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A public opinion survey of four future scenarios for Australia in 2050

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ABSTRACT

Scenario planning and the use of alternative futures have been used successfully to assist organisations, communities and countries to move towards desired outcomes (Dator, 2009). In this study we used a unique combination of scenario planning and a national public opinion survey to explore preferred futures for Australia in 2050. The approach used four future scenarios for Australia in 2050 as the basis for an online national public opinion survey entitled *Australia: Our Future, Your Voice*. Scenario development was based on a review of a broad range of scenarios for Australia and globally. We then developed four synthesis scenarios based on two axes of individual versus community orientation, and national focus on GDP growth versus a focus on well-being more broadly defined. The scenarios were labelled: (1) Free Enterprise (FE); (2) Strong Individualism (SI); (3) Coordinated Action (CA); and (4) Community Well-being (CW). We created a website that described each of these scenarios and invited people to complete a survey after they had reviewed the scenarios.

The survey engaged 2575 adults in two groups: (1) a targeted statistically representative national sample (n = 2083) and (2) a self-selected sample (n = 492). Results from both groups and across all demographic categories revealed that a majority of participants preferred the Community Well-being (CW) scenario. 73% (Representative) and 61% (Self Select) ranked this scenario as 1st or 2nd. We also asked which scenario Australia was headed toward. 32% of the Representative sample and 50% of the Self-Selected sample participants ranked the Free Enterprise (FE) scenario as the most likely future. CW was ranked least likely to be 'where Australia is heading?' The dissonance between the future Australians want and where they thought the country is headed has clear policy implications, which we discuss.

This extension of scenario planning to include public opinion surveys is novel and this approach can be used to improve thinking, discussion, planning and policy about the future of Australia, as well as potentially other countries and regions.

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1. Introduction

Australia, like all countries, is faced with choices about its future. Should Australia pursue an approach that continues to focus on economic growth, or should Australia focus more on conserving the environment, increasing social equity and improving community well-being? Is there a balance that can be established between what are often perceived as competing goals, and what should be the role of government in achieving this balance?

The use of public opinion polls to gauge preferences and attitudes is common, however, they are usually focused on the next election or on short-term, specific policy choices. Who is the best party to govern? Do we support one leader or the other? What is the preference regarding same sex marriage? Further, although politicians often campaign on their "vision for the future of the country", these visions are often criticised as being 'vague sound-bites' and 'short-term' focused. Australians are rarely asked perhaps the most important questions: What type of future would Australians like to see for the country, and, as importantly, do Australians believe they are heading in that direction?

Within this context Scenario Planning (SP) provides an approach that 'helps see beyond short term political horizons' (Inayatullah, 2009) and that addresses these longer term issues. SP has been used effectively in informing decision making by exploring and constructing possible futures based on existing social, environmental, economic and cultural drivers (Costanza et al., 2015). Although used successfully in other regions and countries to navigate the path through an uncertain future, in determining national future scenario preferences, SP has primarily utilised focus group approaches. These focus groups have been based on national leadership representation, as seen in South Africa (Kahane, 2004), or alternatively a broader community audience as utilised in Hawaii (Dator, 2009) and New Zealand (Taylor et al., 2007) Similar approaches to determining and achieving desired future outcomes have also been used in both organisational change (1987, Ansoff, 1978; Mintzberg & Lampel, 1999; Bradford, Wright, Bart, Cairns, & Van Der Heijden, 2005) and societal behaviour change (Costanza et al., 2017).

The example of the use of scenario planning in South Africa demonstrates the impact this approach can have on future planning, policy development and transition and is therefore relevant to the situation in Australia.

Scenario Planning was used in South Africa in the early 1990's to facilitate the transition from Apartheid to the Rainbow Nation (Kahane, 2004). The approach was based on: (i) the identification of particular influential and uncertain focal points and drivers in South Africa (O'Brien, 2000) in this case, national governance options and potential outcomes that could result following the elections; and (ii) the use of these drivers for the development of four plausible scenarios or stories that reflected the alternative futures being faced by South Africa.

