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Community wellbeing and local attitudes to onshore conventional gas development in the Otway Basin

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Executive summary

This research establishes baseline data for community wellbeing and local attitudes and perceptions of onshore conventional gas development in two geological basins of southern Victoria: the Otway and Gippsland basins. Using a representative sample, the research provides empirical data which can be used to inform planning and decision making in relation to improving community wellbeing in local government areas throughout the basins. It also provides baseline data on community expectations and perceptions of onshore conventional gas development in the Otway and Gippsland basins and delivers a framework for understanding these matters. This report presents findings for the Otway Basin.

The study is part of the Victorian state government's Victorian Gas Program of research studies and findings will inform the government in their future decisions and activities related to onshore conventional gas in Victoria. There is currently a moratorium on the exploration and development of onshore conventional gas until June 2020, providing time for the Victorian Gas Program studies to be completed.

What we did and when

Over an eight-week period in September and October 2019, we conducted a comprehensive survey of 801 residents in the Otway and Gippsland basins using telephone interviews that took 35 minutes to complete on average. The survey was divided into two parts. First, it measured residents' perceptions of community wellbeing in their local areas along 15 different wellbeing dimensions. Second, it measured local attitudes and feelings towards onshore conventional gas development in their respective Basin and their perceptions of a range of factors that contribute towards shaping these attitudes. Perceptions of *unconventional* gas development were not included because it is banned in Victoria. The survey was in-depth and comprised approximately 170 questions, including demographics. The response rate was 26%, which means every fourth person on average agreed to participate in the research, which is a good outcome for lengthy telephone surveys.

Who participated

The sample of participants comprised at least 100 residents from each of eight Local Government Areas (LGAs) across the Otway and Gippsland basins. The Otway Basin sample included five LGAs from the south west (SW) region of Victoria: Glenelg, Southern Grampians, Moyne, Warrnambool, and Corangamite. These LGAs are referred to as subregions in this report and used for reporting results. Participants were randomly selected using databases of landline and mobile telephone numbers. To ensure a representative sample was obtained, quotas for age, gender and subregion were used in combination with weighting the data to achieve representativeness by LGA, subregion, age, gender, and working status according to 2016 census data (ABS, 2016).

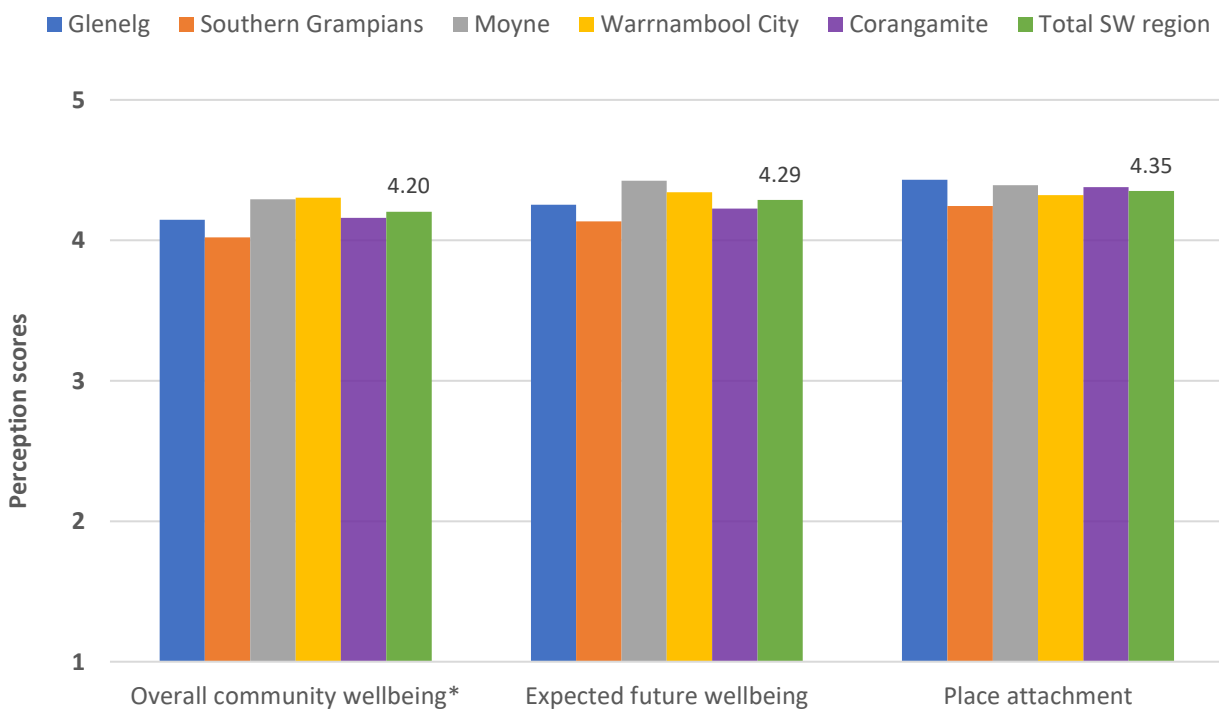
COMMUNITY WELLBEING

Community wellbeing scores reflect perceptions about whether the community is a great place to live and whether it offers a great quality of life for all ages. As such, it differs from individual wellbeing. Fifteen dimensions of community wellbeing were evaluated using approximately 70 questions. These covered social, environmental, political, economic, health, and physical infrastructure aspects of the community, including services, facilities, and the built environment. When assessing community wellbeing and future community wellbeing there was no reference to onshore conventional gas development in the survey questions.

Results showed community wellbeing overall was high across the SW region with all five subregions indicating very robust scores, even though the Southern Grampians subregion was statistically lower than the others. People felt their communities were particularly suitable for seniors and young children but less so for teenagers. Residents of Southern Grampians also reported statistically lower scores for the suitability of their community for teenagers, whereas Warrnambool reported this as statistically significantly higher than the rest of the SW region.

Figure 1 shows that expectations of future community wellbeing, in three years hence, were also very positive. Residents across the SW region reported very high levels of place attachment indicating a very strong sense of belonging and pride in their communities.

Figure 1 Mean scores of overall community wellbeing, expected future wellbeing, and place attachment: By subregions, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions; * statistical difference in mean scores between subregions

Analyses of the 15 wellbeing dimensions showed that across the SW region personal safety, town appearance, environmental quality, and community spirit of their local community were rated most highly. In contrast, the condition and safety of local roads, economic and business opportunities, and local decision-making and trust in leaders were rated the least across the region, which were mainly viewed unfavourably or borderline satisfactory on average. Roads were particularly reported unfavourably in all subregions.

Figure 3 shows a typical pattern emerged where Corangamite and Moyne demonstrated higher scores than the total SW region on some dimensions while Glenelg, Southern Grampians, and Warrnambool showed lower scores than the region on some dimensions. The biggest difference was in local decision making and trust, where Warrnambool was significantly lower than the other subregions and Corangamite significantly higher.

Farm owners perceived significantly higher levels of personal safety, environmental quality, community trust, local decision making and trust, and income sufficiency. On the other hand, farm owners indicated lower levels of satisfaction with environmental management for the future and social interaction than non-farm owners.

Differences in community wellbeing also emerged based on age, gender, income, and education levels. Key differences included younger people being least satisfied with services and facilities and expectations of future wellbeing in the community with older people the most satisfied across a range of dimensions; women indicating lower perceptions of personal safety and less satisfaction with economic opportunities than men; and people on lower income levels showed the least satisfaction with their community participation and social interaction than other income brackets.

Across the SW region the five most important dimensions that explained a sense of community wellbeing were: *community spirit*, *economic opportunities*, *services and facilities*, *community trust* and *community cohesion*, as shown in Figure 2. Understanding which dimensions contribute most to a sense of wellbeing within the community is important. Sometimes, the dimensions that are evaluated as highest or lowest by residents are not necessarily the same as those that contribute most to residents' perceptions that their community is a great place to live.

Figure 2 Most important dimensions to community wellbeing: Total SW region, 2019

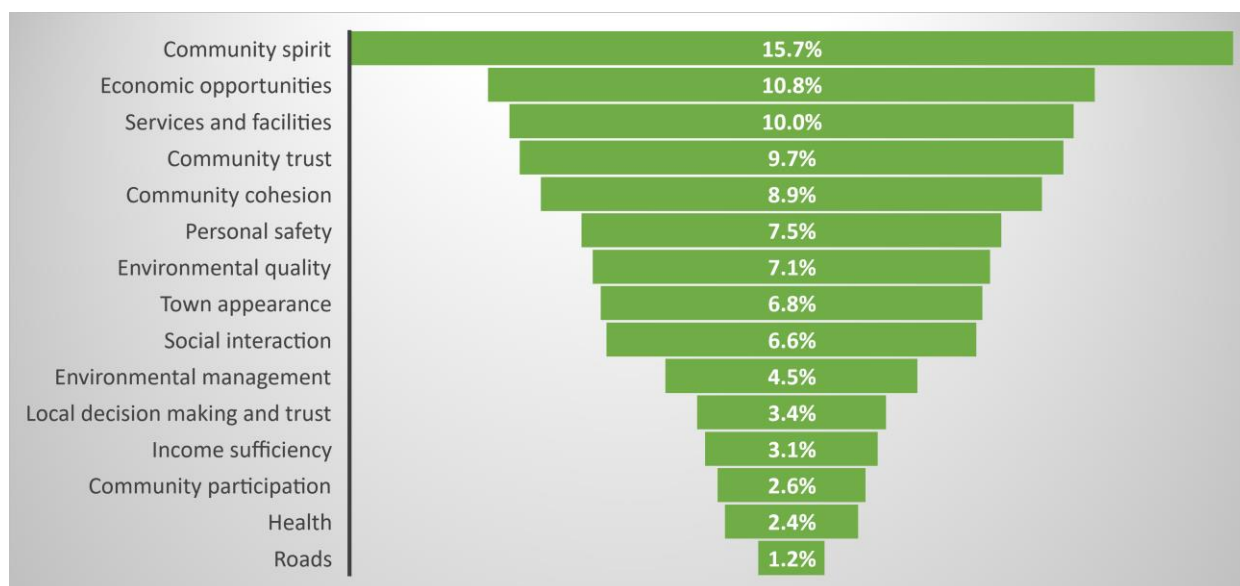
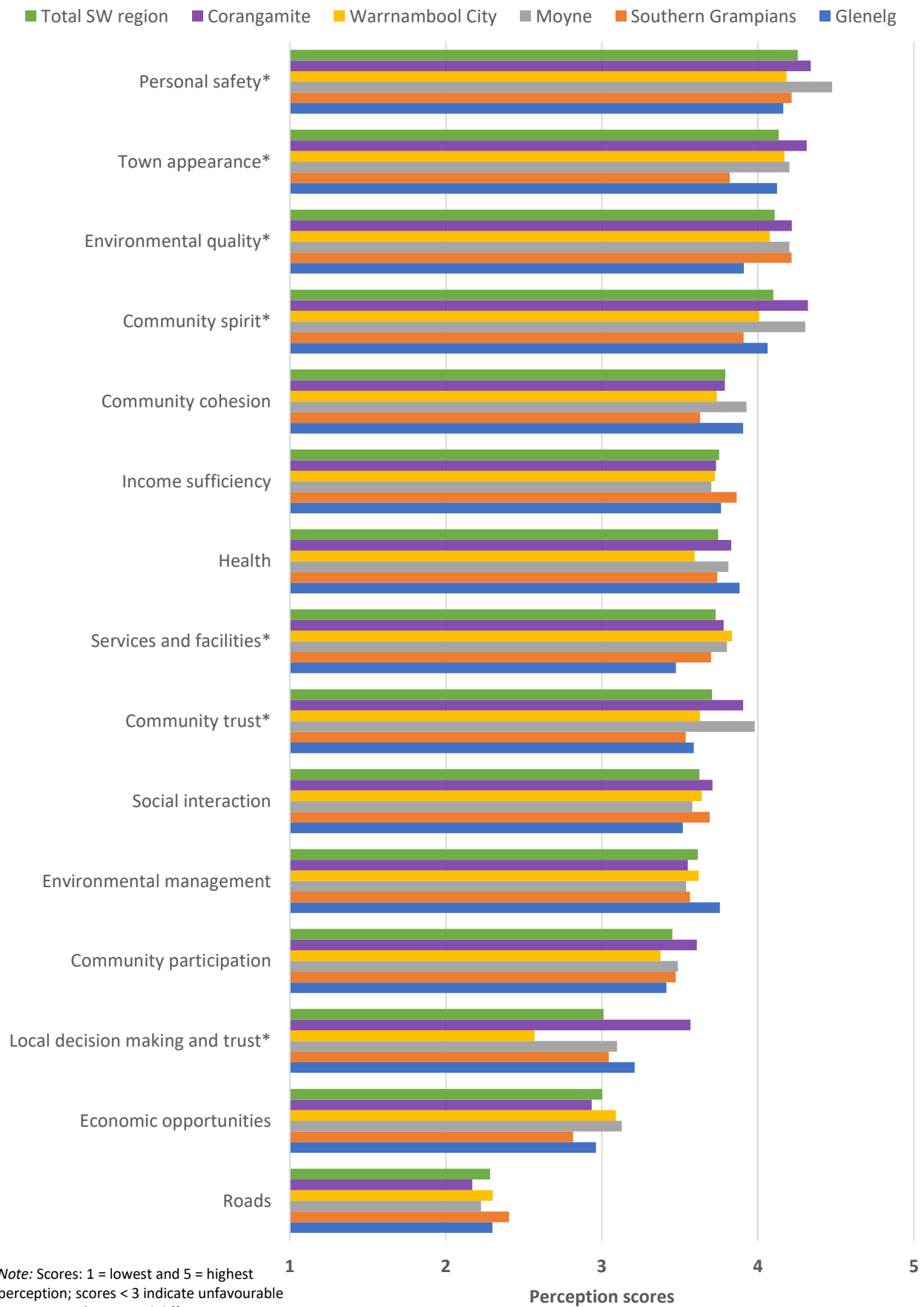


Figure 3 Community wellbeing dimensions: By subregions, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions; * statistical difference in mean scores between subregions

Key messages: Community wellbeing

1. Community wellbeing overall was high across the SW region with all five subregions indicating very robust scores.
2. Three of the fifteen wellbeing dimensions were rated unfavourably or borderline on average across the SW region. These included the condition and safety of local roads, economic and business opportunities, and local decision making and trust in leaders.
3. On some dimensions, a pattern emerged where Corangamite and Moyne demonstrated higher scores than the total SW region and Glenelg, Southern Grampians, and Warrnambool lower scores.
4. Differences were evident among farm owners and those who don't own a farm with farm owners showing higher satisfaction across a range of community wellbeing dimensions, excepting environmental management for the future and social interaction.
5. Differences in community wellbeing also occurred based on age, gender, income, and education levels.
6. The main drivers of community wellbeing across the region were *community spirit, economic opportunities, services and facilities, community trust and community cohesion*.
7. Understanding the most important dimensions to a sense of community wellbeing helps to identify where to target initiatives and scarce resources aimed at improving the quality of life for residents.
8. All subregions showed very positive expectations that community wellbeing in three years hence would be high.

ATTITUDES AND PERCEPTIONS OF ONSHORE CONVENTIONAL GAS DEVELOPMENT

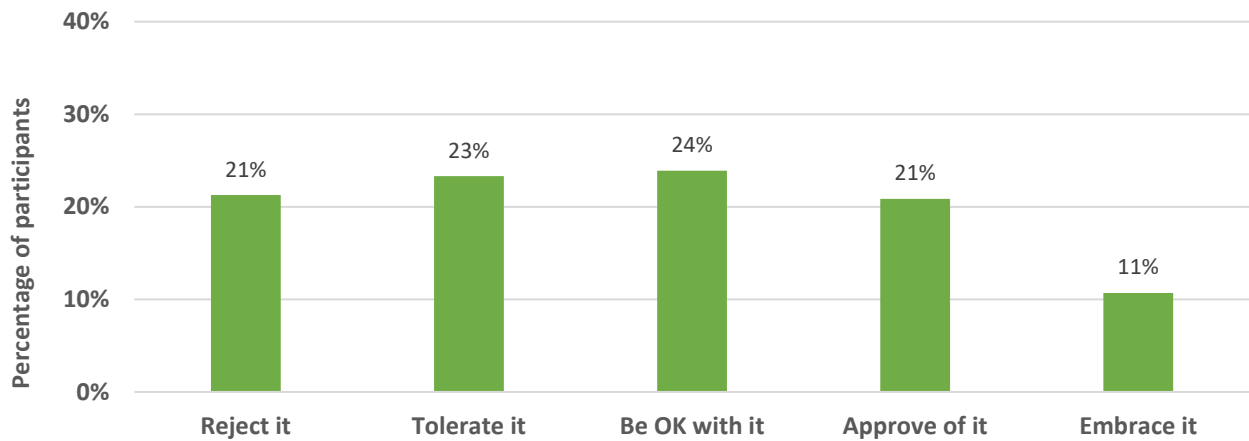
Attitudes towards onshore conventional gas development in the SW region ranged across a spectrum of views:

- 21% of people rejected onshore conventional gas development
- 11% of people embraced onshore conventional gas development
- 68% of people tolerated, would be ok with it, or approved of onshore conventional gas development
 - 23% would tolerate it
 - 24% would be ok with it
 - 21% would approve it

We also measured people's feelings towards onshore conventional gas development for each of the attitude categories: people who reject the idea had very negative feelings ($M = 1.99$), people

who tolerate had more neutral feelings around the mid-point of three ($M = 3.03$), people who were ok with it had much more positive feelings ($M = 3.47$), as did those who approve ($M = 4.10$) and embrace ($M = 4.59$).

Figure 4 Attitudes towards onshore conventional gas development in the Otway Basin: Total SW region

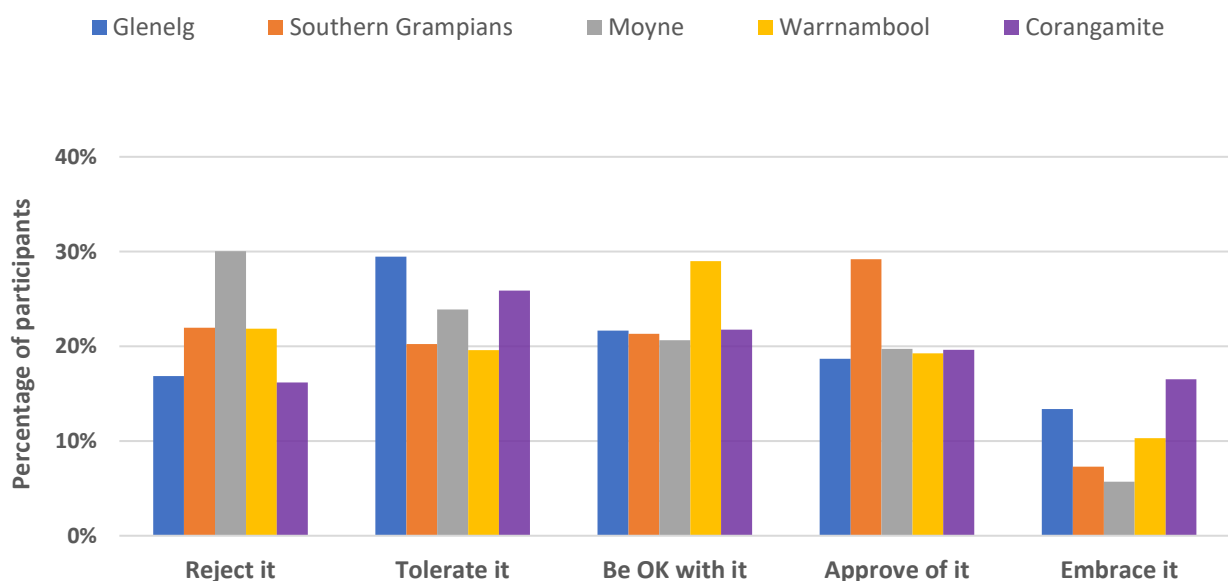


Note: Percentages rounded to the nearest whole percent

Differences in perceptions

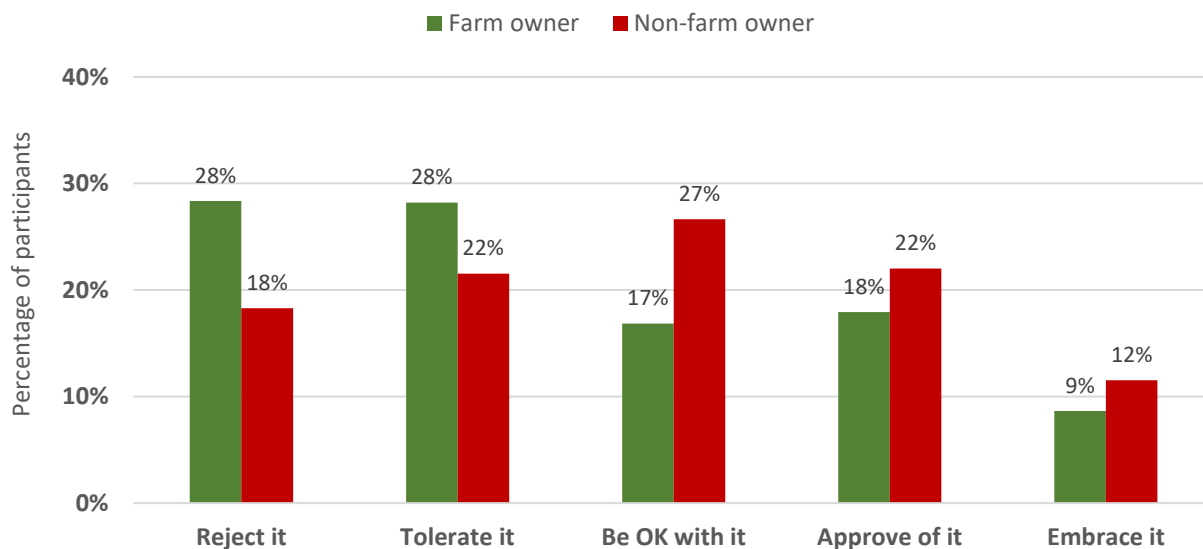
Perceptions differed among the subregions with Moyne tending to be less favourable in their views. In Moyne a larger percentage of people indicated they reject the idea of onshore conventional gas development in the Otway Basin (30%), which was almost double that of Glenelg (17%) and Corangamite (16%). Correspondingly, there was a much higher proportion of residents who embraced the idea in Corangamite (17%) and Glenelg (13%) than in Moyne (6%).

Figure 5 Attitudes towards onshore conventional gas development in the SW region: By subregion, 2019



There were also differences between farm owners and non-farm owners across the SW region in their attitudes towards onshore conventional gas development. Figure 6 shows farm owners held more negative views than people who did not own a farm.

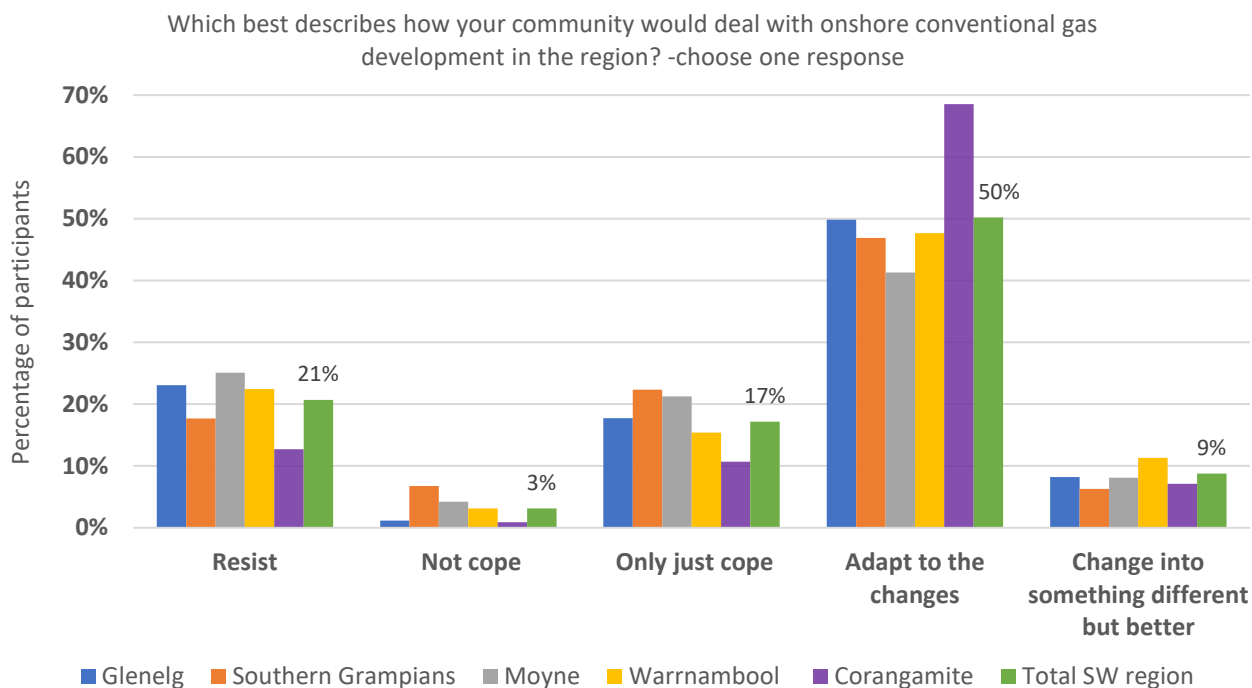
Figure 6 Attitudes towards onshore conventional gas development in the Otway Basin: By farm ownership, 2019



Adapting to onshore conventional gas development

Figure 7 shows that approximately 20% of residents across the SW region believed their community would resist onshore conventional gas development in the region, though less so in Corangamite (13%). Corangamite residents were also more positive about their community adapting to the changes (69%). Relatively few residents thought that their community would not cope with onshore conventional gas development in the region, though 17% of residents in the region thought that their communities would only just cope.

Figure 7 Perceptions of community adapting to onshore gas development: By subregion, 2019



Key messages: Attitudes and feelings about onshore conventional gas development

1. Across the SW region, residents demonstrated a range of views towards onshore conventional gas development with most people indicating they would tolerate, be ok with it, or approve onshore conventional gas development in the region.

 - Perceptions differed among the subregions with Moyne tending to be less favourable in their views with a larger percentage of people indicating they reject the idea of onshore conventional gas development in the Otway Basin (30%), which was almost double that of Glenelg and Corangamite. Correspondingly, there was a much higher proportion of residents who embraced the idea in Corangamite (17%) and Glenelg (13%) than in Moyne (6%).
 - Perceptions also differed between farm owners and those who don't own a farm with farm owners more negative about onshore gas development.
2. Attitudes and perceptions differed based on gender and education and these characteristics need to be factored into communication and engagement planning as each demographic segment has different concerns and needs for information.

 - Higher percentages of men either approved or embraced the idea of gas development (40%) compared to women (23%), while more women tolerated the idea compared to men.
 - People who hold degree levels of education tended to be more likely to reject than embrace onshore conventional gas development.

3. Residents were fairly neutral in how pleased ($M = 3.04$) or optimistic ($M = 2.99$) they felt towards onshore conventional gas development in their region and did not report feeling worried ($M = 2.64$) nor angry ($M = 2.17$) on average. These levels were similar across the SW region except Moyne residents felt statistically less pleased.
4. Fifty-nine percent of residents in the SW region thought their community would adapt or change into something better in response to onshore conventional gas development. Corangamite was most positive in believing how their community would adapt.

Perceptions of underlying drivers of social acceptance

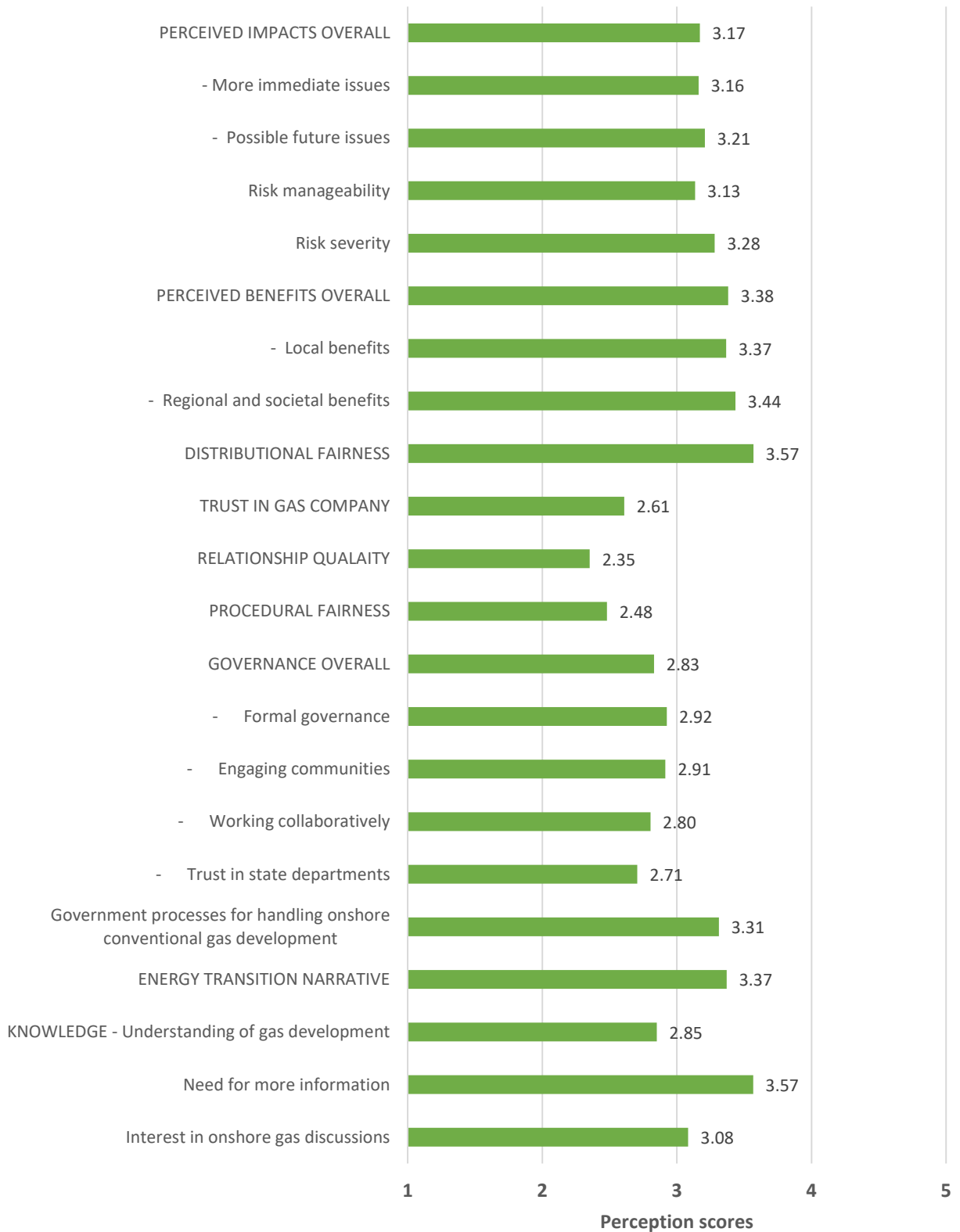
Previous research and interviews with stakeholders identified a range of issues that were important to communities and underpin people's overall attitudes and feelings towards onshore conventional gas development. The survey asked approximately 90 questions related to these issues, which were grouped together into nine key themes or underlying drivers, most with sub-components.

