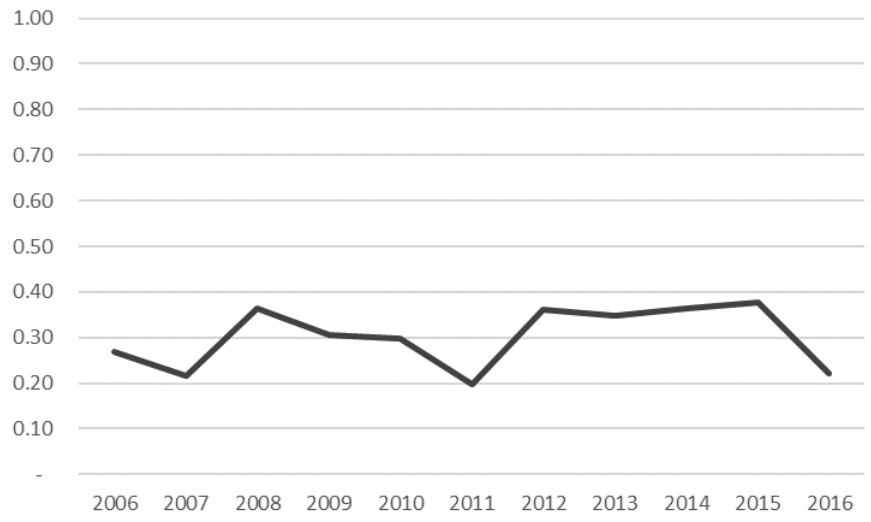
The Queensland Hospital Admitted Patient data collection managed by Queensland Health provides information on the number of hospitalisations resulting from intentional injury (Queensland Health, pers. comm. November 2019). The same data set also provides information on potentially preventable hospitalisations.

Results

As discussed earlier, data were only available to us as indicative outcomes. For this reason, some caution should be given in interpreting the results here, which are presented for discussion purposes only. A key message is that health outcomes are volatile from year to year at the community level. This largely reflects the small populations in the discrete communities[31], and makes year to year interpretation of results difficult.

[31] For example, in Aurukun there are only around 40 births per year between 2012 and 2018 (ABS cat. no. 3301.0).

Figure A.16 Indicative health outcomes



Source: QPC estimates.

Key limitations

The indicators used only cover a subset of possible health outcomes. The indicators chosen were picked for their availability and have not been tested for their suitability as indicators of broader health outcomes in the discrete communities.

A significant omission is a lack of any indicator relating to mental health outcomes. Mental illness is a major contributing factor to wellbeing (Hunter 2007; Swan & Raphael 1995)—it is a principal reason for hospital admissions, is a determinant of substance abuse, self-harm, suicide, risk-seeking and violent behaviours (Australian Government 2013; Honorato et al. 2016; Nadew 2012), and exerts a burden of disease second only to cardiovascular diseases (Nguyen & Cairney 2013).

While some health data may be available at a community level, we were only able to access indicative data for this project. The data have not been matched to any single or group of communities and should be considered broadly indicative of outcomes for the discrete communities.

Other indicators that could be included

It is possible that state and federal administrative health data could be used to build useful indicators for communities. However, it is likely that the construction of community-level data will present some problems due to:

- issues assigning outcomes to individual communities
- small numbers (such as may be the case when using births data) creating significant volatility.

Other data, such as rates of suicide or self-harm, could provide useful indicators of wellbeing. However, some caution would need to be used due to the small number of observations from year to year.

NATSISS includes a range of data that could be used to provide a more comprehensive measure of wellbeing. However, as discussed elsewhere, the survey does not provide sufficient detail to allow reporting at a community level.

Useful indicators from NATSISS include:

- self-assessed health status

- patient experiences
- health outcomes, including dental, optical, maternal and chronic health outcomes
- disabilities
- mental health outcomes.

Appendix B: ABS Indigenous wellbeing framework

Evaluation of frameworks

Two broad categories of existing frameworks were assessed for their suitability for use in this paper; those created specifically for an Australian context with an emphasis on those intended for Indigenous Australians, and those currently in use internationally (Box B.1).

Box B.1 Frameworks for evaluation

Australian frameworks:

- COAG Closing the Gap (2019 Refresh) (CTG)
- Cape York Institute Capability Indicators (CYI)
- ABS Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islanders (FMW)
- Herald/Age Lateral Economics Index of Wellbeing (HALE)
- Interplay Wellbeing Framework (IWF)
- ABS Measures of Australia's Progress (MAP)
- COAG Overcoming Indigenous Disadvantage (OID)

International frameworks:

- Arctic Social Indicators (ASI)
- Better Life Index (BLI)
- Canadian Community Wellbeing Index (CWB)
- Canadian Index of Wellbeing (CIW)
- Social Progress Index (SPI)

The framework adopted for this paper is the Australian Bureau of Statistics (ABS) Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples (described below). Its structure of domains provides the most comprehensive coverage of the different ways through which wellbeing can be affected (Table B.1).

Background to the ABS Indigenous wellbeing framework

Since 2001, the Australian Bureau of Statistics (ABS) has measured the wellbeing of Australians within the framework set out in *Measuring Wellbeing: Frameworks for Australian Social Statistics* (ABS 2001). The ABS considers that that framework does not 'explicitly articulate the unique cultural and historical factors which affect the individual and community wellbeing of Aboriginal and Torres Strait Islander peoples'. To address this shortcoming, the ABS produced *Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples* (ABS 2010) (the framework).

The framework is used by the ABS to guide the collection and analysis of statistics on Indigenous people and inform the future development of appropriate statistical measures. It is used to:

- identify gaps in data for possible inclusion in future surveys
- provide a structure for reporting information from census, surveys and administrative data.

Table B.1 Coverage of dimensions of Aboriginal and Torres Strait Islander quality of life

	Evaluation framework											
Domains	ASI	BLI	CIW	CTG	CWB	CYI	FMW	HALE	IWF	MAP	OID	SPI
Citizenship	X	XXX	XXX				XX			X	X	XX
Connection with country	XXX						XX		X		X	
Culture and heritage	XXX		XX				XX		XXX	X	XX	
Employment		XXX	XX	XXX	XXX	XXX	XXX	X	XXX	XX	X	X
Education	XXX	XXX	XXX	XXX	XXX	XXX	XXX	XX	XXX	XX	XXX	XX
Environment		XXX	XXX				X	XX		XXX		XX
Family, kinship, and community		XX	XX	XX		XX	XXX	X	XXX	XX	XX	X
Governance						XXX	XX	X		XXX	XX	X
Health	XXX	XXX	XXX	XXX		XXX	XXX	XX	XXX	XX	XXX	XX
Housing		XXX		XXX	XXX	XXX	XX			XX	XXX	XX
Income and wealth	XXX	XXX	XX		XXX	XXX	XXX	XX		X	XX	
Infrastructure and services						XX	XX		X	XX	X	XX
Law and justice				XXX			XXX			X	XX	X
Leisure		XXX	XX				XX			X	X	
Personal safety						XXX	X			X	XX	XX
Self-determination	XXX			XXX			XX		XXX	X	X	XX
Subjective wellbeing		XXX	X				X		XXX			

Key: X - indicator; XX - multiple indicators or partial domain; XXX - headline indicator or standalone domain.
Sources: ABS 2010b, 2014; Cairney et al. 2017; CIW 2016; Closing The Gap 2019; CYI 2005; Flanagan & Beauregard 2013b; Gruen, Nicholas & Lancy, Annette 2011; Nymand Larsen et al. 2014; OECD 2017; SCRGSP 2016.

Structure of the framework

The framework is based on the interaction of individuals with their social, cultural and economic environments:

- Individual level: topics focus on the characteristics of a person. This relates to a wide range of areas which include: roles and responsibilities, health status, beliefs and history, educational participation and participation in governance arrangements.
- Social, cultural, physical and economic environment: represents the immediate networks and environments of individuals. The framework attempts to identify the transactions between individuals and their environments, by

grouping similar elements together into nine broad domains, which together contribute to the notion of wellbeing.

The nine domains are:

- Culture, heritage and leisure
- Family, kinship and community
- Health
- Education, learning and skills
- Customary, voluntary and paid work
- Income and economic resources
- Housing, infrastructure and services
- Law and Justice
- Citizenship and governance.

The ABS does not include a separate domain for 'identity', but considers it, 'an underlying feature of many of the elements and transactions throughout the whole framework'.

Appendix C: Experimental estimates of progress for individual communities

Aurukun

Table C.1 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.04	0.09	0.14	0.19	0.23	0.28	0.23	0.17	0.11	0.06	0.00	-100%
Law and Justice	0.15	0.07	0.16	0.29	0.35	0.40	0.40	0.31	0.26	0.18	0.14	-6%
Citizenship and governance	0.16	0.19	0.22	0.25	0.29	0.32	0.28	0.23	0.18	0.16	0.11	-32%
Income & economic resources	0.22	0.22	0.22	0.22	0.22	0.22	0.20	0.18	0.16	0.14	0.13	-42%
Culture, heritage & leisure	0.95	0.96	0.96	0.97	0.97	0.98	0.97	0.97	0.96	0.96	0.95	0%
Housing and infrastructure	0.01	0.05	0.08	0.12	0.15	0.19	0.26	0.32	0.39	0.45	0.52	5377%
Education, learning and skills	0.39	0.40	0.40	0.41	0.41	0.42	0.42	0.43	0.43	0.43	0.44	11%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.2 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Aurukun	0.20	0.21	0.24	0.28	0.31	0.34	0.33	0.31	0.29	0.27	0.26	28.2%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.3 Headline indicators of progress

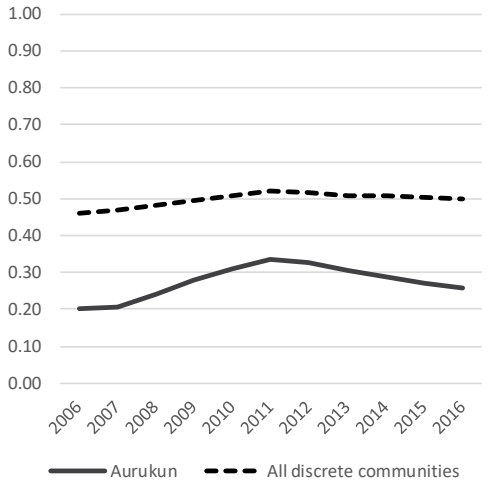
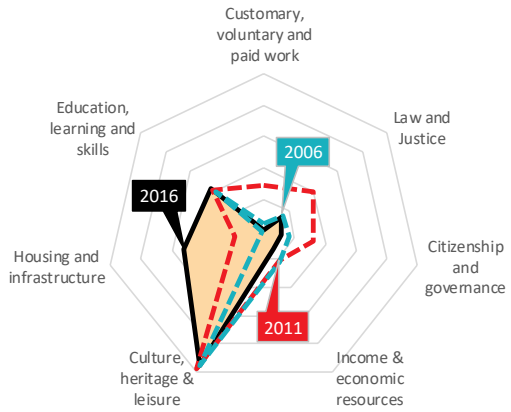


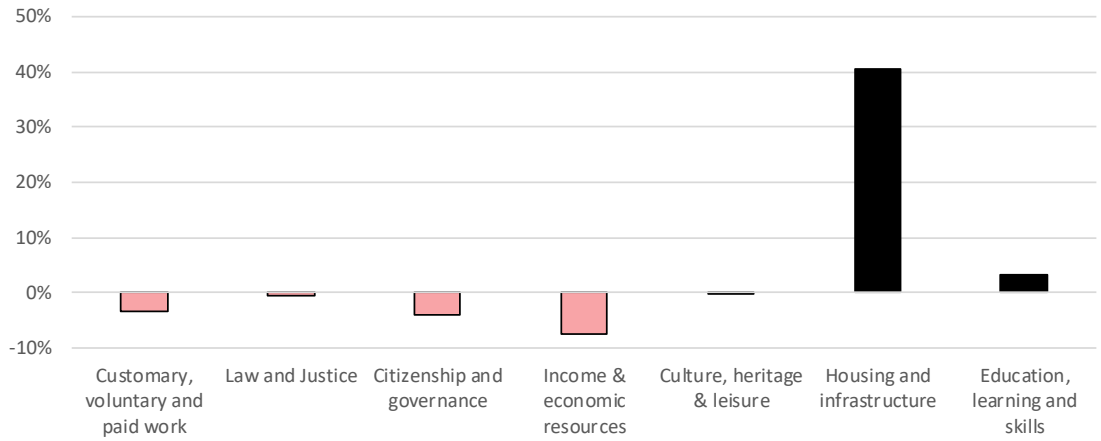
Figure C.2 Domain growth



Key findings:

- Measured wellbeing in Aurukun increased by 28.2 per cent, however wellbeing remains significantly below the average for all discrete communities.
- The increase in wellbeing was overwhelmingly driven by the *Housing, infrastructure and resources* domain.
- The increase in this domain was mainly a result of a decline in the proportion of people in unsuitable housing.
- There were declines in the domains relating to work, law and justice and governance.
- Not all data to support the *Education, learning and skills* domain was available.

Figure C.3 Domain contribution to growth, 2006–2016



Cherbourg

Table C.4 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.30	0.30	0.31	0.32	0.32	0.33	0.30	0.27	0.25	0.22	0.19	-36%
Law and Justice	0.49	0.46	0.45	0.43	0.41	0.35	0.31	0.35	0.36	0.39	0.38	-22%
Citizenship and governance	0.15	0.17	0.18	0.20	0.22	0.23	0.22	0.21	0.20	0.18	0.17	13%
Income & economic resources	0.13	0.16	0.17	0.19	0.21	0.23	0.22	0.21	0.20	0.19	0.18	35%
Culture, heritage & leisure	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.02	0.03	0.04	929%
Housing and infrastructure	0.73	0.73	0.73	0.72	0.72	0.72	0.71	0.71	0.70	0.69	0.69	-6%
Education, learning and skills	0.64	0.63	0.62	0.62	0.62	0.61	0.61	0.60	0.58	0.55	0.54	-16%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.5 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Cherbourg	0.39	0.39	0.39	0.40	0.40	0.39	0.38	0.37	0.36	0.35	0.34	-11.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.6 Headline indicators of progress