The benefits of the use of scenario planning at a very practical level in this very volatile period in the South Africa's history is captured in a popular joke at the time. Faced with the country's daunting challenges after considerable disharmony and hardship, South Africans joked that they had two options: a practical option and a miraculous option. 'The practical option was that we would all get down on our knees and pray for a band of angels to come down from heaven and fix things for us. The miraculous option was that we would continue to talk with each other until we found a way forward together' (Kahane, 2004). Scenario planning provided the practical framework for the 'miraculous' option. In addition to indentifying the key parameters / drivers impacting the future in South Africa and developing four plausible scenarios based on these key parameters, two additional scenario planning tools were utilised to facilitate the transition process; these included identification of a preferred scenario by participants and utilisation of this preferred scenario to form the basis for a national conversation and strategic planning process on how this preferred future or scenario could be achieved (Dator, 2009; Kahane, 2004).

In Australia, scenario planning has already been used in a number of regional contexts (Costanza et al., 2015) but to date not on a national level. One recent regional example was in the Westernport Bay Region in Victoria as part of a community consultation process. The key parameters were built around current trends of development, construction of a major international container port, and economic and environmental factors, including consideration of tourism and ecosystem services (VNPA, 2014). These were distilled into four plausible scenarios and used to inform policy-making regarding development in the region.

In order to address the larger question of the preferred future for Australia we extended the traditional use of scenario planning to include public opinion survey methodologies. The approach utilised both the identification of key drivers for Australia and then used these drivers to identify four alternative plausible future scenarios for Australia in 2050. Two forms of national survey were then conducted where respondents were asked a series of questions relative to these four scenarios which included (i) their preferred scenario (ii) where they thought Australia is now and (iii) where they thought Australia is heading (Dator, 2009). The purpose of this approach was to both support a national discussion on what Australians want for their future and to guide government, business and community in decision making and governance relative to the preferred futures.

The first section of this paper describes the methods used in preparing the four future scenarios for a web-based national public opinion survey. The second section outlines the survey and public engagement methodology. The third section provides the results of the survey of public preferences for the four scenarios and an analysis of these results. Finally, in section four, we discuss some implications of these results for governance and policy.

1.1. Developing SCENARIOS FOR AUSTRALIA

In looking at the development of scenarios for Australia it is useful to further review the background and broader application of scenario planning.

Schwartz (1996) defined scenario planning as a process for matching perceptions of the future with decisions that have to be taken, thereby providing an important tool for setting public policy both within Australia and internationally. Ringland and Schwartz

(1998) emphasised the usefulness of scenario planning as a tool to manage the uncertainty of the future, a situation faced in Australia due to both national and international trends and drivers. The importance of the use of these drivers in establishing the scenario options is identified by O'Brian, who highlighted that scenarios are essentially 'stories that consider how alternative futures relate to particular focal issues that may unfold from a combination of highly influential and uncertain drivers, and their interaction with more precise driving forces' (O'Brien, 2000).

Within the public policy context, Coreau, Pinay, Thompson, Cheptau, and Mernet, (2009) highlighted that scenarios 'are not predictive models, but deal with hypothetical futures from a strategic perspective, rather than tactical' (Coreau et al., 2009). Coreau also noted that scenarios do not predict a single outcome, but a cumulative impact. Most importantly in the public policy context, as Australia faces a range of choices for the future, Amer, Daim, and Jetter, (2013) highlight how scenario planning stimulates strategic thinking and helps overcome thinking limitations by creating multiple futures. The importance of scenarios in academic research was emphasised by Ramirez, Mukherjee, Vezzoli, and Kramer, (2005) who outlined how scenarios 'help challenge existing assumption, identify novel lines of enquiry, and enable new research opportunities to emerge'.

For the specific development of alternative scenarios for Australia, Dator (2009) and Hunt et al. (2012) provided useful frameworks by identifying four key scenario archetypes: (i) Continued Growth / Market Forces (a growth archetype), (ii) Discipline / Policy Reform (a discipline/restraint archetype), (iii) Transformation / New Sustainability Paradigm (a transformational archetype) and (iv) Collapse / Fortress World (an archetype where the world become fragmented, inequitable, and head towards temporary or permanent social collapse).