1. **Perceived impacts:** immediate issues, possible future issues, risk manageability and severity
2. **Perceived benefits:** local benefits, regional and societal benefits
3. **Distributional fairness:** perceptions of how fairly impacts and benefits are shared
4. **Trust in the onshore gas industry:** trust and confidence in industry competence, and doing the right thing by communities
5. **Relationship quality:** perceptions of the relationship between the gas industry and community
6. **Procedural fairness:** perceptions of how fairly the gas industry will treat the community
7. **Governance:** perceptions of formal governance (regulations and compliance), government engaging with and working collaboratively with communities, trust in state departments
8. **Energy transition narrative:** the role of onshore gas in reducing carbon emissions and transitioning to renewable energies
9. **Knowledge:** awareness and understanding of the onshore conventional gas industry

Figure 8 summarises the scores for each of the underlying drivers (and relevant sub-components) for the SW region. It also includes additional scores about risk perceptions, information needs and views about the government's handling of onshore gas development and the role of gas in the energy narrative.

- Concerns about impacts overall were not overly high ($M = 3.17$) with levels of concern about immediate issues such as impacts on water and the community similar to more future oriented concerns; for example, the integrity of gas wells over time. The greatest concerns were over possible community division in relation to gas development, the possible unfair treatment of farmers and damage to underground water. People perceived the severity of risks to be moderate ($M = 3.28$) but had only modest confidence that risks could be managed ($M = 3.13$).
- Potential benefits from onshore gas development were perceived favourably ($M = 3.38$). Residents viewed local benefits and wider regional and societal benefits similarly.
- Distributional fairness scores were moderately good ($M = 3.57$) indicating that people thought it fair on average provided landowners were compensated fairly and that benefits outweighed the impacts.
- Perceptions of trust in gas companies was limited ($M = 2.61$) and views about how the gas company would treat locals (relationship quality and procedural fairness) were unfavourable, indicating low expectations that the community would be treated fairly or that the gas companies would be genuine in their interactions.
- Perceptions of overall governance was marginal, including confidence in government to hold companies to account through regulation ($M = 2.92$). Similarly, expectations that government would engage with communities about gas was borderline with limited trust in government and confidence in their ability to work together with communities and gas companies to solve issues.
- However, people had a favourable view of the government's processes for dealing with onshore gas development in terms of the moratorium and undertaking the science first ($M = 3.31$).
- Knowledge levels about onshore conventional gas development was limited ($M = 2.85$), including an understanding of the differences between conventional and unconventional gas, with people indicating a need for more information ($M = 3.57$).
- Across the SW region, the role gas has to play in the energy transition to lower carbon sources was perceived favourably ($M = 3.37$).

Figure 8 Perceptions about onshore conventional gas development: Summary, SW region, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions except perceived impacts where the higher the score the greater the concern

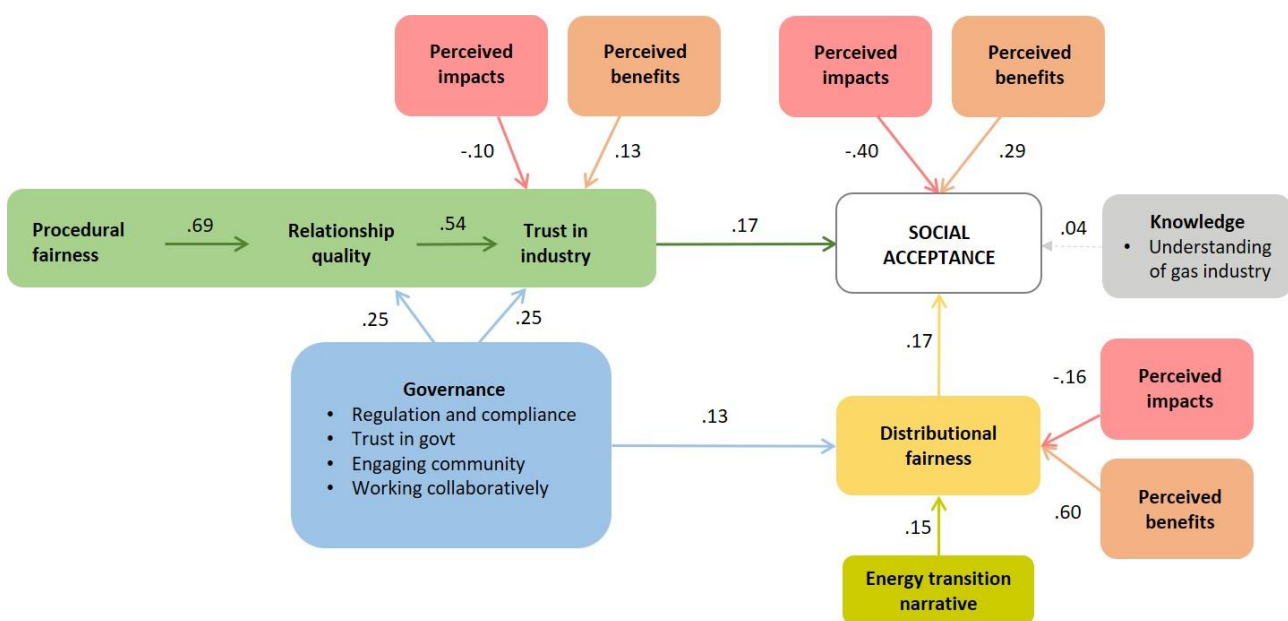
Model of social acceptance: A framework for understanding community concerns and expectations of onshore conventional gas development

Statistical modelling of the nine key factors contributing to trust and social acceptance showed how the different factors work together to shape people’s overall attitude or level of acceptance towards onshore conventional gas development. It also shows the factors important for trust in the industry and a sense of distributional fairness, as shown in Figure 9.

The model demonstrates that people’s trust and acceptance of the industry is dependent on a range of factors. Moreover, each factor needs to be addressed and improved if people’s trust in industry and acceptance of onshore conventional gas development in their communities is to change.

The statistics attached to the model identify which factors are more important than others – the larger the number the stronger the influence. These are described and discussed in the report and summarised in the key messages.

Figure 9 The CSIRO model of social acceptance of onshore conventional gas development: Otway Basin, 2019



Key messages: Perceptions of underlying drivers of social acceptance

- Concerns about negative effects of onshore conventional gas development not only shaped people’s acceptance levels directly but also influenced people’s perceptions of trust in industry and their notions of distributional fairness. People were similarly concerned about long-term future issues of onshore conventional gas development as they were about more immediate impacts.
 - This means perceived impacts (concerns) and benefits directly affect social acceptance, or lack thereof, as well as indirectly affecting it by contributing to people’s perceptions of how much they trust the onshore conventional gas industry and how much they believe it is fair in terms of how costs and benefits would be distributed and shared.

2. People viewed the benefits from onshore gas as moderate, however benefits are not only important in shaping attitudes about gas but are particularly important in weighing up a sense of fairness.
 - Perceived benefits are almost four times as important as perceived impacts in determining distributional fairness.
3. People's expectations are low that the gas industry could be trusted or that they would treat people fairly.
 - Trust in industry is determined by the quality of the relationship industry has with community and the procedural fairness by which they would engage with their community. Good governance is also important for building trust in industry.
4. Confidence in government to effectively regulate the gas industry was modest, yet results show perceptions of good governance of the industry not only supports trust in industry but also beliefs about distributional fairness.
 - This means regulation and compliance, planning, collaborating, engaging with communities, and trust in gas governing bodies all shape people's views of how much they trust industry and how fair they believe gas development would be for their community.
5. Perceptions of distributional fairness are important factors that directly influence acceptance.
 - This means perceived fairness in the distribution of impacts and benefits is important in its own right.
 - The narrative around the role of conventional gas in Victoria's transition to renewable energy sources is also important for determining perceptions of fairness. The more local residents believe there is a greater need for gas in achieving a low carbon energy supply, the more they positively factor this into weighing up costs and benefits.
6. People's knowledge and understanding of the industry was limited.
 - Both those who reject and those who embrace onshore conventional gas development have higher levels of industry knowledge than those with more moderate views like 'tolerating it' or 'being OK with it'.
 - Knowledge and understanding needs to relate to the things people care about for it to be a greater influence in shaping people's views about onshore gas development rather than technical industry knowledge. For example, how the industry will be governed, what are the negative impacts and how they will be managed or mitigated, and what are the benefits both locally and more broadly to the region and society.
 - People indicated an interest and need for more information.

Part I Introduction and Methods

Background to the research

This study is part of the Victorian state government's Victorian Gas Program of research studies and findings to inform the government in their future decisions and activities related to onshore conventional gas in Victoria. There is currently a moratorium on the exploration and development of onshore conventional gas until June 2020, providing time for the Victorian Gas Program studies to be completed.

Project purpose

The purpose of this project is to create baselines for understanding community concerns, expected benefits, knowledge of, and factors important for explaining trust and acceptance in relation to onshore conventional gas development in the Gippsland and Otway geological basins of Victoria. The research is part of a broader government appraisal reviewing the feasibility of an onshore conventional gas industry operating in the Gippsland and Otway basins.

In addition, the research assesses baseline levels of community wellbeing, expectations of the region's future and identifies community values and beliefs in relation to onshore conventional gas development.

Establishing baseline measures of community wellbeing and regional attitudes towards onshore conventional gas development enables government stakeholders to consider community expectations, current perceptions of and concerns related to such development, and other matters related to trust of and acceptance of an onshore conventional gas sector. This knowledge informs stakeholders of issues that are important to communities, their level of importance, and their extent, so that if such an industry were to proceed it could be done so in a manner that met community expectations. This research also provides valuable insights for developing community engagement strategies that would be critical for building trust with regional communities if any development progresses after the moratorium ends in June 2020.

1 Concepts used in this report

1.1 Community wellbeing

A measure of community wellbeing is a snapshot in time of the perceived 'quality of life' within the community; an evaluation of the community as a 'good place to live' (McCrea, Walton, & Leonard, 2014). The notion of community wellbeing means different things to different people and thus a comprehensive measure of wellbeing that incorporates different '*dimensions*' of wellbeing is used to gain a deeper understanding of the various aspects of community wellbeing.

Drawing on international research and previous research in onshore gas development regions in the Western Downs region of Queensland and the Narrabri region of New South Wales (McCrea, Walton, & Leonard, 2014; McCrea, Walton, and Leonard, 2019; Walton and McCrea, 2017; Walton and McCrea, 2018), we investigated wellbeing across 15 dimensions. These dimensions can be grouped into six domains: social, environmental, political, physical infrastructure, economic, and health (McCrea et al., 2014). Figure 10 depicts the 15 dimensions grouped into the six domains, which we measure and discuss further in this report.

Figure 10 Dimensions of community wellbeing grouped into six domains



Table 1 Descriptions of the fifteen dimensions of community wellbeing

Dimension	Domain	Brief description
1. Personal safety	Social	Safety at home alone at night, walking outside alone at night
2. Community spirit	Social	Friendliness, supporting each other
3. Community cohesion	Social	Inclusion, welcoming of newcomers and people with differences
4. Community trust	Social	Trust within the community and people seen around locally
5. Community participation	Social	Supporting community based organisations and activities
6. Social interaction	Social	Visiting, talking, and going out with others in the community
7. Environmental quality	Environment	Quality of the environment in which people live - levels of dust, noise, air, drinking water, and overall quality of the general environment
8. Environmental management	Environment	Managing the environment for the future: waterways, nature reserves, and parks
9. Local decision making	Political	Citizens having a say and being heard in local decision making
10. Trust in local leaders	Political	Local leaders and local council can be trusted
11. Services and facilities	Physical infrastructure	Schools, childcare, sports and leisure facilities, shopping, medical and health services, and community support services
12. Town appearance	Physical infrastructure	General physical appearance of the town, cleanliness, parks, gardens
13. Roads	Physical infrastructure	Condition and amount of traffic on the roads
14. Income sufficiency	Economic	Household income sufficient for household expenses, and lifestyles
15. Economic opportunities	Economic	Job opportunities in the community, local businesses doing well
16. Health	Health	Diet and eating habits, exercise habits, physical and mental health

1.2 Attitudes and perceptions of onshore conventional gas development

Community acceptance of an industry's activities within a community is important for the establishment and ongoing operation of a new industry. This acceptance is commonly referred to as a 'social licence to operate' (SLO), whereby the industry meets the ongoing expectations of the community with regards to its actions and thus gains ongoing acceptance (Curran, 2017; Gunningham, Kagan, & Thornton, 2004; Moffat & Zhang, 2014).

Building on previous studies (e.g., Grubert and Skinner, 2017; Zhang and Moffat, 2015), as well as CSIRO research in the Western Downs region of Queensland and the Narrabri region of New South Wales into unconventional gas development (Walton & McCrea, 2017 and 2018), we identified and modified a range of factors that may also shape people's perceptions and attitudes towards onshore conventional gas development.

As listed in Figure 11, these factors can be described as the underlying drivers of trust and acceptance, or a lack of trust and acceptance. When people have high levels of these factors then

they are likely to have more positive views towards onshore conventional gas development, and when they have low levels of these factors they are more likely to have negative views, with one exception: when people have high levels of concern over possible negative impacts from gas development then they are likely to have more negative views of the industry and its development.

Figure 11 List of factors that underlie trust and acceptance of onshore conventional gas development

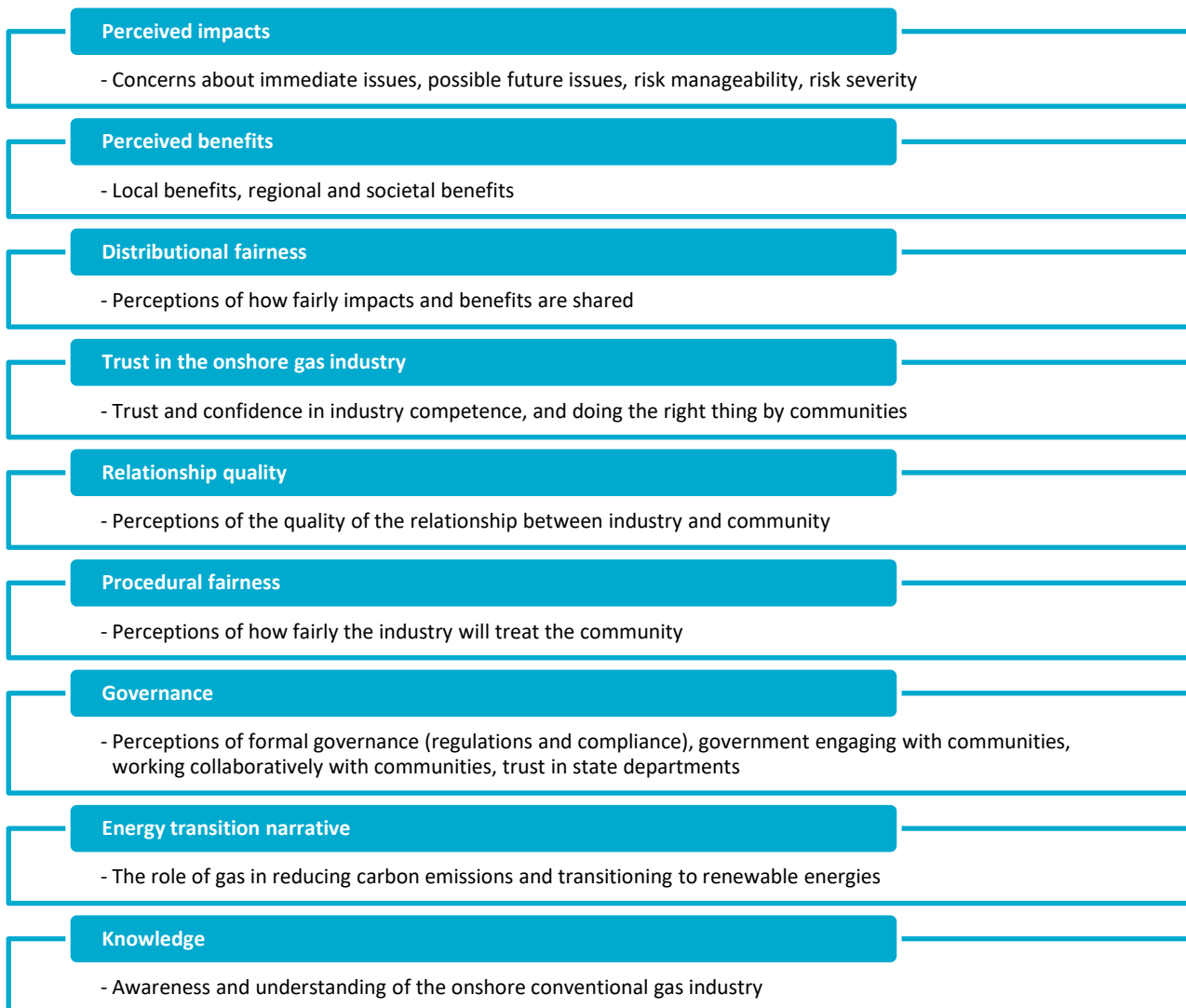
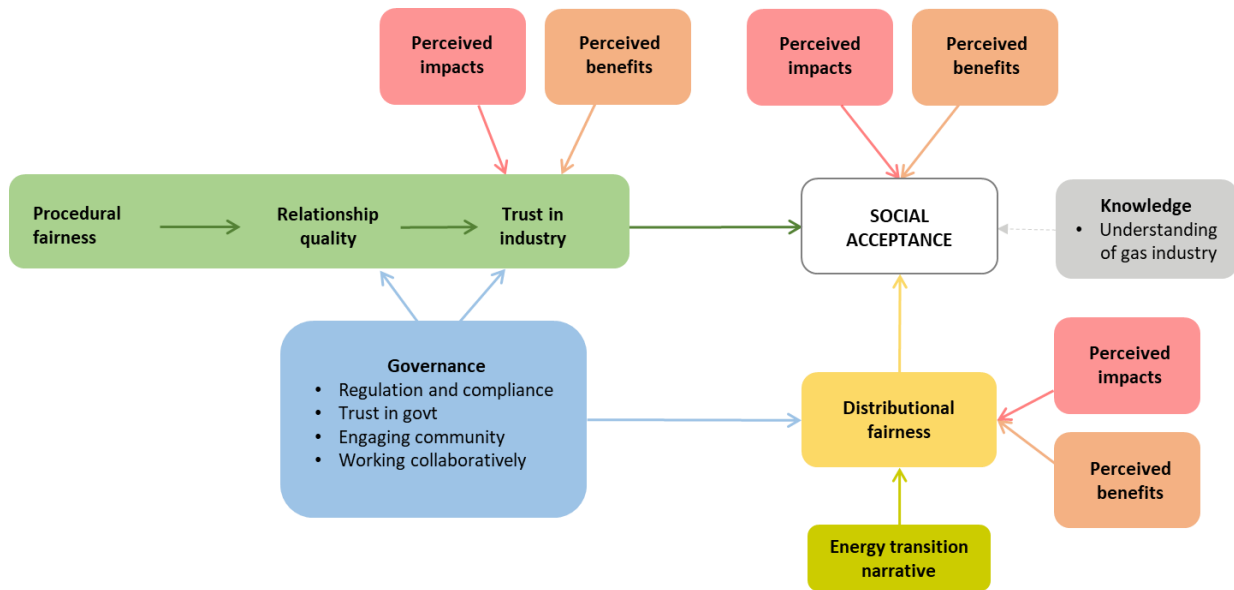


Figure 12 shows a model of how these factors work together to explain a person’s level of acceptance (or lack thereof) for onshore conventional gas development within their community. Each of these factors are important to communities and represent concerns that communities have about conventional gas development, their expectations if trust in the industry is to be achieved, and their views related to fairness and how benefits are distributed and costs borne by host communities.

By measuring these factors, we provide empirical evidence to the conventional gas industry and key stakeholders as to the current levels of these factors within communities. Results can be used

to guide industry improvements and government initiatives, and strengthen policy and standards governing the onshore conventional gas sector.

Figure 12 CSIRO model of social acceptance (or lack thereof) and its underlying drivers



2 Method

2.1 Survey overview

The survey was conducted during September-October 2019 over an eight-week period using computer-assisted telephone interviewing (CATI). The survey involved 801 participants from eight local government areas (LGAs) in southern Victoria – 501 participants from the Otway Basin and 300 from the Gippsland Basin. The survey explored community wellbeing and attitudes to onshore conventional gas development. Specifically, the survey targeted participants from five LGAs in the Otway Basin and three LGAs in the Gippsland Basin.

A third-party research company administered the survey using a database of landline and mobile telephone numbers to randomly select residents based on pre-determined selection criteria, and demographic quotas to achieve a representative sample.

On average, the survey took 35 minutes to complete and the response rate was 25.9%, which is considered a good outcome for lengthy telephone surveys.

This report focusses results on the Otway Basin sample and the sample profile is detailed in Appendix A .

Key points

Total Sample: 801 participants

- Five Otway Basin LGAs: Glenelg Shire, Southern Grampians Shire, Moyne Shire, Warrnambool City, Corangamite Shire
- Three Gippsland Basin LGAs: Latrobe City, Wellington Shire, East Gippsland
- At least 100 participants per LGA
- Weighted sample representative on age, gender, and location (in or out-of-town) according to the Australian Bureau of Statistics (ABS, 2016)
- Landowners included
- 35 minute telephone interview with approximately 170 questions
- Inclusion criteria: residents of target LGA, age 18 years or older
- Random selection using landline and mobile telephone numbers
- Quotas, screening questions and weighting used to achieve sample representativeness

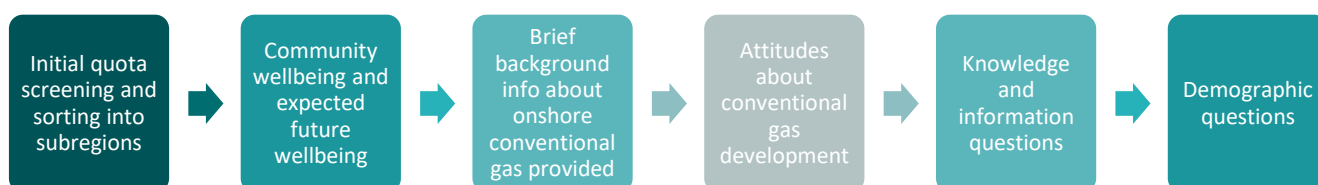
2.2 Survey procedure

The survey comprised approximately 170 questions covering five main topics. Figure 13 shows the flow of questions, with the initial part of the survey including screening and demographic questions. Within each of the five targeted LGAs, there were various main towns and participants were asked which main town they felt most part of. This town and surrounds became the subsequent reference for community wellbeing related questions for that participant. For example, if a participant identified Port Fairy and surrounds as their community, then all subsequent questions were framed in relation to 'the town and surrounds of Port Fairy'. Residents also identified whether they lived in or out-of-town.

The survey then proceeded with community wellbeing questions, followed by attitudes and perceptions about onshore conventional gas development and the sector, then knowledge and information questions, and finally a few more demographic questions.

At the end of the survey participants were asked whether they would like to be in a prize draw for \$50 gift vouchers as a thank-you for completing the survey. Twenty participants were randomly selected to receive vouchers.

Figure 13 Outline of survey question topics



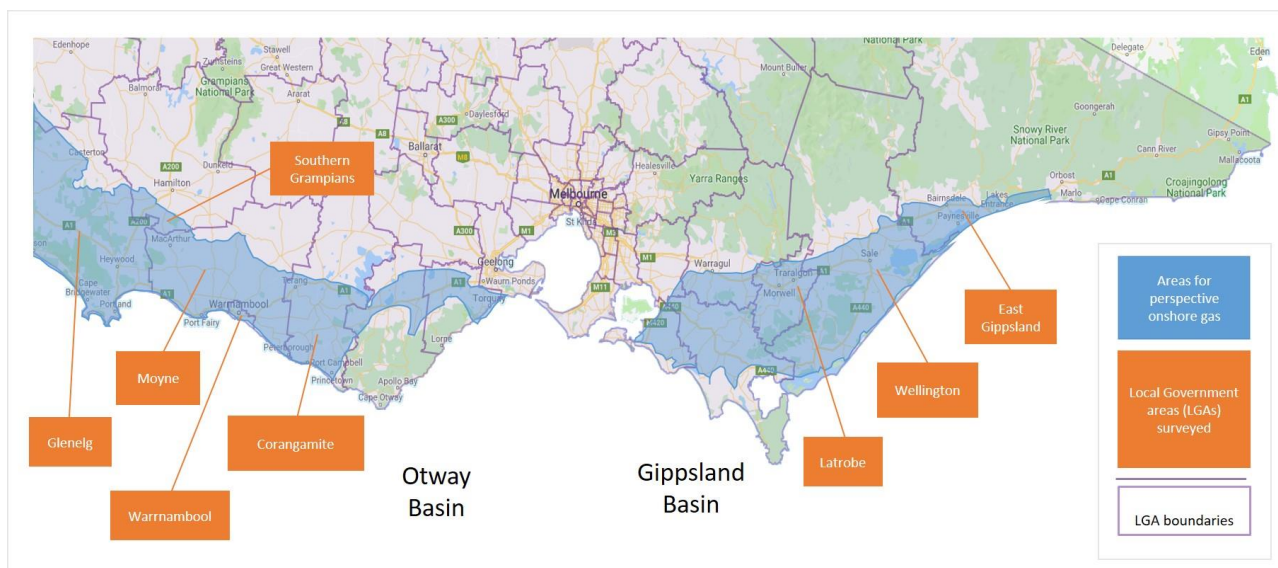
ETHICS REVIEW

All procedures adhered to the National Statement on Ethical Conduct in Human Research, as well as the ethical review processes of the CSIRO, which granted ethics approval.

2.3 Survey sample and representativeness

The Otway Basin sample comprised 501 residents who were sampled from five LGAs that made up the South West (SW) region in the Otway Basin, see Figure 14. These LGAs are reported as 'subregions' in this report. Table 2 shows the main urban centres or localities in each of the subregions sampled.

Figure 14 LGAs sampled in the survey: Otway and Gippsland basins



Those living out-of-town were over sampled to ensure sufficient out-of-town residents and farmers were included in the research. Over-sampled residents were later weighted to ensure the statistics were representative for each subregion and the SW region as a whole.

Table 2 Otway LGAs sampled in the survey and urban centres or localities within each LGA

LGA	Urban Centre or locality	LGA	Urban Centre or locality
GLENELG SHIRE	Casterton	SOUTHERN GRAMPIANS SHIRE	Coleraine
	Dartmoor		Dunkeld
	Heywood		Hamilton
	Portland		Penshurst
MOYNE SHIRE	Koroit	CORANGAMITE SHIRE	Camperdown
	Macarthur		Cobden
	Mortlake		Derrinallum
	Peterborough		Lismore
	Port Fairy		Noorat
	Woolsthorpe		Port Campbell
WARRNAMBOOL CITY	Allansford	Skipton	
	Warrnambool	Terang	
	Woodford	Timboon	

Representativeness

The sample was reasonably representative on age, gender, and living in- or out-of-town, though the data was also weighted by these characteristics for each of the LGAs to match ABS 2016 population census. The data was weighted using the *calibrate* program in Stata15 and the weighted sample used in analyses of results. The sample profile is described in Appendix A.

2.4 Measures

2.4.1 Response scales

Survey questions mainly used a Likert response scale from 1 to 5, where 1 was the least and 5 was the most. Participants were either asked to indicate how much they agreed with a statement, or how satisfied they were with the issue in question. The agreement response scales ranged from 1 = strongly disagree to 5 = strongly agree, and the satisfaction response scales ranged from 1 = very dissatisfied to 5 = very satisfied. The demographic questions required participants to choose the most accurate category (single response item).

There were two categoric questions where participants were required to choose one response from a range of choices. There was also one open ended question, which asked participants for a short response in their own words (to describe information needs regarding onshore conventional gas development).

2.4.2 Survey items

The survey comprised approximately 170 questions (items) covering five main topics. A brief outline of the items used to measure each topic area is summarised in Table 3. Descriptions of individual measures and scales are detailed in Appendix C along with reliability of each scale. The survey questions with exact wording of all items are detailed in Appendix E .