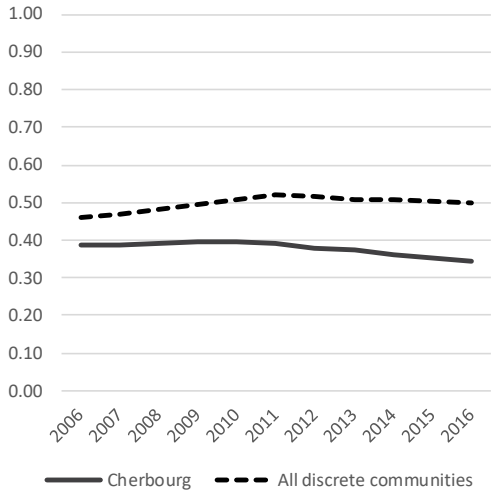


Figure C.4 Domain growth

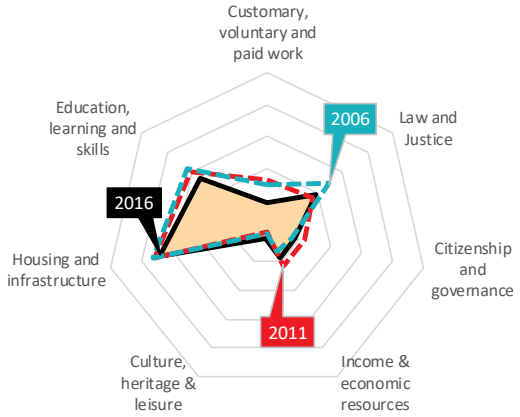
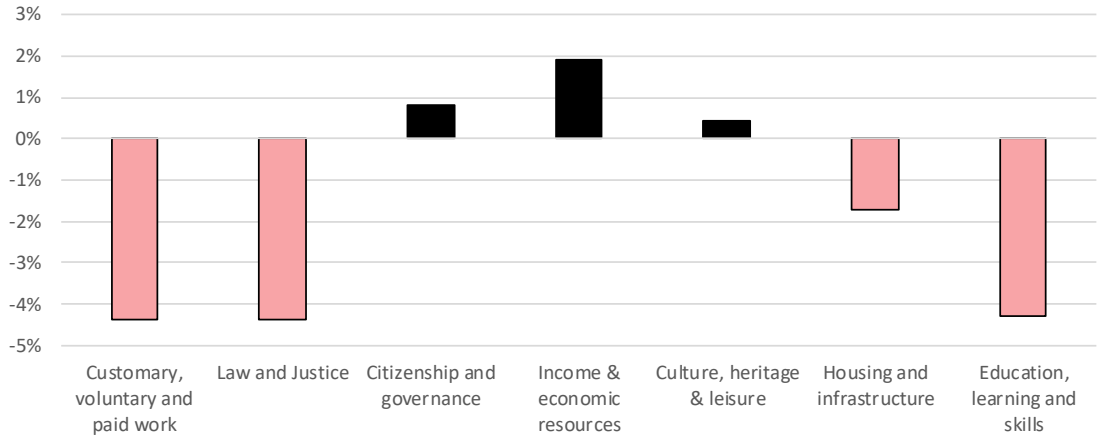


Figure C.5 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Cherbourg declined by 11.6 per cent over the years 2006 to 2016, with the decline occurring over the years 2011 to 2016.
- Measured wellbeing remains below the average for all discrete communities.
- All domains apart from the *Income & economic resources, Citizenship and governance* and the *Culture, heritage & leisure* domain declined, with *Customary, voluntary and paid work*, *Law and Justice* and *Education, learning and skills* contributing the most to the decline.
- The decrease in the *Customary, voluntary and paid work* domain was driven by a decline in the percentage of residents either volunteering, studying or working from 2011 to 2016.
- The decrease in the *Education, learning and skills* domain was due to a decline in the proportion of Year 3 students achieving minimum reading and numeracy standards; Cherbourg also experienced a lower rate of Cert III achievement (as a proportion of working age population) in comparison to other Indigenous LGAs.

Doomadgee

Table C.7 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.21	0.20	0.18	0.17	0.16	0.14	0.13	0.13	0.12	0.11	0.10	-54%
Law and Justice	0.54	0.49	0.56	0.63	0.65	0.70	0.68	0.65	0.60	0.53	0.43	-20%
Citizenship and governance	0.11	0.12	0.13	0.14	0.15	0.16	0.15	0.14	0.15	0.14	0.14	26%
Income & economic resources	0.49	0.48	0.46	0.45	0.44	0.42	0.40	0.37	0.34	0.31	0.29	-41%
Culture, heritage & leisure	0.01	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.03	0.03	0.03	93%
Housing and infrastructure	0.01	0.11	0.21	0.32	0.42	0.52	0.53	0.54	0.56	0.57	0.58	9410%
Education, learning and skills	0.43	0.42	0.41	0.47	0.46	0.49	0.48	0.49	0.43	0.42	0.42	-2%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.8 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Doomadgee	0.28	0.29	0.31	0.35	0.36	0.39	0.38	0.37	0.35	0.33	0.31	9.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.9 Headline indicators of progress

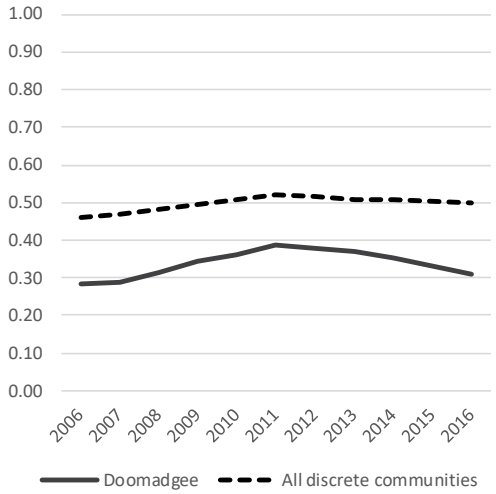


Figure C.6 Domain growth

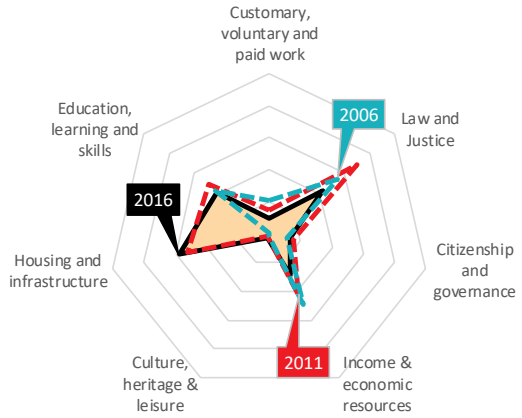
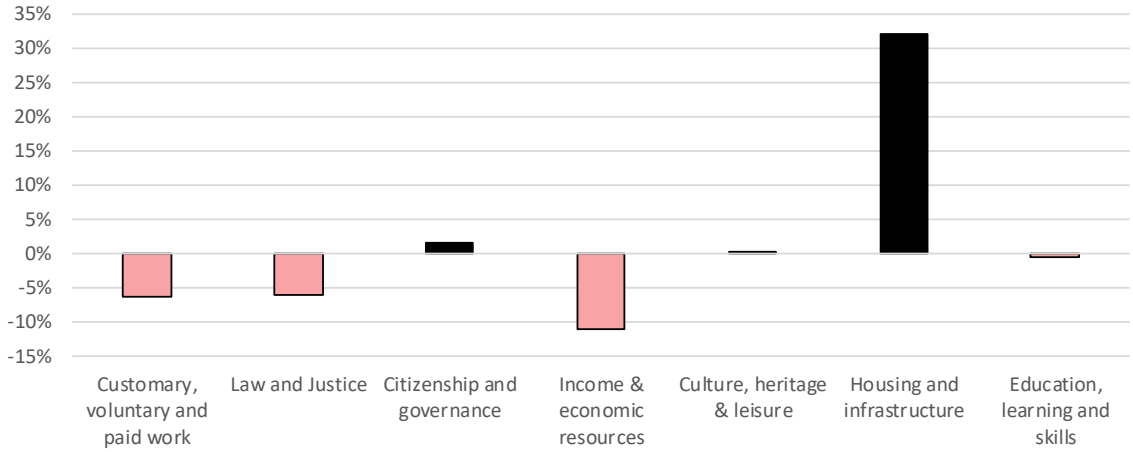


Figure C.7 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Doomadgee increased by 9.6 per cent from 2006 to 2016; however, the index was at its highest value in 2011.
- Measured wellbeing remains below the average for all discrete communities.
- The *Housing and infrastructure* domain was by far the largest driver of the increase in wellbeing, driven by both increased internet connectivity and housing suitability.
- Negative contributions to wellbeing came from the *Income & economic resources* and the *Customary, voluntary and paid work* domains.
- The decrease in the *Education, learning and skills* domain was caused by a decline in the proportion of Year 3 students achieving minimum reading and numeracy standards; in Doomadgee, this proportion increased from 42.8% in 2006 to 56.0% in 2011 but decreased to 34.6% in 2016.

Hope Vale

Table C.10 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.43	0.41	0.40	0.38	0.36	0.35	0.37	0.40	0.42	0.45	0.48	10%
Law and Justice	0.87	0.84	0.84	0.83	0.84	0.82	0.78	0.76	0.75	0.76	0.75	-13%
Citizenship and governance	0.39	0.37	0.35	0.33	0.31	0.29	0.31	0.34	0.36	0.38	0.41	5%
Income & economic resources	0.20	0.22	0.23	0.25	0.27	0.28	0.27	0.26	0.25	0.24	0.23	18%
Culture, heritage & leisure	0.87	0.90	0.92	0.95	0.97	1.00	0.98	0.96	0.94	0.92	0.90	4%
Housing and infrastructure	0.67	0.72	0.76	0.80	0.85	0.89	0.89	0.89	0.90	0.90	0.90	34%
Education, learning and skills	0.42	0.46	0.49	0.52	0.55	0.58	0.60	0.62	0.65	0.66	0.68	60%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.11 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Hope Vale	0.51	0.52	0.53	0.54	0.55	0.56	0.56	0.56	0.57	0.58	0.59	14.9%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.12 Headline indicators of progress

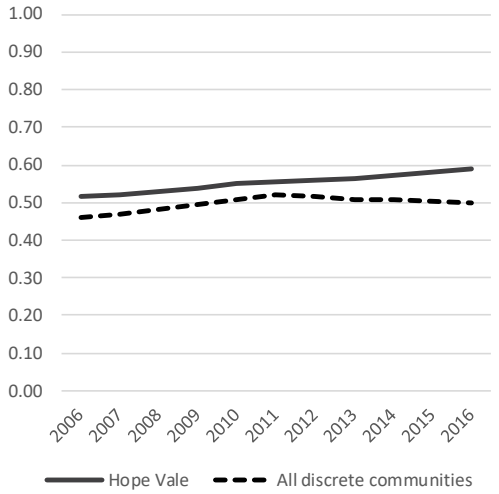


Figure C.8 Domain growth

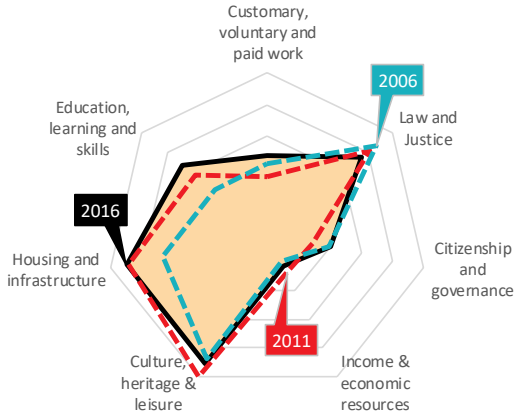
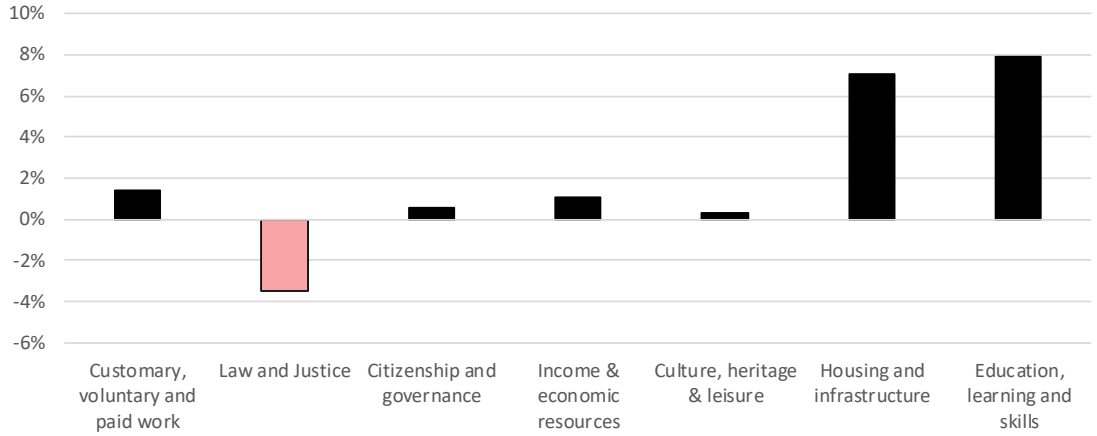


Figure C.9 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Hope Vale increased by 14.9 per cent between 2006 (0.51) and 2016 (0.59).
- Measured wellbeing remains above the average for all discrete communities.
- The *Housing and infrastructure* and *Education, learning and skills* domains made the largest contributions to wellbeing growth. However, the gains were partly offset by the decline in the *Law and Justice* domain.
- The *Housing and infrastructure* domain saw growth primarily through the decline in the ratio of residents who were homeless; internet connectivity also assisted, growing from 8.2% of dwellings connected in 2006 to 58.2% in 2016.
- The *Law and Justice* domain saw a decline through increases in offence rates; however, the rates for offences against the person and property are still lower than the average for all discrete communities.

Kowanyama

Table C.13 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.28	0.29	0.30	0.31	0.32	0.33	0.29	0.26	0.22	0.18	0.15	-47%
Law and Justice	0.50	0.53	0.55	0.53	0.58	0.62	0.61	0.58	0.46	0.30	0.20	-60%
Citizenship and governance	0.17	0.19	0.20	0.22	0.24	0.26	0.23	0.19	0.17	0.14	0.11	-35%
Income & economic resources	0.33	0.31	0.30	0.29	0.28	0.27	0.25	0.23	0.21	0.20	0.18	-44%
Culture, heritage & leisure	0.18	0.16	0.14	0.12	0.11	0.09	0.08	0.07	0.07	0.06	0.05	-71%
Housing and infrastructure	0.34	0.40	0.46	0.52	0.58	0.64	0.68	0.71	0.75	0.78	0.82	144%
Education, learning and skills	0.47	0.49	0.52	0.55	0.54	0.58	0.56	0.60	0.60	0.62	0.62	33%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.14 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Kowanyama	0.34	0.36	0.38	0.39	0.41	0.43	0.42	0.41	0.39	0.36	0.33	-1.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.15 Headline indicators of progress

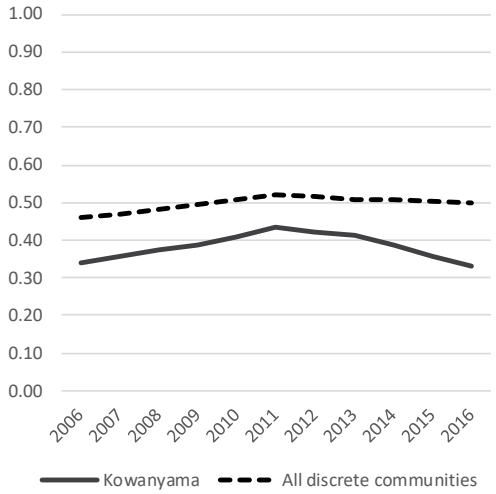


Figure C.10 Domain growth

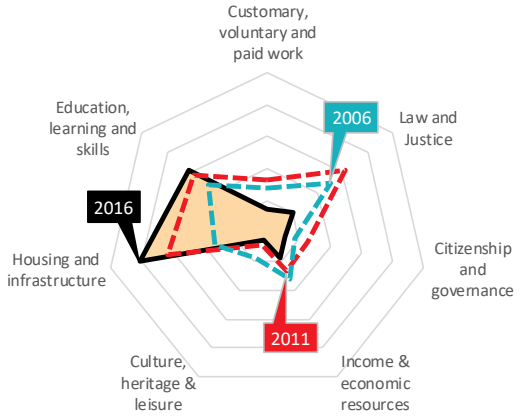
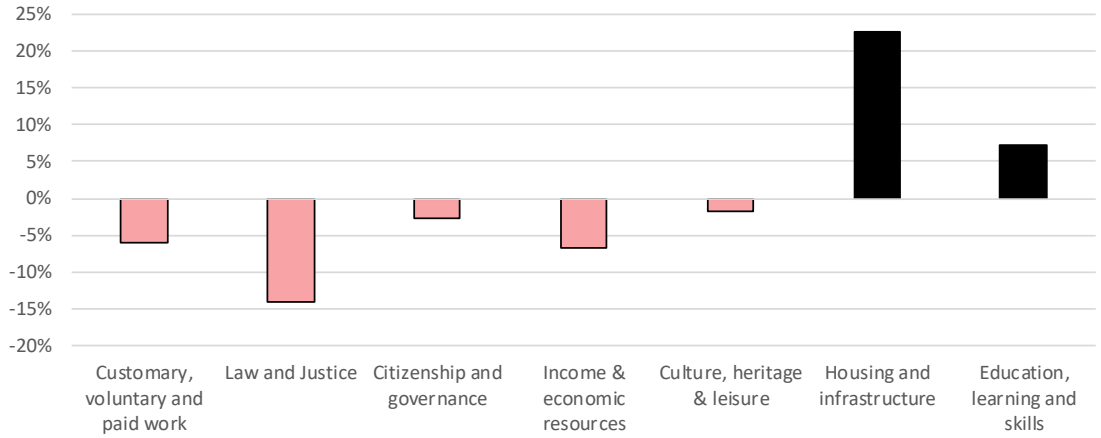


Figure C.11 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Kowanyama grew between 2006 (0.34) to 2011 (0.43) before declining to just below 2016 levels (0.33).
- Measured wellbeing remains below the average for all discrete communities.
- The main domains contributing to the decline between 2011 and 2016 were *Law and justice*, *Customary, voluntary and paid work* and *Citizenship and governance*. The *Housing and infrastructure* and *Education, learning and skills* domains steadily increased between 2006 and 2016.
- From 2006 to 2016, both internet connectivity and housing suitability grew from levels below to above the average of the discrete communities.
- The decline in *Customary, voluntary and paid work* domain between 2011 and 2016 was primarily driven by a decline in those engaged in volunteering (15% to 4%) and those engaged in CDEP (10% to 3%), as well as those in full-time employment (16% to 13%).