1.2. Four scenarios for Australia in 2050

In outlining the development process for the four scenarios, it is important to identify at the outset the theoretical and epistemological position of the authors. The survey was developed at The Crawford School of Public Policy, Australian National University as part of an ecological economics program that embodies a trans-disciplinary, systems oriented approach.

To ensure that scenarios were fully representative of Australia's population base, the four specific scenarios for Australia were developed broadly based on the four scenario archetypes outlined by Dator (2009) and Hunt et al. (2012). These were then checked against a systematic review and synthesis of a broad range of Australian and global scenario studies to identify both key drivers and national scenario content (Costanza et al., 2015). Based on this analysis the Australian scenarios were structured around two key parameters: (i) individualism versus community orientation and (ii) a business as usual / GDP growth development approach versus a broader economic, ecological and social well-being development approach. The public debate leading up to the 2016 Federal Election on issues such as the environment and climate change (Cox & Lee, 2015; Mitchell, 2015), freedom of the individual versus community interests (The Guardian, 2015), tax equality and gun laws (Gittins, 2015), demonstrated the practical application of these axes / drivers to the debate in Australia. These parameters were then used to generate four potential scenarios for Australia's future in 2050.

Within this process it was noted that one of the challenges faced in using national public opinion survey methodologies would be the minimisation of any potential bias in both naming and describing the scenarios. The generic naming descriptions used by Dator (2009) and Hunt et al. (2012) such as Collapse / Fortress World and Transformation / New Sustainability Paradigm highlighted this potential for bias to be perceived in scenario names and descriptions.

A further review of scenario names and descriptions used in other regional and national studies further highlighted this as a potential problem that needed to be addressed. Examples such as 'Catastrophe' in the Australia's Futures study (Cork et al., 2015), 'Fruits for a Few' in the New Zealand study (Taylor, 2015), and 'Lame Duck' in the South African scenarios (Kahane, 2004) also highlighted the potential to lead the respondents to prefer certain scenarios over others because of their names (Costanza, 2014). Although the use of these names was perhaps not problematic for these limited group studies as they were developed by the participants and therefore had appropriate significance for the outcomes. However as national survey participants would not have this background in the development and significance of the alternative scenarios, naming and scenario descriptions were identified as a potential area of bias that required addressing if SP was to be used in a national public opinion survey.

Therefore, for this national public opinion survey where the objectives were to both determine preferred future scenarios for Australia and to promote an open national dialogue on each of these preferred futures, a methodology was developed to minimize potential bias in scenario naming and descriptions. First, we named scenarios based on what we perceived as plausible alternative futures for Australia given the key parameters in each. Second, to minimise potential bias where negative outcomes were included in descriptions, we used existing research used as the basis for the description content (e.g., potential outcomes for the Great Barrier Reef under each scenario (Bohensky, Butler, & Costanza, 2011), Third, drivers such as economic, ecological and social outcomes were standardised under generic key headings: Governance, Economy, Community, Individual well-being, Natural environment and Built infrastructure. Finally, the names and description terminology for this Australian survey were then pre-tested with a focus group to ensure the scenario naming and descriptions that we developed were indicative of the basic characteristics of the scenario but minimised any unintended bias (Harte et al., 2015).

This methodology resulted in the four scenario names chosen to describe the options: (1) Strong Individualism, (2) Community Well-Being, (3) Free Enterprise, and (4) Coordinated Action. The parameters, scenario names, and brief descriptors are summarised in Fig. 1.

Each scenario was then translated into a single page description of Australia in 2050. Finally, to increase participant 'experience' and 'engagement' in these scenarios (Dator, 2009), each scenario description was translated into a short story (O'Brien, 2000) in the form of '2050 News Brief'. The intent was to maximise accessibility of the scenarios to a broad range of participants in the national survey context, while minimizing the amount of time necessary for participants to understand each scenario. These Scenario

Fig. 1. Australia: Our Future, Your Voice survey matrix.

Descriptions and associated scenario '2050 News Reports' are included in Appendix A.