Table 3 Summary of survey questions

SURVEY TOPIC	BRIEF DESCRIPTION
1. Community wellbeing	66 items <i>Fifteen dimensions</i> of wellbeing each with their own set of multiple items (57 items), as outlined in Section 1.1., and place attachment (4 items) <i>Overall wellbeing</i> , five items rating the community as a suitable place to live for different segments of the population (children / teenagers / seniors), and assessing the community overall as a place to live (that offers a good quality of life / they are happy to be living in)
2. Expected future community wellbeing	3 items <i>Expected future community wellbeing</i> in 3 years hence (as a place that offered a good quality of life / where they would be happy to be living). They were also asked to choose how wellbeing in their community might change in the future (decline / stay about the same / improve).

3. Attitudes and perceptions of onshore conventional gas development and the sector	77 items	<ul style="list-style-type: none"> • Perceived impacts - immediate and future • Perceived risks - manageability and severity • Personal impact • Perceived benefits – local and wider (regional and societal) • Perceived fairness – procedural and distributional • Trust in gas companies • Quality of relationships and responsiveness of gas companies • Governance – formal (compliance, regulations); engaging community, working collaboratively; trust in gas governing bodies; govt. handling of onshore gas development • Energy transition narrative - the role of gas in reducing carbon emissions and transitioning to renewable energies • Feelings towards onshore conventional gas development, measuring positive emotions (pleased, optimistic) and negative emotions (angry, worried) • Attitudes towards onshore conventional gas development – acceptance of conventional gas development in the region • Community adapting, perceptions of the community’s coping and adapting to a proposed onshore conventional gas development
4. Knowledge and information	15 items	Use of different types of information sources; self-rated knowledge about the industry / gas extraction / the moratorium; need for more information; interest in gas discussion
5. Demographic questions	9 items	Age, gender, employment status, household income, home ownership, education, farm ownership, location type (live in or out-of-town), and subregion (Glenelg, Southern Grampians, Moyne, Warrnambool, and Corangamite)

2.5 Analyses

2.5.1 Statistical tests

A range of bivariate and multivariate analyses were undertaken including t-tests, chi-square tests, dominance analyses, and path analyses. The latter two analyses are explained in Appendix D .

Part 2 Results

Reporting of results

Findings reported as 'significant' means that they were 'statistically significant' at p value less than the .05 level. This means there is less than a five percent chance that the findings were due to chance. This is a convention in scientific report writing and denoted as $p < .05$. In some instances, scores have been rounded to one decimal place in the graphical figures.

Results of the survey are typically described as average scores out of 5, using a scale from 1 to 5 where 1 is the least and 5 is the most. A score below the midpoint of 3 is considered unfavourable on average, except where otherwise indicated. Results for subregions are reported as Glenelg, Southern Grampians, Moyne, Warrnambool, Corangamite, and the total region as the South West (SW) region.

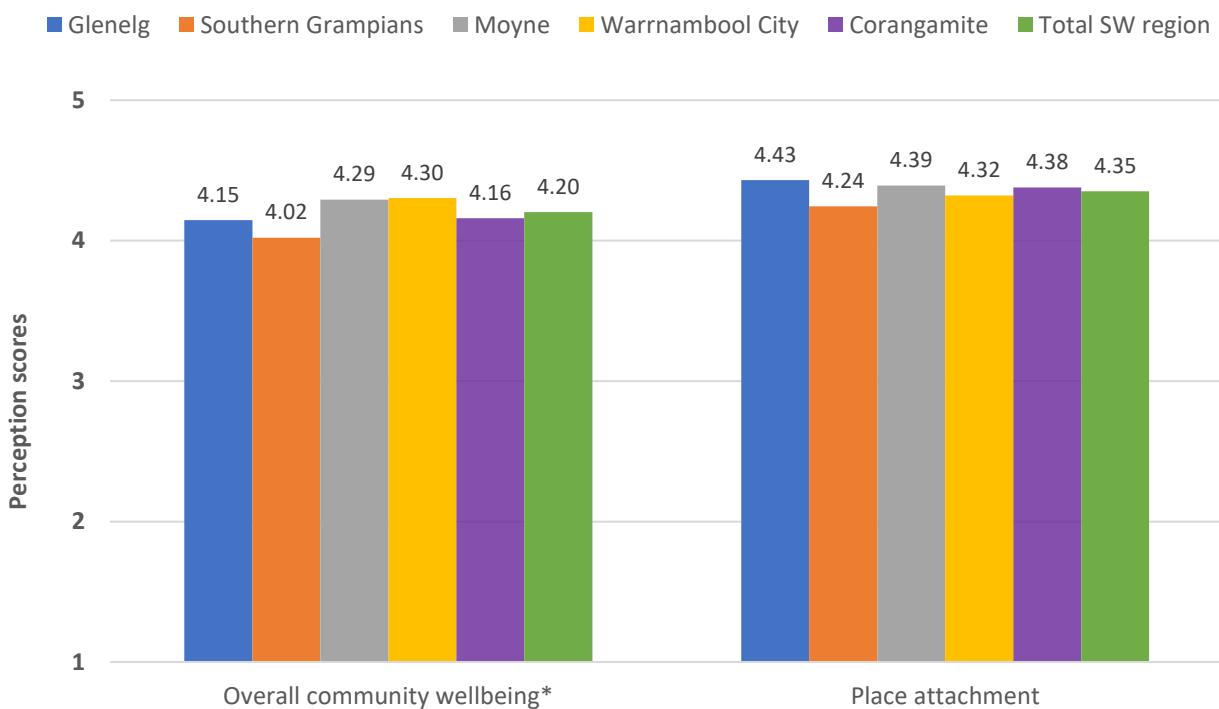
3 Community wellbeing

3.1 Overall community wellbeing and place attachment

Community wellbeing across the South West (SW) region was high ($M = 4.20$) with all five subregions demonstrating wellbeing scores of at least four out of five. Though still high, the Southern Grampians subregion reported a statistically lower score ($M = 4.02$) than the average across the region. Figure 15 shows the other subregions were similar to each other.

Place attachment was very high across the SW region ($M = 4.35$) with all subregions reporting a strong sense of belonging and level of pride towards their local towns and surrounding areas. Figure 15 shows no real differences in placement attachment among the regions.

Figure 15 Mean scores of overall community wellbeing and place attachment: By subregions, 2019

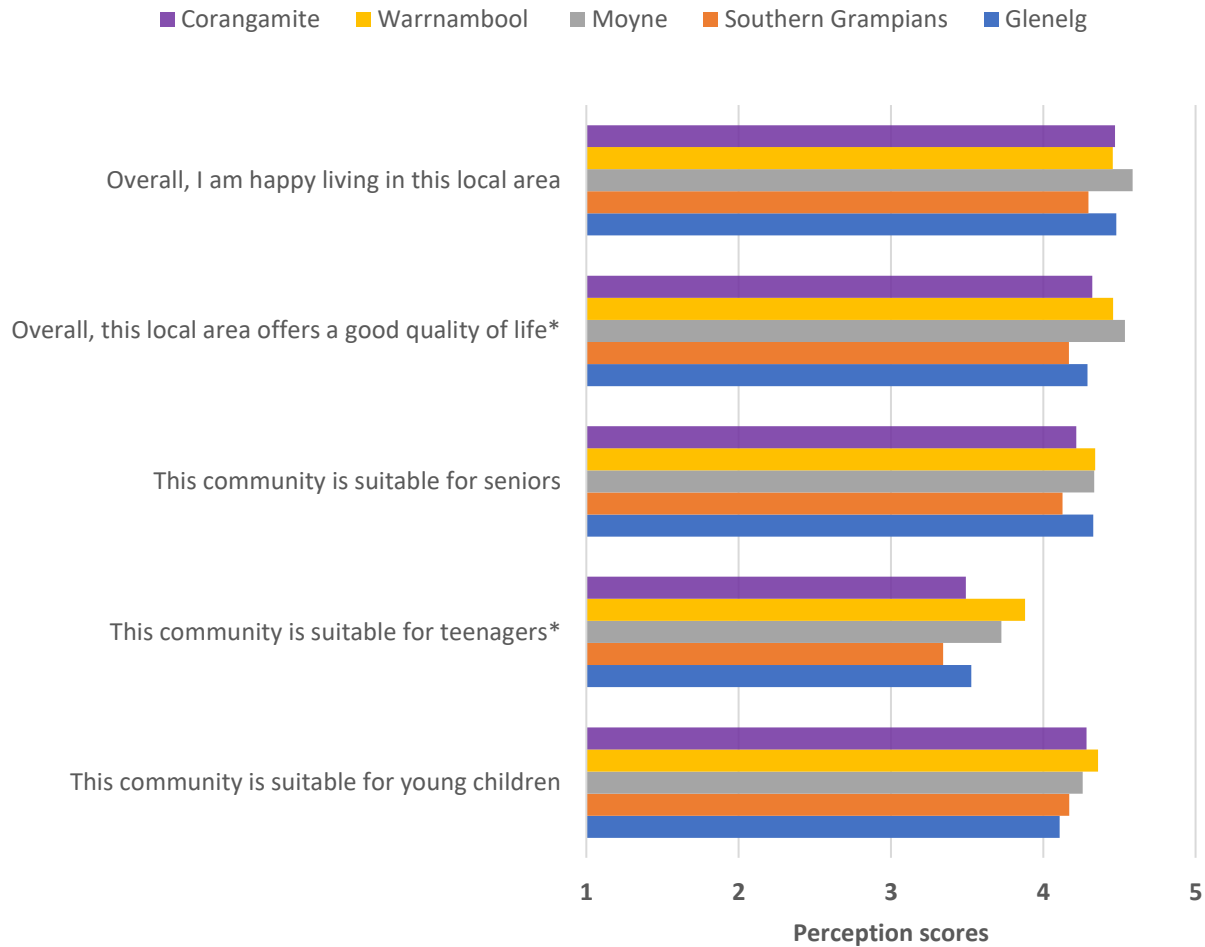


Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions; * statistical difference in mean scores between subregions

The individual items that comprise the overall community wellbeing score showed that residents were very happy living where they do and that they viewed their communities as great places to live and offering a good quality of life. Figure 16 shows that people felt their communities were particularly suitable for seniors and young children, though less so for teenagers. Residents of the Southern Grampians reported statistically lower scores than the rest of the SW region for two of

the items including the suitability of the community for teenagers. In contrast, Warrnambool reported a statistically higher score for teenagers than the average for the SW region.

Figure 16 Overall community wellbeing items: By subregions, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;
 * statistical difference in mean scores between subregions

Differences between farm owners and non-farm owners

There no statistical differences in overall community wellbeing nor place attachment between farm owners nor non-farm owners across the SW region.

Differences between people who live in-town and out-of-town

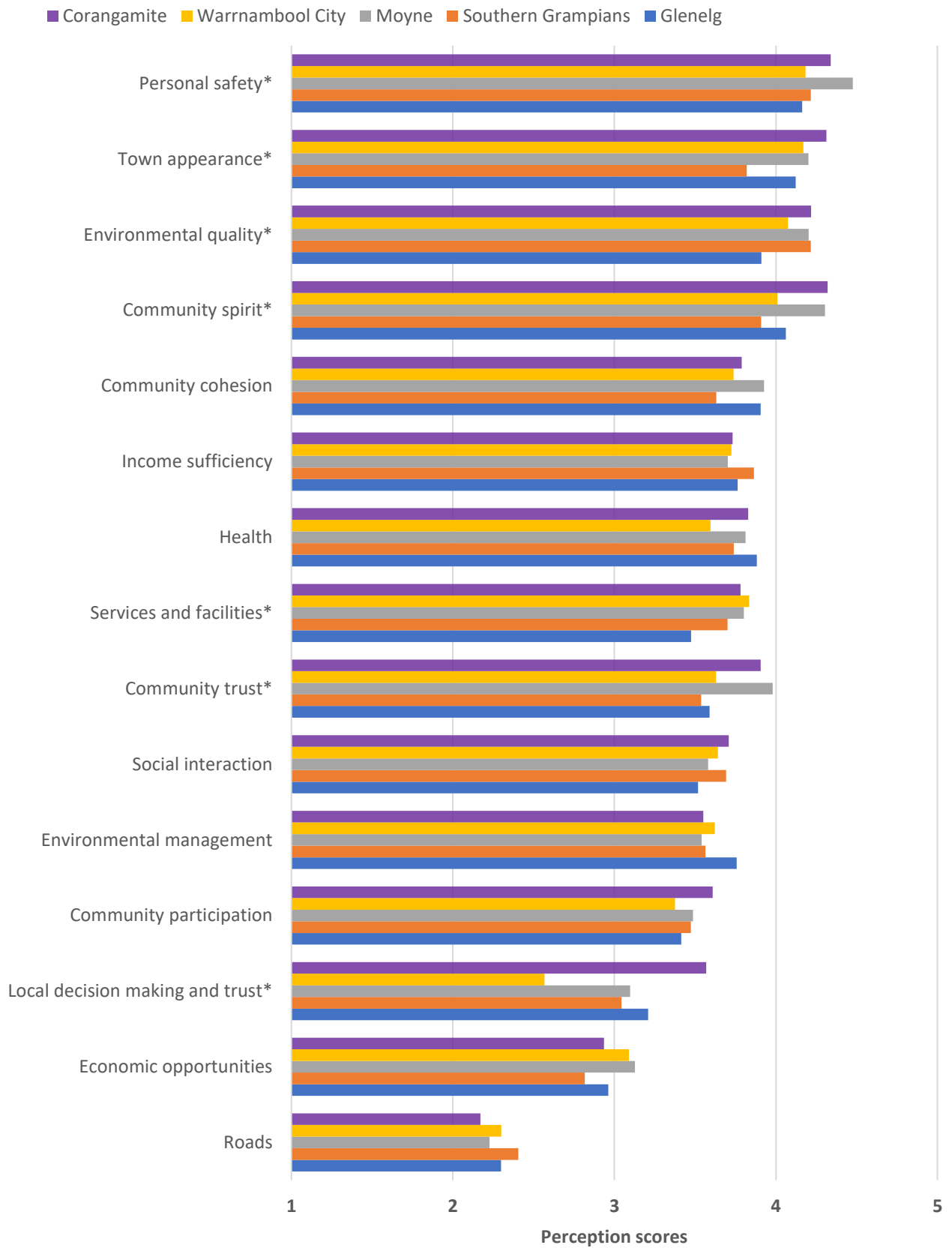
There were also no differences in overall community wellbeing nor place attachment based on residents living in a town or out of a town.

3.2 Dimensions of community wellbeing

The survey measured fifteen different dimensions of community wellbeing and analysed differences among the subregions. As shown in Figure 17, twelve of the fifteen dimensions were rated positively on average across the region with average scores above three. Personal safety, town appearance, environmental quality and community spirit of their local community were rated most highly. In contrast, the condition and safety of local roads, economic and business opportunities, and local decision making and trust were rated the least favourably across the region. In most of the subregions, these were rated unfavourably or borderline satisfactory on average. Roads were particularly reported unfavourably in all subregions.

There were significant differences among the subregions when compared to the total SW region in seven of the fifteen dimensions. A typical pattern emerged where Corangamite and Moyne demonstrated higher scores than the total region on some dimensions and Glenelg, Southern Grampians, and Warrnambool showed lower scores than the regional average on some dimensions. The biggest difference was in local decision making and trust, which showed Warrnambool as significantly lower than the other subregions and Corangamite significantly higher. Services and facilities in Glenelg were rated lower than the other subregions, and personal safety higher in Moyne than the other subregions. The tables in Appendix E show which subregions were significantly different on each dimension.

Figure 17 Community wellbeing dimensions: By subregions, 2019



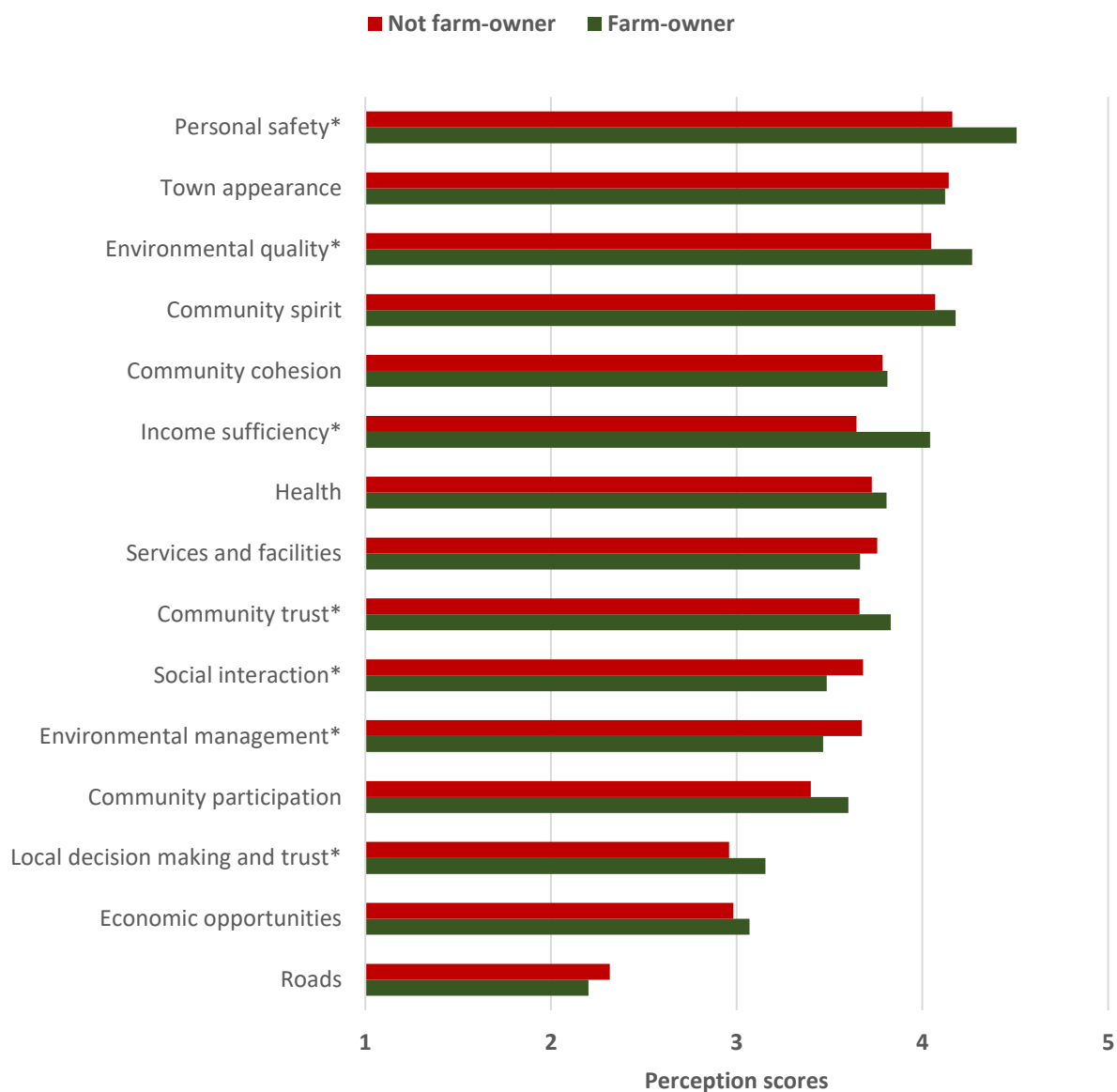
Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;
 * statistical difference in mean scores between subregions

Differences between farm owners and non-farm owners

While there were no statistical differences between farm owners and other residents in *overall* community wellbeing, there were statistically significant differences in seven of the fifteen community wellbeing dimensions.

Figure 18 shows farm owners reported significantly higher levels of personal safety, environmental quality, community trust, local decision making and trust, and income sufficiency. On the other hand, farm owners indicated lower levels of satisfaction with environmental management for the future and social interaction than non-farm owners.

Figure 18 Community wellbeing dimensions: By farm owners, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions;

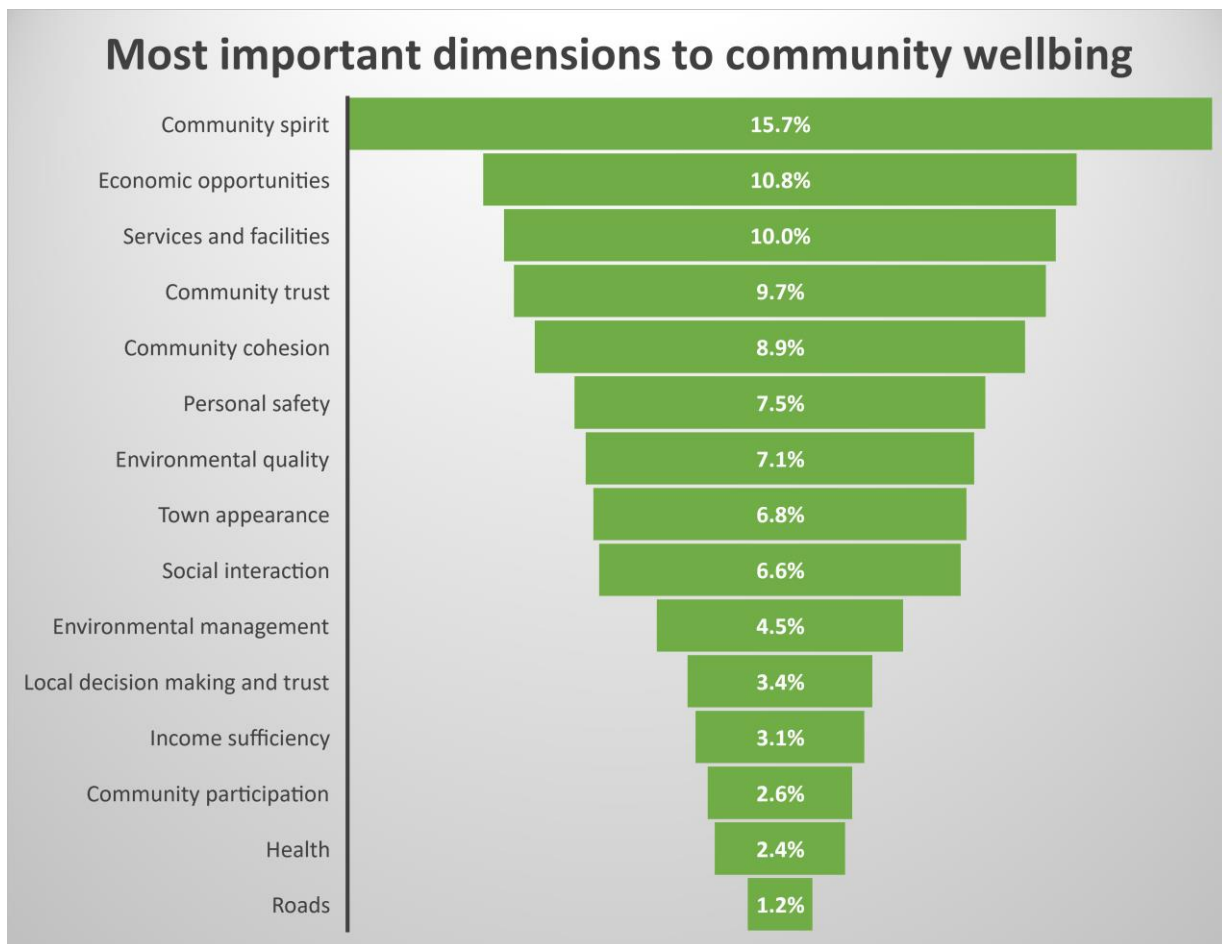
* statistical difference in mean scores between farm owners and non-farm owners

3.3 Most important dimensions of community wellbeing

Understanding which dimensions contribute most to a sense of wellbeing within the community is useful in helping identify where to target initiatives aimed at improving the quality of life for its residents. Sometimes, the dimensions that are evaluated as highest or lowest by residents are not necessarily the same as those that contribute most to residents' perceptions that their community is a great place to live.

Across the SW region the five most important dimensions that explained a sense of community wellbeing were: *community spirit*, *economic opportunities*, *services and facilities*, *community trust* and *community cohesion*. Figure 19 lists the different community wellbeing dimensions in order of the relative importance that each dimension makes to a sense of wellbeing within the community.

Figure 19 Most important dimensions to community wellbeing: Total SW region, 2019



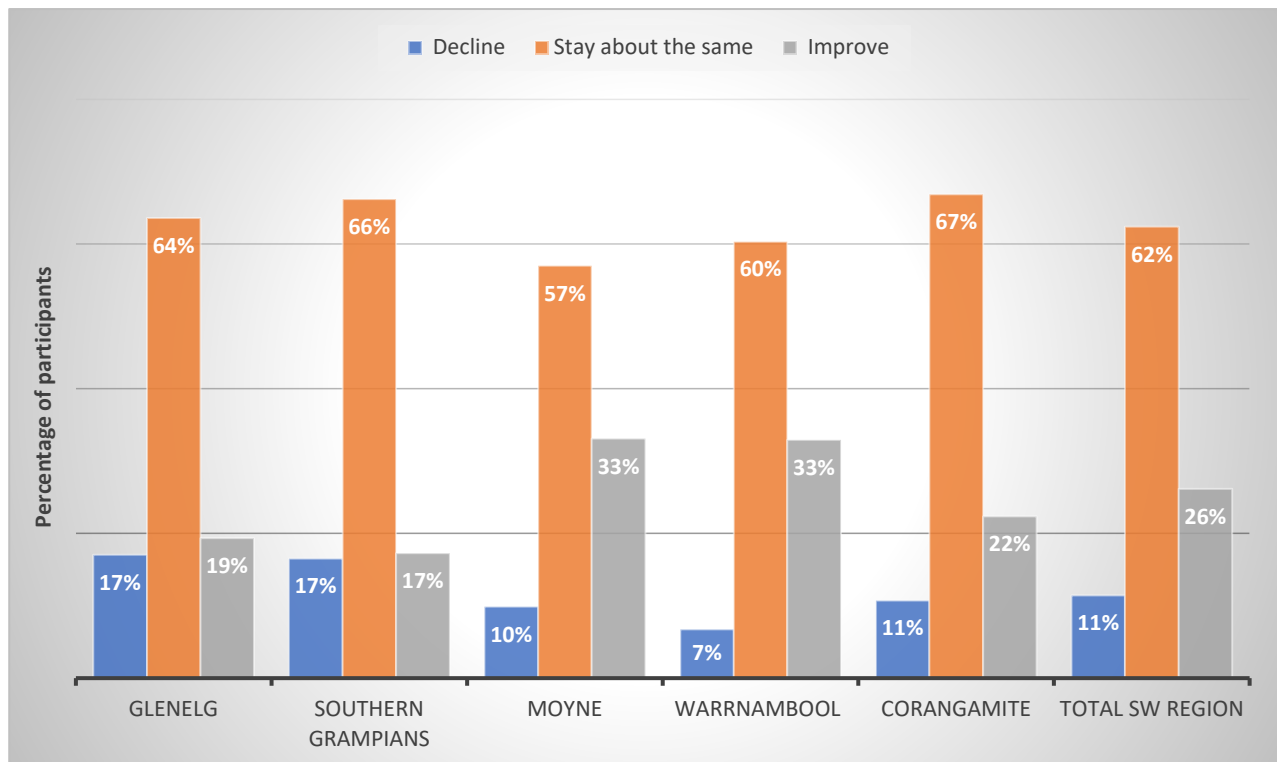
Note: the larger the percentage the more important the dimension to a sense of community wellbeing in that subregion

4 Expected future community wellbeing

Most people across the subregions of the SW region expected future community wellbeing to stay about the same in three years time (62% of residents), as shown in Figure 20. People were more positive in their outlook than negative across the region with twice as many people indicating they expected their community wellbeing would improve (26% of residents) than those who felt it would decline (11% of residents).

Warrnambool and Moyne residents indicated the most optimistic outlooks for their community, with fewest residents indicating they thought wellbeing would decline (7% and 10% respectively) and considerably more residents expecting wellbeing to improve (33% in each), when compared to the other subregions.