Lockhart River

Table C.16 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.13	0.20	0.27	0.34	0.41	0.48	0.46	0.43	0.40	0.38	0.35	170%
Law and Justice	0.56	0.50	0.48	0.42	0.44	0.51	0.57	0.60	0.69	0.72	0.70	24%
Citizenship and governance	0.13	0.15	0.17	0.20	0.22	0.24	0.24	0.24	0.23	0.22	0.21	62%
Income & economic resources	0.22	0.25	0.27	0.29	0.32	0.34	0.33	0.32	0.30	0.28	0.27	19%
Culture, heritage & leisure	0.54	0.45	0.36	0.27	0.17	0.08	0.15	0.21	0.27	0.33	0.39	-27%
Housing and infrastructure	0.70	0.71	0.71	0.71	0.71	0.72	0.67	0.62	0.57	0.52	0.47	-34%
Education, learning and skills	0.40	0.44	0.49	0.51	0.55	0.63	0.62	0.60	0.61	0.61	0.58	44%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.17 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Lockhart River	0.37	0.38	0.40	0.41	0.43	0.47	0.46	0.45	0.46	0.45	0.43	16.2%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.18 Headline indicators of progress

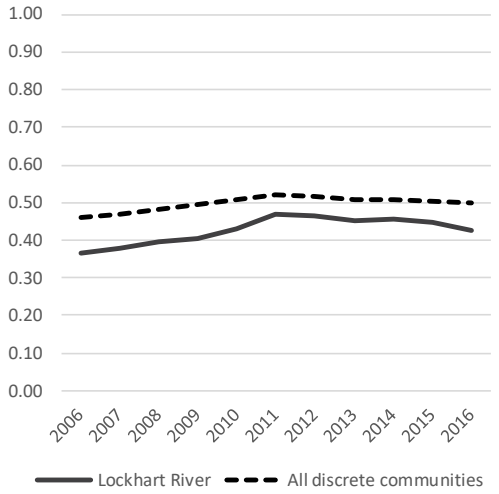


Figure C.12 Domain growth

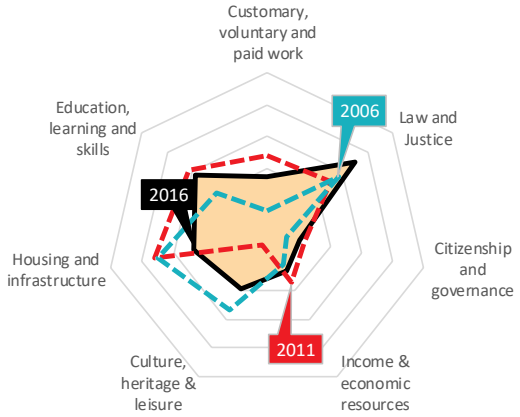
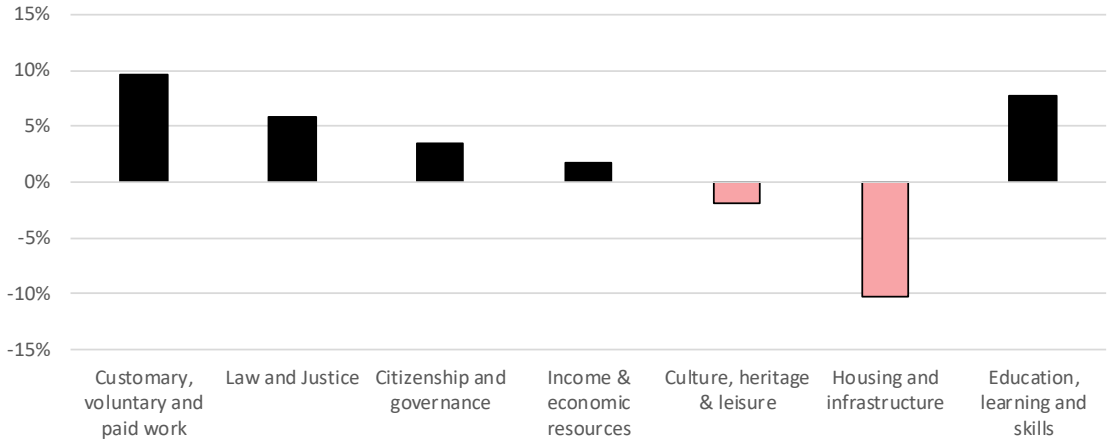


Figure C.13 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Lockhart River grew from 0.37 in 2006 to 0.47 in 2011, and then stayed relatively constant until it fell in 2016 to 0.43 (overall increase of 16.2%).
- Measured wellbeing remains below the average for all discrete communities.
- The main domains contributing to the increase in wellbeing were *Customary, voluntary and paid work*, *Education, learning and skills* and *Law and Justice*. *Housing and infrastructure* was the main domain detracting from growth.
- While *Customary, voluntary and paid work* experienced growth between 2006 and 2016, the 2016 levels (0.35) represent a decline when compared to 2011 (0.48); this was mainly through the decline in the ratio of residents in activities other than part-time work.
- The decline in the *Housing and infrastructure* domain occurred through a significant increase in the proportion of individuals living in inappropriate housing (7.6% in 2006 to 16.5% in 2016).

Mapoon

Table C.19 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.48	0.47	0.46	0.45	0.44	0.43	0.39	0.35	0.32	0.28	0.24	-49%
Law and Justice	0.90	0.90	0.95	0.98	0.98	0.97	0.94	0.92	0.93	0.95	0.96	7%
Citizenship and governance	0.18	0.23	0.27	0.31	0.36	0.40	0.37	0.34	0.30	0.27	0.24	32%
Income & economic resources	0.24	0.27	0.30	0.32	0.35	0.37	0.35	0.33	0.30	0.28	0.26	7%
Culture, heritage & leisure	0.00	0.03	0.06	0.09	0.11	0.14	0.13	0.11	0.09	0.08	0.06	NA
Housing and infrastructure	0.90	0.86	0.82	0.78	0.74	0.70	0.74	0.77	0.80	0.84	0.87	-3%
Education, learning and skills	0.42	0.43	0.44	0.45	0.46	0.47	0.51	0.54	0.58	0.61	0.65	55%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.20 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Mapoon	0.50	0.50	0.52	0.53	0.53	0.54	0.53	0.52	0.52	0.52	0.51	3.9%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.21 Headline indicators of progress

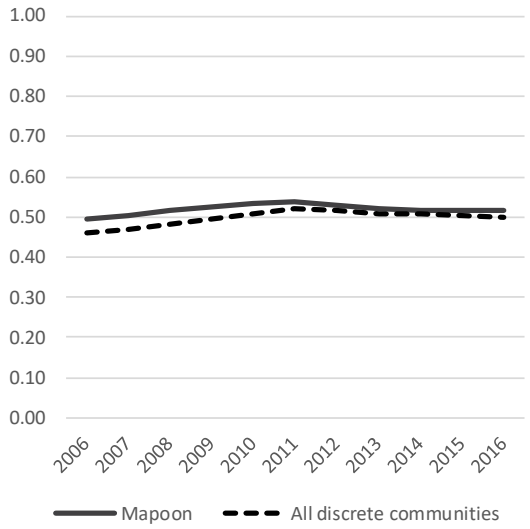


Figure C.14 Domain growth

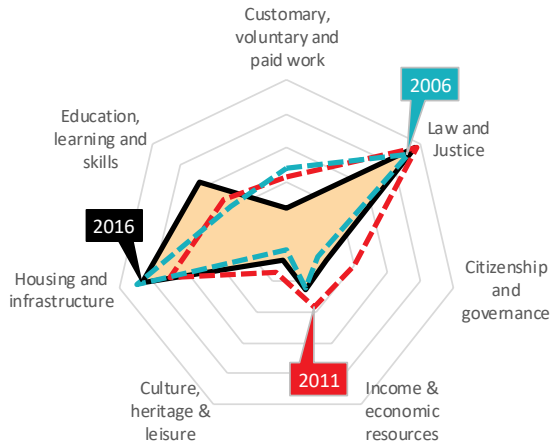
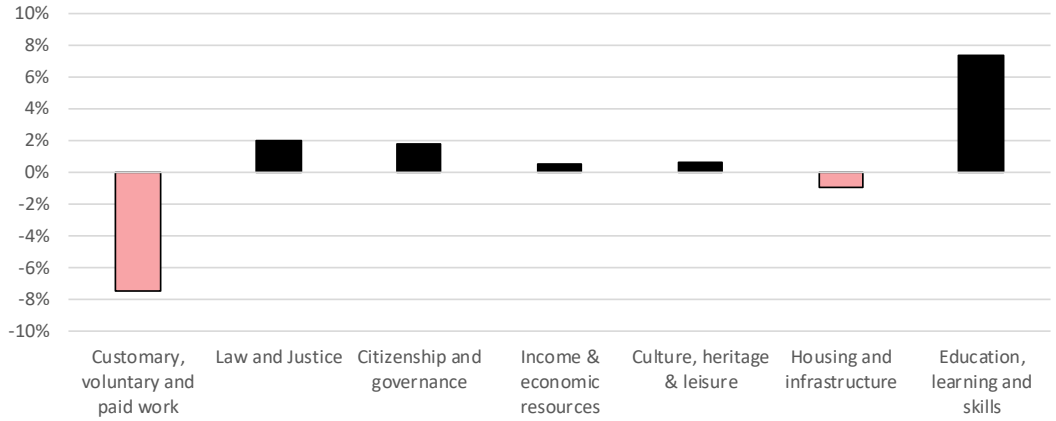


Figure C.15 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Mapoon has remained largely stable over time, increasing slightly by 3.9%; however, the index was at its highest value in 2011.
- Measured wellbeing was slightly above the average for all discrete communities.
- *Housing and infrastructure* and *Customary, voluntary and paid work* saw declines from 2006 to 2016—particularly *Customary, voluntary and paid work,* which fell from 0.48 to 0.24.
- While the proportion of working age individuals engaged in full-time work increased between 2006 to 2016, the proportion of those engaged in all other work, volunteering, study or CDEP decreased.
- Not all data to support the *education, learning and skills* domain was available.

Mornington

Table C.22 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.21	0.22	0.23	0.24	0.26	0.27	0.26	0.26	0.25	0.25	0.24	15%
Law and Justice	0.39	0.41	0.42	0.37	0.44	0.48	0.52	0.53	0.48	0.40	0.31	-22%
Citizenship and governance	0.27	0.26	0.25	0.24	0.21	0.20	0.22	0.21	0.17	0.22	0.27	3%
Income & economic resources	0.16	0.18	0.21	0.23	0.25	0.27	0.26	0.25	0.24	0.24	0.23	48%
Culture, heritage & leisure	0.07	0.07	0.08	0.08	0.09	0.10	0.10	0.10	0.11	0.11	0.11	72%
Housing and infrastructure	0.46	0.42	0.38	0.34	0.30	0.26	0.34	0.41	0.49	0.56	0.64	40%
Education, learning and skills	0.40	0.42	0.45	0.49	0.51	0.55	0.58	0.59	0.61	0.62	0.65	60%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.23 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Mornington	0.30	0.31	0.31	0.31	0.32	0.33	0.35	0.36	0.36	0.37	0.38	24.8%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.24 Headline indicators of progress

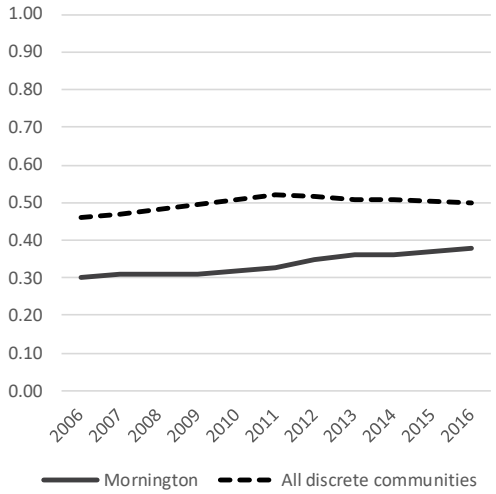


Figure C.16 Domain growth

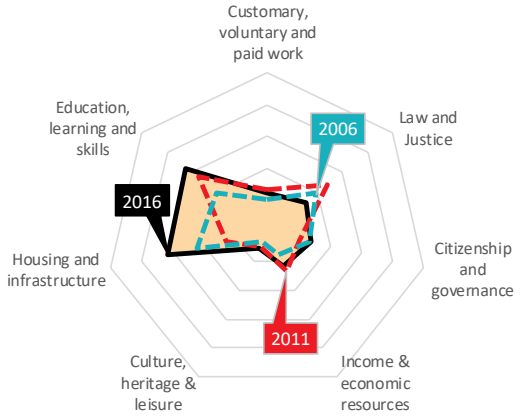
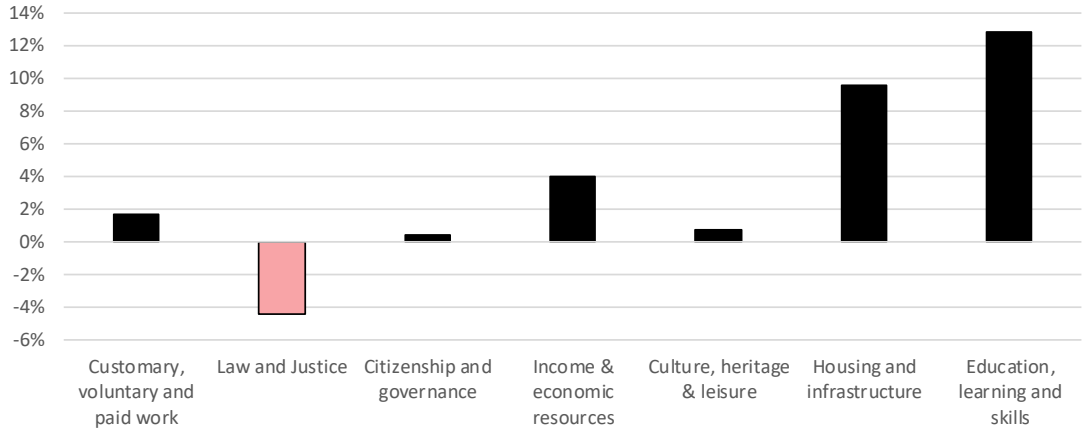


Figure C.17 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Mornington increased by around 25 per cent (from 0.30 to 0.38) between 2006 and 2016.
- Measured wellbeing remains below the average for all discrete communities.
- All domains apart from *Law and Justice* saw increases between 2006 and 2016. *Education, learning and skills* and *Housing and infrastructure* made the largest contribution to growth in wellbeing.
- In 2006, the domain index score for *Education, learning and skills* was lower than the average for all discrete communities but grew to match that level by 2016 (0.65). All the education related sub-domains experienced steady increases between 2006 to 2016.
- The *Law and Justice* domain contributed to a decline in wellbeing, with offence rates against property and 'other offences' rising significantly between 2006 and 2016.