2. Public survey and engagement

This research was conducted using two public survey sampling techniques: (i) a national statistically representative sample and (ii) a self-selected sample. The two survey sample methodologies were used to provide the opportunity to (i) compare and contrast the results of the nationally representative sample (more indicative of a national compulsory referendum result as used for the Australian republic referendum) to a self-selected sample (more indicative of the voluntary postal survey used in the Australian same sex marriage survey) (Bickers, 2017; Medhora, 2017) and (ii) to encourage inclusiveness and engagement in the national debate generated by the self select engagement process.

2.1. representative survey (national statistically representative sample)

This survey was conducted using a closed website where participants could engage in the survey. To achieve statistical robustness, a random sample of 2083 participants was sourced from the ADP market research national database. This was normalised to reflect a demographically representative sample. Sample size of $n > 2080$ has a maximum sampling variance of ± 2.85% for the total sample at a 99% confidence level.

2.2. Self-Select Survey

This survey was conducted using a publicly accessible website combined with a national promotion campaign entitled *'Australia: Our Future, Your Voice'*. The national survey was promoted though a range of public communications mechanisms, including (i) a national press release, (ii) a national radio interview broadcast on ABC Radio National, (iii) direct contact to a cross section of 30 national organisations inviting the participation of their membership, and (iv) invitations to participate to students and staff in a national university (The Australian National University). A total of 492 participants took part in the Self-select Survey, which was substantially lower than the Representative Survey. The Self-select sample size of $n > 480$ has a maximum sampling variance of ± 4.455% for the total sample at a 95% confidence level.

2.3. The 'Australia: our future, your voice' survey

Both surveys were conducted using the *Australia: Our Future, Your Voice* web based survey. The survey aimed to determine both information regarding public participant scenario preferences and participant characteristics; it is included in Appendix B. The survey was constructed based on a questionnaire framework developed to elicit (i) a simple ranking of scenarios from most to least preferred, and estimates of how 'satisfied' participants expect they would be in each of the scenarios (intended to supplement the preference ranking by giving an estimate of strength of preference for each scenario) (Dator, 2009), as well as (ii) demographic questions (postcode, gender, voting intention, age, highest level of education, household income and country of origination). Demographic data provided the opportunity to understand the comparative demographics of both the Representative and Self-select samples. The survey also included (iii) a shortened and adapted form of the Aspiration Index (Grouzet et al., 2005), which can be answered by people with a wide range of backgrounds and educational levels, as well as (iv) a short measure of well-being known as the Flourishing Scale (Diener et al., 2010). Finally the survey included (v) a short measure of participant motivation to take part in the survey (Where did you hear about this Survey?). This was of particular relevance for Self-select Survey participants.

The inclusion of both participant scenario preferences and demographics is a core objective of the research. The inclusion of participant motivation to take part in the survey was to test correlations between any organisational affiliations and preferences. The inclusion of participant goals, values and well being indicators requires further explanation. Individual goals and values are strongly associated with preferences for the future and are therefore potentially significant drivers of scenario preferences. We were therefore interested in not only exploring patterns of preferences among the general public for different scenarios and participant demographics, but also testing relationships between preferences and different types of personal goals and values.

The Aspiration Index, a well-validated goal and values measure, was used to explore this relationship. This provided a number of further benefits to the research. **(i)** Validation: Measuring goals provided an opportunity to validate that participant preferences for different scenarios reflect general patterns of valuing rather than idiosyncratic features of the scenarios themselves. **(ii)** Ability to generalise: Inclusion of goal measures allowed us to generalise our findings. Goals appear to influence responses on a large range of societal and environmental issues, including social inequality, racism, gender relationships, human rights and environmental degradation. It is important in the ongoing evolution and application of living scenarios to be able to relate the specific scenario narratives to more general patterns of intrinsic (personal growth, affiliation, community feeling) and extrinsic (financial success, image, popularity) values (Grouzet et al., 2005). **(iii)** Tailoring: Understanding the relationship between goals and values, and their relationship to scenarios, is important in the application of scenario planning moving forward. It enabled us to understand how to tailor scenarios and communications so they are readily accessible to varying population segments whose goals may vary widely. Similar visions for the future, for example, can be expressed in different ways in order to better relate to people with different aspirations. This was seen as important in the ongoing evolution of the use of living scenarios in public policy development and implementation. **(iv)** Application: In responding to a values questionnaire, participants are essentially reporting on affective (emotional) responses across a range of contexts. As highlighted by Schwartz, 'values reflect desirable, trans-situational goals, which vary in importance and that serve as guiding principles in people's lives'. While values can be abstracted from any given situation, they are inextricably linked to emotions and desires that influence behaviour and become important in the potential application of this research moving forward.