Figure 20 Expected future community wellbeing: By subregions, 2019



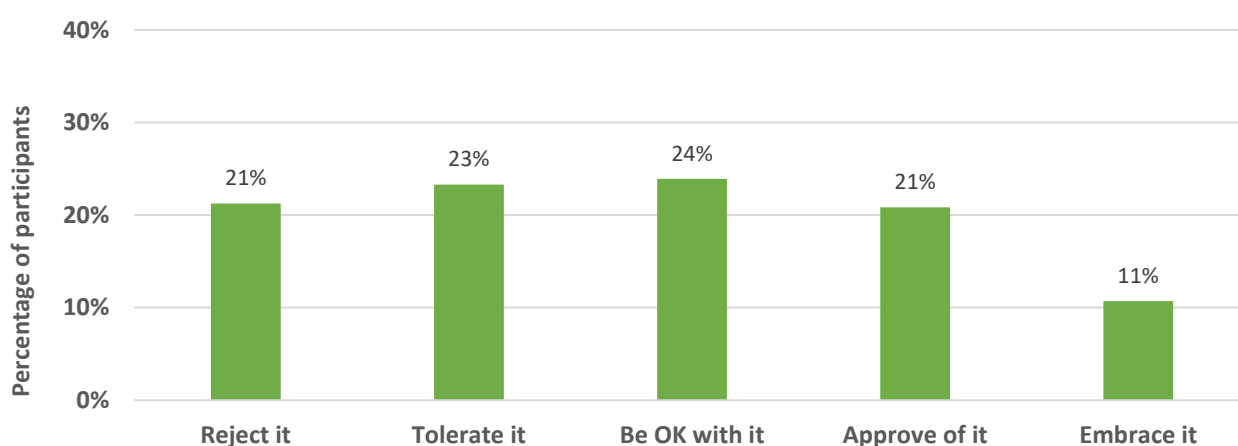
5 Attitudes and perceptions of onshore conventional gas development

5.1 Attitudes towards onshore conventional gas development

Attitudes towards onshore conventional gas development in the SW region ranged across a spectrum of views:

- 21% of people rejected onshore conventional gas development
- 11% of people embraced onshore conventional gas development
- 68% of people tolerated, would be ok with it, or approved of onshore conventional gas development
 - 23% would tolerate it
 - 24% would be ok with it
 - 21% would approve it

Figure 21 Attitudes towards onshore conventional gas development in the Otway Basin: Total SW region

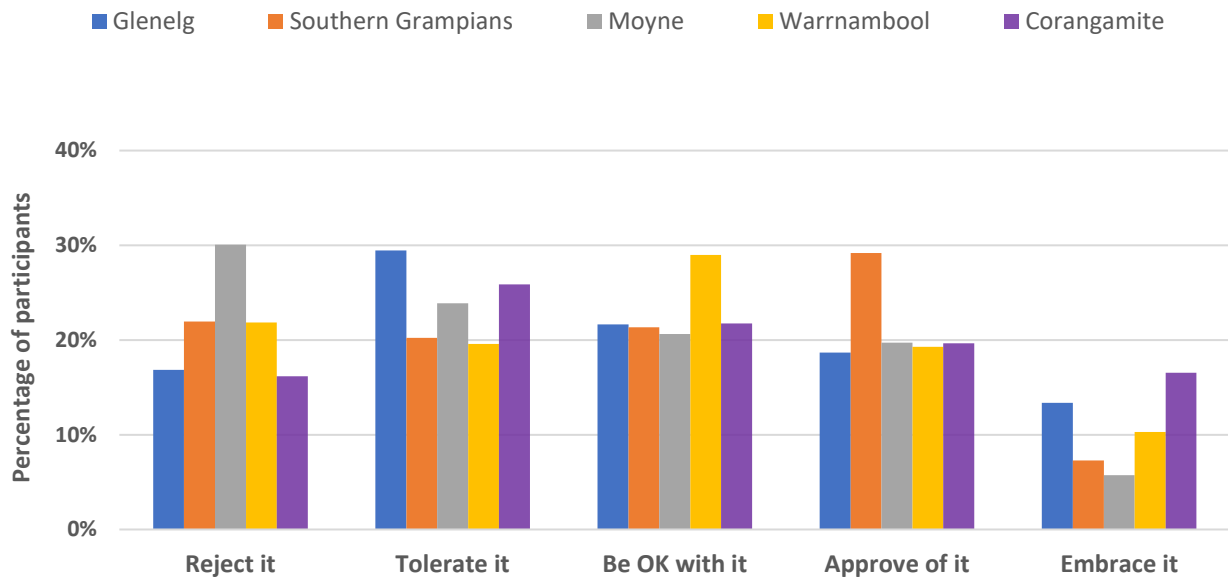


Note: Percentages rounded to the nearest whole percent

Differences among subregions

Figure 22 shows attitudes towards onshore conventional gas development demonstrated a similar range in views across the different subregions with most people in each of the subregions either tolerating, being ok with it, or approving gas development in the region. Even though the variations among the subregions were not statistically significant overall, it is useful to note residents in Moyne tended to be less favourable in their views. Of note is that 30% of Moyne residents indicated they would reject gas development, which is almost double that of Glenelg (17%) and Corangamite (16%). Correspondingly, there was a much higher proportion of residents who reported they would embrace onshore gas development in Corangamite (17%) and Glenelg (13%) than in Moyne (6%).

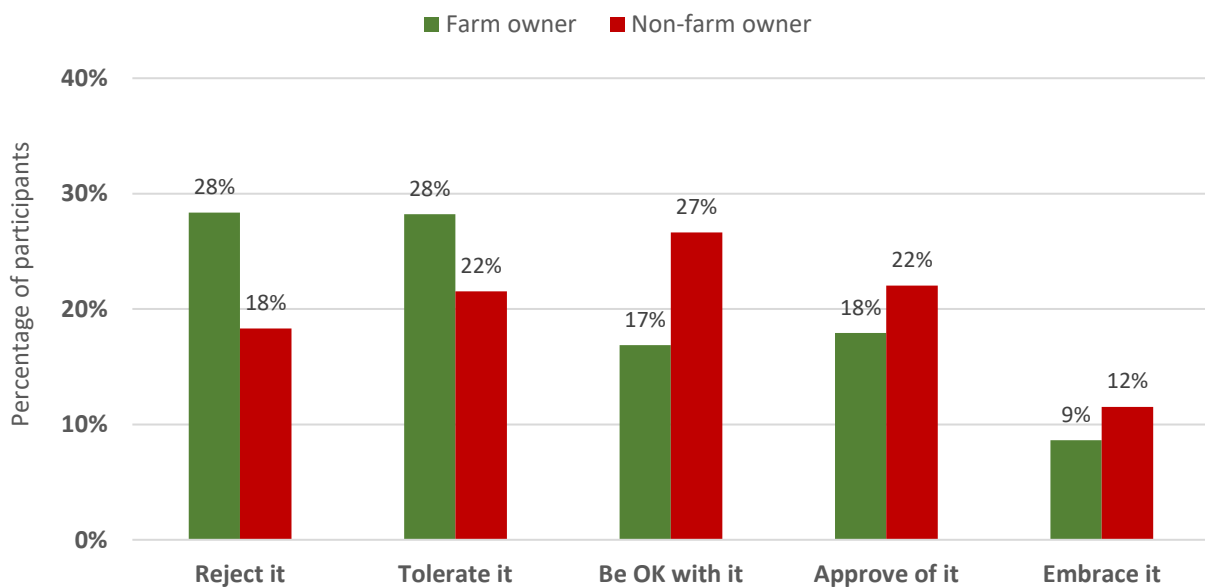
Figure 22 Attitudes towards onshore conventional gas development in the Otway Basin: By subregion, 2019



Differences between farm owners and non-farm owners

There were statistically significant differences between farm owners and non-farm owners in their attitudes towards onshore conventional gas development in the region. Figure 23 shows farm owners across the region held more negative views towards onshore conventional gas development than people who did not own a farm, with 28% rejecting it.

Figure 23 Attitudes towards onshore conventional gas development in the Otway Basin: By farm ownership, 2019



Differences in attitudes based on gender, education, and income levels

There were significant differences in attitudes towards onshore gas development based on gender with men demonstrating more positive attitudes than women across the SW region. Figure 24 shows a greater percentage of men (40%) either approved or embraced the idea of gas development compared to women (23%). On the other hand, more women tolerated the idea compared to men. Approximately equal percentages of men and women rejected onshore conventional gas.

Figure 25 shows significant differences in attitudes based on education levels with people who hold degrees tending to be more negative.

There were no significant differences in attitudes based on income levels.

Figure 24 Attitudes towards onshore conventional gas development in the Otway Basin: By gender, 2019

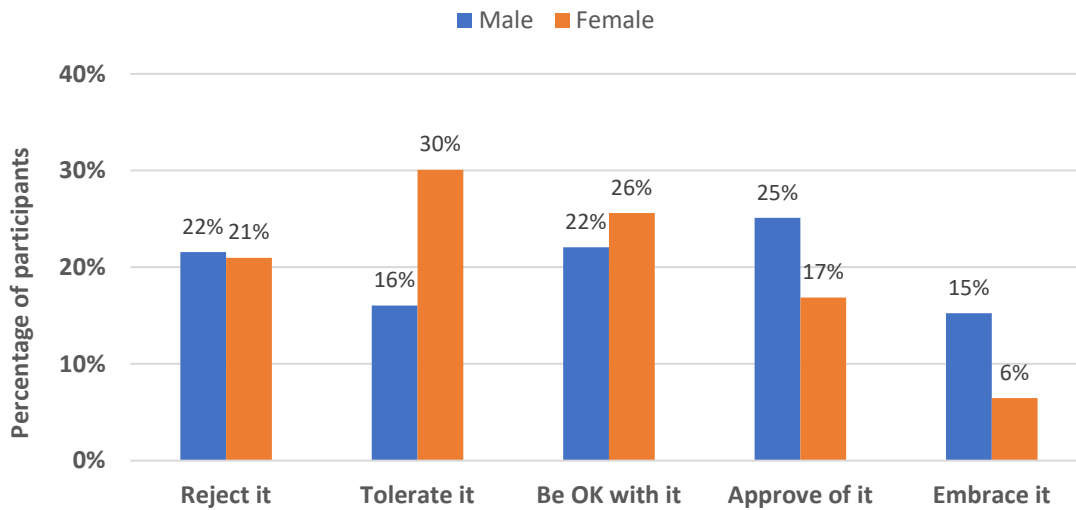
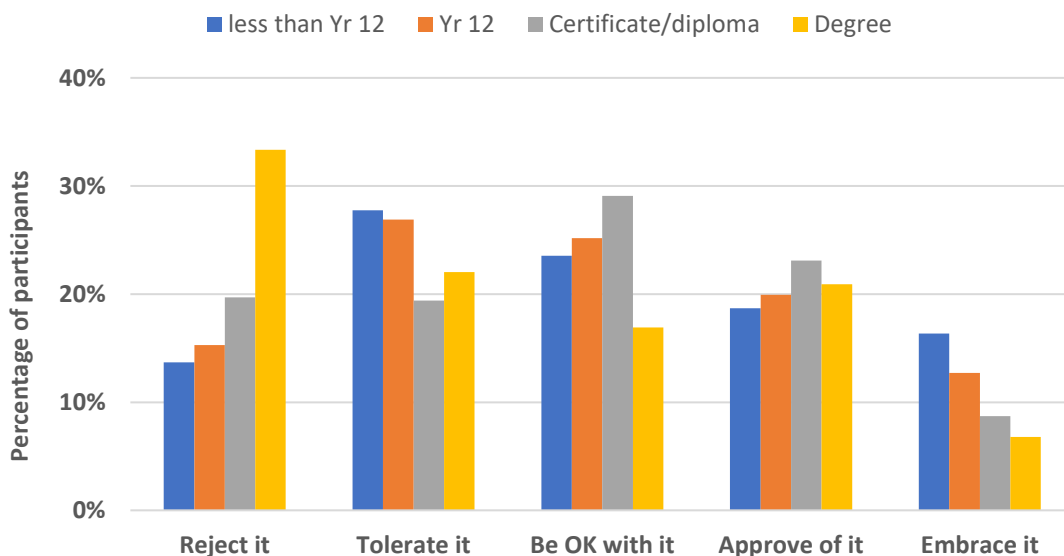


Figure 25 Attitudes towards onshore conventional gas development in the Otway Basin: By education level, 2019



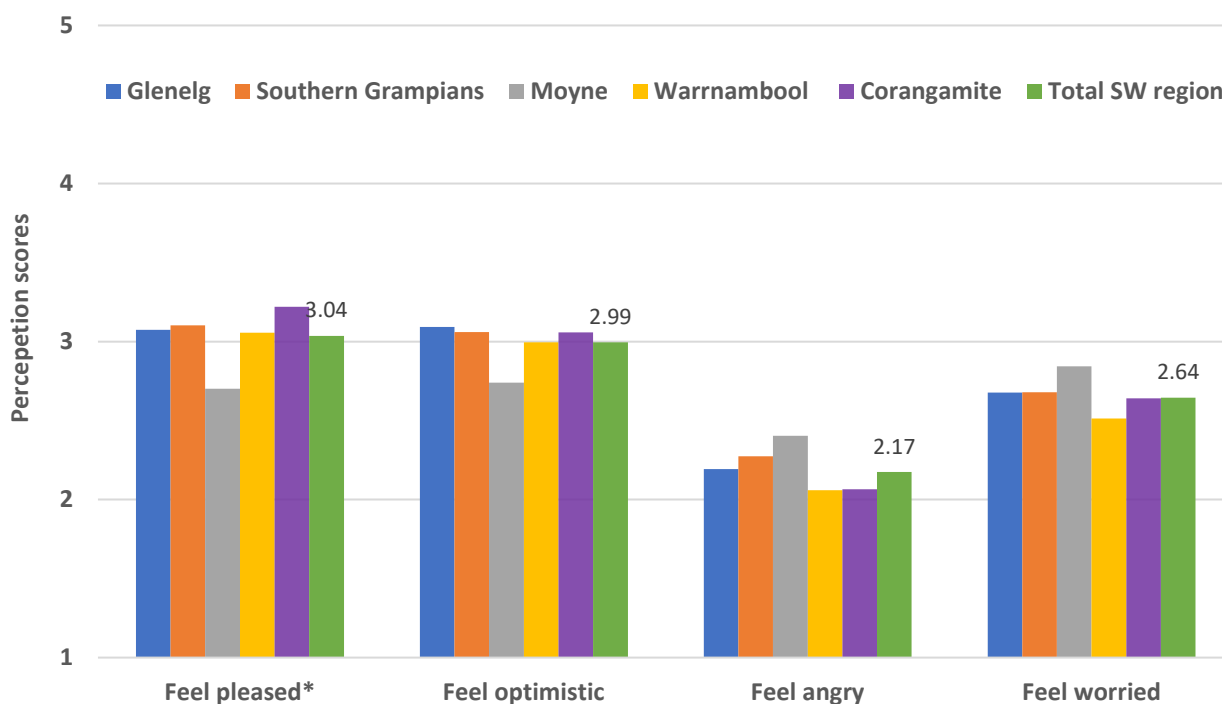
5.2 Feelings towards onshore conventional gas development

The survey measured both positive and negative feelings towards onshore gas development. Positive feelings included feeling optimistic and feeling pleased and negative feelings measured feeling angry and feeling worried.

Figure 26 shows residents had fairly neutral feelings on average towards onshore conventional gas development in their region. On average people were fairly neutral about feeling pleased ($M = 3.04$) or feeling optimistic ($M = 2.99$) towards development.

In terms of negative emotions across the region people did not report feeling worried on average ($M = 2.64$) and particularly did not feel angry on average ($M = 2.17$) towards onshore gas development. These levels of feelings were similar across the SW region except for Moyne residents who indicated statistically lower levels of feeling pleased about onshore gas development than the rest of the subregions.

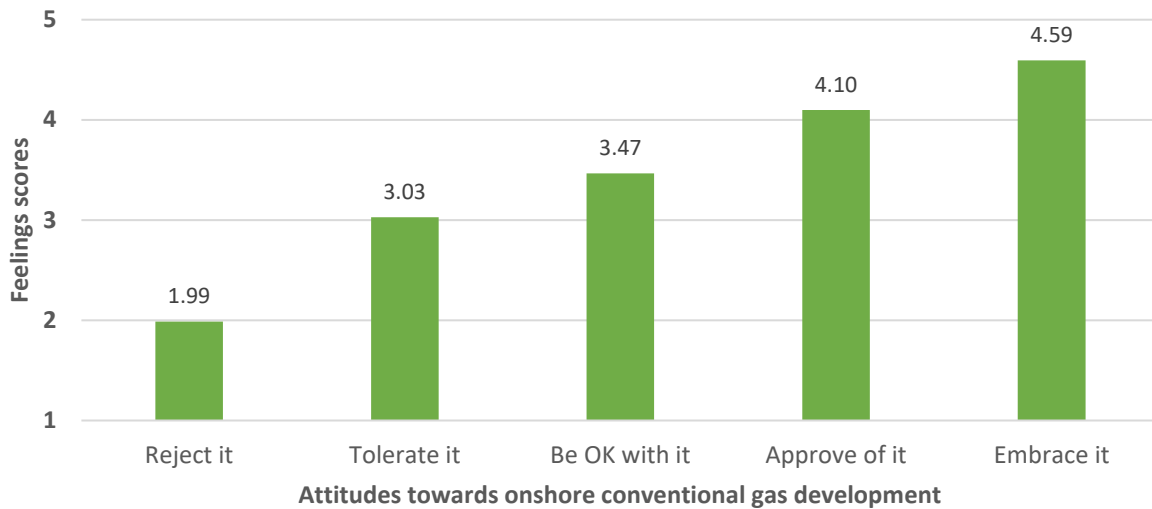
Figure 26 Feelings towards onshore conventional gas development in the Otway Basin: By subregion, 2019



Note: * statistical difference in mean scores between subregions

In terms of how these feelings correspond to different attitudes to onshore conventional gas development in the SW region, those rejecting it had clearly negative feelings toward such development. Those who would tolerate it had quite neutral feelings, while those who would be 'OK with it', approve of it, or embrace all had positive feelings toward onshore conventional gas development, as shown in Figure 27.

Figure 27 Feelings by attitude to onshore conventional gas development in the Otway: Total SW region, 2019

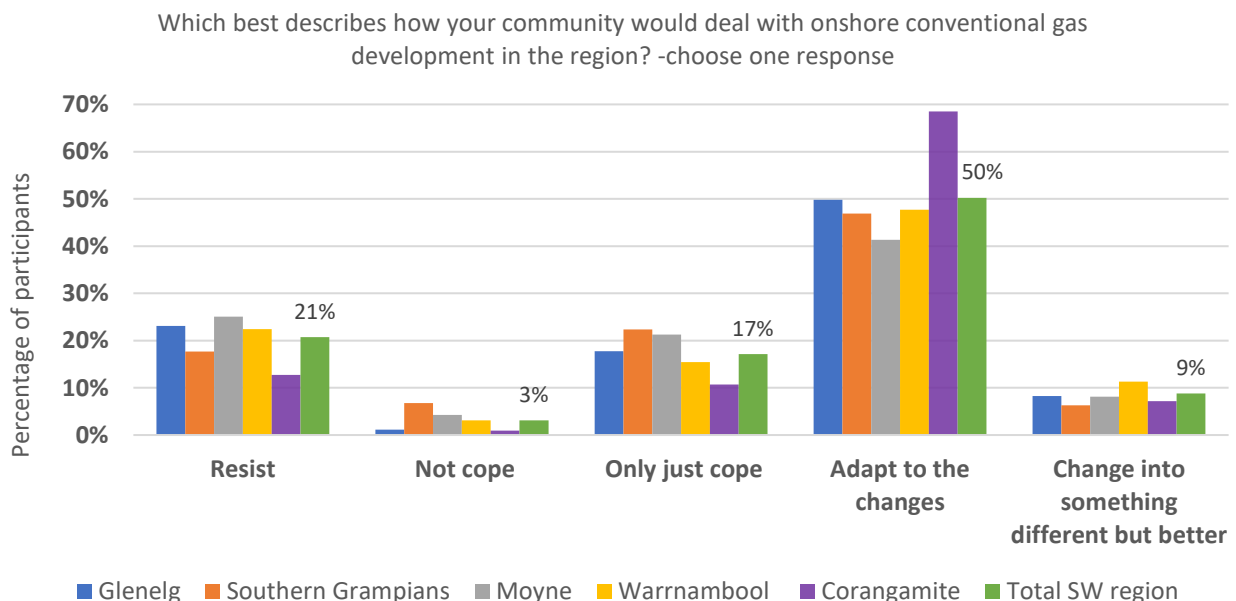


5.3 Adapting to onshore conventional gas development

Across the SW region, most people believed that their community would adapt to the changes associated with onshore conventional gas development (50% of residents) or transform into something different but better (9% of residents) as shown in Figure 28. In addition, one fifth of residents believed that their community would resist the changes (21% of residents), and another significant size group thought their community would only just cope with the changes (17% of residents). However, few people thought their community would not cope (3% of residents) with changes from onshore gas development.

Figure 28 also shows some variation across the SW region with Corangamite indicating the highest proportion of residents who believed their community would adapt to the changes (69% of residents) and the lowest percentage resisting it (13%).

Figure 28 Perceptions of community adapting to onshore gas development: By subregion



5.4 Perceptions about onshore conventional gas development and the sector

5.4.1 Summary of the underlying drivers

Previous research and interviews with stakeholders identified a range of issues that underpin people’s overall attitudes and feelings towards onshore conventional gas development. The survey asked approximately 90 questions related to these issues, which are grouped together into key themes or underlying drivers. For example, trust in the gas industry or perceptions of governance are each a key theme or underlying driver. Table 4 lists the underlying drivers of people’s attitudes towards onshore conventional gas development measured in the survey along with examples of items for each. It also includes additional measures of risk perceptions, information needs, and views about the government’s processes for handling onshore gas development.

Table 4 Underlying drivers and perceptions of onshore conventional gas development: Example items

UNDERLYING DRIVERS AND PERCEPTIONS	DESCRIPTION EXAMPLES OF ITEMS
PERCEIVED IMPACTS OVERALL	
- More immediate issues	Damage to underground water; air, dust, noise, and light pollution; a threat to ‘clean’ and ‘green’ image and tourism; reduces region’s visual attractiveness; impact on farm property values; increased traffic; community division; health impacts
- Possible future issues	Conventional gas contributing to climate change; integrity of gas wells over time (e.g. leaks)
Risk manageability	Risks have been identified; are understood by science; are manageable; can be alleviated as problems arise
Risk severity	Potential risks can adversely affect future generations; are potentially disastrous
PERCEIVED BENEFITS OVERALL	
- Local benefits	Local employment; local business opportunities; opportunities for young people to stay in region; corporate support for local communities; cheaper gas for local industries; cheaper gas for residents
- Regional and societal benefits	Improving energy security in the region; supporting the viability of big gas users; make the region more attractive to new businesses and industry; boosting the wider state economy
DISTRIBUTIONAL FAIRNESS	Fair to have onshore conventional gas development in the region if your local council was compensated accordingly; your community received a fair share of the benefits; if affected landholders were compensated fairly; if regional benefits outweigh any impacts
TRUST IN GAS COMPANY	Trust local gas companies to act responsibly; in local communities’ best interests; trust their capability; overall extent of trust
RELATIONSHIP QUALITY	Gas companies would be accessible or easy to contact; open, honest and transparent; engage in genuine two-way dialogue
PROCEDURAL FAIRNESS	Gas company would listen to and respect community opinions; inform residents of important developments
GOVERNANCE OVERALL	
- Formal governance	Legislation and regulation could be counted on to ensure companies did the right thing; government regulators would be able to hold companies accountable
- Engaging community	The local council would listen to and advocate for local communities about gas development; the EPA would listen to and respond to community concerns; state government would listen to and respond to community concerns.
- Working collaboratively	Government, communities, and gas companies can work together to address any problems; to maximise any benefits; share information, resources and learnings; proactively plan for future changes; manage any changes effectively
- Trust in state departments	Trust state departments and agencies overseeing onshore conventional gas development to act responsibly; in local communities’ best interests; trust their capability
Government processes for handling onshore conventional gas development	The state government is following good processes by placing a permanent ban on coal seam gas and fracking; introducing the moratorium on onshore conventional gas; conducting scientific research prior to exploration

ENERGY TRANSITION NARRATIVE	The role of gas in reducing carbon emissions; and transitioning to renewable energies
KNOWLEDGE	How much do you feel you know about the onshore conventional gas industry; how aware are you that hydraulic fracturing is permanently banned in Victoria; not needed to extract conventional gas; that one or two conventional gas wells can produce large volumes of gas; about the differences between conventional and unconventional gas
Need for more information	How much more information do you feel you need about onshore conventional gas development

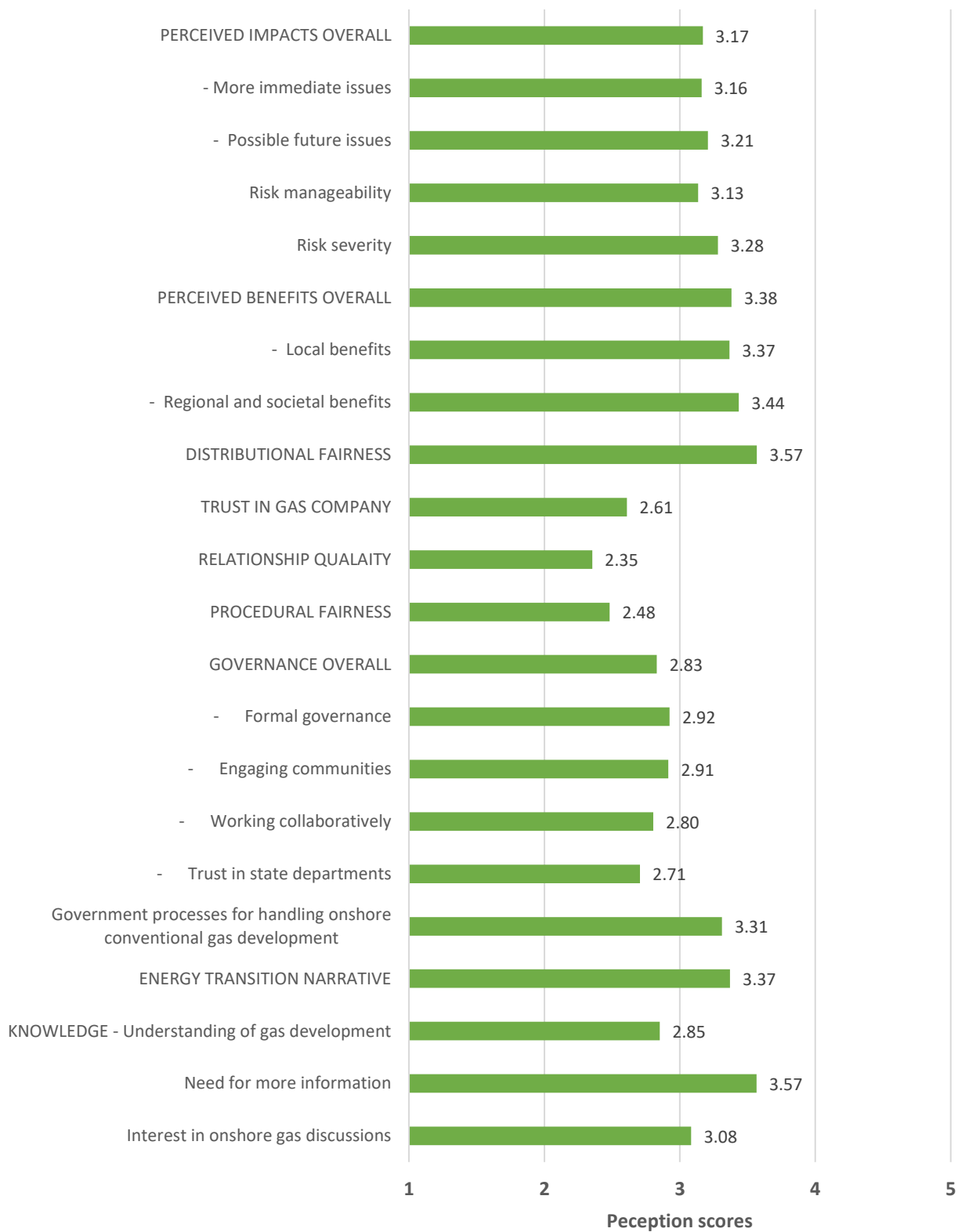
Note: Uppercase indicates the underlying drivers of people’s attitudes towards onshore conventional gas development used in the model of social acceptance described in section 5.5.

5.4.2 Perceptions of the underlying drivers: A summary

Figure 29 shows the level of each of these underlying drivers for the SW region and includes some additional perception scores about risk and information needs. A more detailed analysis of each key driver is found in Section 6, which allows the reader to more deeply engage with each of the concepts and gain a more specific understanding of the driver. The main points are summarised as follows:

- Concerns about impacts overall were not overly high ($M = 3.17$) with similar levels of concern about immediate issues, such as impacts on water and the community, as more future oriented concerns, for example the integrity of gas wells over time. People perceived the severity of risks to be moderate ($M = 3.28$) but only had modest confidence that risks could be managed ($M = 3.13$).
- Potential benefits from onshore gas development were perceived favourably ($M = 3.38$). Residents viewed local benefits and wider regional and societal benefits similarly.
- Distributional fairness scores were also moderately good ($M = 3.57$) indicating that people thought it fair on average provided landowners were compensated fairly and that benefits outweighed the impacts.
- Perceptions of trust in gas companies were limited ($M = 2.61$) on average across the SW region, and views about how the gas company would treat locals (relationship quality and procedural fairness) were unfavourable, indicating low expectations that the community would be treated fairly or that the gas companies would be genuine in their interactions.
- Perceptions of governance and confidence in government to hold companies to account through regulation was marginal ($M = 2.92$). Similarly, expectations that government would engage with communities about gas was borderline with limited trust in government and the ability of communities, gas companies, local councils and state government to be able to collaboratively work together to solve issues.
- Knowledge levels about onshore conventional gas development and an understanding of the differences between conventional and unconventional gas was limited ($M = 2.85$) with people indicating a need for more information ($M = 3.57$).
- People had a favourable view of the government’s processes for dealing with onshore gas development in terms of the moratorium and undertaking the science first ($M = 3.31$). People also indicated they had a favourable view on average about the broader role of gas in the future energy mix in terms of replacing coal and transitioning to renewable energies ($M = 3.37$).

Figure 29 Perceptions of onshore conventional gas development: Summary, total SW region, 2019



Note: Scores: 1 = lowest and 5 = highest perception; scores < 3 indicate unfavourable perceptions except perceived impacts where the higher the score the greater the concern

Differences among subregions

Perceptions differed among the subregions on three of the underlying drivers. Residents from Warrnambool were statistically less likely to think that communities, local councils, state government and gas companies could work collaboratively or that government including local government would engage with communities to keep them informed about gas development. In contrast, Corangamite reported statistically higher perceptions that government would engage well with communities than the rest of the SW region. Corangamite residents also held statistically higher perceptions of trust in gas companies. Appendix F details the scores for these differences.

Differences between farm owners and non-farm owners

There were also differences in the perception of the underlying drivers between farm owners and those who didn't own a farm. Farm owners perceived the risks to be less manageable, the benefits to be lower (both locally and for the wider region), lower levels of fairness in how benefits and impacts would be shared, and lower levels of trust in state departments to govern onshore conventional gas development. On the other hand, farm owners reported statistically higher levels of knowledge and understanding about gas development. However, farm owners' overall attitudes and feelings toward onshore conventional gas development were statistically less favourable than non-farm owners. Appendix F details the scores for these differences.