Napranum

Table C.25 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.22	0.24	0.27	0.29	0.32	0.34	0.29	0.24	0.19	0.13	0.08	-63%
Law and Justice	0.75	0.74	0.74	0.75	0.75	0.77	0.77	0.77	0.74	0.72	0.70	-7%
Citizenship and governance	0.22	0.24	0.25	0.27	0.28	0.30	0.27	0.24	0.21	0.18	0.15	-35%
Income & economic resources	0.14	0.15	0.16	0.16	0.18	0.18	0.18	0.18	0.17	0.16	0.16	18%
Culture, heritage & leisure	0.12	0.26	0.40	0.54	0.68	0.82	0.71	0.59	0.47	0.35	0.23	90%
Housing and infrastructure	0.70	0.70	0.70	0.69	0.69	0.69	0.73	0.76	0.80	0.84	0.87	25%
Education, learning and skills	0.43	0.43	0.44	0.44	0.45	0.45	0.47	0.48	0.49	0.51	0.52	21%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.26 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Napranum	0.40	0.41	0.43	0.44	0.46	0.47	0.46	0.45	0.43	0.42	0.40	1.9%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.27 Headline indicators of progress

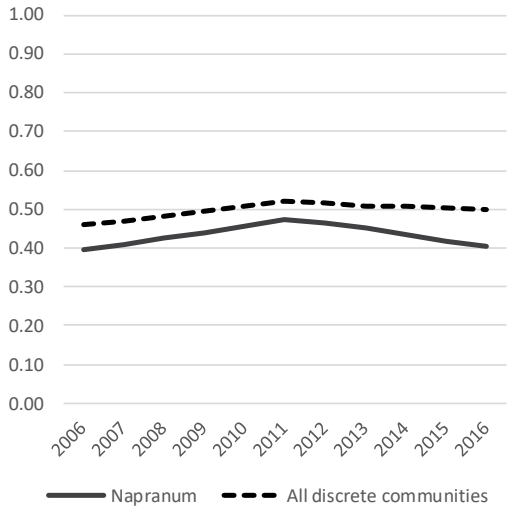


Figure C.18 Domain growth

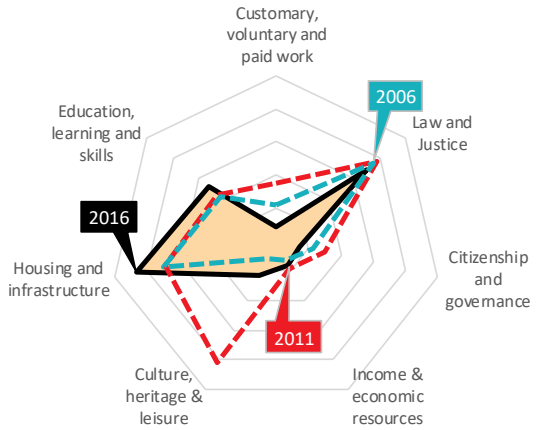
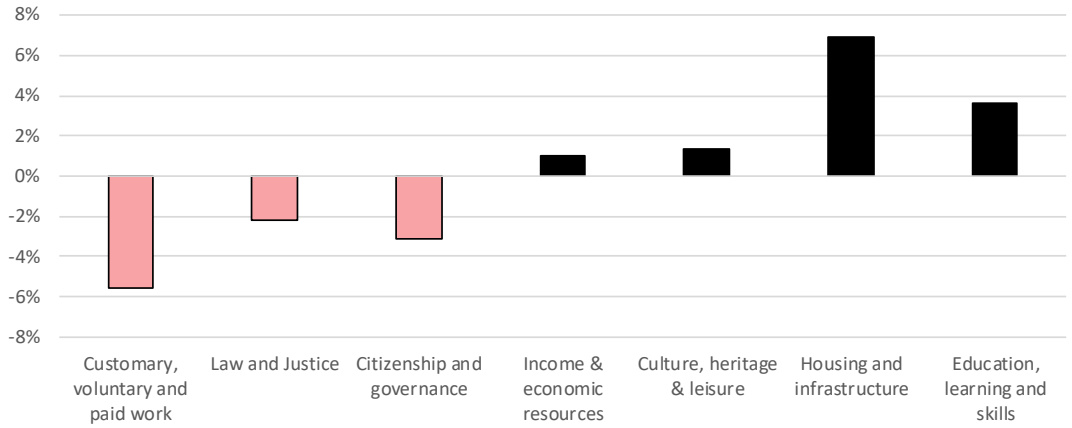


Figure C.19 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Napranum grew from 0.40 in 2006 to 0.47 in 2011, before declining back to 0.40 in 2016.
- Measured wellbeing remains below the average for all discrete communities.
- Between 2006 and 2016, the domain index for *Housing and infrastructure* showed the highest growth while the indices for *Customary, voluntary and paid work* and *Citizenship and governance* were the biggest hindrances to growth.
- The reduction in the percentage of people living in sub-standard accommodation was the largest contributor to the growth in the domain index for *Housing and infrastructure*.
- Not all data to support the *Education, learning and skills* domain was available.

Northern Peninsula Area

Table C.28 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.71	0.70	0.69	0.68	0.67	0.65	0.66	0.67	0.67	0.68	0.69	-3%
Law and Justice	0.78	0.76	0.74	0.76	0.76	0.79	0.82	0.83	0.84	0.84	0.86	11%
Citizenship and governance	0.35	0.34	0.33	0.32	0.31	0.30	0.33	0.36	0.45	0.47	0.52	48%
Income & economic resources	0.21	0.26	0.29	0.33	0.37	0.41	0.41	0.42	0.42	0.42	0.43	101%
Culture, heritage & leisure	0.78	0.72	0.66	0.60	0.54	0.47	0.45	0.43	0.41	0.39	0.37	-53%
Housing and infrastructure	0.83	0.83	0.83	0.83	0.83	0.84	0.84	0.84	0.84	0.84	0.84	1%
Education, learning and skills	0.55	0.57	0.59	0.63	0.65	0.72	0.75	0.75	0.76	0.77	0.76	39%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.29 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Northern Peninsula Area	0.58	0.58	0.58	0.59	0.60	0.61	0.63	0.63	0.65	0.66	0.67	14.8%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.30 Headline indicators of progress

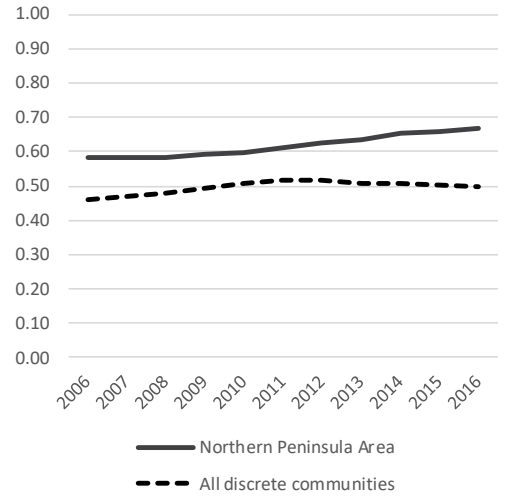


Figure C.20 Domain growth

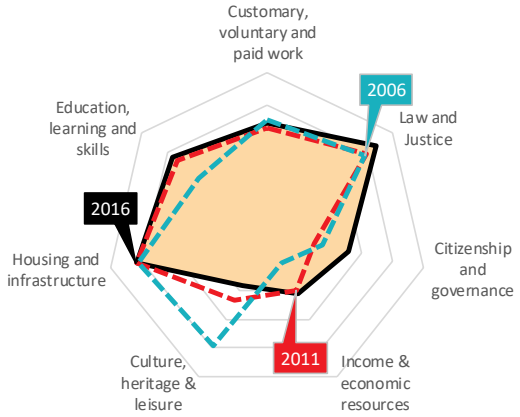
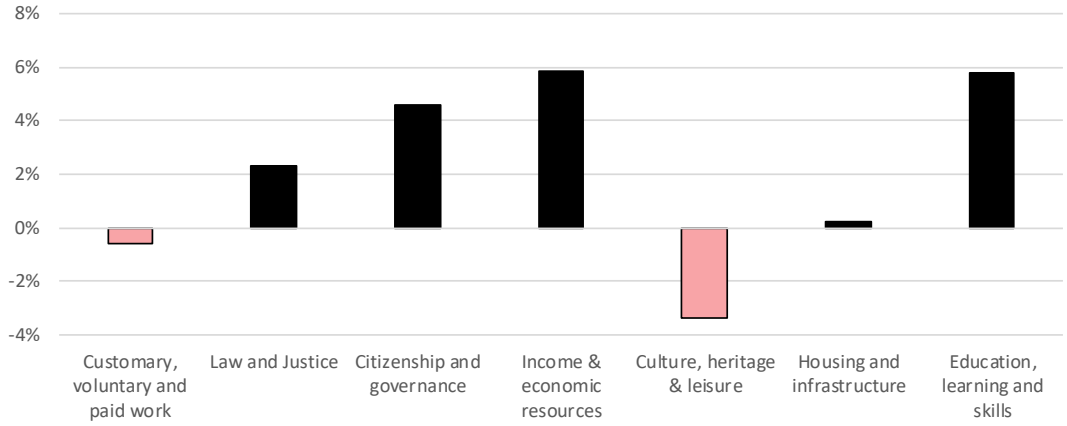


Figure C.21 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Northern Peninsula Area remained relatively stable between 2006 (0.58) and 2011 (0.61) before increasing to 0.67 in 2016.
- Measured wellbeing remains above the average for all discrete communities.
- The increase in wellbeing was driven by increases in the domain indices for *Income & economic resources*, *Education, learning and skills* and *Citizenship and governance*.
- The combined domain index for *Income & economic resources* started at a level lower than the average across all discrete communities, but increased to above the average by 2009. The most significant increase was realised in the median weekly real total household income.
- The decline in the *Culture, heritage & leisure* was driven by a steep decline in the ratio of those speaking an Aboriginal and/or Torres Strait Island language (71.6% in 2006 to 33.7% in 2016).

Palm Island

Table C.31 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.20	0.21	0.22	0.23	0.25	0.26	0.22	0.19	0.16	0.13	0.09	-54%
Law and Justice	0.54	0.54	0.51	0.49	0.48	0.44	0.42	0.40	0.41	0.44	0.45	-17%
Citizenship and governance	0.15	0.15	0.16	0.16	0.17	0.17	0.17	0.16	0.15	0.16	0.14	-9%
Income & economic resources	0.27	0.28	0.29	0.31	0.32	0.33	0.32	0.32	0.30	0.30	0.29	9%
Culture, heritage & leisure	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.02	0.03	0.03	181%
Housing and infrastructure	0.44	0.42	0.40	0.37	0.35	0.33	0.33	0.34	0.34	0.35	0.35	-20%
Education, learning and skills	0.44	0.45	0.46	0.48	0.48	0.48	0.50	0.48	0.49	0.50	0.54	21%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.32 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Palm Island	0.32	0.33	0.32	0.33	0.33	0.32	0.31	0.30	0.30	0.30	0.30	-8.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.33 Headline indicators of progress

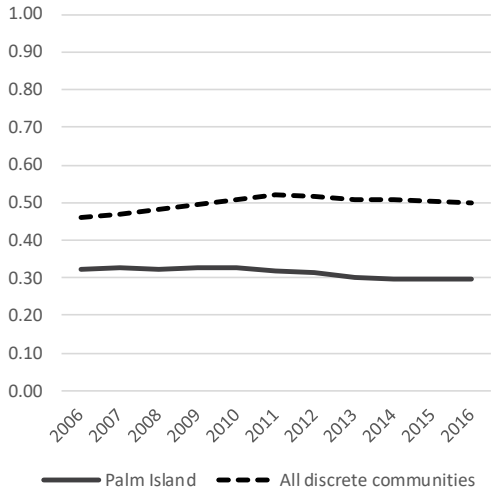


Figure C.22 Domain growth

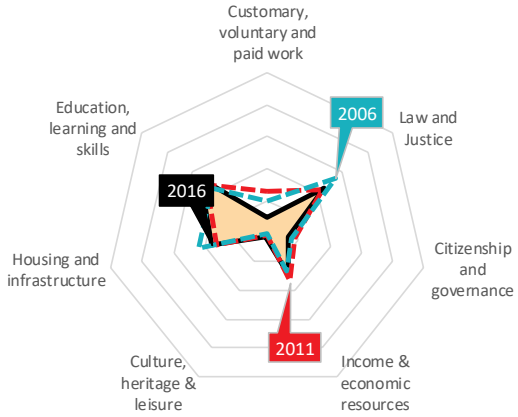
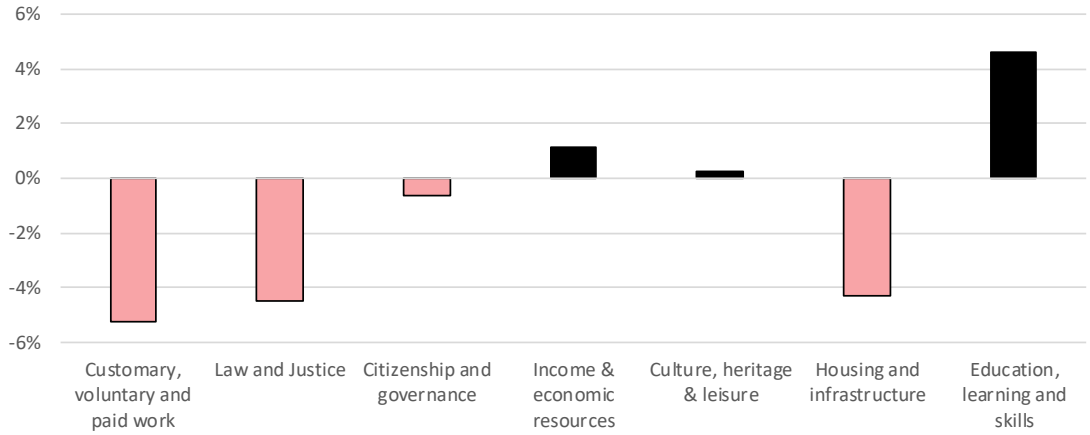


Figure C.23 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Palm Island declined slightly from 0.32 in 2006 to 0.30 in 2016.
- Measured wellbeing remains well below the average for all discrete communities.
- The decline in the level of wellbeing mainly accrues from the fall in the domain indices for *Customary, voluntary and paid work, Law and Justice* and *Housing and infrastructure*.
- The fall in domain indices for *Law and Justice* accrue from the rise in offence rates per capita; however, the rates for offences against the person and property has shown a decreasing trend since 2013 and 2012 respectively.
- The *Education, learning and skills* domain index shows an increasing trend, through increases in all three individual indicator scores. However, the gap between the index for Palm Island and the average of the discrete communities has widened.