The benefits of understanding participant goals and values and their relationship to preferred futures therefore provided further frameworks for the evolution of living scenarios and their contribution to both developing and implementing public policy and achieving publicly desired outcomes.

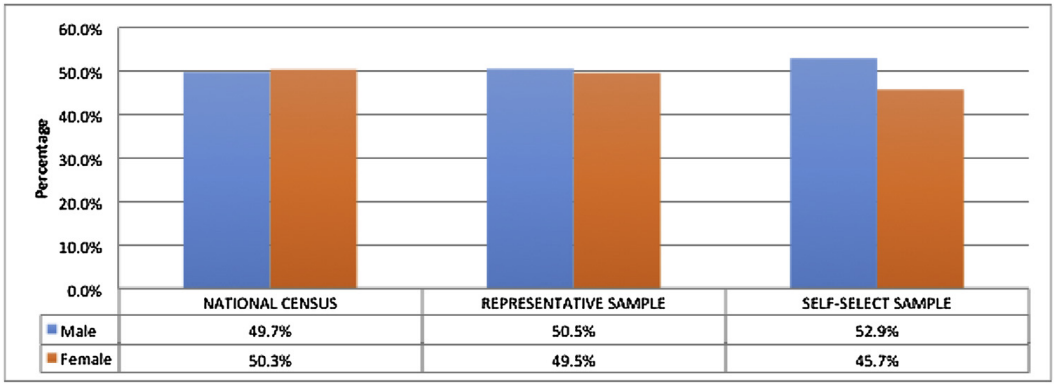
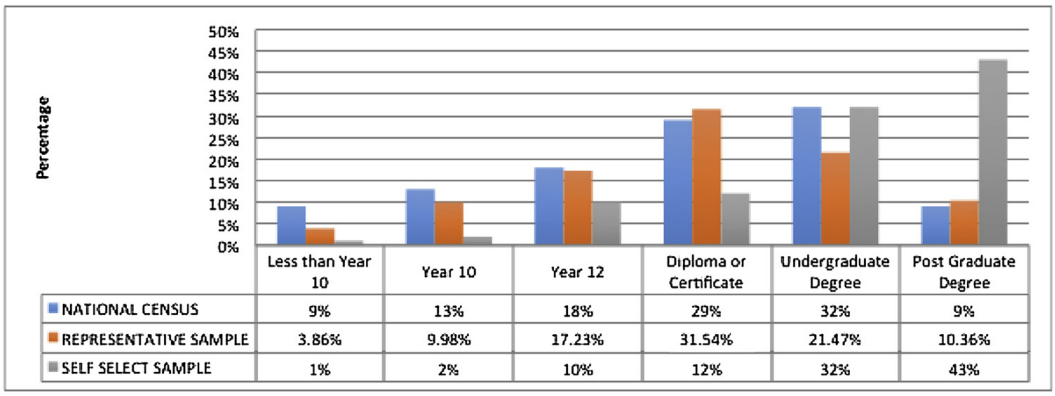


Fig. 2. Gender Distribution.



	Less than Year 10	Year 10	Year 12	Diploma or Certificate	Undergraduate Degree	Post Graduate Degree
NATIONAL CENSUS	9%	13%	18%	29%	32%	9%
REPRESENTATIVE SAMPLE	3.86%	9.98%	17.23%	31.54%	21.47%	10.36%
SELF SELECT SAMPLE	1%	2%	10%	12%	32%	43%

Fig. 3. Education Levels.

3. Results

3.1. Demographic results

3.1.1. Gender distribution

Fig. 2 demonstrates that the demographics of the Representative sample were comparable to the National Census Data in both male and female participant populations. It was noted, however, that in the Self-select sample male representation was 7.2% higher than female representation.