5.5 Model of social acceptance: A framework for explaining trust and social acceptance of onshore conventional gas development

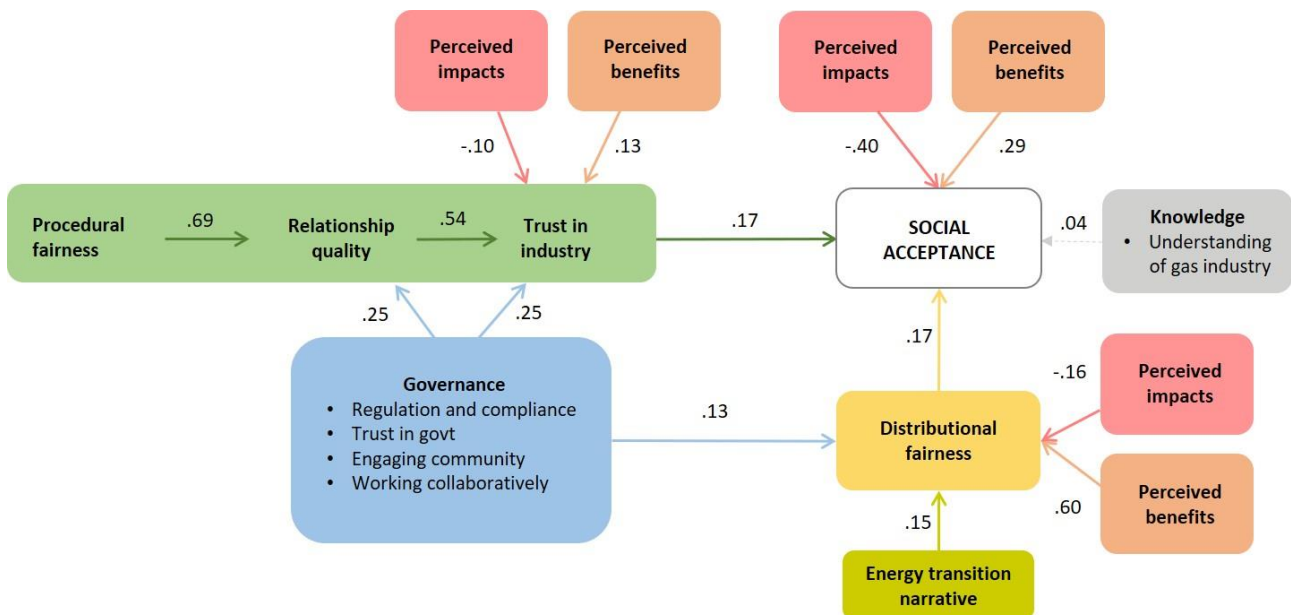
By using the results for each of the underlying drivers described in Table 4, statistical modelling shows how each of these key factors work together to shape people’s overall attitude and feelings or social acceptance of onshore conventional gas development. The model displayed in Figure 30 also shows how these factors contribute to trust in the industry and a sense of fairness in how people perceive costs and benefits would be shared if gas development were to proceed.

5.5.1 How the model works

The model uses arrows to show the relationships among the different drivers and numbers on the arrows to show the relative importance of each of the drivers. Looking at the size of the numbers on the arrows gives an indication of the size of a factor’s importance in determining the perception of the factor that the arrow is pointing to. This means the larger the number the more important the factor.

The relationships between all these factors were positive except for perceived impacts, which demonstrated negative relationships (shown by a negative sign on the number). A positive relationship means that when a person perceives one factor to be high, they are more likely to perceive the corresponding factor to also be high. In contrast, a negative relationship means that when a person perceives one factor to be high, they are more likely to perceive the other factor to be low.

Figure 30 The CSIRO model of social acceptance of onshore conventional gas development: Otway Basin, 2019



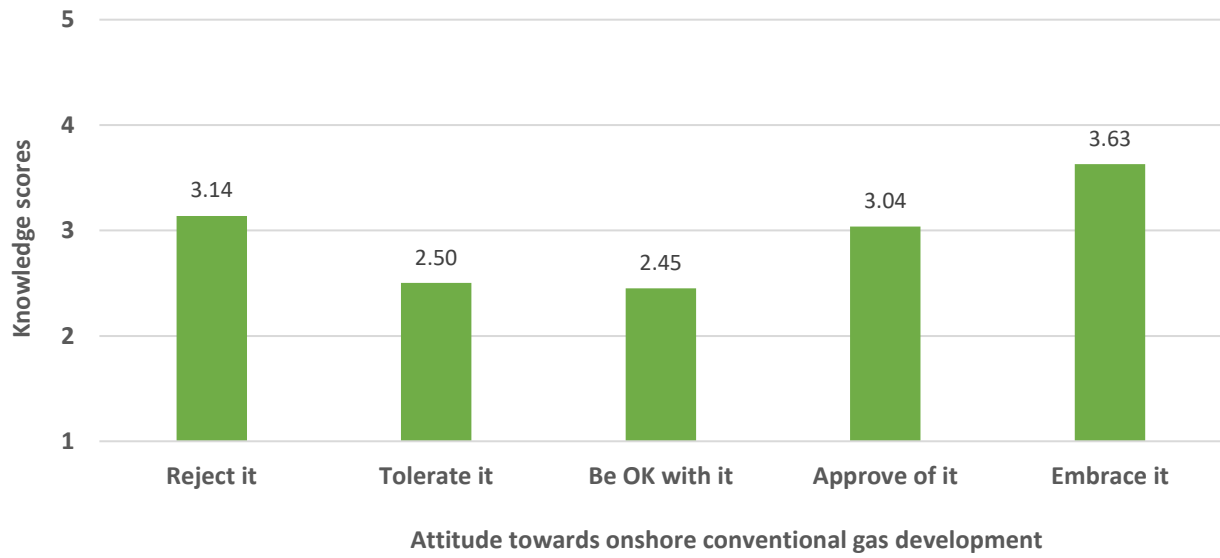
5.5.2 Results of the model: A summary

Analysis shows the model works extremely well to explain social acceptance of onshore conventional gas development in the Otway Basin (explaining 70% of individual variation in social acceptance). Some of the key points are as follows:

- **Perceived impacts** and **benefits** both act directly on acceptance to directly influence people's level of acceptance.
 - Perceived impacts is the main direct driver of acceptance or lack thereof.
- **Perceived impacts** and **benefits** also act indirectly to influence acceptance by shaping trust in the industry and perceptions of distributional fairness.
 - This means perceived impacts and benefits contribute to people's perceptions of how much they trust the onshore conventional gas industry and how much they believe it is fair in terms of how costs and benefits would be distributed and shared.
- Perceptions of **trust in the industry** are largely determined by the quality of the relationship industry has with community and the procedural fairness by which they would treat their community.
 - Good governance is also important for building trust.
- Good **governance** of the industry not only supports trust in industry but also beliefs about distributional fairness.
 - This means compliance, regulations, planning, collaborating, engaging with communities, and trust in gas governing bodies all shape people's views of how much they trust industry and how fair they believe gas development would be for their community.
- Perceptions of **distributional fairness** are important factors that directly influence acceptance
 - Benefits are over three times as important as impacts in driving a sense of fairness.
 - The narrative around the role of onshore conventional gas and what it plays in Victoria's transition to renewable energy sources is also important for determining perceptions of fairness. The more people believe there is a greater need for gas in the energy mix the more they factor this point into weighing up the fairness of costs and benefits.
- People's **knowledge and understanding** of the industry has a small influence on acceptance.
 - The influence of knowledge is not straightforward. It depends on beliefs about risk manageability and helps to shape people's level of concerns about impacts, which in turn affects attitudes about onshore conventional gas development. Knowledge only decreases concerns when perceived risks are perceived as manageable.
 - Knowledge also has a non-linear relationship with attitudes about onshore conventional gas development. This means that low levels of knowledge do not correspond to the least favourable views about gas development. Rather, as Figure 31 shows, the relationship is a U-shape with the lowest levels of knowledge corresponding to the lukewarm attitudes. Both people who reject gas development and those who approve it have higher levels of knowledge and understanding, while the highest level of knowledge is associated with those people who embrace gas development. Regardless, the level of knowledge and

understanding was either low or borderline except for those who embrace gas, which was moderate.

Figure 31 Knowledge scores for each attitude group: Otway Basin, 2019



6 Deeper dive into the underlying drivers of social acceptance

6.1 Possible industry effects: Concerns, risks, and benefits

6.1.1 Perceived impacts

The greatest concerns about possible impacts of onshore conventional gas development in the Otway Basin was the potential for community division over any development ($M = 3.51$) and the possible unfair treatment of farmers ($M = 3.46$), both of which were higher than concerns for damage to underground water ($M = 3.38$). The levels of these concerns were modest. There were borderline levels of concerns with effects such as health impacts ($M = 3.04$) and dust and noise pollution ($M = 3.05$). On average across the SW region, people were not greatly concerned about the impact of onshore conventional gas development on the region’s visual attractiveness ($M = 2.92$) nor a threat to the region’s tourism ($M = 2.80$).

Figure 32 and Figure 33 show some variation in these level of concerns across the subregions though in most cases these differences were not statistically different, meaning that the subregions had similar levels of concern. The exceptions were Corangamite residents indicating the lowest level of concerns about contamination of the air from gas development, and Glenelg the lowest level of concern about community division over gas development.

When it comes to concerns about future issues there was a moderate level of concern across the SW region about maintaining the integrity of gas wells over time ($M = 3.35$) though not as much concern on average about onshore conventional gas contributing to climate change ($M = 3.05$).

Appendix E details the perception score for each item of perceived impacts by subregion.

Figure 32 Perceived future issues from onshore conventional gas development in Otway Basin: By subregion, 2019

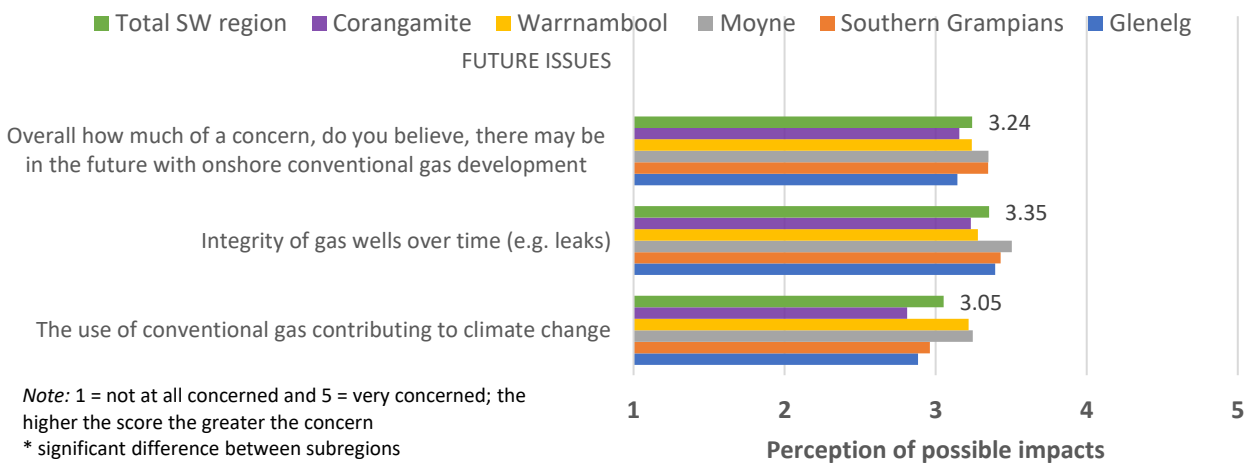
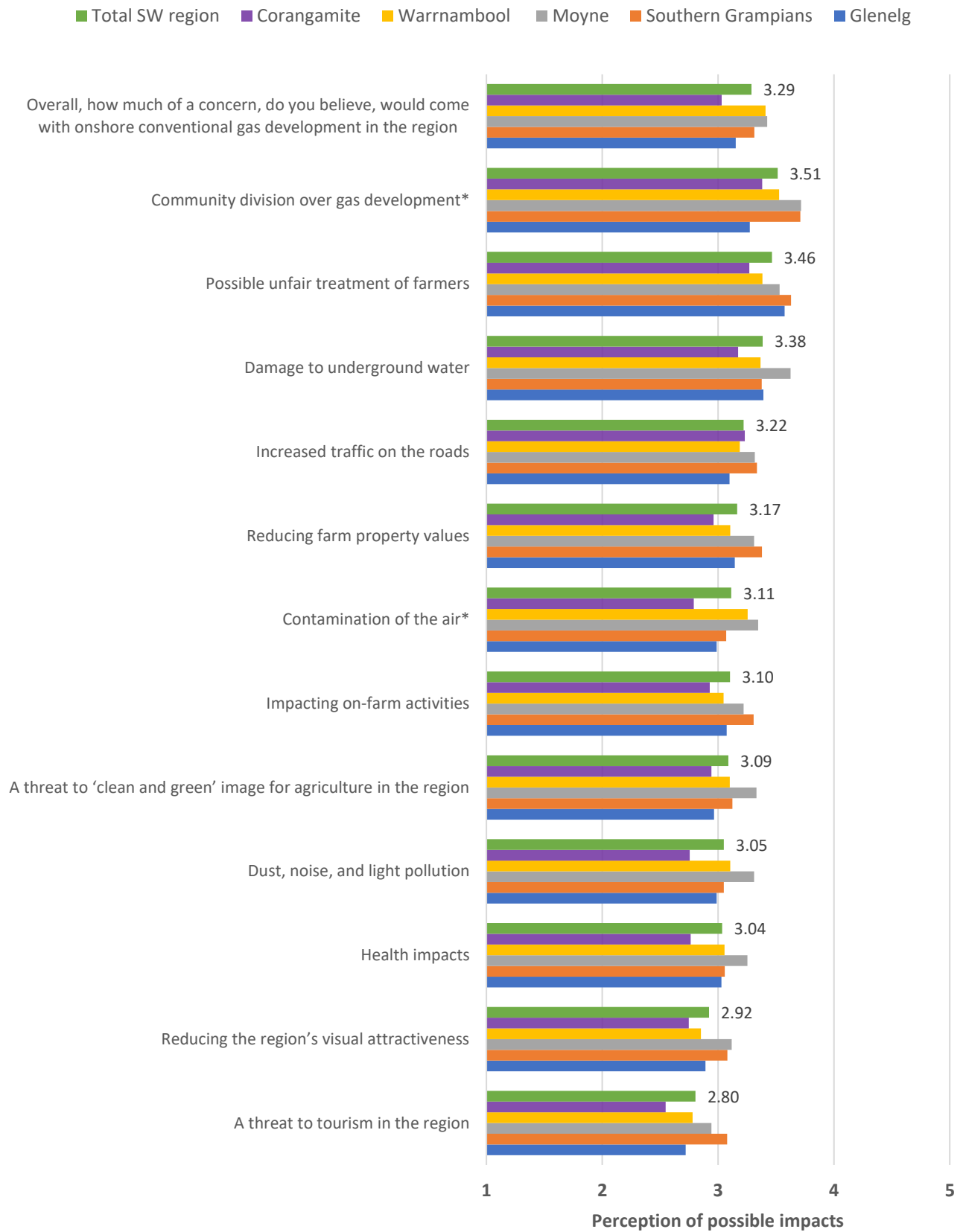


Figure 33 Perceived impacts of onshore conventional gas development in the Otway Basin: By subregion, 2019



Note: 1 = not at all concerned and 5 = very concerned; the higher the score the greater the concern

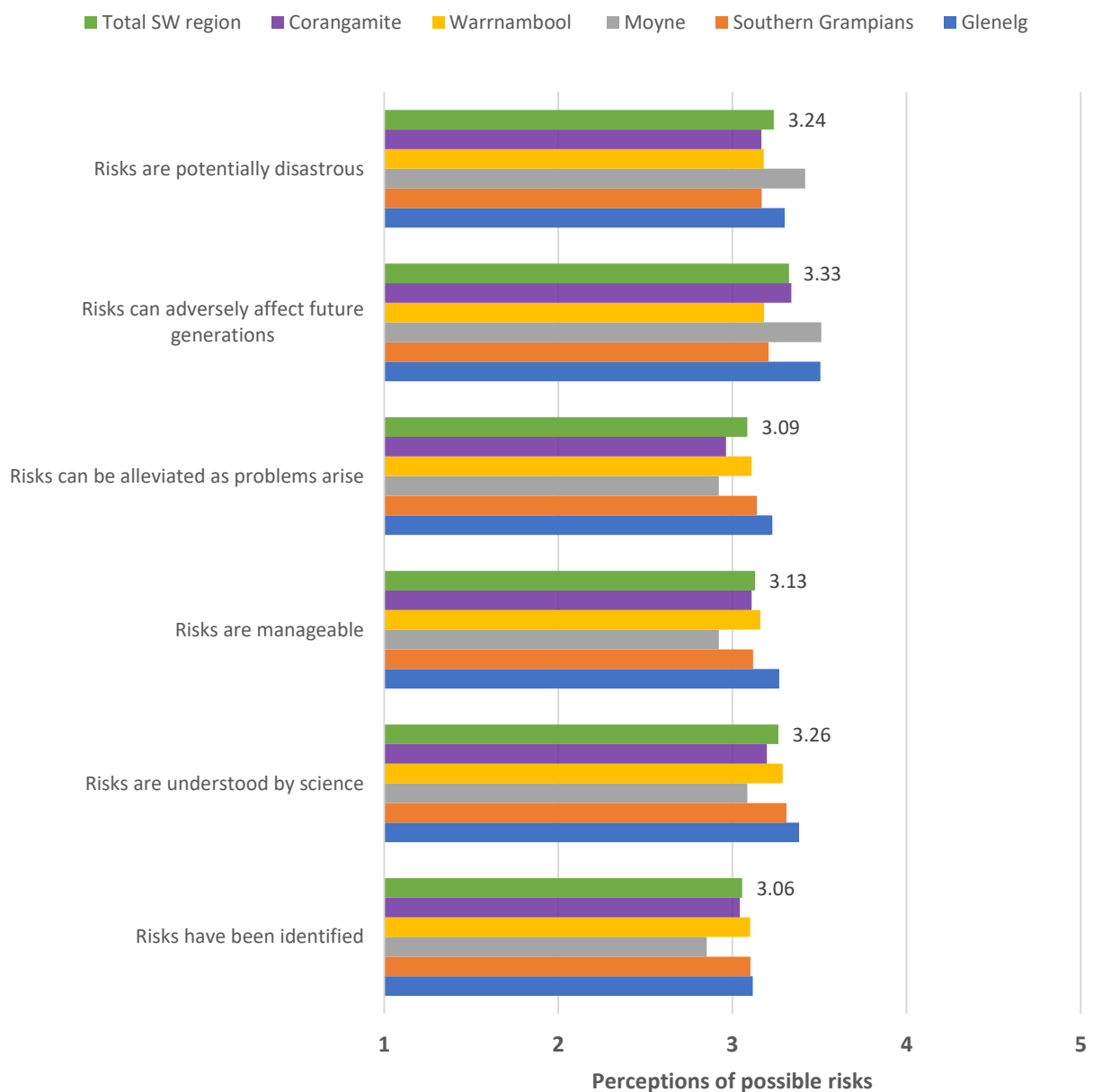
* significant difference between subregions

6.1.2 Perceived risk

Although perceived risk severity was not viewed as high on average, neither was it viewed as that manageable. Figure 34 shows residents agreed that there was a risk of possible adverse effects affecting future generations ($M = 3.33$). They perceived the risks as just manageable on average ($M = 3.13$), and somewhat understood by science ($M = 3.26$). They also reported borderline levels of agreement that the risks associated with onshore conventional gas have been identified ($M = 3.06$) and that risks can be alleviated as problems arise ($M = 3.09$).

Figure 34 also shows these views were similar across the SW region with no statistical differences in risk perceptions among the subregions.

Figure 34 Perceptions of risk from onshore conventional gas development: By subregion, 2019



Note: 1 = Strongly disagree and 5 = Strongly agree
 * significant difference between subregions

6.1.3 Perceived benefits

Perceptions of benefits from onshore conventional gas development were moderately favourable with people perceiving local benefits and wider regional and state benefits similarly. People perceived the boost to the state economy ($M = 3.53$), the corporate support that may come from gas companies to local communities ($M = 3.59$) and the local employment opportunities ($M = 3.55$) as the three most positive benefits. On the other hand, there was only modest agreement that onshore gas development would provide cheaper gas for local industries ($M = 3.12$) and for local residents ($M = 3.06$).

Figure 35 and Figure 36 show variations across the SW region in how people perceived potential benefits from onshore conventional gas development; however, these differences were not statistically different. This means the subregions essentially viewed benefits from gas development similarly.

Figure 35 Perceived local benefits from onshore conventional gas development in Otway Basin: By subregion, 2019

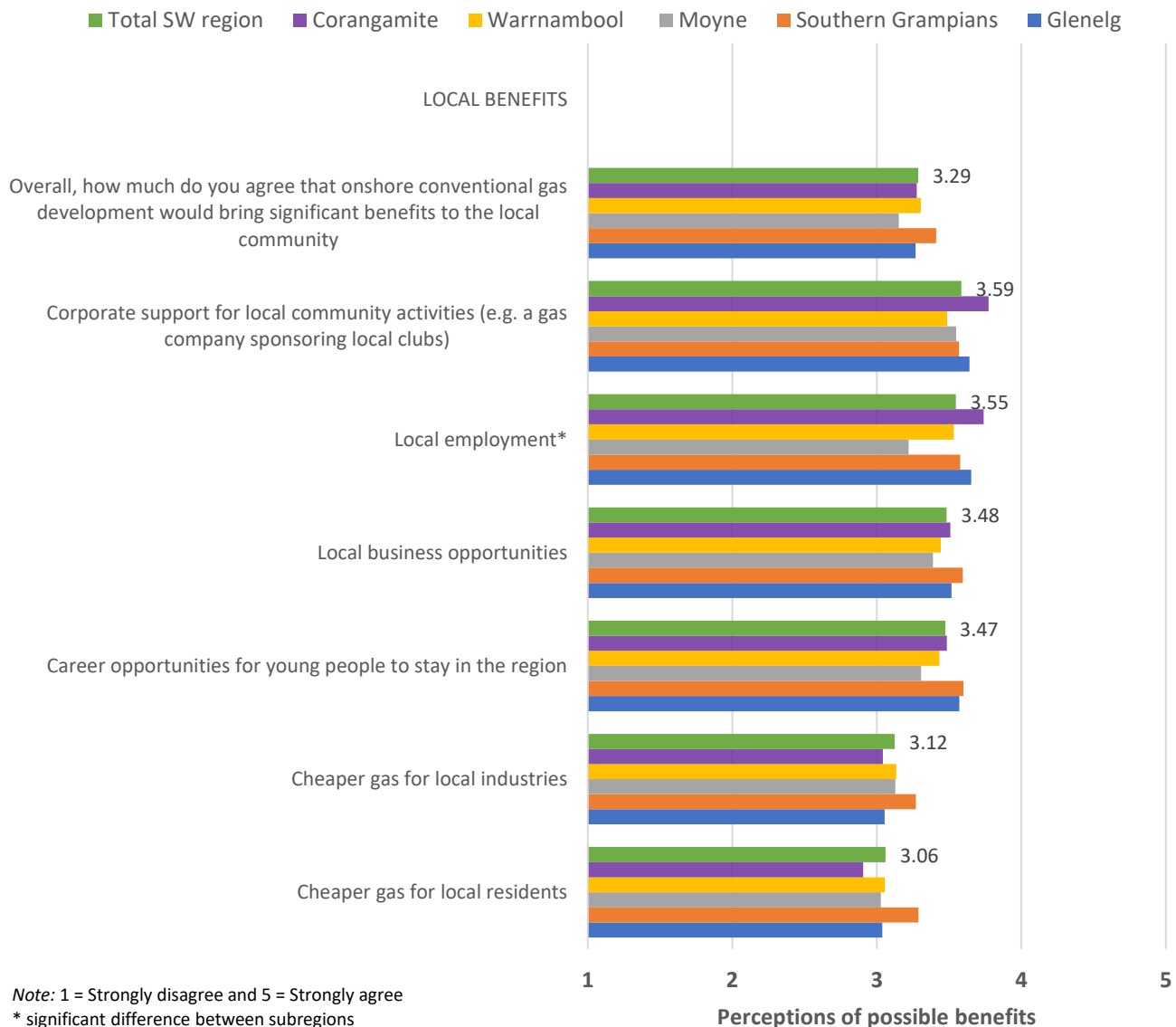
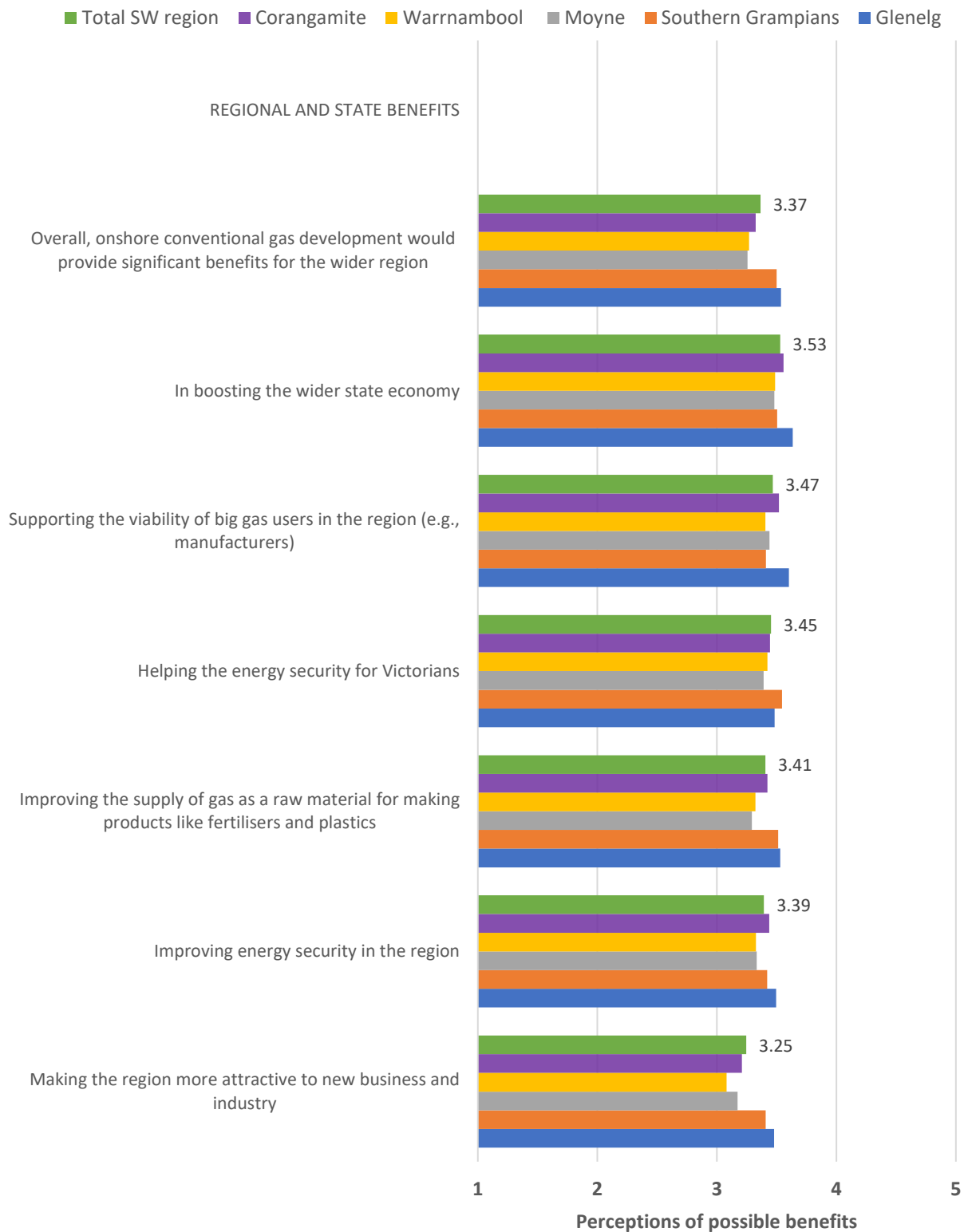


Figure 36 Perceived regional and state benefits from onshore conventional gas development in the Otway Basin: By subregion, 2019

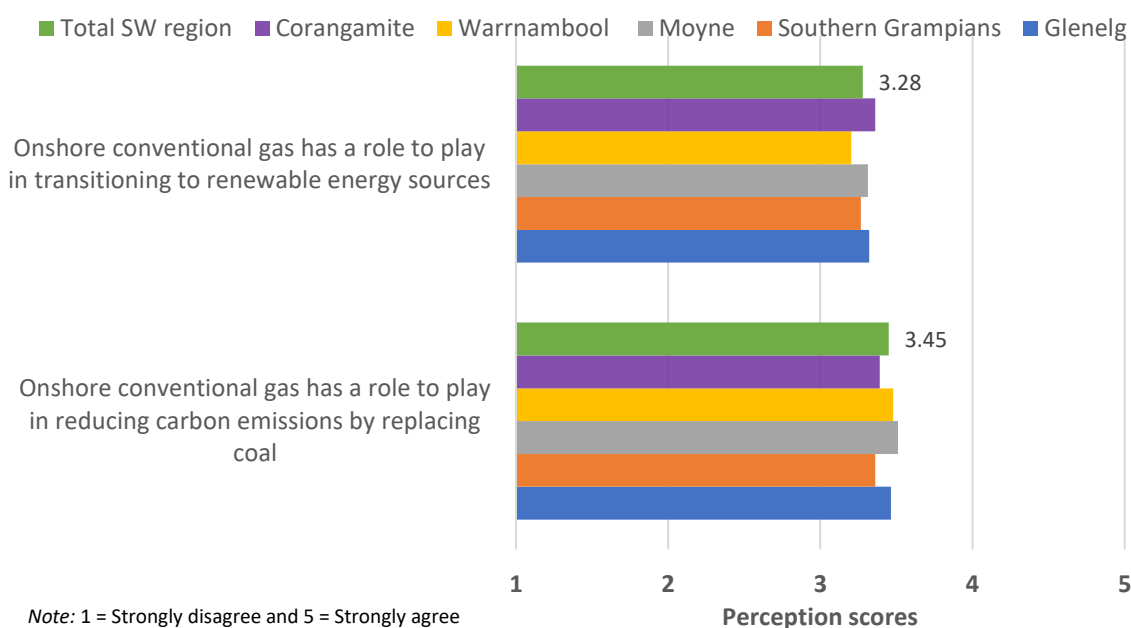


Note: 1 = Strongly disagree and 5 = Strongly agree
 * significant difference between subregions

The role of gas more broadly: the energy transition narrative

People viewed the role gas has to play in the energy transition differently from other benefits. Across the SW region residents on average were positive about the role onshore conventional gas has to play in transitioning to renewable energy ($M = 3.28$) and more so about the role it has to play in reducing carbon emissions through the replacement of coal ($M = 3.45$), as shown in Figure 37.