Pormpuraaw

Table C.34 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.51	0.50	0.49	0.48	0.47	0.46	0.39	0.33	0.27	0.21	0.15	-71%
Law and Justice	0.36	0.40	0.49	0.53	0.61	0.63	0.62	0.63	0.66	0.61	0.62	71%
Citizenship and governance	0.41	0.41	0.40	0.40	0.40	0.39	0.36	0.33	0.29	0.26	0.22	-47%
Income & economic resources	0.28	0.27	0.26	0.25	0.25	0.24	0.23	0.22	0.20	0.18	0.17	-41%
Culture, heritage & leisure	0.62	0.65	0.68	0.71	0.74	0.77	0.75	0.73	0.71	0.69	0.67	8%
Housing and infrastructure	0.57	0.59	0.61	0.64	0.66	0.69	0.70	0.72	0.73	0.75	0.76	35%
Education, learning and skills	0.29	0.32	0.35	0.41	0.43	0.49	0.53	0.56	0.55	0.56	0.56	92%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.35 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Pormpuraaw	0.41	0.43	0.45	0.46	0.48	0.50	0.48	0.48	0.46	0.44	0.42	2.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.36 Headline indicators of progress

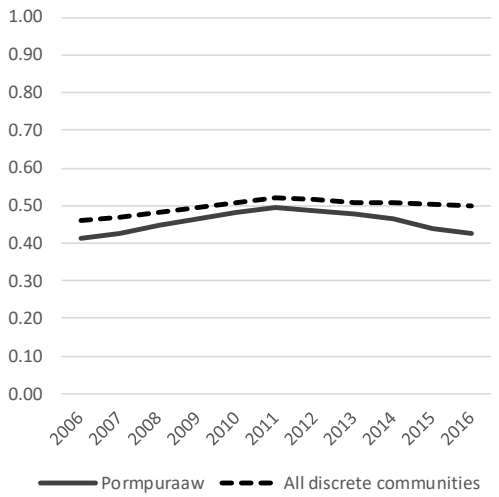


Figure C.24 Domain growth

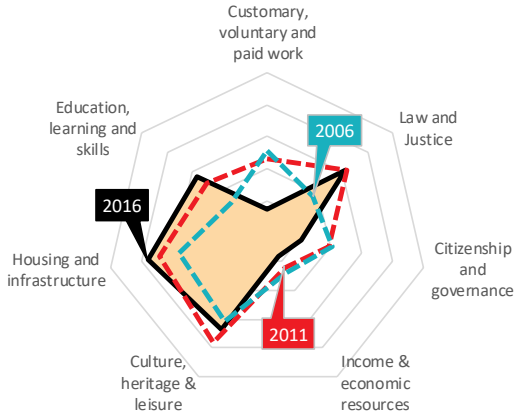
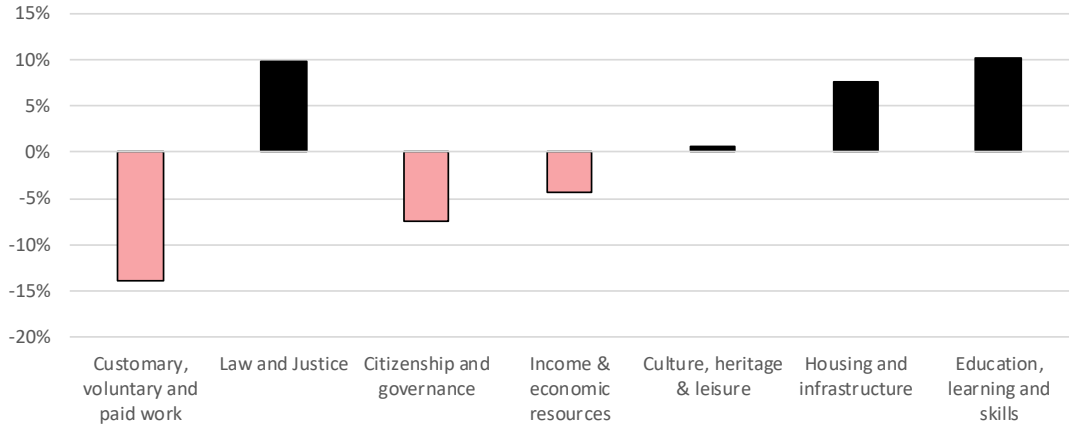


Figure C.25 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Pormpuraaw increased from 2006 (0.41) to 2011 (0.50) but fell back between 2011 and 2016 to 0.42.
- Measured wellbeing remains below the average for all discrete communities.
- The domain indices for *Customary, voluntary and paid work*, *Citizenship and governance* and *Income & economic resources* have shown a declining trend over the 10 years. *Education, learning and skills*, *Housing and infrastructure* and *Law and Justice* have displayed improvements.
- The fall in domain indices for *Customary, voluntary and paid work* is largely due to the decrease in proportion of working age individuals engaged in CDEP and volunteering. When compared to 2011, the ratio engaged in full-time or part-time work have both decreased.
- An increase in the proportions of residents finishing year 9 and year 3 students achieving minimum reading and numeracy standards were the largest contributors to improvement in *Education, learning & skills*.

Torres

Table C.37 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.82	0.83	0.83	0.83	0.83	0.83	0.82	0.81	0.80	0.79	0.78	-5%
Law and Justice	0.81	0.82	0.84	0.84	0.85	0.84	0.81	0.82	0.83	0.84	0.86	6%
Citizenship and governance	0.63	0.61	0.61	0.60	0.57	0.54	0.55	0.54	0.56	0.60	0.56	-11%
Income & economic resources	0.54	0.56	0.58	0.59	0.60	0.62	0.63	0.64	0.64	0.65	0.67	23%
Culture, heritage & leisure	0.45	0.41	0.38	0.34	0.30	0.26	0.32	0.38	0.44	0.50	0.56	24%
Housing and infrastructure	0.89	0.90	0.91	0.91	0.92	0.93	0.92	0.91	0.90	0.89	0.88	-1%
Education, learning and skills	0.69	0.70	0.71	0.74	0.74	0.77	0.79	0.80	0.81	0.82	0.82	20%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.38 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Torres	0.72	0.72	0.73	0.73	0.73	0.73	0.73	0.74	0.74	0.75	0.75	4.8%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.39 Headline indicators of progress

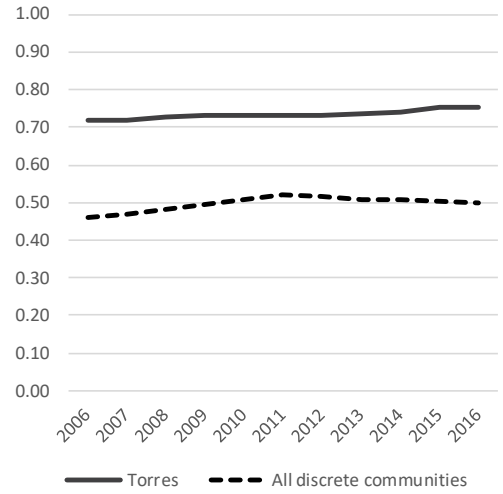


Figure C.26 Domain growth

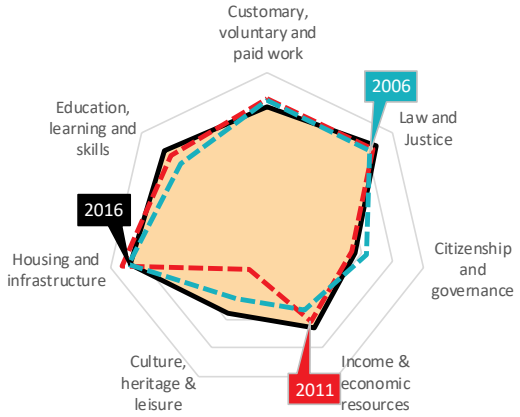
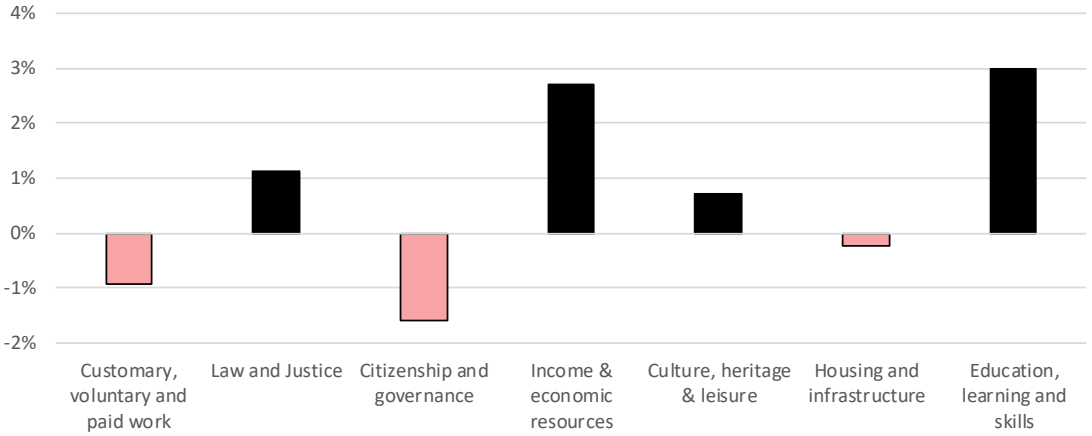


Figure C.27 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Torres increased slightly from 0.72 in 2006 to 0.75 in 2016.
- Measured wellbeing remains significantly higher than the average for all discrete communities.
- The domains *Education, learning and skills* and *Income & economic resources* were the biggest contributors to the growth in wellbeing; the biggest hindrances to growth were *Customary, voluntary and paid work* and *Citizenship and governance*. However, the latter has improved since 2011.
- The increase in the ratio of working age persons holding a Cert III or higher qualification and the proportion of year 3 students achieving minimum reading and numeracy standards were the largest contributors to improvement in *Education, learning & skills*.
- The largest influence on the *Customary, voluntary and paid work* domain was a drop in working age individuals engaged in CDEP between 2006 and 2016 (11% to 3%).

Torres strait Island

Table C.40 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.64	0.66	0.68	0.71	0.73	0.76	0.69	0.63	0.57	0.50	0.44	-31%
Law and Justice	0.91	0.91	0.91	0.93	0.93	0.93	0.92	0.93	0.94	0.94	0.95	4%
Citizenship and governance	0.58	0.59	0.60	0.61	0.62	0.62	0.60	0.57	0.55	0.52	0.49	-16%
Income & economic resources	0.16	0.16	0.15	0.14	0.13	0.13	0.13	0.14	0.14	0.14	0.15	-10%
Culture, heritage & leisure	0.90	0.90	0.89	0.89	0.89	0.88	0.90	0.93	0.95	0.97	0.99	10%
Housing and infrastructure	0.77	0.79	0.81	0.82	0.84	0.86	0.86	0.85	0.85	0.85	0.85	10%
Education, learning and skills	0.52	0.53	0.54	0.55	0.56	0.57	0.60	0.62	0.65	0.67	0.69	34%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.41 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Torres strait Island	0.61	0.62	0.63	0.64	0.65	0.66	0.65	0.64	0.63	0.62	0.61	0.3%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.42 Headline indicators of progress

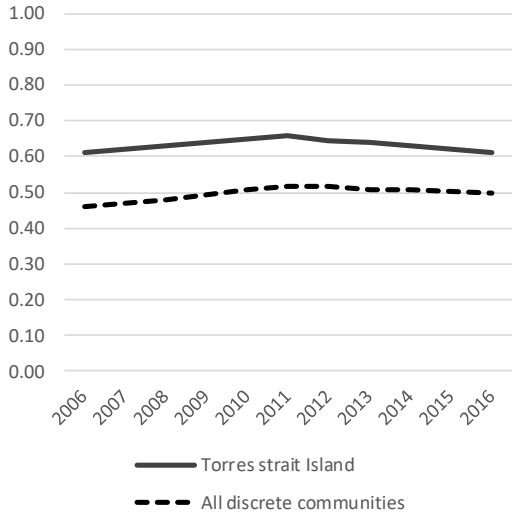


Figure C.28 Domain growth

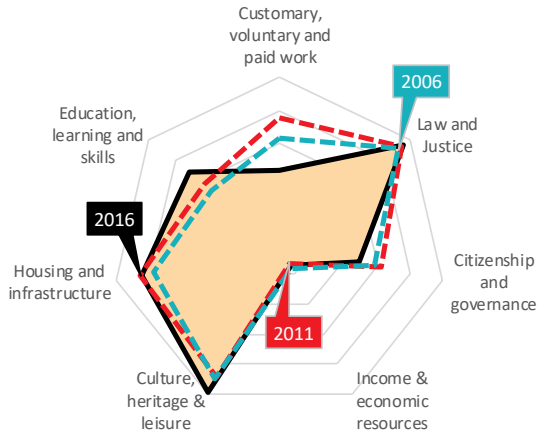
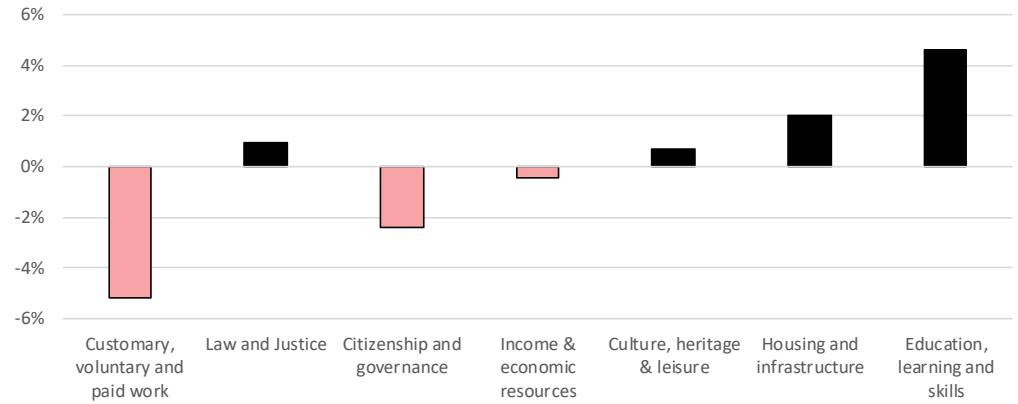


Figure C.29 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in the Torres Strait Islands increased slightly between 2006 (0.61) and 2011 (0.66) but declined after this (0.61 in 2016).
- Measured wellbeing remains higher than the average for all discrete communities.
- The decline in measured wellbeing was mostly due to the domains *Customary, voluntary and paid work* and *Citizenship and governance*.
- The proportion of working age individuals engaged in work, volunteering, study or CDEP have shown a sharp decrease from 2011.
- The domain indices for *Law and Justice* (0.95 in 2016) and *Culture, heritage and leisure* (0.99 in 2016) have consistently been higher than the average for all discrete communities.
- Not all data to support the *Education, learning and skills* domain was available.

Woorabinda

Table C.43 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.22	0.22	0.23	0.24	0.25	0.25	0.26	0.27	0.27	0.28	0.29	32%
Law and Justice	0.19	0.08	0.11	0.05	0.16	0.25	0.25	0.32	0.22	0.18	0.07	-61%
Citizenship and governance	0.10	0.11	0.12	0.12	0.13	0.14	0.14	0.15	0.15	0.16	0.16	61%
Income & economic resources	0.07	0.10	0.12	0.14	0.17	0.19	0.18	0.16	0.15	0.14	0.13	99%
Culture, heritage & leisure	0.02	0.02	0.02	0.01	0.01	0.01	0.03	0.05	0.07	0.09	0.11	453%
Housing and infrastructure	0.56	0.63	0.70	0.77	0.84	0.91	0.87	0.84	0.81	0.78	0.75	34%
Education, learning and skills	0.50	0.51	0.52	0.53	0.52	0.54	0.55	0.56	0.57	0.61	0.63	26%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.44 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Woorabinda	0.26	0.26	0.29	0.29	0.33	0.36	0.36	0.37	0.35	0.35	0.33	26.1%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.45 Headline indicators of progress

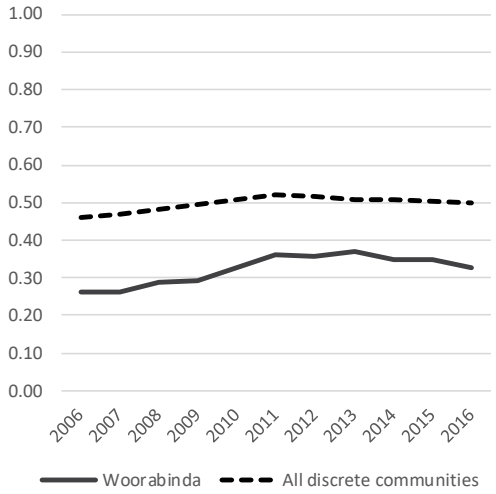


Figure C.30 Domain growth

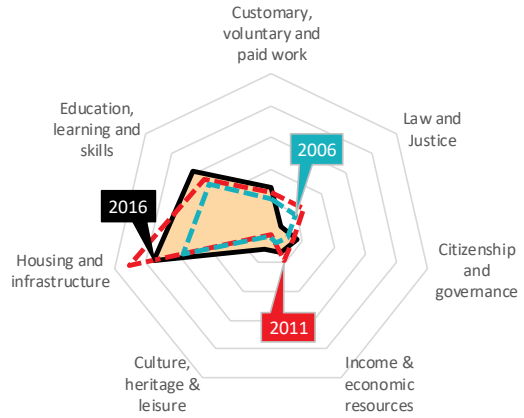
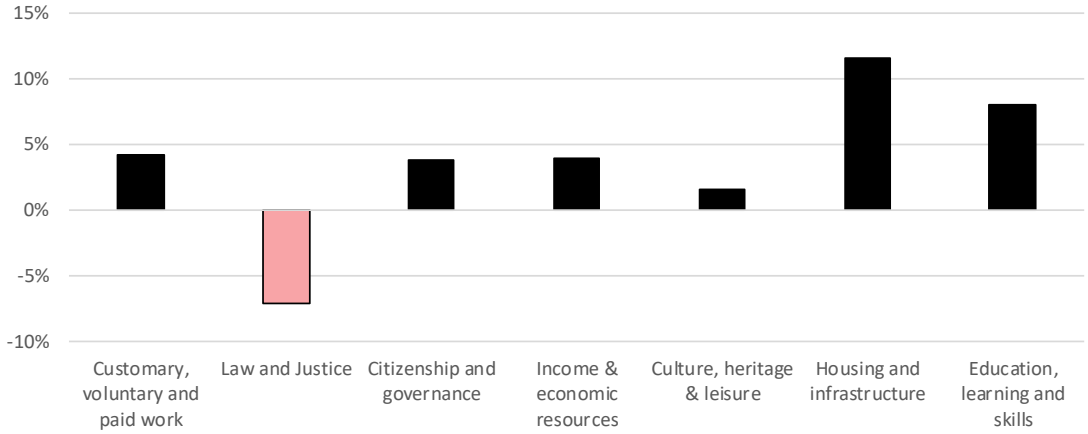


Figure C.31 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in in Woorabinda increased between 2006 (0.26) and 2011 (0.36) before declining slightly in 2016 (0.33).
- Measured wellbeing remains below the average for all discrete communities.
- All domain indices apart from *Law and Justice* have increased between 2006 and 2016. In particular, *Housing and infrastructure* and *Education, learning and skills* were the largest contributors to growth.
- The decline in the *Law and Justice* domain is attributed to the increased offence rate per capita for offences against the property and 'other offences' (the rate for 'other offences' per capita was 64.2% in 2016).
- The increase in the *Housing and infrastructure* domain index was largely due to a decrease in the ratio of people residing in inappropriate housing since 2006—however, this rate has increased between 2011 (1.1%) and 2016 (6.6%).

Wujal Wujal

Table C.46 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.26	0.27	0.29	0.31	0.33	0.35	0.31	0.26	0.22	0.18	0.14	-45%
Law and Justice	0.69	0.70	0.65	0.63	0.67	0.66	0.72	0.70	0.72	0.72	0.67	-3%
Citizenship and governance	0.17	0.19	0.21	0.23	0.25	0.27	0.26	0.26	0.25	0.25	0.24	47%
Income & economic resources	0.27	0.27	0.27	0.26	0.26	0.25	0.23	0.20	0.17	0.15	0.12	-55%
Culture, heritage & leisure	0.73	0.69	0.64	0.59	0.55	0.50	0.55	0.59	0.64	0.68	0.73	0%
Housing and infrastructure	0.77	0.80	0.84	0.87	0.91	0.94	0.92	0.90	0.88	0.86	0.84	9%
Education, learning and skills	0.37	0.38	0.40	0.41	0.43	0.44	0.47	0.50	0.53	0.55	0.58	58%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.47 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Wujal Wujal	0.43	0.45	0.45	0.46	0.48	0.49	0.49	0.48	0.47	0.46	0.45	2.6%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.48 Headline indicators of progress

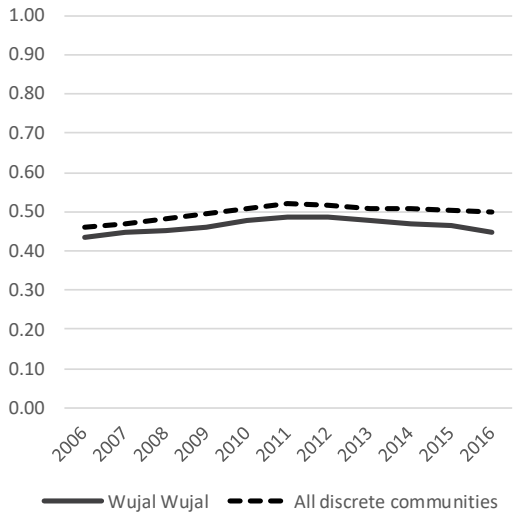


Figure C.32 Domain growth

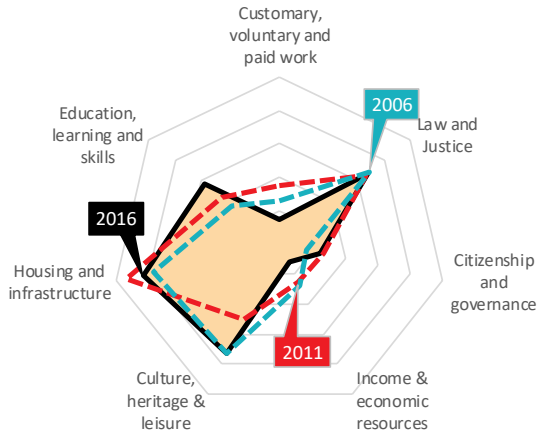
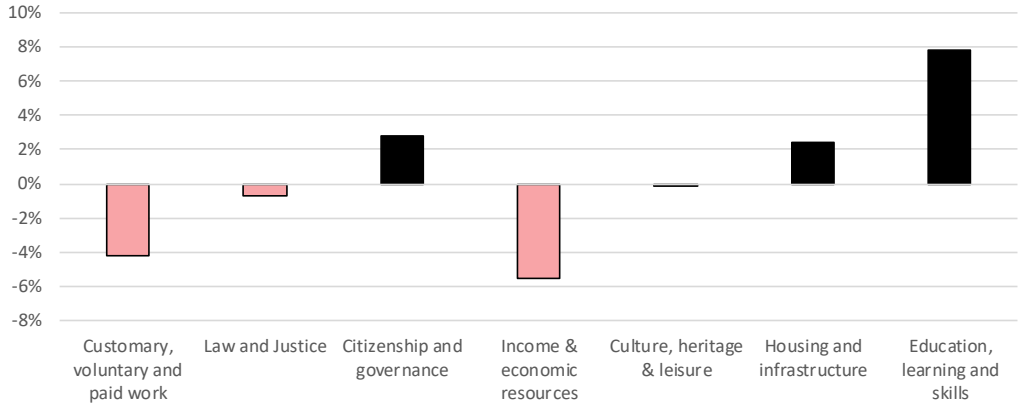


Figure C.33 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Wujal Wujal increased between 2006 (0.43) and 2011 (0.49) but then declined to 2016 (0.45), showing little change overall.
- Measured wellbeing is slightly below the average for all discrete communities.
- The decline in measured wellbeing was largely due to the domains *Customary, voluntary and paid work* and *Income & economic resources*.
- The domain *Education, learning & skills* was the biggest contributor to growth in wellbeing.
- The proportion of working age individuals engaged in full-time and/or part-time work increased between 2006 and 2011 but has since decreased to levels below that in 2006.
- The decrease in *Income and economic resources* domain index score was due to the decrease in Median total household real weekly income (from $994 in 2006 to $759 in 2016) and fall in home ownership.

Yarrabah

Table C.49 Outcomes for individual indicators

Indicator	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth 2006-16
Customary, voluntary and paid work	0.36	0.33	0.31	0.28	0.25	0.23	0.23	0.22	0.22	0.22	0.22	-40%
Law and Justice	0.68	0.68	0.67	0.66	0.66	0.61	0.57	0.54	0.55	0.63	0.68	0%
Citizenship and governance	0.38	0.36	0.35	0.33	0.32	0.30	0.29	0.28	0.27	0.24	0.22	-41%
Income & economic resources	0.40	0.40	0.40	0.40	0.40	0.40	0.41	0.41	0.42	0.42	0.43	7%
Culture, heritage & leisure	0.03	0.06	0.09	0.12	0.15	0.19	0.18	0.17	0.15	0.14	0.13	344%
Housing and infrastructure	0.34	0.35	0.35	0.36	0.36	0.37	0.36	0.36	0.36	0.35	0.35	1%
Education, learning and skills	0.49	0.50	0.52	0.54	0.56	0.60	0.61	0.62	0.64	0.66	0.66	36%
Health												NA

Note: Experimental estimates only
Source: QPC estimates.

Table C.50 Combined indices

Community	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	growth
Yarrabah	0.42	0.42	0.42	0.41	0.41	0.41	0.40	0.40	0.40	0.41	0.41	-2.2%
All discrete communities	0.46	0.47	0.48	0.49	0.51	0.52	0.51	0.51	0.51	0.50	0.50	8.6%

Note: Experimental estimates only
Source: QPC estimates.

Table C.51 Headline indicators of progress

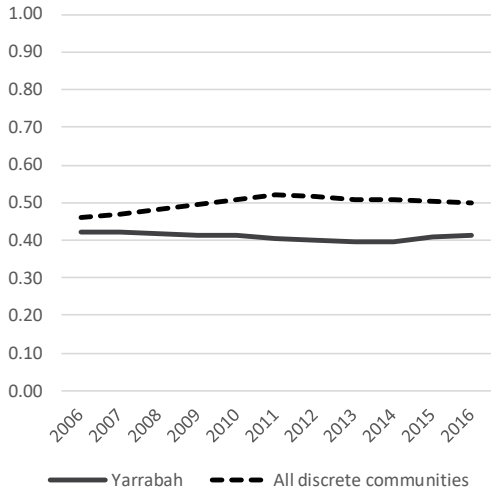


Figure C.34 Domain growth

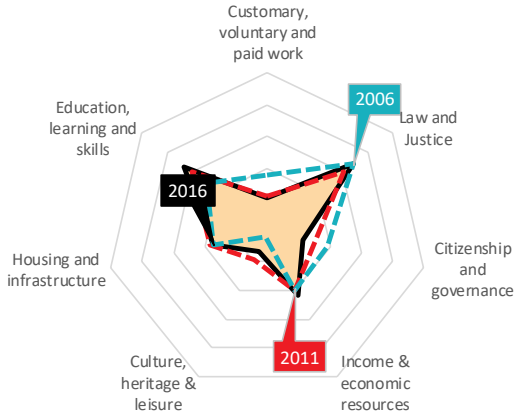
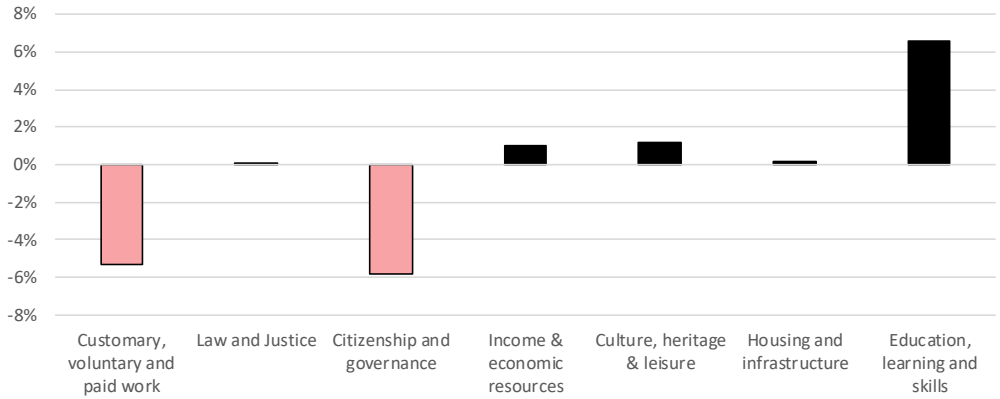


Figure C.35 Domain contribution to growth, 2006–16



Key findings:

- Measured wellbeing in Yarrabah has shown relatively little change.
- Measured wellbeing is below the average for all discrete communities.
- Results were driven by a large decline in community participation, particularly in paid employment—a decline in participation following the abolition of CDEP had a large impact on employment and participation in Yarrabah.
- A decline in the proportion of Indigenous residents holding leadership contributed to the decline in measured *Citizenship and governance*—the abolition of CDEP affected this indicator since around a third of all leadership positions held by Indigenous residents in 2006 were funded under CDEP.
- Significant gains were made in relation to *Education, learning and skills*, with significant improvements across all underlying indicators.

Appendix D: Age standardisation

Differences in the age composition of communities might bias comparisons of indicators whose incidence varies with age. For example, it may not be meaningful to directly compare the mortality rate of a community with a large proportion of young people to the mortality rate of a community with a large proportion of older people. Further, the composition of a community itself may change over time, albeit slowly.