Figure 37 Perceptions of the role of onshore conventional gas in the energy transition

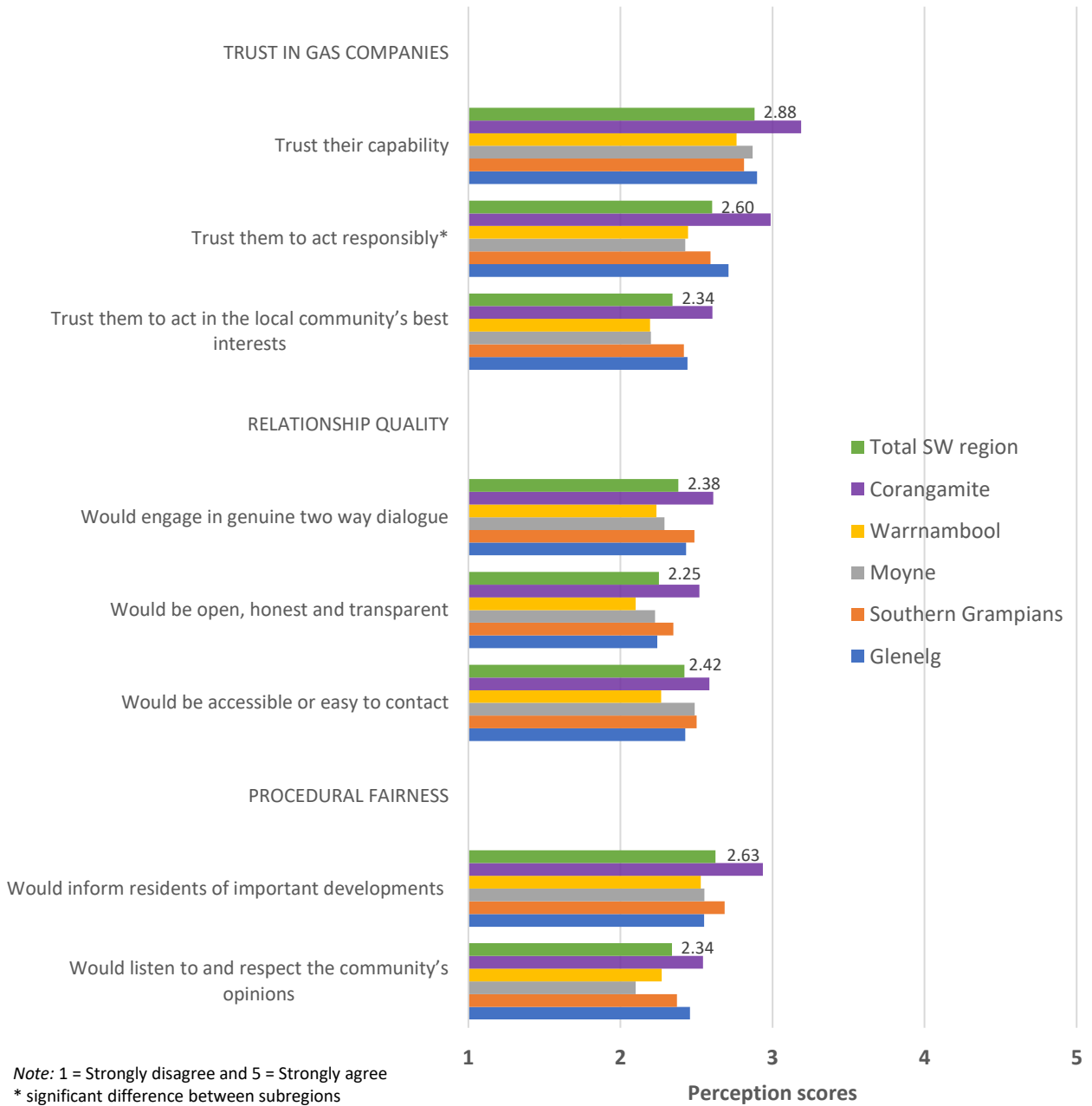


6.2 Industry and community relationship: Trust in industry, relationship quality and fairness

Results showed trust in gas companies was limited with people having the most trust in the gas companies' capabilities and the least trust in their preparedness to act in communities' best interests. Corangamite residents showed higher levels of trust in gas companies to act responsibly than the other subregions.

Figure 38 also shows expectations were low across the SW region that gas companies would engage with them in a genuine, open, and transparent way or that the companies would be very accessible or easy to contact. Residents held slightly more positive views that gas companies would keep them informed of important developments. These views were similar across the region.

Figure 38 Perceptions of trust in industry, relationship quality, and procedural fairness: By subregion, 2019



6.3 Governance: Trust in government, regulations, engaging and working with the community

Confidence in formal governance such as legislation and regulation and the respective governing authorities to hold gas companies to account was borderline on average across the SW region. Figure 40 shows, people felt more positive that local council would listen and advocate on their behalf (though this was statistically lower for Warrnambool) and that government regulators would listen to and respond to community concerns. Trust in state departments to act in the community’s best interest was low across the SW region.

Figure 40 shows some significant differences among the subregions with Glenelg and Corangamite tending to show more positive perceptions of governance and Warrnambool lower levels on some measures. Warrnambool residents particularly showed a lack of confidence that communities, local and state government, and gas companies could work collaboratively to plan and manage changes.

However, Figure 39 shows people were more favourable of the state government’s processes for dealing with onshore gas development in terms of the moratorium and undertaking the science first.

Figure 39 Perceptions of government’s handling of onshore conventional gas development

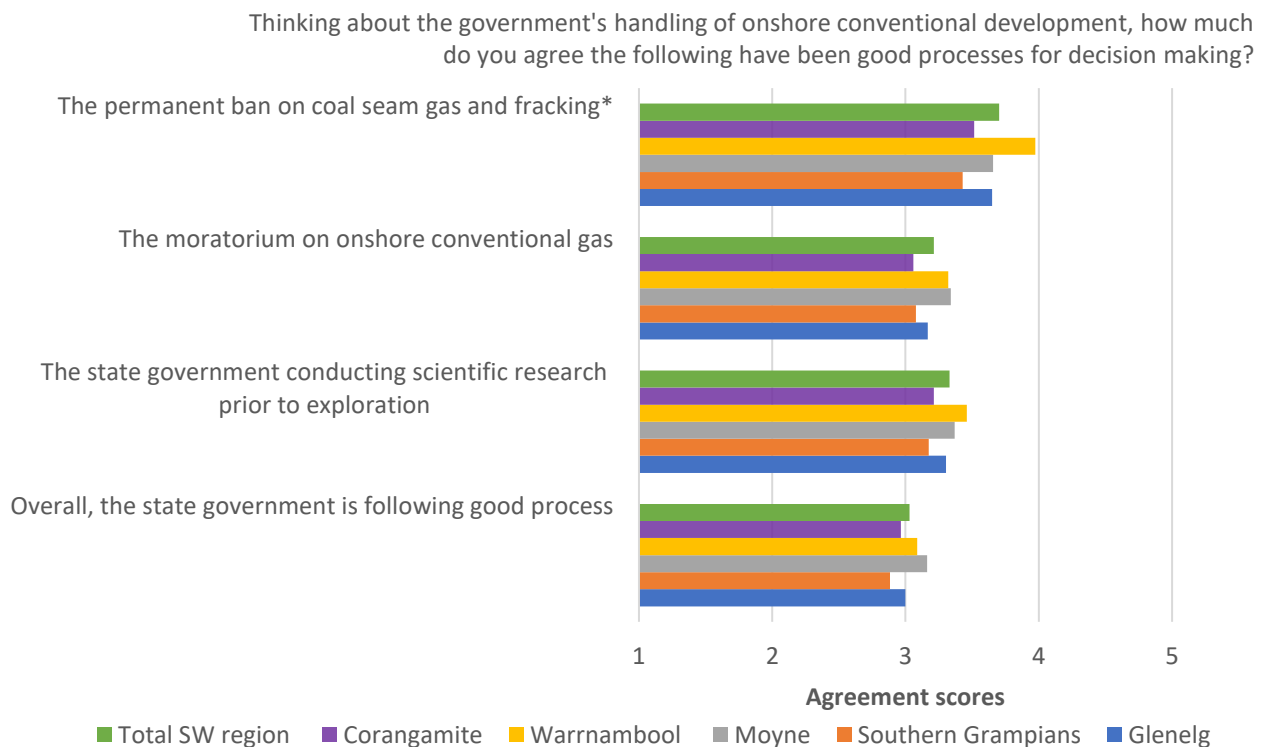
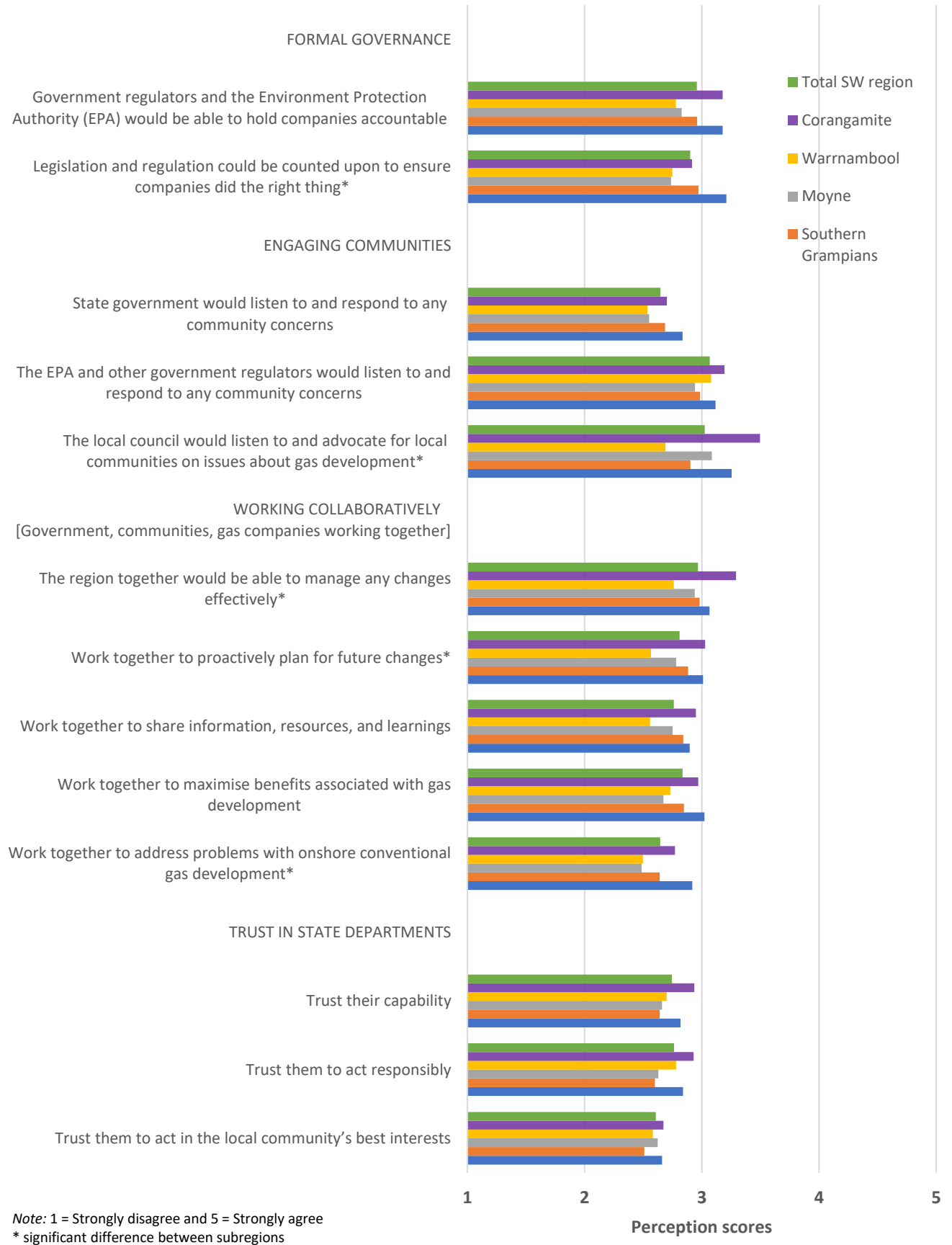


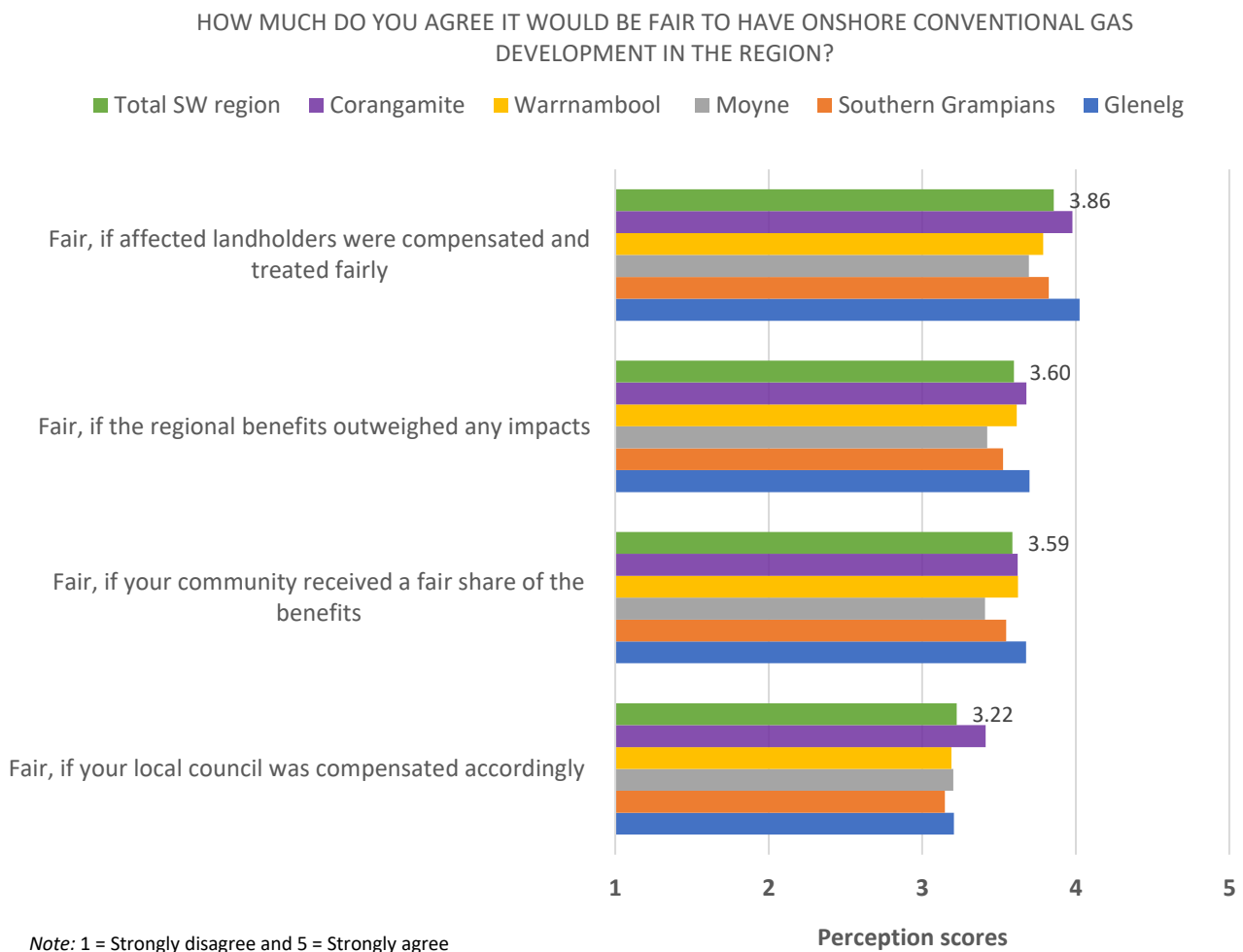
Figure 40 Perceptions of formal governance, informal governance, and trust in government: By subregion, 2019



6.4 Distributional fairness: Sharing costs and benefits

Figure 41 shows that residents agreed that it was very important to compensate affected landholders fairly if onshore conventional gas development in the region were to occur. When given the option of the local council being compensated accordingly, residents only indicated modest views that this was necessary for a fair outcome; however, it was important for the region and community to receive a fair share of the benefits. There were no statistical differences among the subregions.

Figure 41 Perceptions of distributional fairness to have onshore gas development in the region: By subregions, 2019



6.5 Knowledge and information

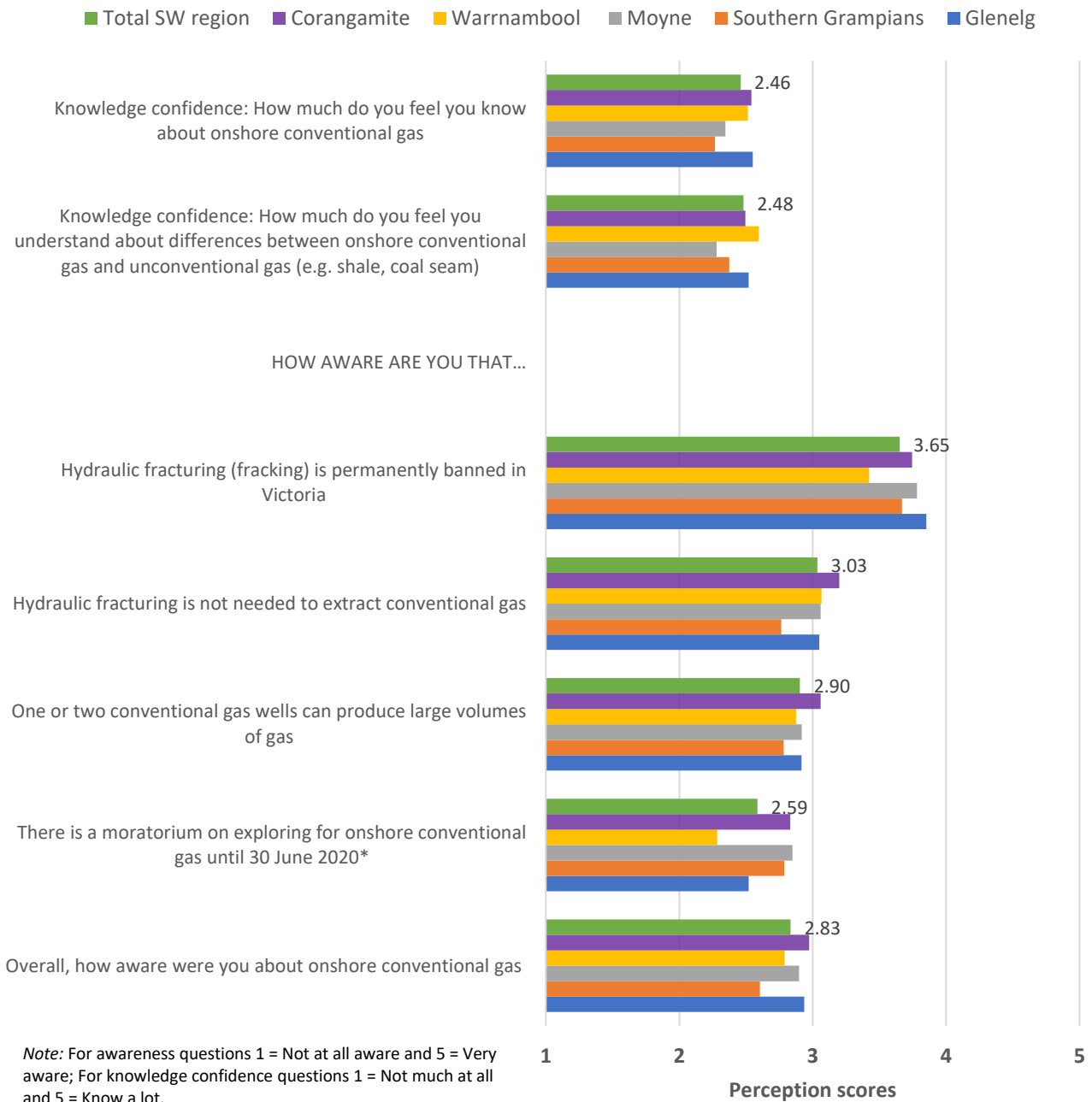
6.5.1 Knowledge confidence and awareness

Figure 42 shows residents across the SW region had low levels of confidence in their knowledge when it comes to how much they feel they know about onshore conventional gas development

($M = 2.46$). They also had low confidence in understanding differences between conventional and unconventional gas development ($M = 2.48$).

Residents indicated borderline levels of awareness and understanding about issues related to the extraction of gas such as hydraulic fracturing not needed to extract conventional gas or that large volumes of gas can come from one or two wells. On the other hand, people were well aware that hydraulic fracturing is permanently banned in Victoria, but less so about the moratorium that exists on exploration for onshore conventional gas until June 2020. These results were similar across the subregions except for Warrnambool, where residents indicated statistically lower levels of awareness about the moratorium than the rest of the SW region. Statistically lower levels of knowledge and understanding were also reported by younger residents 18-34 years,

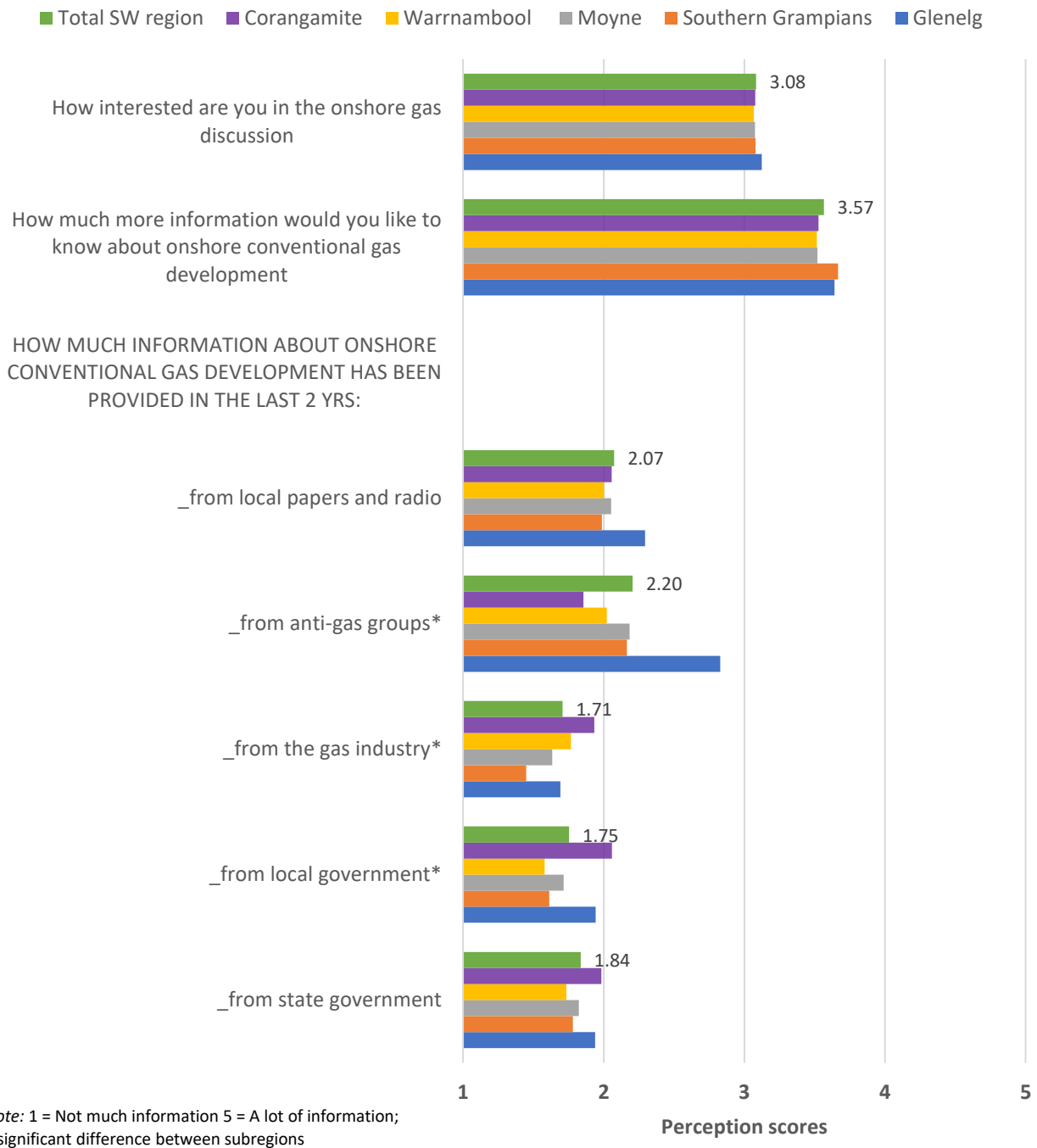
Figure 42 Knowledge confidence and awareness levels about onshore conventional gas: By subregion, 2019



6.5.2 Information need and information sources

Across the SW region people indicated getting limited amount of information about onshore conventional gas development in the last couple of years. Figure 43 shows that people had mostly received their information from anti-gas groups, though this was still limited. An exception was in Glenelg, which showed a statistically higher sourcing of information from anti-gas groups than average in the SW region; whereas Corangamite and Warrnambool showed statistically lower levels of information sourced from anti-gas groups. Figure 43 demonstrates the differences across the SW region. Residents in all subregions indicated they would like to know more about onshore conventional gas development, despite borderline interest across the SW region in the onshore gas discussion.

Figure 43 Perceptions of information sources and information need: By subregion, 2019



6.5.3 Things that people would like to know more about

Using an open-ended question, participants in the SW region were asked to briefly describe the main information they would like about onshore conventional gas development. Thematic analysis revealed key topics residents would like to know more about. Table 5 lists the main themes and examples of comments for each theme.

Table 5 Information needs about onshore conventional gas development in the Otway Basin

MAIN THEMES	% OF RESIDENTS	SUBTHEMES (% OF MAIN THEME COMMENTS)
Potential negative effects	53%	Environmental impacts and risks (49%); impacts on farmers, agriculture and landholders (22%); health & safety impacts/risks (14%); risk mitigation and management plans (10%)
What's happening	34%	When (35%) and where (31%); onshore conventional gas development plans (19%); general info about developments (12%)
Potential benefits	31%	Pros and cons generally (30%); economic cost and benefits (19%); who benefits? (17%); employment impacts and benefits (15%); gas, energy, and power price benefits (9%)
Geographic level of information	25%	Local area, community and town level information (77%); regional level information (13%); state and national level (7%); global (2%)
Processes involved	20%	Drilling, extracting, and distributing onshore conventional gas (66%); destination of the gas (19%); resource quantity, quality, location and value (14%)
Governance	11%	Independent and objective scientific research (30%); information around control, decisions, ownership, responsibility and accountability for onshore conventional gas development (26%); need for honesty, transparency and trust in information (23%); information about foreign ownership and exports (21%)
Why do it?	5%	Rationale, purpose, and goals of onshore conventional gas development (49%); alternatives to this development such as renewable energy (39%); how to resist or stop such development (12%)
Other information	1%	n.a.
None needed or unsure	15%	n.a.

Note: The percentage of total residents can add to more than 100% because respondents may express more than one information need; weighted data; n.a. = not applicable.

Table 5 shows that over half of respondents in the Otway Basin (53%) wanted to know more about any potential negative effects of onshore conventional gas development, particularly any environmental impacts and risks, as well as impacts on farmers, agriculture, health and safety. About a third wanted information about potential benefits (31%) and what's happening (34%). Potential benefits included information about economic and employment benefits, as well as any adverse impacts on these. That is, a balanced view was important. Nearly 10% were interesting in finding out whether there would be any benefits for their gas or energy costs.

A need to know what's happening (34%) was related to the when and where of onshore conventional gas development, as well as more general information about onshore conventional gas plans and developments. Another dimension was seeking information at different geographic levels. Most information needed related to the local area or community, followed by the regional level, and to a much lesser extent the state and national levels. Few residents wanted information at a global level.

One in five residents (20%) wanted to know more about the process involved. This need was primarily about processes of drilling, extracting, and distributing onshore conventional gas. Residents in the SW region also wanted to know how these developments would be governed (11%). There was a strong need expressed for independent and objective scientific research to play a role in governance, as well as information around decision making, responsibility and accountability, and whether the gas would be exported. There was also a clear need expressed for honest, transparent and trustworthy information from independent and objective sources (e.g., scientific research).

A relatively small percentage of respondents (5%) wanted to know about why we need onshore conventional gas development. What was the rationale behind onshore conventional gas development and what about alternatives such as renewable energy? Approximately 15% of residents in the SW region did not need any further information or were unsure of what information they may need.