For some indicators, these errors can be minimised by looking at age-specific rates for an event. For example, when analysing a schooling indicator, the population is restricted to the school-aged cohort. However, for other indicators, restricting the event to a relevant population may not adequately account for age variation if the age range is sufficiently wide. For example, in this report indicators relating to employment are restricted to the working-age population (aged 15–64 years), but this is a wide age range within which the incidence (of employment) may still vary.

Age standardisation is an approach for making these rates comparable over time and between different communities. It is the hypothetical rate that one *would* observe in a community *if* it had the same age composition as a selected standard community, keeping all other characteristics unchanged.

This appendix makes a preliminary assessment of the extent to which age standardisation is required for the indicators used in this report.

Preliminary analysis

The age compositions of each discrete community are relatively similar to each other, and are biased towards younger populations than the general population in Queensland (Table D.1).[32] The similarity in age composition between communities indicates that standardising by age is likely to have little impact for the purposes of comparing indicators between communities. However, this only holds if the event under consideration is distributed over all age groups in a community. For indicators that are restricted to a given cohort, the age-specific rate should still be preferred.

[32] Wujal Wujal has a slightly different peak at the 20–29 age group; however, it must be noted that this is the community with the smallest sample size and will therefore be most affected by random variation. Pormpuraaw, Kowanyama and Mapoon exhibit spikes in some middle-aged cohorts. These are also communities with smaller sample sizes, where small changes in counted population will have a relatively large impact on calculated proportions.

Table D.1 Age composition of each community

LGA	0–9	10–19	20–29	30–39	40–49	50–59	60–69	70–79	80+
Aurukun	0.21	0.18	0.16	0.14	0.14	0.10	0.05	0.02	0.00
Cherbourg	0.26	0.21	0.17	0.11	0.11	0.09	0.04	0.01	0.00
Doomadgee	0.27	0.22	0.17	0.13	0.09	0.08	0.03	0.01	0.01
Hope Vale	0.22	0.18	0.18	0.13	0.14	0.07	0.05	0.02	0.01
Kowanyama	0.22	0.15	0.17	0.13	0.16	0.10	0.07	0.01	0.01
Lockhart River	0.24	0.21	0.18	0.12	0.12	0.07	0.05	0.02	0.00
Mapoon	0.24	0.16	0.19	0.11	0.08	0.13	0.09	0.00	0.00
Mornington	0.23	0.23	0.14	0.16	0.12	0.09	0.03	0.00	0.00
Napranum	0.21	0.18	0.19	0.13	0.12	0.10	0.05	0.02	0.00
Northern Peninsula Area	0.30	0.20	0.18	0.11	0.09	0.08	0.04	0.01	0.00
Palm Island	0.25	0.18	0.17	0.12	0.12	0.10	0.05	0.01	0.00
Pormpuraaw	0.21	0.16	0.13	0.14	0.17	0.11	0.05	0.02	0.01
Torres	0.20	0.23	0.18	0.12	0.10	0.09	0.06	0.02	0.01
Torres Strait Island	0.27	0.18	0.18	0.13	0.09	0.08	0.05	0.02	0.00
Woorabinda	0.24	0.20	0.17	0.11	0.12	0.09	0.05	0.02	0.00
Wujal Wujal	0.18	0.10	0.23	0.08	0.16	0.12	0.09	0.03	0.01
Yarrabah	0.22	0.23	0.17	0.11	0.12	0.09	0.04	0.01	0.00
All communities	0.19	0.15	0.13	0.10	0.09	0.07	0.04	0.01	0.00
Queensland	0.13	0.13	0.15	0.14	0.14	0.12	0.10	0.05	0.03

Source: ABS cat. no. 3101.0 for estimated Queensland population; ABS 2016, Census—Employment, Income and Education, TableBuilder.

Method

The most common method of age standardisation is the direct method, whereby the age-specific rates are applied to a standard population (AIHW 2011, p. 3). The direct method involves standardising to a single population, making the rates directly comparable between the studied groups and over time.

The rate is a weighted average of each age-specific event rate (AIHW 2011, p. 4):

$$Age\ standardised\ rate = \frac{\sum N_i r_i}{\sum N_i}$$

where N is the standard population size for age group i, and r is the rate of the event for age group i. To directly age standardise, it is therefore necessary to have the indicator of interest broken down by age category.

Explained more simply, to construct the age-standardised rate:

- for each age group being studied, calculate their age-specific rate
- multiply this rate by the number of people in the corresponding age group in the standard population and sum them together
- divide by the total number of people in the standard population.

Implementation

There are several principles to consider when implementing the direct age-standardisation method for Indigenous communities (Table D.2). An assessment of these principles shows that the key difficulty involved with constructing age-standardised rates for Indigenous communities in Queensland is the small sample sizes under study. It is therefore likely to be inappropriate to implement community-specific age standardisation, and instead, age-specific rates restricted to the relevant cohort should be preferred.

Table D.2 Principles for direct age-standardisation

Principle	Considerations	Assessment
Investigate the data	An analysis of the data to be age-standardised should be undertaken as a preliminary step, to understand how the variable is distributed by age.	It is expected that the rate of full-time work will at first increase with age, and then begin to decrease with age. This is supported by the age-specific rates for most communities.
Choice of standard population	Internal or external. An external standard population can be helpful so that rates can be comparable between studies. However, an internal standard population may suit the requirements of a study.	The current standard population is the Australian Estimated Resident Population as at 30 June 2011. The standard is updated each time Census data become available for a year ending in 1 (one). An internal standard population (the sum of all communities) may better suit the purposes of this study. Indigenous communities typically have a younger age profile than the general Australian population (Table D.1). It is best for the standard population chosen to have an age distribution similar to the populations being studied, thus the communities combined is the preferred population to standardise to for the purposes of this study.
Age group size	Each age group for each community should have a minimum of 30 members. Age-standardised rates should not be produced if this principle is not met. Five-year age groupings should be used; however, to meet the minimum ten-year age groups can be used.	Ten-year age groups must be used for this study, as many communities have a small population. In 2016, there were three communities with at least one age category that does not meet the minimum of 30 persons criteria. Age-standardisation should therefore not be used in many cases as the variance for these rates will be high.
Number of events	The total number of events of interest must be greater than 20. If this is not met, other contextual information should be provided.	There are a significant number of age-groups that have observations less than 20. Age-standardisation should therefore not be used.
Contextual information	Contextual information should also be provided if the age-standardised rate is for the most part outside the range of the age-specific rates; or if patterns differ significantly across communities.	Contextual information behind each domain is discussed throughout this report.

Source: AIHW 2011, pp. 10–11.

Exploratory study of the full-time work indicator

Despite the limited sample size, age-standardised rates have been constructed for the indicator 'employed in full-time work' to understand the impact that age standardisation may have on this study. The communities under consideration were first restricted to the working-age population aged 15–64, and then divided into ten-year age groupings to construct the age-standardised rates (sample sizes were too small to allow for five-year age groupings).

The results show that age standardisation has little impact on calculated rates for the full-time work indicator (Table D.3). This is the case whether standardising to an internal population (the communities combined) or to an external population (Queensland). The rate of full-time work for Wujal Wujal is most affected by age standardisation; however, this is the community with the smallest sample size. Age standardisation is unreliable for this community, and should be avoided, based on the principles outlined in Table D.2.

Table D.3 Rates of full-time work in Indigenous communities in Queensland, adjusted for age

LGA	Unadjusted rate (working-age population)	Age-standardised rate (internal standard)	Age-standardised rate (external standard)
Aurukun	0.11	0.11	0.11
Cherbourg	0.11	0.12	0.14
Doomadgee	0.12	0.12	0.13
Hope Vale	0.25	0.26	0.26
Kowanyama	0.14	0.13	0.14
Lockhart River	0.14	0.14	0.14
Mapoon	0.29	0.30	0.31
Mornington	0.19	0.18	0.19
Napranum	0.14	0.14	0.14
Northern Peninsula Area	0.29	0.30	0.32
Palm Island	0.13	0.13	0.14
Pormpuraaw	0.12	0.11	0.11
Torres	0.30	0.30	0.32
Torres Strait Island	0.18	0.19	0.20
Torres (combined)	0.23	0.23	0.25
Woorabinda	0.15	0.16	0.17
Wujal Wujal	0.14	0.12	0.15
Yarrabah	0.11	0.11	0.12
All communities	0.18	0.18	0.19

Note: The working-age population is 15–64. The internal standard used is the population of the combined communities under study. The external standard is the estimated resident population of Queensland as at 30 June 2011.
Source: ABS cat. no. 3101.0 for estimated Queensland population; ABS, 2016 Census—Employment, Income and Education, TableBuilder.

It is therefore unlikely that age standardisation is necessary for most indicators in the context of this study, due to the similar age compositions of each community. In many cases, it will also be statistically unreliable to undertake community-specific age standardisation. Where appropriate, age-specific indicators have instead been used to ensure accuracy.

Furthermore, if there is an indicator that exhibits different patterns of age-specific incidence between communities, contextual information is provided when discussing the indicator. This practice is recommended by the AIHW for cases where age standardisation is not feasible.

References

ABS 2009, ABS Data Quality Framework, viewed 14 June 2019, <https://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/1520.0Main%20Features3May%202009?opendocument&tabname=Summary&prodno=1520.0&issue=May%202009&num=&view=>.

— 2010a, Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples, 2010, 4703.0 - Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples, 2010, viewed 1 February 2019, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4703.0Main+Features12010?OpenDocument>.

— 2010b, Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples, 2010, 4703.0 - Framework for Measuring Wellbeing: Aboriginal and Torres Strait Islander Peoples, 2010, viewed 1 February 2019, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4703.0Main+Features12010?OpenDocument>.

— 2011, Australian and New Zealand Standard Offence Classification (ANZSOC), cat. no. 1234.0.

— 2012, 2049.0.55.001 Information Paper - Methodology for Estimating Homelessness from the Census of Population and Housing, p. 84.

— 2014, Measures of Australia's Progress, 2013, viewed 5 April 2019, <https://www.abs.gov.au/AUSSTATS/abs@.nsf/mf/1370.0>.

— 2016a, Appendix - Appendix 1: Data comparability with the 2008 NATSISS (Appendix), viewed 14 January 2020, <https://www.abs.gov.au/AUSSTATS/abs@.nsf/Latestproducts/4714.0Appendix12014-15?opendocument&tabname=Notes&prodno=4714.0&issue=2014-15&num=&view=>.

— 2016b, Census of population and housing: understanding the census and census data.

— 2016c, Main Features - Key findings, viewed 14 January 2020, <https://www.abs.gov.au/ausstats/abs@.nsf/Lookup/by%20Subject/4714.0~2014-15~Main%20Features~Key%20findings~1>.

— 2016d, National Aboriginal and Torres Strait Islander Social Survey: User Guide, 2014-15, May, Cat. no. 4720.0, Canberra, ACT.

— 2017, Census Independent Assurance Panel to the Australian Statistician - Report on the Quality of 2016 Census Data, June, Canberra, ACT.

— 2018a, National Offence Index, cat. no. 1234.0, ABS.

— 2018b, Socio-Economic Indexes for Areas (SEIFA) 2016 Technical Paper, Technical Paper, Canberra.

ABS, (Australian Bureau of Statistics) 2001, Measuring Wellbeing: frameworks for Australian social statistics, Cat. No. 4160.0.

AEDC, (Australian Early Development Census) 2019, Australian Early Development Census National Report 2018 - a snapshot of Early Childhood Development in Australia, Canberra, ACT.

AIHW 2009, Measuring the social and emotional wellbeing of Aboriginal and Torres Strait Islander peoples., Australian Institute of Health and Welfare, Canberra.

— 2011, Principles on the use of direct age-standardisation in administrative data collections, Australian Institute of Health and Welfare, Canberra.

— 2014a, Birthweight of babies born to Indigenous mothers, Australian Institute of Health and Welfare, Canberra, viewed 4 June 2019, <http://www.aihw.gov.au/publication-detail/?id=60129548202>.

— 2014b, Determinants of wellbeing for Indigenous Australians, Cat. no. IHW 137, Canberra.

Altman, J 2016, Making a Living Differently, Inside Story, Swinburne Institute for Social Research.

Altman, J, Biddle, N & Hunter, B 2008, How Realistic are the Prospects for 'Closing the Gaps' in Socioeconomic Outcomes for Indigenous Australians, CAEPR Discussion Paper No. 287/2008, Centre for Aboriginal Economic Policy Research, Australian National University, Canberra.

Anand, S & Sen, AmartyaK 1994, Human Development Index: methodology and measurement.

ANAO, (Australian National Audit Office) 2019, Closing the Gap, Text, viewed 3 January 2020, <https://www.anao.gov.au/work/performance-audit/closing-the-gap>.

Australian Government 2013, National Aboriginal and Torres Strait Islander Health Plan 2013-2023, Dept. of Health and Ageing, Canberra, ACT, viewed 22 February 2019, <http://www.health.gov.au/natsihp>.

Australian Government & Department of Families, H, Community Services and Indigenous Affairs 2013, Cape York Welfare Reform evaluation: 2012., Dept. of Families, Housing, Community Services and Indigenous Affairs, Canberra, viewed 3 August 2017, <http://www.fahcsia.gov.au/our-responsibilities/indigenous-australians/publications-articles/evaluation-research/cape-york-welfare-reform-cywr-evaluation-report>.

Biddle, N 2014, Data about and for Aboriginal and Torres Strait Islander Australians, Australian Institute of Health and Welfare, Issues Paper no. 10.

Biddle, N & Wilson, T 2013, 'Indigenous Australian population projections: problems and prospects', Journal of Population Research, vol. 30, pp. 101–116.

Cairney, S, Abbott, T, Quinn, S, Yamaguchi, J, Wilson, B & Wakerman, J 2017, 'Interplay wellbeing framework: a collaborative methodology "bringing together stories and numbers" to quantify Aboriginal cultural values in remote Australia', International Journal for Equity in Health, vol. 16, no. 1, viewed 7 February 2019, <http://equityhealthj.biomedcentral.com/articles/10.1186/s12939-017-0563-5>.

Cape York Institute 2007, From Hand Out to Hand Up: Cape York Welfare Reform Project - design recommendations, Cape York Institute for Policy and Leadership, Cairns.

CIW 2016, How are Canadians really doing? The 2016 CIW national report, Canadian Index of Wellbeing and University of Waterloo, Waterloo, ON, viewed 4 May 2019, <https://uwaterloo.ca/canadian-index-wellbeing/sites/ca.canadian-index-wellbeing/files/uploads/files/c011676-nationalreport-ciw_final-s.pdf>.

Closing The Gap 2019, Closing The Gap, viewed 5 April 2019, <https://closingthegap.pmc.gov.au/>.

COAG 2018, COAG statement on the Closing the Gap refresh, 12 December, viewed 15 July 2019, <https://www.coag.gov.au/sites/default/files/communique/coag-statement-closing-the-gap-refresh.pdf>.

Colquhoun, S & Dockery, AM 2012, 'The link between Indigenous culture and wellbeing: Qualitative evidence for Australian Aboriginal peoples', p. 29.

CYI 2005, Freedom, capabilities and the Cape York reform agenda, Cape York Institute for Policy and Leadership, Cairns, viewed 3 May 2019, <https://capeyorkpartnership.org.au/wp-content/uploads/2018/09/6-20Freedom-20capabiltiies-20and-20Cape-20York-20reform-20agenda.pdf>.

DATSIP 2019, Closing the Gap Report Card 2018, Queensland.

Department of Aboriginal and Torres Strait Islander Partnerships 2018, Queensland Closing the Gap Report Card 2018, p. 20.

Department of the Prime Minister and Cabinet 2017, Study away review: review of support for Aboriginal and Torres Strait Islander secondary students studying away from home., viewed 17 January 2020, <https://www.niaa.gov.au/sites/default/files/publications/study-away-review_0.pdf>.

Diener, E, Heintzelman, SJ, Kushlev, K, Tay, L, Wirtz, D, Lutes, LD & Oishi, S 2016, 'Findings all psychologists should know from the new science on subjective well-being.', Canadian Psychology/Psychologie canadienne, vol. 58, no. 2, pp. 87–104.

Diener, E, Suh, EM, Lucas, RE & Smith, HL 1999, 'Subjective Well-Being: Three Decades of Progress', p. 27.

Family Matters 2018, Family Matters Report.

Flanagan, T & Beauregard, K 2013a, The Wealth of First Nations: an exploratory study, Centre for Aboriginal Studies, Canada.

— 2013b, 'The Wealth of First Nations: An Exploratory Study', p. 44.

Goldenberg, RL & Culhane, JF 2007, 'Low birth weight in the United States', The American Journal of Clinical Nutrition, vol. 85, no. 2, pp. 584S-590S.

Gorecki, S, Gruen, D & Johnson, S 2011, Measuring Wellbeing in Theory and Practice, Working Paper, 02, Commonwealth Treasury, viewed 27 March 2019, <http://pandora.nla.gov.au/pan/56089/20120807-0819/www.treasury.gov.au/_/media/Treasury/Publications%20and%20Media/Publications/2011/Working%20paper%202011%2002/Downloads/Tsy_WorkingPaper_11_2.pdf>.

Graham, J 2015, Closing the well-being gap through improved First Nations governance, p. 19.

Gruen, Nicholas & Lancy, Annette 2011, The Herald/Age - Lateral Economics Index of Australia's Wellbeing, Lateral Economics, viewed 27 March 2019, <https://lateraleconomics.com.au/wp-content/uploads/2014/02/Fairfax-Lateral-Economics-Index-of-Australias-Wellbeing-Final-Report.pdf>.

Harding, S, Jackson Puliver, L., McDonald, P., Morrison, P., Trewin, D. & Voss, A. 2017, Report on the quality of 2016 Census data, June.

Haswell, M, Kavanagh, D, Tsey, K, Reilly, L, Cadet-James, Y, Lalliberte, A, Wilson, A & Doran, C 2010, 'Psychometric validation of the Growth and Empowerment Measure (GEM) applied with Indigenous Australians', Australian and New Zealand Journal of Psychiatry, vol. 44, no. 9.

Honorato, B, Caltabiano, N & Clough, AR 2016, 'From trauma to incarceration: exploring the trajectory in a qualitative study in male prison inmates from north Queensland, Australia', Health and Justice, vol. 4, no. 3.

Hudson, S 2008, CDEP: Help or Hindrance - the Community Development Employment Program and its impact on Indigenous Australians, The Centre for Independent Studies.

Hunter, E 2007, 'Disadvantage and discontent: A review of issues relevant to the mental health of rural and remote Indigenous Australians', Australian Journal of Rural Health, vol. 15, no. 2, pp. 88–93.

Jordan, K 2016, Better than Welfare? Work and Livelihoods for Indigenous Australians after CDEP, Research Monograph, 36, Centre for Aboriginal Economic Policy Research, Canberra.

Kaufmann, D, Kraay, A & Zoido-Lobaton, P 1999, Aggregating Governance Indicators, 2195, October, Policy Research Working Paper, The World Bank, Washington D.C.

King, DS 2019, 'Human services: the next wave of productivity reform', paper presented at QPC Productivity Lecture, Brisbane, Qld.

King, K 2011, 'How understanding the Aboriginal Kinship system can inform better policy and practice: Social work research with the Larrakia nad Warumungu Peoples of Northern Territory', viewed 12 July 2019, <http://researchbank.acu.edu.au/theses/391>.

Kral, I 2010, 'Generational Change, Learning and Remote Australian Indigenous Youth', CAEPR working paper, viewed 26 February 2019, <http://www.ssrn.com/abstract=2244636>.

Lee-Hammond, L & Jackson-Barrett, E 2018, 'Strengthening Identities and Involvement of Aboriginal Children through Learning On Country', Australian Journal of Teacher Education, vol. 43, no. 6, pp. 86–106.

Limerick, M 2009, Wellbeing Indicators for Remote Indigenous Communities in Queensland, Consultancy prepared for the Local Government Group, Department of Infrstrucutre and Planning.

Manning, M, Ambrey, CL & Fleming, CM 2016, 'A Longitudinal Study of Indigenous Wellbeing in Australia', Journal of Happiness Studies, vol. 17, no. 6, pp. 2503–2525.

Martin, D, Morphy, F, Sanders, W & Taylor, J (eds) 2004, Making Sense of the Census: Observations of the 2001 Enumeration in Remote Aboriginal Australia, ANU Press, viewed 16 April 2019, <https://press.anu.edu.au/publications/series/centre-aboriginal-economic-policy-research-caepr/making-sense-census>.

Memmott, P, Nash, D & Birdsall-Jones, C 2013, Indigenous Homelessness in Regional Australia, Institute for Social Research, Queensland University.

Michalos, A, Smale, B, Labonte, R, Muhajarine, N, Scott, K, Guhn, M, Gaderman, A, Zumbo, B, Morgan, A, Moore, K, Swystun, L, Holden, B, Bernardin, H, Dunning, B, Graham, P, Brooker, A-S & Hyman, I 2011, Canadian Index of Wellbeing Technical Paper.

Moran, M 2018, 'The courage to reform: fixing the Commonwealth's Indigenous policies', Griffith Review, vol. 60.

Nadew, G 2012, 'Exposure to traumatic events, prevalence of posttraumatic stress disorder and alcohol abuse in Aboriginal communities', Rural and Remote Health, vol. 12, no. 1667.

New Zealand Treasury 2018, Living Standards Framework: Background and Future Work, New Zealand Government, viewed 4 May 2019, <https://treasury.govt.nz/sites/default/files/2018-12/lsf-background-future-work.pdf>.

Nguyen, OK & Cairney, S 2013, Literature review of the interplay between education, employment, health and wellbeing for Aboriginal and Torres Strait Islander people in remote areas: working towards an Aboriginal and Torres Strait Islander wellbeing framework.

Nymand Larsen, J, Schweitzer, Peter & Petrov, Andrey 2014, Arctic social indicators ASI II: Implementation, Nordic Council of Ministers, Copenhagen, viewed 27 February 2019, <https://www.sdwg.org/wp-content/uploads/2016/04/Arctic-Social-Indicators-II.pdf>.

OECD 2017, How's life? 2017: measuring well-being, How's life?, OECD Publishing, Paris.

OECD, European Union & Joint Research Centre - European Commission 2008, Handbook on Constructing Composite Indicators: Methodology and User Guide, OECD, viewed 1 March 2019, <https://www.oecd-ilibrary.org/economics/handbook-on-constructing-composite-indicators-methodology-and-user-guide_9789264043466-en>.

OECD, (Organisation for Economic Cooperation and Development) 2011, Compendium of OECD Well-being Indicators, OECD Better Life Initiative.

ONS (Office for National Statistics UK) 2013, Guidelines for Measuring Statistical Output Quality.

Price, K & Rogers, J 2019, Aboriginal and torres strait islander education: an introduction for the teaching profession, 3rd edn, Cambridge University Press, Port Melbourne, Victoria.

Prout, S 2012, 'Indigenous Wellbeing Frameworks in Australia and the Quest for Quantification', Social Indicators Research, vol. 109, no. 2, pp. 317–336.

QGSO 2017, Population estimates by Indigenous status, Queensland, data quality statement, 2015 edition, Brisbane.

QGSO, (Queensland Government Statistician's Office) 2016, Prices across Queensland: how they compare, Index of retail prices in Queensland regional centres 2015, Brisbane.

QPC 2017, Service delivery in remote and discrete Aboriginal and Torres Strait Islander communities, Brisbane.

Queensland Government Statistician's Office 2019a, Queensland Regional Database, Brisbane.

— 2019b, Queensland Regional Profiles, QGSO.

Queensland Health 2019, Queensland Perinatal Data Collection Data Quality Statement, p. 16, viewed 27 August 2019, <https://www.health.qld.gov.au/__data/assets/pdf_file/0026/153476/pdc.pdf>.

Reconciliation Australia 2018, 'Failure to close the gap is proof of need for Indigenous voice', Reconciliation Australia, viewed 3 January 2020, <https://www.reconciliation.org.au/failure-close-gap-proof-need-indigenous-voice/>.

Salmon, M, Doery, K, Dance, P, Chapman, J, Gilbert, R, Williams, R & Lovett, R 2018, Defining the Indefinable: Descriptors of Aboriginal and Torres Strait Islander Peoples' Cultures and their Links to Health and Wellbeing, National Centre for Epidemiology and Population Health, Research School of Population Health (NCEPH), The Australian National University, viewed 13 February 2019, <https://openresearch-repository.anu.edu.au/handle/1885/148406>.

SCRGSP, (Steering Committee for the Review of Government Service Provision) 2016, Overcoming Indigenous Disadvantage: Key Indicators 2016, Productivity Commission, Canberra.

Sen, A 1985, 'Well-being and Freedom':, Journal of Philosophy, vol. 82, no. 4, pp. 185–203.

Staines, Z & Moran, M 2019, 'Complexity and hybrid effects in the delivery and evaluation of youth programs in a remote Indigenous community', Australian Journal of Public Administration, pp. 1–23.

Statistics Canada 2019, Data quality toolkit, viewed 14 June 2019, <https://www.statcan.gc.ca/eng/data-quality-toolkit>.

Stern, S, Wares, A & Hellman, T 2016, Social Progress Index 2016: Methodological report, Social Progress Imperative.

Stiglitz, JE, Sen, A & Fitoussi, J-P 2009, Report by the Commission on the Measurement of Economic Performance and Social Progress, viewed 2 August 2019, <https://ec.europa.eu/eurostat/documents/118025/118123/Fitoussi+Commission+report>.

Swan, P & Raphael, B 1995, Ways forward: national Aboriginal and Torres Strait Islander mental health policy; national consultancy report, Commonwealth of Australia, Canberra, ACT.

Taylor, J 2013, '8 Data for better Indigenous policy', p. 12.

Taylor, J & Biddle, N 2010, 'Estimating the Accuracy of Geographic Variation in Indigenous Population Counts', Australian Geographer, vol. 41, no. 4, pp. 469–484.

Thorpe, A, Anders, W & Rowley, K 2014, 'The community network: an Aboriginal community football club bringing people together', Australian Journal of Primary Health, vol. 20, no. 4, p. 356.

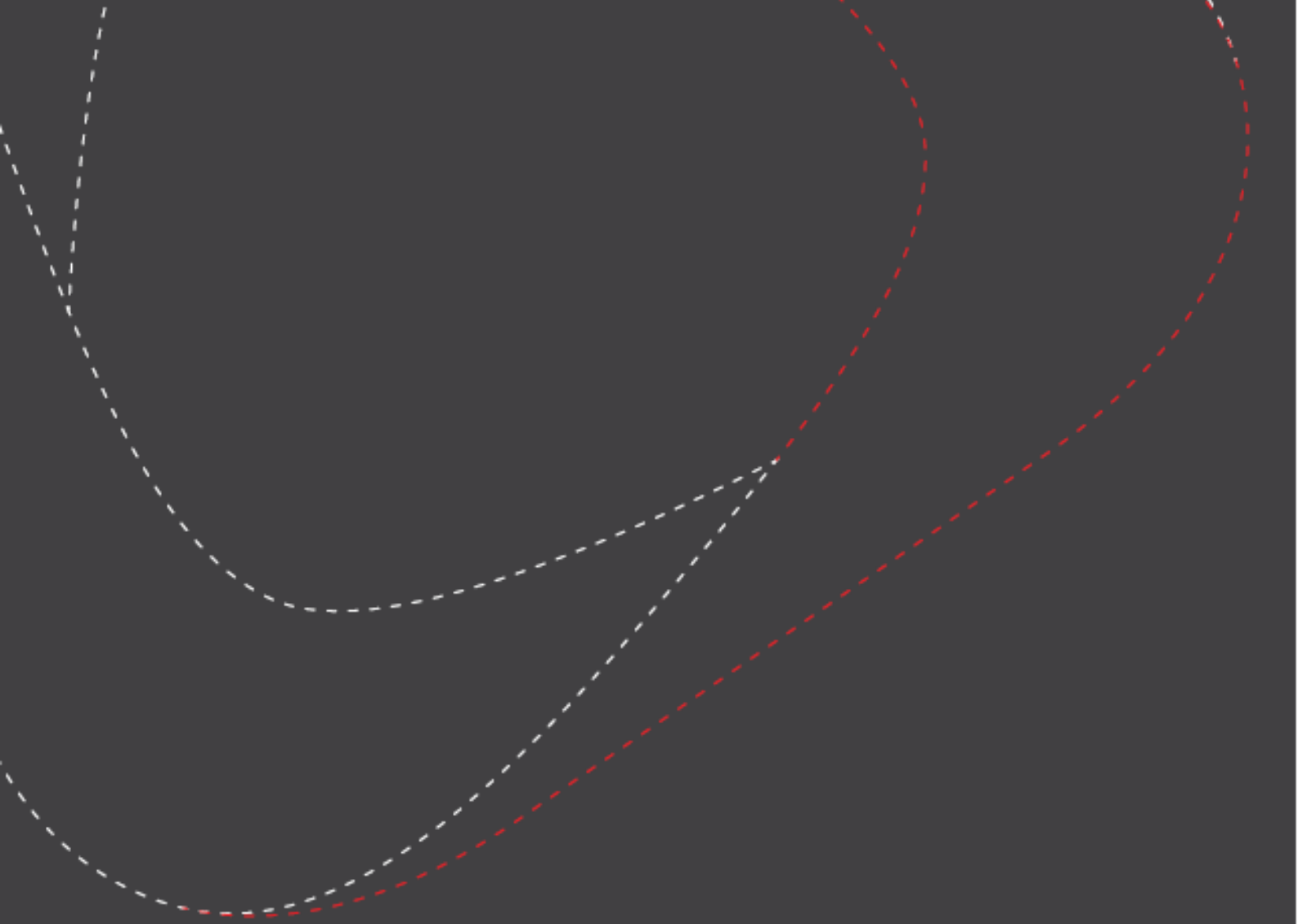
UNICEF & WHO 2019, UNICEF-WHO Low birthweight estimates: Levels and trends 2000–2015, World Health Organisation, Geneva, viewed 26 August 2019, <https://apps.who.int/iris/bitstream/handle/10665/324783/WHO-NMH-NHD-19.21-eng.pdf?ua=1>.

Watson, N & Wooden, M 2004, HILDA Project Technical Paper Series - Assessing the Quality of the HILDA Survey Wave 2 Data, No. 5/04, July, Melbourne Institute of Applied Economic and Social Research, Melbourne.

White, J & Maxim, P 2007, Community Well-being: A Comparable Communities Analysis, Strategic Research and Analysis Directorate, Indian and Northern Affairs Canada.

Wigglesworth, G, Simpson, J & Loakes, D 2011, 'NAPLAN Language Assessments for Indigenous Children in Remote Communities: Issues and Problems', Australian Review of Applied Linguistics, vol. 43, no. 3, pp. 320–343.

Wilcox, AJ 2001, 'On the importance—and the unimportance— of birthweight', International Journal of Epidemiology, vol. 30, no. 6, pp. 1233–1241.

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