7 Demographic differences

The data was analysed to identify differences in findings based on demographic characteristics. Differences in perceptions of community wellbeing and local attitudes and perceptions of onshore conventional gas development based on age, gender, education, and income levels were identified and are reported in this section. Differences based on whether participants lived in a town or out of a town are also described. Differences based on subregions and farm ownership are reported in the main part of the report. All demographic and locational differences are also summarised in tables in Appendix F.

Age

Overall community wellbeing was high in the SW region across all age groups. However, older residents aged over 55 in the SW region had statistically higher wellbeing across a range of community dimensions: income sufficiency, health, services and facilities, environmental quality, local decision-making and trust, community trust, and community spirit. Their expected future wellbeing and place attachment was also significantly higher than the regional average.

Older residents also had more favourable views around onshore conventional gas development than younger or middle-aged residents. They had statistically more favourable perceptions of how well the community would adapt to any onshore conventional gas development, as well as perceiving impacts and risk severity to be significantly lower than younger residents. Older residents thought that procedural fairness would be significantly higher than middle-aged residents (35-54 years) while middle aged residents rated governance significantly lower than the SW regional average, especially perceptions that local and state government would effectively engage with local communities around potential onshore conventional gas development.

Gender

Overall community wellbeing for males and females was not significantly different in the SW region. However, females reported statistically lower levels of personal safety and economic opportunities, as well as satisfaction with the roads. On the other hand, they reported higher satisfaction with town appearance and managing the environment for the future, on average.

Males had significantly more favourable attitudes and perceptions about potential onshore conventional gas development. Their concerns about impacts and risk severity were significantly less than females, while their perceptions of risk manageability and distributional fairness were significantly higher. Males also had significantly more interest in the onshore gas discussion and more confidence in their knowledge and understanding the sector. In contrast, females were statistically less likely to think that their communities would adapt to dealing with an onshore conventional gas industry.

Income

Generally speaking, households with higher incomes had more favourable perceptions of community wellbeing. Income sufficiency for those with less than \$40,000 pa was marginal. Households with incomes over \$80,000 pa were significantly more satisfied with their income sufficiency than average. They also felt statistically more personal safety, with those over \$120,000 pa reporting significantly more satisfaction with their surrounding environmental quality in terms of things like dust, noise, air, and water quality.

However, residents from households with incomes over \$120,000 pa had less favourable perceptions of onshore conventional development. They had significantly less trust in gas companies, being especially doubtful about good quality relationships between gas companies and local communities being formed. Perceptions of governance were also significantly lower for high income households, particularly around whether formal governance arrangements would ensure companies did the right thing and were accountable.

Education

Those with an education of less than Year 12 had significantly lower social interaction and community participation. Over one-third of these were older residents (55+) in the SW region. Those with higher education (degrees or higher) viewed their community participation, trust, and roads significantly more favourably, as well as their income sufficiency. Interestingly, those completing a Year 12 education rated many dimensions significantly higher than average while those with an additional certificate, trade or diploma rated various dimensions lower than average. However, there was no significant difference in overall community wellbeing across different education levels.

Those with higher education levels had significantly less favourable attitudes and perceptions of onshore conventional gas development in the SW region. This related to lower perceptions of benefits, distributional fairness, trust and relationships with gas companies, procedural fairness, and the effectiveness of formal governance arrangements. They also had significantly more interest in the gas discussion and confidence in their knowledge and awareness of the sector, though still modest, expressing a higher need for more information.

Living in-town and out-of-town

Those living out-of-town in the SW region were commonly farm owners (over 70%). However, over 95% of residents living in-town were not farm owners. Those living in-town reported significantly higher levels of social interaction, though significantly less favourable perceptions of personal safety, environmental quality, income sufficiency, community decision making and trust in local leaders. This was a similar pattern to that for farm owners. However, overall levels of community wellbeing for residents living in and out-of-town were similar.

Overall attitudes and feelings about onshore conventional gas development in the SW region were significantly less favourable out-of-town, whereas they were favourable on average in-town. This seems mainly due to differences between farm owners and non-farm owners.

8 Conclusions

This research has established baseline measures of community wellbeing and local attitudes to onshore conventional gas development in the SW region of Victoria using a representative sample from five local government areas: Glenelg, Southern Grampians, Moyne, Warrnambool, and Corangamite. The research has measured and documented residents' perceptions of factors important to communities in relation to onshore conventional gas development. This baseline information is useful for targeting resources to maintain and enhance community wellbeing, and for informing government in their future decisions and activities relating to onshore conventional gas development. Baseline information also enables any changes in community wellbeing and attitudes toward onshore conventional gas development to be measured over time.

In reading the findings below, results were typically reported using a scale from 1 to 5, where one is the least and five is the most. A score below the midpoint of 3 is considered negative or unfavourable on average except for perceived impacts where the higher the score the greater the concern about potential impacts.

8.1 Community wellbeing

The research concluded that overall community wellbeing, expected future community wellbeing, and place attachment were high across the SW region, with some variation among the LGAs. The study found the most highly rated dimensions of community wellbeing across the SW region were personal safety, town appearance, environmental quality, and community spirit. In contrast, the condition and safety of local roads, economic and business opportunities, and local decision-making were rated least favourably.

The research also identified five dimensions of community wellbeing most important to residents in the SW region: community spirit, economic opportunities, services and facilities, community trust, and community cohesion. These represent aspects of the community that contribute most to a good quality of life in the eyes of residents, indicating that their community is a great place to live. The research findings indicated that the level of services and facilities, economic and business opportunities, and social aspects such as community spirit, cohesion, and local trust were all important areas for maintaining and building community wellbeing in the SW region.

8.2 Local attitudes to onshore conventional gas development

The research findings showed that residents in the SW region held a range of views toward onshore conventional gas development. Approximately one in five residents in the SW region would reject onshore conventional gas development (21%), while approximately one in ten would embrace such development (11%). Over two thirds of residents had mid-range attitudes from tolerating it (21%) to being OK with it (24%) or approving of it (21%). Tolerating it was associated with more neutral feelings on average toward onshore conventional gas development, while being OK with it was associated with more positive feelings. The research found farm owners across the

SW region held more negative views (28% rejecting it) than people who did not own a farm (18% rejecting it). Residents in the Moyne LGA indicated the highest level of rejecting onshore conventional gas development (30% rejecting it) and Corangamite residents the lowest level (16% rejecting it). There were also differences in attitudes based on gender and education. More men approved of or embraced onshore conventional gas development (40%) compared to women (23%), while those who held degree levels of education were more likely to reject than embrace such development. This highlights the importance of communicating and engaging with different demographic segments in line with their differing concerns and information needs.

In addition, the research found most residents thought their communities would either adapt to (50%) or change into something different but better (9%), if onshore conventional gas development were to proceed. Corangamite residents were most positive with approximately three quarters of residents thinking their community would adapt or change into something better.

8.3 Perceptions of factors important for local acceptance

The research found nine different factors drive people's overall attitudes about onshore conventional gas development. These included perceptions of *impacts and benefits*; perceptions of *procedural fairness* and the *quality of the relationship* with the gas company, which underpin *trust in the gas operator*; perceptions of *distributional fairness* in terms of how benefits and costs will be shared; confidence and trust in *governance* of the industry; the belief in a role for gas as part of the *energy narrative* for transitioning to renewable energies; and the individual's confidence in their *knowledge and understanding* about onshore conventional gas development.

Using a scale from 1-5, results showed that concerns about overall impacts from onshore conventional gas development were not overly high (3.2) and perceived benefits were favourable on average (3.4). However, residents in the SW region had low levels of trust in gas companies on average (2.6) and how they may engage with communities to maintain good relationships (2.4) and procedural fairness (2.5). Residents also lacked confidence in effective overall governance of the industry (2.8), including both formal and informal types of governance between gas companies, communities and governments. This is despite residents having more positive views on average about the state government handling of potential onshore gas development (i.e., banning coal seam gas development and fracking, placing a moratorium on onshore conventional gas, and conducting research prior to deciding whether to allow exploration).

Residents had relatively low confidence in their knowledge and understanding about onshore conventional gas development, and expressed a need for more information, especially on potential negative effects. They also wanted balanced information including about potential benefits with information focussed at the local level. Other common information needs were around processes of gas extraction and distribution, how the industry might unfold in terms of place and size, and information on effective evidence-based governance of the industry.

Appendix A Sample representativeness

The sample of residents in the Otway and Gippsland basins were reasonably representative based on quota sampling by age, gender, and location for each LGA. However, to make the sample more representative the sample was also weighted to reflect 2016 ABS population census data. This was particularly important to gain accurate estimates across the Otway and Gippsland basins as there were equal numbers surveyed in each LGA, though different populations in each LGA.

Apx Figure A. 1 Age, gender and location statistics for the sample, weighted sample, and 2016 census

	Otway Basin			Gippsland Basin		
	Sample	Weighted sample	2016 Census	Sample	Weighted sample	2016 Census
Age						
18-34	17%	22%	22%	26%	24%	23%
35-54	31%	32%	32%	32%	31%	30%
55+	52%	45%	45%	42%	46%	46%
Gender						
Male	44%	49%	49%	45%	49%	49%
Female	56%	51%	51%	55%	51%	51%
Location						
In-town	64%	70%	70%	63%	76%	75%
Out-of-town	36%	30%	30%	37%	24%	25%

Appendix B Background information provided for survey questions relating to onshore conventional gas development

Excerpt from survey

Moving on to community attitudes about onshore conventional gas development in the Gippsland and Otway basins, please consider this information:

- Conventional gas is found trapped deep underground under a layer of rock. It is used in Victoria for heating, electricity, and making things like fertilisers and plastics. At present Victoria relies on gas from offshore reserves.
- Currently, there is a moratorium on exploring for conventional gas onshore until 30 June 2020. During this time, the state government is assessing the potential for new discoveries of onshore conventional gas - including any risks, benefits and impacts.
- Unlike unconventional gas such as shale gas and coal seam gas, conventional gas involves far fewer wells and does not involve fracking. Finally, in Victoria, there will continue to be a permanent ban on fracking.

Please answer the following questions with this information in mind.

Appendix C Measures and reliability of scales

Separate scales were developed for the various measures associated with community wellbeing and perceptions of onshore conventional gas development, and the sector, by averaging the items within the respective scale. All multi-item measures were tested for ‘internal consistency’ or reliability. As shown in Table X, the reliability of all multi-item measures (scales) for this survey usually exceeded .80. Reliability over .90 is considered very good, over .80 is considered good, and .70 considered adequate for scale development.

ApX Table C. 1 Measures and reliability of scales used in survey

Measures of community wellbeing	No. of items	Scale type / reliability ¹	Abbreviated survey items
Personal safety	3	Agreement 0.86	It is safe to be alone at home during the night; to walk alone outside at night; overall feel safe living in the area
Income sufficiency	3	Agreement .93	Your income is enough for household expenses; for the lifestyle you enjoy; overall satisfied income covers living expenses
Health	5	Satisfaction .82	With diet and eating habits; exercise habits; physical health; mental health; overall satisfaction with health and wellbeing
Services and facilities	7	Satisfaction .85	With local schools; childcare facilities; sports and leisure facilities; shopping (other than for food and everyday items); medical and health services; community support services; overall satisfaction with services and facilities
Town appearance	3	Satisfaction .85	With cleanliness in the town; greenery and parks in the town; overall satisfaction with general appearance of the town
Roads	3	Satisfaction .80	With condition; safety; amount of traffic on roads; roads overall
Environmental quality	5	Satisfaction .79	With level of dust; noise; quality of the air; drinking water; overall quality of the general environment
Environmental management	3	Satisfaction .86	With parks and nature reserves for the future; overall management of the natural environment for the future
Local decision making and trust	6	Agreement .93	See items for sub-scales:
- Local decision making	3	Agreement .89	Local council informs residents; opportunities to be heard; overall satisfied with how decisions are made for the community
- Trust in local leaders	3	Agreement .93	Your local council can be trusted; there are local leaders I can trust; Overall, I trust my local leaders
Economic opportunities	4	Agreement .90	There are good job opportunities; there is good job security for locals; local businesses are doing well; overall satisfied with employment and business opportunities
Community spirit	3	Agreement .93	People can rely upon one another for help; people have friendly relationships; overall there is good community spirit around here
Community cohesion	3	Agreement .890	Community is welcoming of newcomers; and people of different cultures; overall community includes everyone no matter who they are
Community trust	2	Agreement .92	People that you see around [local area] can generally; overall satisfied with levels of trust in local area
Community participation	3	Agreement .91	Involved in a local organisation or club; attended several community events in the past year; overall participate regularly in community activities

Social interaction	4	Agreement .84	Regularly visit someone's home; go out together socially; speak or text on phone; overall satisfied with level of social interaction in local area
Overall community wellbeing	5	Agreement .88	Community is suitable for young children; teenagers; seniors; overall, local area offers a good quality of life; overall, happy living in local area
Expected future wellbeing	2	Agreement .90	In 3 years time, I will be happy living in this local area; it will offer a good quality of life
Place attachment	4	Agreement .88	Feel that I belong to this area; pleased to come back to the area if I go away; I feel proud to living in this community; Overall, I feel very attached to this local area

Notes: ¹ The Spearman-Brown Rho correlation was used for two item measures and Cronbach's alpha for other measures

Measures for perceptions and attitudes about onshore conventional gas	No. of items	Scale type / reliability ¹	Example survey items
Perceived impacts	16	Concern .96	See items for sub-scales:
- More immediate issues	13	Concern .96	Damage to underground water; air, dust, noise, and light pollution; a threat to 'clean' and 'green' image and tourism; reduces region's visual attractiveness; impact on farm property values; increased traffic; community division; health impacts
- Possible future issues	3	Concern .88	The use of onshore conventional gas contributing to climate change; integrity of gas wells over time (e.g. leaks)
Risk manageability	4	Agreement .585	Any risks have been identified: are understood by science; are manageable; can be alleviated as problems arise
Risk severity	2	Agreement .84	Potential risks can adversely affect future generations; are potentially disastrous
Perceived benefits	15	Agreement .96	See items for sub-scales:
- Local benefits	8	Agreement .93	Local employment; local business opportunities; opportunities for young people to stay in region; corporate support for local community activities; cheaper gas for local industries; cheaper gas for residents
- Regional and societal benefits	8	Agreement .95	Improving energy security in the region; supporting the viability of big gas users; make the region more attractive to new businesses and industry; boosting the wider state economy
Distributional fairness	4	Agreement .92	Fair to have onshore conventional gas development in the region if your local council was compensated accordingly; your community received a fair share of the benefits; if affected landholders were compensated fairly; if regional benefits outweigh any impacts
Procedural fairness	2	Agreement .87	Gas company would listen to and respect community opinions; inform residents of important developments
Relationship quality	3	Agreement .94	Gas companies would be accessible or easy to contact; open, honest and transparent; engage in genuine two-way dialogue
Governance overall	9	Agreement .95	See items for sub-scales:
- Formal governance	2	Agreement .88	Legislation and regulation could be counted on to ensure companies did the right thing; Government regulators would be able to hold companies accountable
- Engaging communities	3	Agreement .85	The local council would listen to and advocate for local communities about gas development; the EPA would listen to and respond to community concerns; State government would listen to and respond to any community concerns.
- Working collaboratively	5	Agreement .94	Government, communities, and gas companies can work together to address any problems; to maximise any benefits; share information,

			resources and learnings; proactively plan for future changes; manage any changes effectively
- Trust in state departments	3	Extent of trust .95	Trust state departments and agencies overseeing onshore conventional gas development to act responsibly; in local community's best interest's; trust their capability
Trust in gas company	3	Extent of trust .93	Trust local gas companies to act responsibly; in local community's best interest's; trust their capability; overall extent of trust
Government's handling of onshore gas development	4	Agreement .83	The state government is following good processes re the permanent ban on coal seam gas and fracking; the moratorium on onshore conventional gas; conducting scientific research prior to exploration
Energy transition narrative			The role of gas in reducing carbon emissions; and transitioning to renewable energies
Community attitudes and feelings toward onshore gas development	6	Agreement .91	Attitude: reject, tolerate, accept, approve, embrace it (categoric); acceptance of onshore conventional gas development Feelings: pleased; optimistic; angry; worried
Community adapting to onshore gas development	1	Agreement n.a.	How local area would deal with onshore conventional gas: resist, note cope, only just cope, adapt to the changes, change into something different but better (categoric)
Knowledge	7	Level .89	How much do you feel you know about the onshore conventional gas industry; how aware are you that hydraulic fracturing is permanently banned in Victoria; not needed to extract conventional gas; one or two conventional gas wells can produce large volumes of gas; about the differences between conventional and unconventional gas
Need for more information	1	Level n.a.	How much more information do you feel you need about onshore conventional gas development

Notes: ¹ The Spearman-Brown Rho correlation was used for two item measures and Cronbach's alpha for other measures; CG = conventional gas; n.a. = not applicable

Appendix D Statistical analyses

Dominance analysis

Dominance analysis was used to determine the relative importance of various dimensions of community wellbeing in predicting overall community wellbeing. General dominance statistics were used because they are the most commonly used and easiest to interpret.

We reported the standardised versions of these statistics which calculates the percentage of the explained variation in overall community wellbeing which can be attributed to each dimension, adding up to 100% across all predictors. It does this by calculating the incremental contribution to R-squared across all models in which the independent variable is included. This involved running regressions for each possible combination of the CWB dimensions (over 16,000 regressions for each subregion).

Path analysis

Path analysis was used to model the social acceptance of onshore conventional gas development in Victoria and its underlying drivers. The main advantage of path analysis over multiple regression analysis is that it can model a range of direct and indirect paths or influences on the main dependent variable - social acceptance in this case (McCrea, 2014). Direct paths are factors that lead directly to social acceptance. Indirect paths lead to social acceptance via mediating or intervening factors, and some factors have both direct and indirect paths to social acceptance.

The path models show the percentage of variation explained in each dependent variable and the standardised regression coefficients for each path predictor of that variable, giving an indication of the relative importance of each. Path analysis can also test how well the models fit the data. That is, how well the correlations implied in the path model fit the actual correlations in the data (McCrea, 2014). The path analysis in this report had good model fit (i.e., standardized root mean squared residual of less than .05).

Appendix E All survey items by subregion

Apx Table E. 1 Survey item statistics by subregion

	Glenelg	Sthn. Grampian	Moynes	Warrnambool	Corangamite	Total SW Region
Section 1. Community wellbeing						
Q7 Thinking about [NAME] and surrounds, how much do you agree with the following statements on a scale from 1 = strongly disagree to 5 = strongly agree						
a) I feel that I belong to this area	4.30	4.22	4.10	4.22	4.30	4.23
b) I am pleased to come back to the area, if I go away	4.60	4.33	4.66	4.47	4.52	4.51
c) I feel proud to live in this community	4.42	4.20	4.47	4.30	4.41	4.35
d) Overall, I feel very attached to this local area	4.40	4.23	4.34	4.30	4.28	4.31
Q8 Now a few questions about personal safety. On a scale from 1 to 5, how much do you agree that:						
a) It is safe to be alone at home during the night	4.36	4.41	4.58	4.47	4.47	4.46
b) It is safe to walk alone outside at night	3.73	3.85	4.25	3.66	4.08	3.86
c) Overall, I feel safe living in the area	4.40	4.38	4.60	4.41	4.45	4.44
Q9 Thinking about your household income, how much do you agree that:						
a) your income is enough for household expenses	3.77	3.83	3.70	3.70	3.78	3.75
b) your income is enough for the lifestyle you enjoy	3.68	3.78	3.70	3.68	3.59	3.68
c) Overall, you are satisfied that your income covers living expenses	3.83	4.01	3.69	3.79	3.83	3.82
Q10 Now on a scale from 1 = very dissatisfied to 5 = very satisfied and thinking about your health and wellbeing, how satisfied are you with						
a) your diet and eating habits	3.92	3.88	3.83	3.63	3.95	3.81
b) your exercise habits	3.59	3.39	3.52	3.21	3.40	3.39
c) your physical health	3.85	3.56	3.83	3.57	3.66	3.68
d) your mental health	4.04	3.96	4.00	3.83	4.10	3.96
e) Overall, how satisfied are you with your health and wellbeing	3.99	3.90	3.87	3.73	4.03	3.88
Q11 Thinking of services and facilities for [NAME] and surrounds, how satisfied are you with						
a) local schools	3.73	4.06	4.09	4.01	4.02	3.98
b) childcare facilities	3.67	3.81	3.73	3.97	3.96	3.85
c) sports and leisure facilities	3.91	3.99	3.98	3.84	4.02	3.93
d) shopping (other than food and everyday items)	2.77	3.00	3.47	3.56	3.37	3.27
e) medical and health services	3.20	3.79	3.87	4.07	3.57	3.75
f) community support services (e.g. meals on wheels, youth workers)	3.59	3.77	3.71	3.74	3.69	3.70
g) Overall, how satisfied are you with the services and facilities in your local area	3.61	3.69	3.83	3.83	3.83	3.76
Q12 Thinking about [NAME]'s general appearance, how satisfied are you with:						
a) Cleanliness in the town	4.09	3.67	4.23	4.12	4.35	4.10
b) Greenery and Parks in the town	4.14	4.02	4.13	4.23	4.32	4.18
c) Overall, how satisfied are you with the general appearance of the town	4.14	3.80	4.24	4.17	4.27	4.13

	Glenelg	Sthn. Grampian	Moyne	Warrn- ambool	Coranga- mite	Total SW Region
Q13 Thinking about the roads outside of [NAME], how satisfied are you with the						
a) Condition of the roads	1.79	1.88	1.76	1.69	1.74	1.76
b) Amount of traffic on roads	3.04	3.22	2.99	3.18	2.94	3.09
c) The roads overall	2.05	2.13	1.94	2.04	1.84	2.01
Q14 Thinking about pollution in the general environment, how satisfied are you with the						
<i>[Note: higher score means more satisfied]</i>						
a) Level of dust	3.75	3.96	3.93	3.91	3.76	3.87
b) Level of noise	4.00	4.10	4.17	4.03	4.20	4.08
c) Quality of the air	4.15	4.51	4.63	4.42	4.45	4.42
d) Quality of drinking water	3.53	4.28	3.99	3.88	4.35	3.97
e) Overall quality of the general environment around [NAME]	4.07	4.24	4.31	4.13	4.33	4.19
Q15 Now thinking about the natural environment around [NAME], how satisfied are you with the management of:						
a) parks and nature reserves for the future	3.88	3.67	3.66	3.76	3.69	3.74
b) waterways and water supplies for the future	3.63	3.52	3.47	3.59	3.52	3.56
c) Overall, the management of the natural environment for the future	3.73	3.48	3.49	3.57	3.47	3.56
Q16 Thinking about how decisions are made affecting [NAME] and surrounds, how much do you agree that:						
a) The local council informs residents of important developments	3.09	2.86	3.02	2.56	3.39	2.91
b) There are opportunities for your voice to be heard on issues that are important to you	3.17	3.05	3.03	2.69	3.43	3.01
c) Overall, I am satisfied with how decisions are made that affect [NAME]	3.02	2.80	3.07	2.52	3.44	2.89
Q17 Thinking about trust in local leaders, how much do you agree that:						
a) Your local council can be trusted	3.11	2.91	2.88	2.20	3.65	2.83
b) There are local community leaders you can trust	3.48	3.34	3.41	2.78	3.77	3.26
c) Overall, you can trust your local leaders	3.39	3.30	3.20	2.58	3.73	3.13
Q18 Regarding employment and business opportunities in [NAME] and surrounds, how much do you agree that:						
a) there are good job opportunities	2.97	2.67	2.89	3.18	2.77	2.94
b) there is good job security for locals	2.95	3.04	3.10	3.18	3.02	3.07
c) local businesses are doing well	2.91	2.75	3.30	2.92	3.03	2.97
d) Overall, I am satisfied with employment and business opportunities in my local area	3.00	2.77	3.17	3.09	2.92	3.01
Q19 Thinking about community spirit in [NAME] and surrounds, how much do you agree that:						
a) People can rely upon one another for help	3.96	3.84	4.21	3.96	4.32	4.04
b) People have friendly relationships	4.06	3.92	4.33	4.00	4.32	4.10
c) Overall, there is good community spirit around here	4.17	3.97	4.37	4.08	4.32	4.17
Q20 Thinking about how inclusive your local community is in [NAME] and surrounds, how much do you agree that:						
a) Your community is welcoming of newcomers	3.98	3.73	3.94	3.68	3.87	3.82
b) Your local community is welcoming of people of different cultures	3.87	3.54	3.89	3.78	3.64	3.75
c) Overall, your community includes everyone no matter who they are.	3.89	3.63	3.99	3.75	3.85	3.81
Q21 Thinking about levels of trust in your local area, how much do you agree that:						

	Glenelg	Sthn. Grampian	Moynes	Warrnambool	Corangamite	Total SW Region
a) People that you see around [NAME] can generally be trusted	3.52	3.51	3.89	3.58	3.88	3.65
b) Overall, you are satisfied with levels of trust in your local area	3.66	3.57	4.07	3.67	3.94	3.76
Q22 Thinking about participating in local community groups around [NAME] (like school, sport, church, hobbies and services), how much do you agree that:						
a) You are involved in a local organisation or club	3.44	3.40	3.49	3.40	3.66	3.46
b) You have attended several community events in the past year	3.49	3.66	3.59	3.43	3.70	3.55
c) Overall, you participate regularly in a variety of community activities	3.32	3.35	3.38	3.28	3.46	3.34
Q23 Thinking about everyday interactions with people, other than those you may live with. How much do you agree that you do the following regularly						
a) Visit someone's home	3.25	3.41	3.20	3.36	3.36	3.32
b) Go out together socially	3.17	3.45	3.29	3.45	3.50	3.38
c) Speak or text on the phone	3.86	3.96	3.94	3.84	4.02	3.90
d) Overall, you have regular social interaction with others in your local area	3.80	3.95	3.88	3.94	3.95	3.90
Q24 Thinking about overall community wellbeing around [NAME] and surrounds, how much do you agree that:						
a) This community is suitable for young children	4.11	4.17	4.26	4.36	4.29	4.25
b) This community is suitable for teenagers	3.53	3.34	3.73	3.88	3.49	3.64
c) This community is suitable for seniors	4.33	4.13	4.33	4.34	4.22	4.28
d) Overall, this local area offers a good quality of life	4.29	4.17	4.54	4.46	4.32	4.37
e) Overall, I am happy living in this local area	4.48	4.30	4.59	4.46	4.47	4.46
Q25 Imagining what it might be like in 3 years time, how much do you agree that:						
a) Overall, I will be happy living in this local area	4.28	4.12	4.38	4.34	4.13	4.27
b) Overall, this local area will offer a good quality of life	4.23	4.15	4.47	4.35	4.31	4.31
Q26 Over the next 3 years, do you think community wellbeing will						
a) Decline	17%	17%	10%	7%	11%	11%
b) Stay about the same	64%	66%	57%	60%	67%	62%
c) Improve	19%	17%	33%	33%	22%	26%
	100%	100%	100%	100%	100%	100%
Section 2. Community attitudes about onshore conventional gas development						
Q27 In relation to potential onshore conventional gas development in the [insert relevant basin from Q4 - Gippsland/Otway] basin, how much of a concern do you believe the following impacts may be:						
Scale: 1=not a concern at all to 5=a very large concern						
a) a threat to the 'clean and green' image for agriculture in the region	2.97	3.12	3.33	3.10	2.94	3.09
b) a threat to tourism in the region	2.72	3.08	2.94	2.78	2.55	2.80
c) reducing the region's visual attractiveness	2.89	3.08	3.12	2.85	2.75	2.92
d) damage to underground water	3.39	3.38	3.63	3.37	3.17	3.38
e) contamination of the air	2.99	3.07	3.35	3.26	2.79	3.11
f) dust, noise, and light pollution	2.99	3.05	3.31	3.10	2.76	3.05
g) health impacts	3.03	3.06	3.25	3.06	2.76	3.04
h) increased traffic on the roads	3.10	3.34	3.32	3.19	3.23	3.22

	Glenelg	Sthn. Grampian	Moyne	Warrnambool	Corangamite	Total SW Region
Now thinking about impacts on farming, how much of a concern do you believe the following may be:						
i) reducing farm property values	3.14	3.38	3.31	3.11	2.96	3.17
j) impacting on-farm activities	3.07	3.31	3.22	3.05	2.93	3.10
k) possible unfair treatment of farmers	3.57	3.63	3.53	3.38	3.27	3.46
l) Finally, community division over gas development	3.27	3.71	3.72	3.53	3.38	3.51
m) Overall, how much of a concern, do you believe, would come with onshore conventional gas development in the region	3.15	3.31	3.42	3.41	3.03	3.29
Q28 Thinking about possible future issues, how much of a concern do you believe the following may be:						
a) the use of conventional gas contributing to climate change	2.88	2.96	3.25	3.22	2.81	3.05
b) integrity of gas wells over time (e.g. leaks)	3.39	3.43	3.50	3.28	3.23	3.35
c) Overall how much of a concern, do you believe, there may be with onshore conventional gas development in the future	3.14	3.35	3.35	3.24	3.16	3.24
Q29 How much do you agree that any risks associated with onshore conventional gas development:						
a) have been identified	3.12	3.10	2.85	3.10	3.04	3.06
b) are understood by science	3.38	3.31	3.08	3.29	3.20	3.26
c) are manageable	3.27	3.12	2.92	3.16	3.11	3.13
d) can be alleviated as problems arise	3.23	3.14	2.92	3.11	2.96	3.09
e) can adversely affect future generations	3.51	3.21	3.51	3.18	3.34	3.33
f) are potentially disastrous	3.30	3.17	3.42	3.18	3.17	3.24
Q30 Moving on to benefits, how much do you agree that onshore conventional gas development would provide significant local benefits such as						
a) local employment	3.65	3.58	3.22	3.53	3.74	3.55
b) career opportunities for young people to stay in the region	3.57	3.60	3.31	3.43	3.49	3.47
c) local business opportunities	3.52	3.60	3.39	3.44	3.51	3.48
d) corporate support for local community activities (e.g. a gas company sponsoring local clubs)	3.64	3.57	3.55	3.49	3.77	3.59
e) cheaper gas for local industries	3.05	3.27	3.13	3.13	3.04	3.12
f) cheaper gas for local residents	3.04	3.29	3.03	3.06	2.91	3.06
g) Overall, how much do you agree that onshore conventional gas development would bring significant benefits to the local community	3.27	3.41	3.15	3.31	3.28	3.29
Q31 How much do you agree that onshore conventional gas development would bring benefits to the wider region, such as						
a) improving energy security in the region	3.50	3.42	3.33	3.33	3.44	3.39
b) supporting the viability of big gas users in the region (e.g., manufacturers)	3.60	3.41	3.44	3.41	3.52	3.47
c) making the region more attractive to new business and industry	3.48	3.41	3.17	3.08	3.21	3.25
d) improving the supply of gas as a raw material for making products like fertilisers and plastics	3.53	3.51	3.29	3.32	3.42	3.41
e) Overall, onshore conventional gas development would provide significant benefits for the wider region	3.54	3.50	3.26	3.27	3.33	3.37
Q32 Thinking more broadly, how much do you agree that onshore conventional gas development has a role to play in						

	Glenelg	Sthn. Grampian	Moyne	Warrnambool	Corangamite	Total SW Region
a) in boosting the wider state economy	3.63	3.50	3.48	3.49	3.56	3.53
b) energy security for Victorians	3.48	3.54	3.39	3.42	3.44	3.45
c) in reducing carbon emissions by replacing coal	3.46	3.36	3.51	3.48	3.39	3.45
d) in transitioning to renewable energy sources	3.32	3.27	3.31	3.20	3.36	3.28
e) Overall, onshore conventional gas development has an important role to play in society	3.34	3.45	3.20	3.29	3.39	3.33
Q33 How much do you agree that it would be fair to have onshore conventional gas development in the region?						
a) Fair, if your local council was compensated accordingly	3.21	3.15	3.20	3.19	3.41	3.22
b) Fair, if your community received a fair share of the benefits	3.68	3.55	3.41	3.62	3.62	3.59
c) if affected landholders were compensated and treated fairly	4.02	3.82	3.69	3.79	3.98	3.86
d) Fair if the regional benefits outweighed any impacts	3.70	3.53	3.42	3.62	3.68	3.60
Q34 Thinking about how decisions might be made about onshore conventional gas development, how much do you agree that gas companies:						
<i>Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree</i>						
a) would listen to and respect the community's opinions	2.46	2.37	2.10	2.27	2.54	2.34
b) would inform residents of important developments	2.55	2.69	2.55	2.53	2.94	2.63
Q35 How confident are you that gas companies would						
<i>Scale: 1=not at all confident; 5=very confident</i>						
a) be accessible or easy to contact	2.43	2.50	2.49	2.27	2.58	2.42
b) be open, honest and transparent	2.24	2.35	2.23	2.10	2.52	2.25
c) engage in genuine two way dialogue	2.43	2.49	2.29	2.24	2.61	2.38
Q36 Thinking about gas companies operating onshore conventional gas developments, to what extent would you						
<i>Scale: 1=not at all to 5=a great deal</i>						
a) trust them to act in the local community's best interests	2.44	2.42	2.20	2.19	2.61	2.34
b) trust them to act responsibly	2.71	2.59	2.43	2.44	2.99	2.60
c) trust their capability	2.90	2.81	2.87	2.76	3.19	2.88
Q37 Thinking about how onshore conventional gas development would be governed, how much do you agree that:						
<i>Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree</i>						
a) Legislation and regulation could be counted upon to ensure that companies did the right thing	3.21	2.97	2.74	2.75	2.92	2.90
b) Government regulators and the Environment Protection Authority (EPA) would be able to hold companies accountable	3.18	2.96	2.83	2.78	3.18	2.96
Q38 Thinking about other government responses to onshore conventional gas development, how much do you agree that						
<i>Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree</i>						
a) The local council would listen to and advocate for local communities on issues about gas development	3.26	2.90	3.09	2.69	3.50	3.02
b) The EPA and other government regulators would listen to and respond to any community concerns	3.12	2.98	2.94	3.08	3.19	3.07
c) State government would listen to and respond to any community concerns	2.83	2.69	2.55	2.54	2.70	2.65

	Glenelg	Sthn. Grampian	Moyne	Warrnambool	Corangamite	Total SW Region
Q39 (see Q40)How much do you agree that communities, gas companies, local councils and state government would be able to work together						
Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree						
a) to address any problems with onshore conventional gas development	2.92	2.64	2.49	2.50	2.77	2.64
b) to maximise any benefits associated with gas development	3.02	2.85	2.67	2.73	2.97	2.83
c) share information, resources, and learnings	2.90	2.84	2.75	2.56	2.95	2.76
d) proactively plan for future changes	3.01	2.88	2.78	2.57	3.03	2.81
e) Overall, the region together would be able to manage any changes effectively	3.07	2.98	2.94	2.76	3.29	2.97
Q40 Thinking about the state government's handling of onshore gas development, how much do you agree the following have been good processes for decision making						
Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree						
a) the permanent ban on coal seam gas and fracking	3.65	3.43	3.66	3.97	3.52	3.70
b) the moratorium on onshore conventional gas	3.17	3.08	3.34	3.32	3.06	3.21
c) the state government conducting scientific research prior to exploration	3.30	3.17	3.37	3.46	3.21	3.33
d) Overall, the state government is following good process	3.00	2.88	3.16	3.09	2.97	3.03
Q41 Thinking about state government departments and agencies involved in overseeing onshore conventional gas development, to what extent would you						
Scale: 1=not at all to 5=a great deal						
a) trust them to act in the local community's best interests	2.66	2.51	2.62	2.58	2.67	2.61
b) trust them to act responsibly	2.84	2.60	2.63	2.78	2.93	2.76
c) trust their capability	2.82	2.64	2.66	2.70	2.94	2.74
Q42 Thinking about potential onshore conventional gas development in the region, overall how accepting are you? Scale: 1=Not at all accepting; 3=Somewhat accepting; 5=very accepting						
	3.26	3.16	2.88	3.22	3.26	3.17
Q43 Overall, which best describes your attitude toward onshore conventional gas development in the [insert relevant basin from Q4 - Gippsland/Otway] basin. You would						
1. reject it	17%	22%	30%	22%	16%	21%
2. tolerate it	29%	20%	24%	20%	26%	23%
3. be OK with it	22%	21%	21%	29%	22%	24%
4. approve of it	19%	29%	20%	19%	20%	21%
5. embrace it	13%	7%	6%	10%	17%	11%
	100%	100%	100%	100%	100%	100%
Q44 Thinking about potential onshore conventional gas development in the region, how much do you agree you would feel						
Scale: 1=strongly disagree; 3=neither agree nor disagree; 5=strongly agree						
a) pleased	3.07	3.10	2.70	3.06	3.22	3.04
b) optimistic	3.09	3.06	2.74	3.00	3.06	2.99
c) angry	2.19	2.27	2.40	2.06	2.06	2.17
d) worried	2.68	2.68	2.84	2.51	2.64	2.64
Q45 In general, how accepting do you think others in your local community would be of onshore conventional gas development in the region Scale: 1=Not at all accepting; 3=Somewhat accepting; 5=very accepting						
	2.58	2.56	2.62	2.69	2.88	2.67
Q46 How much do you agree that [NAME] and surrounds would adapt to onshore conventional gas development						
	3.18	2.94	2.97	3.18	3.31	3.13
Q47 Which of the following best describes how [NAME] and surrounds would deal with onshore conventional gas development?						

	Glenelg	Sthn. Grampian	Moyne	Warrnambool	Corangamite	Total SW Region
1. Resist	23%	18%	25%	22%	13%	21%
2. Not cope	1%	7%	4%	3%	1%	3%
3. Only just cope	18%	22%	21%	15%	11%	17%
4. Adapt to the changes	50%	47%	41%	48%	69%	50%
5. Change into something different but better	8%	6%	8%	11%	7%	9%
	100%	100%	100%	100%	100%	100%
Q48 Over the last couple of years, how much information about potential onshore conventional gas development has been provided to the community by the						
<i>Scale: 1= none at all to 5 = a lot</i>						
a) state government	1.94	1.78	1.82	1.73	1.98	1.84
b) local government	1.94	1.61	1.71	1.58	2.06	1.75
c) the gas industry	1.69	1.45	1.63	1.77	1.93	1.71
d) anti-gas groups	2.83	2.16	2.18	2.02	1.86	2.20
e) local papers and radio	2.29	1.99	2.05	2.00	2.06	2.07
Q49 How much do you feel you know about onshore conventional gas?						
<i>Scale: 1= very little to 5 = a lot</i>						
	2.55	2.27	2.35	2.51	2.54	2.46
Q50 How much more information would you like to know?						
<i>Scale: 1= none at all to 5 = a lot</i>						
	3.64	3.67	3.52	3.52	3.53	3.57
Q51 What is the main information you would like to know about onshore conventional gas development in the region, if any? (open question)						
Q52 When it comes to onshore conventional gas development, prior to this survey, how aware were you that:						
<i>Scale: 1= Not aware to 5 = very aware</i>						
a) Hydraulic fracturing (fracking) is permanently banned in Victoria	3.85	3.67	3.78	3.42	3.75	3.65
b) Hydraulic fracturing is not needed to extract conventional gas	3.05	2.76	3.06	3.06	3.20	3.03
c) There is a moratorium on exploring for onshore conventional gas until 30 June 2020.	2.52	2.79	2.85	2.28	2.83	2.59
d) One or two conventional gas wells can produce large volumes of gas	2.92	2.78	2.92	2.88	3.06	2.90
e) Overall, how aware were you about onshore conventional gas	2.94	2.60	2.90	2.79	2.97	2.83
Q53 When it comes to the differences between onshore conventional and <u>unconventional</u> gas development (e.g. shale gas), how much do you feel you understand about the differences.						
<i>Scale: 1= very little understanding to 5 = a lot of understanding</i>						
	2.52	2.37	2.28	2.60	2.50	2.48
Q54 On a scale of 1 to 5, how interested are you in the onshore gas discussions?						
<i>Scale: 1= not at all interested; 3 somewhat interested; 5 = very interested</i>						
	3.12	3.08	3.08	3.07	3.08	3.08

Note: Bold font indicates a significant difference from the SW Region average

Appendix F Tables of demographic differences

Differences based on the following attributes:

- Subregions
- Out-of-town and In-town residence
- Farm ownership
- Gender
- Age
- Household Income
- Education level

Apx Table F. 1 Demographic differences: Mean scores based on subregions

Dimensions	Glenelg	Sth Grampians	Moyne	Warrnambool	Corangamite	SW region
COMMUNITY WELLBEING						
Personal safety	4.16	4.22	4.48^H	4.18	4.34	4.26
Income sufficiency	3.76	3.86	3.70	3.72	3.73	3.75
Health	3.88	3.74	3.81	3.60	3.83	3.75
Services and facilities	3.47^L	3.70	3.80	3.83	3.78	3.73
Town appearance	4.12	3.82^L	4.20	4.17	4.31^H	4.13
Roads	2.30	2.41	2.23	2.30	2.17	2.28
Environmental quality	3.91^L	4.22	4.20	4.08	4.22	4.11
Environmental management	3.76	3.56	3.54	3.62	3.55	3.61
Local decision-making and trust	3.21	3.04	3.10	2.57^L	3.57^H	3.01
Economic opportunities	2.96	2.82	3.13	3.09	2.93	3.00
Community cohesion	3.91	3.63	3.93	3.74	3.79	3.79
Community trust	3.59	3.54^L	3.98^H	3.63	3.91^H	3.71
Community participation	3.41	3.47	3.49	3.38	3.61	3.45
Community spirit	4.06	3.91^L	4.30^H	4.01	4.32^H	4.10
Social interaction	3.52	3.69	3.58	3.64	3.71	3.63
Overall community wellbeing	4.15	4.02^L	4.29	4.30	4.16	4.20
Expected future wellbeing	4.25	4.14	4.43	4.34	4.23	4.29
Place attachment	4.43	4.24	4.39	4.32	4.38	4.35
Community adapting	3.19	3.17	3.03	3.22	3.56^H	3.23
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES						
Perceived impacts	3.10	3.26	3.34	3.18	2.98	3.17
Risk manageability	3.25	3.16	2.95	3.17	3.08	3.13
Risk severity	3.40	3.19	3.46	3.18	3.25	3.28
Perceived benefits	3.46	3.47	3.29	3.33	3.40	3.38
Distributional fairness	3.65	3.51	3.44	3.56	3.67	3.57
Trust in gas company	2.68	2.61	2.50	2.47	2.93^H	2.61
Procedural fairness	2.37	2.45	2.33	2.20	2.58	2.35
Relationship quality	2.50	2.53	2.33	2.40	2.73	2.48
Governance overall	2.99	2.81	2.75	2.69^L	3.00	2.83
Formal governance	3.19^H	2.97	2.78	2.75	3.05	2.92
Engaging communities	3.08	2.86	2.86	2.77^L	3.13^H	2.91
Working collaboratively	2.98	2.84	2.73	2.62^L	3.00	2.80
Trust in gas governing bodies	2.77	2.59	2.64	2.69	2.85	2.71
Energy transition narrative	3.40	3.32	3.41	3.35	3.38	3.37
Knowledge and understanding	2.91	2.75	2.88	2.79	2.98	2.85
Information need	3.64	3.67	3.52	3.52	3.53	3.57
Interest in onshore gas discussion	3.12	3.08	3.08	3.07	3.08	3.08
Community attitudes and feelings	3.23	3.20	2.93	3.24	3.30	3.20

Note: Bold font indicates a significant difference from SW region average; Means with different superscript letters are significantly different (L = lower; H=higher)

Apx Table F. 2 Demographic differences: Mean scores based on living In-town and Out-of-town, Otway Basin, 2019

Dimensions	In-town	Out-of-town	SW region
COMMUNITY WELLBEING			
Personal safety	4.14	4.53	4.26
Income sufficiency	3.67	3.94	3.75
Health	3.73	3.77	3.75
Services and facilities	3.75	3.67	3.73
Town appearance	4.14	4.11	4.13
Roads	2.29	2.27	2.28
Environmental quality	4.04	4.27	4.11
Environmental management	3.64	3.55	3.61
Local decision-making and trust	2.94	3.19	3.01
Economic opportunities	2.97	3.08	3.00
Community cohesion	3.77	3.84	3.79
Community trust	3.67	3.79	3.71
Community participation	3.48	3.40	3.45
Community spirit	4.07	4.18	4.10
Social interaction	3.70	3.44	3.63
Overall community wellbeing	4.21	4.19	4.20
Expected future wellbeing	4.27	4.32	4.29
Place attachment	4.34	4.38	4.35
Community adapting	3.26	3.16	3.23
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES			
Perceived impacts	3.14	3.25	3.17
Risk manageability	3.17	3.05	3.13
Risk severity	3.24	3.38	3.28
Perceived benefits	3.42	3.29	3.38
Distributional fairness	3.60	3.49	3.57
Trust in gas company	2.64	2.55	2.61
Procedural fairness	2.35	2.35	2.35
Relationship quality	2.50	2.44	2.48
Governance overall	2.83	2.81	2.83
Formal governance	2.92	2.93	2.92
Engaging communities	2.92	2.89	2.91
Working collaboratively	2.79	2.82	2.80
Trust in gas governing bodies	2.74	2.62	2.71
Energy transition narrative	3.36	3.39	3.37
Knowledge and understanding	2.83	2.91	2.85
Information need	3.55	3.59	3.57
Interest in onshore gas discussion	3.07	3.12	3.08
Community attitudes and feelings	3.26	3.04	3.19

Note: Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

ApX Table F. 3 Demographic differences: Mean scores based on farm ownership, Otway Basin, 2019

Dimensions	Farm owner	Non-farm owner	SW region
COMMUNITY WELLBEING			
Personal safety	4.51	4.16	4.26
Income sufficiency	4.04	3.65	3.76
Health	3.81	3.73	3.75
Services and facilities	3.66	3.76	3.73
Town appearance	4.12	4.14	4.14
Roads	2.20	2.32	2.29
Environmental quality	4.27	4.05	4.11
Environmental management	3.47	3.67	3.62
Local decision-making and trust	3.15	2.96	3.01
Economic opportunities	3.07	2.98	3.01
Community cohesion	3.81	3.79	3.79
Community trust	3.83	3.66	3.71
Community participation	3.60	3.40	3.45
Community spirit	4.18	4.07	4.10
Social interaction	3.48	3.68	3.63
Overall community wellbeing	4.18	4.22	4.21
Expected future wellbeing	4.30	4.28	4.29
Place attachment	4.42	4.33	4.35
Community adapting	3.02	3.32	3.24
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES			
Perceived impacts	3.28	3.12	3.17
Risk manageability	2.94	3.21	3.14
Risk severity	3.41	3.22	3.28
Perceived benefits	3.19	3.46	3.39
Distributional fairness	3.38	3.64	3.57
Trust in gas company	2.52	2.65	2.61
Procedural fairness	2.30	2.38	2.36
Relationship quality	2.41	2.51	2.49
Governance overall	2.71	2.87	2.83
Formal governance	2.81	2.97	2.93
Engaging communities	2.78	2.97	2.92
Working collaboratively	2.72	2.84	2.81
Trust in gas governing bodies	2.55	2.77	2.71
Energy transition narrative	3.38	3.37	3.37
Knowledge and understanding	3.03	2.78	2.85
Information need	3.63	3.55	3.57
Interest in onshore gas discussion	3.19	3.04	3.08
Community attitudes and feelings	2.96	3.29	3.20

Note: Bold font indicates a significant difference

Apx Table F. 4 Demographic differences: Mean scores based on gender

Dimensions	Male	Female	SW region
COMMUNITY WELLBEING			
Personal safety	4.43^H	4.09^L	4.26
Income sufficiency	3.80	3.71	3.75
Health	3.77	3.72	3.75
Services and facilities	3.70	3.75	3.73
Town appearance	4.04^L	4.22^H	4.13
Roads	2.37^H	2.21^L	2.28
Environmental quality	4.16	4.06	4.11
Environmental management	3.53^L	3.70^H	3.61
Local decision-making and trust	3.02	3.00	3.01
Economic opportunities	3.13^H	2.88^L	3.00
Community cohesion	3.78	3.80	3.79
Community trust	3.72	3.70	3.71
Community participation	3.46	3.44	3.45
Community spirit	4.05	4.14	4.10
Social interaction	3.57	3.67	3.63
Overall community wellbeing	4.21	4.20	4.20
Expected future wellbeing	4.27	4.30	4.29
Place attachment	4.35	4.35	4.35
Community adapting	3.38^H	3.09^L	3.23
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES			
Perceived impacts	2.93^L	3.40^H	3.17
Risk manageability	3.32^H	2.96^L	3.13
Risk severity	3.15^L	3.40^H	3.28
Perceived benefits	3.45	3.32	3.38
Distributional fairness	3.68^H	3.47^L	3.57
Trust in gas company	2.69	2.54	2.61
Procedural fairness	2.39	2.32	2.35
Relationship quality	2.50	2.47	2.48
Governance overall	2.87	2.78	2.83
Formal governance	3.00	2.85	2.92
Engaging communities	3.00	2.83	2.91
Working collaboratively	2.86	2.75	2.80
Trust in gas governing bodies	2.66	2.75	2.71
Energy transition narrative	3.36	3.38	3.37
Knowledge and understanding	3.18^H	2.54^L	2.85
Information need	3.51	3.62	3.57
Interest in onshore gas discussion	3.26^H	2.91^L	3.08
Community attitudes and feelings	3.37^H	3.03^L	3.19

Note: Bold font indicates a significant difference; Means with different superscript letters are significantly different (L = lower; H=higher)

Apx Table F. 5 Demographic differences: Mean scores based on age

Dimensions	18-34 years	35-54 years	55+ years	SW region
COMMUNITY WELLBEING				
Personal safety	4.24	4.20	4.30	4.26
Income sufficiency	3.63	3.67	3.88^H	3.75
Health	3.69	3.61^L	3.87^H	3.75
Services and facilities	3.50^L	3.63^L	3.92^H	3.73
Town appearance	4.09	4.10	4.18	4.13
Roads	2.31	2.19	2.33	2.28
Environmental quality	3.95^L	4.09	4.20^H	4.11
Environmental management	3.70	3.52	3.64	3.61
Local decision-making and trust	2.85	2.74^L	3.29^H	3.01
Economic opportunities	3.08	2.95	3.00	3.00
Community cohesion	3.78	3.74	3.83	3.79
Community trust	3.75	3.55^L	3.80^H	3.71
Community participation	3.27	3.46	3.54	3.45
Community spirit	4.16	3.93^L	4.19^H	4.10
Social interaction	3.80	3.55	3.60	3.63
Overall community wellbeing	4.17	4.20	4.22	4.20
Expected future wellbeing	4.11^L	4.27	4.38^H	4.29
Place attachment	4.22	4.28	4.47^H	4.35
Community adapting	2.85^L	3.23	3.43^H	3.23
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES				
Perceived impacts	3.36^H	3.26	3.01^L	3.17
Risk manageability	3.17	3.21	3.06	3.13
Risk severity	3.61^H	3.38	3.05^L	3.28
Perceived benefits	3.28	3.42	3.41	3.38
Distributional fairness	3.60	3.48	3.61	3.57
Trust in gas company	2.55	2.48	2.73	2.61
Procedural fairness	2.27	2.21^L	2.50^H	2.35
Relationship quality	2.30	2.43	2.61	2.48
Governance overall	2.94	2.68^L	2.87	2.83
Formal governance	2.93	2.76	3.04	2.92
Engaging communities	3.02	2.75^L	2.98	2.91
Working collaboratively	2.88	2.67	2.86	2.80
Trust in gas governing bodies	2.98^H	2.58	2.66	2.71
Energy transition narrative	3.43	3.31	3.38	3.37
Knowledge and understanding	2.47^L	2.82	3.06^H	2.85
Information need	3.41	3.68	3.56	3.57
Interest in onshore gas discussion	2.96	3.03	3.19	3.08
Community attitudes and feelings	3.02	3.15	3.30	3.19

Note: Bold font shows significant difference from regional average; superscript letters are significantly different (L = lower; H=higher)

Apx Table F. 6 Demographic differences: Mean scores based on household income

Dimensions	less than \$40,000	\$40,000 to \$80,000	\$80,000 to \$120,000	\$120,000 or more
COMMUNITY WELLBEING				
Personal safety	4.19	4.15^L	4.41^H	4.41
Income sufficiency	3.12 ^L	3.74	4.01^H	4.29^H
Health	3.65	3.74	3.81	3.75
Services and facilities	3.85	3.71	3.71	3.59
Town appearance	4.14	4.07	4.26	4.08
Roads	2.28	2.25	2.33	2.29
Environmental quality	4.00	4.06	4.13	4.29^H
Environmental management	3.61	3.62	3.61	3.57
Local decision-making and trust	3.09	2.95	2.98	2.98
Economic opportunities	2.90	2.92	3.15	3.17
Community cohesion	3.80	3.83	3.80	3.70
Community trust	3.68	3.67	3.77	3.74
Community participation	3.47	3.41	3.46	3.56
Community spirit	4.03	4.11	4.14	4.14
Social interaction	3.56	3.57	3.76	3.67
Overall community wellbeing	4.12	4.19	4.36^H	4.20
Expected future wellbeing	4.18	4.31	4.43	4.24
Place attachment	4.34	4.30	4.46	4.29
Community adapting	3.39	3.34	3.22	2.89
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES				
Perceived impacts	3.27	3.22	3.02	3.14
Risk manageability	3.09	3.12	3.26	3.08
Risk severity	3.47	3.39	3.20	3.13
Perceived benefits	3.44	3.48	3.31	3.22
Distributional fairness	3.65	3.64	3.57	3.36
Trust in gas company	2.68	2.74	2.60	2.34^L
Procedural fairness	2.50	2.47	2.27	2.02
Relationship quality	2.61	2.59	2.48	2.11^L
Governance overall	2.85	2.96	2.81	2.65^L
Formal governance	3.02	3.07	2.85	2.65^L
Engaging communities	2.95	2.99	2.89	2.82
Working collaboratively	2.82	2.92	2.81	2.59
Trust in gas governing bodies	2.68	2.93	2.69	2.58
Energy transition narrative	3.41	3.47	3.30	3.17
Knowledge and understanding	2.75	2.70	2.86	3.22^H
Information need	3.57	3.49	3.71	3.61
Interest in onshore gas discussion	3.03	3.02	3.17	3.17
Community attitudes and feelings	3.18	3.27	3.21	3.12

Note: Bold font shows significant difference from regional average; superscript letters are significantly different (L = lower; H=higher)

Apx Table F. 7 Demographic differences: Mean scores based on education level

Dimensions	Less than Yr 12	Completed Yr 12	Certificate, Dip, Trade	Degree or higher
COMMUNITY WELLBEING				
Personal safety	4.30	4.32	4.13	4.32
Income sufficiency	3.70	3.82	3.46^L	4.14^H
Health	3.77	3.90^H	3.60^L	3.81
Services and facilities	3.79	3.99^H	3.62^L	3.63
Town appearance	4.06	4.33^H	4.08	4.14
Roads	2.20	2.44	2.10^L	2.50^H
Environmental quality	4.07	4.18	4.05	4.17
Environmental management	3.72	3.81^H	3.49	3.55
Local decision-making and trust	3.08	3.19	2.77^L	3.14
Economic opportunities	3.03	3.12	2.95	2.96
Community cohesion	3.75	4.05^H	3.73	3.73
Community trust	3.66	3.91^H	3.53^L	3.84^H
Community participation	3.17^L	3.42	3.43	3.77^H
Community spirit	4.05	4.27^H	3.99	4.16
Social interaction	3.38^L	3.90^H	3.66	3.61
Overall community wellbeing	4.11	4.35	4.18	4.22
Expected future wellbeing	4.32	4.36	4.17	4.36
Place attachment	4.43	4.50	4.25	4.29
Community adapting	3.60^H	3.38	3.22	2.82^L
ONSHORE CONVENTIONAL GAS PERCEPTIONS AND ATTITUDES				
Perceived impacts	2.97	3.14	3.21	3.33
Risk manageability	3.17	3.27	3.17	2.96
Risk severity	3.13	3.30	3.34	3.32
Perceived benefits	3.60^H	3.61^H	3.33	3.10^L
Distributional fairness	3.68	3.94^H	3.50	3.30^L
Trust in gas company	2.81^H	3.01^H	2.42^L	2.40^L
Procedural fairness	2.60^H	2.70^H	2.15^L	2.15^L
Relationship quality	2.65	2.87^H	2.30^L	2.30^L
Governance overall	2.97	3.07^H	2.65^L	2.76
Formal governance	3.10	3.30^H	2.75^L	2.73^L
Engaging communities	3.06	3.16^H	2.71^L	2.88
Working collaboratively	3.05^H	3.06^H	2.60^L	2.68
Trust in gas governing bodies	2.66	2.85	2.60	2.81
Energy transition narrative	3.47	3.71^H	3.22^L	3.25
Knowledge and understanding	2.84	2.57^L	2.80	3.12^H
Information need	3.19^L	3.53	3.55	3.99^H
Interest in onshore gas discussion	2.92	2.84	3.17	3.30^H
Community attitudes and feelings	3.36^H	3.28	3.23	2.94^L

Note: Bold font shows significant difference from regional average; superscript letters are significantly different (L = lower; H=higher)

References

- Australian Bureau of Statistics (ABS) (2016). TableBuilder. Viewed 12 September 2019
<https://www.abs.gov.au/census>
- Curran, G. (2017). Social licence, corporate social responsibility and coal seam gas: framing the new political dynamics of contestation. *Energy Policy*, 101, 427-435.
doi:10.1016/j.enpol.2016.10.042
- Grubert, E., & Skinner, W. (2017). A town divided: Community values and attitudes towards coal seam gas development in Gloucester, Australia. *Energy Research and Social Science*, 30, 43-52. doi:10.1016/j.erss.2017.05.041
- Gunningham, N., Kagan, R. A., & Thornton, D. (2004). Social license and environmental protection: why businesses go beyond compliance. *Law & Social Inquiry*, 29(2), 307-341.
- McCrea, R. (2014) Modelling effects of intervening variables using path analysis, In R. J. Stimson (Ed) *Handbook for Spatially Integrated Social Science Research Methodology*, Edward Elgar
- McCrea, R., Walton, A. and Leonard, R., 2014. A conceptual framework for investigating community wellbeing and resilience. *Rural Society*, 23 (3), 270-282.
- McCrea, R., Walton, A. and Leonard, R. (2019) Rural communities and unconventional gas development: What's important for maintaining subjective community wellbeing and resilience over time? *Journal of Rural Studies*, 68, 87-99.
- Moffat, K., & Zhang, A. (2014). The paths to social licence to operate: An integrative model explaining community acceptance of mining. *Resources Policy*, 39, 61-70.
- Walton, A. and McCrea, R. (2017) *Community wellbeing and local attitudes to coal seam gas development Social Baseline Assessment: Narrabri project - Phase 3 Survey report*. Australia: CSIRO.
- Walton, A. and McCrea, R. (2018) *Trends in community wellbeing and local attitudes to coal seam gas development - 2014 – 2016 - 2018: Western Downs and Eastern Maranoa regions, Queensland, Survey report*. Brisbane, Australia CSIRO. <https://gisera.csiro.au/project/trends-in-community-wellbeing-and-attitudes-to-csg-development-survey-3/>
- Zhang, A., & Moffat, K. (2015). A balancing act: The role of benefits, impacts and confidence in governance in predicting acceptance of mining in Australia. *Resources Policy*, 44, 25-34.
doi:10.1016/j.resourpol.2015.01.001

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