3.1.2. Age, education and salary distribution

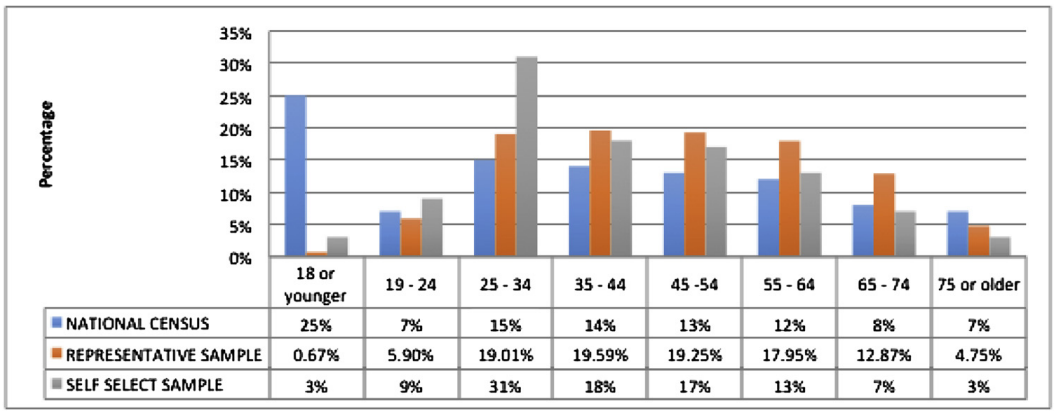
Comparisons were made to Australian Census data against factors such as gender, education level, age, and salary range for both the Representative and Self-select samples. The Representative Sample was quite comparable on these factors, except for undergraduate education, which was slightly lower than the National Census Data, as seen in Fig. 3.

Also of note when reviewing educational levels was that the Self-select sample had much higher participation rates by participants with postgraduate education levels than both the National Census Data and the Representative Sample. An explanation for this could be the invitation to a university population to participate in the Self-select sample. This would also explain the higher 25–34 years age range compared to the National Census Data, as seen in Fig. 4.

The other demographic characteristic of note in the Representative sample was a higher concentration of participants in the $25,000 to $74,000 salary range compared to the National Census data (Fig. 5). This may reflect a characteristic of participants who form part of the ADP research database.

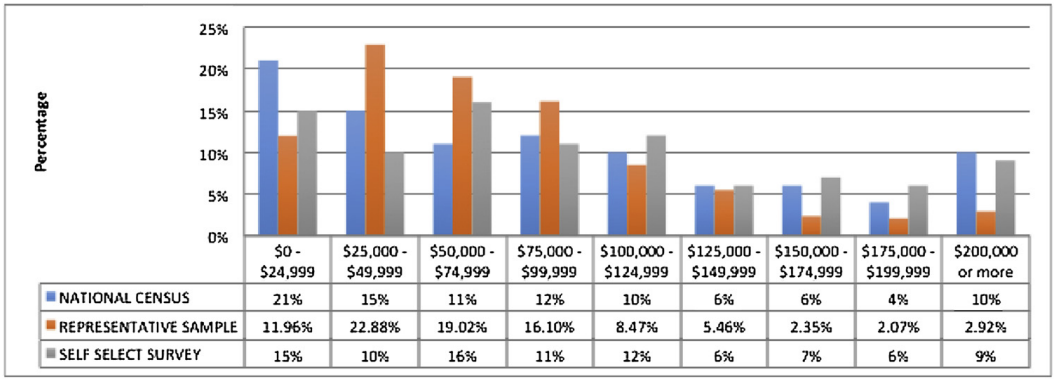
3.2. Political alignment

In the Representative Sample, a slightly lower percentage of Liberal Party aligned participants was observed, although other party affiliations were comparable to the 2013 Election Data (Australian Electoral Commission, 2013). In both samples it was noted that participants who responded as politically non-aligned were relatively high compared to the election results. In the Self-select sample, the most obvious differences were a much higher percentage of Green Party aligned participants. A lower representation of the Liberal, National Party, and Labour aligned participants was also observed (Fig. 6). These results provided a useful contrast to the Representative sample and therefore the opportunity to examine the potential differences in scenario preference results between the



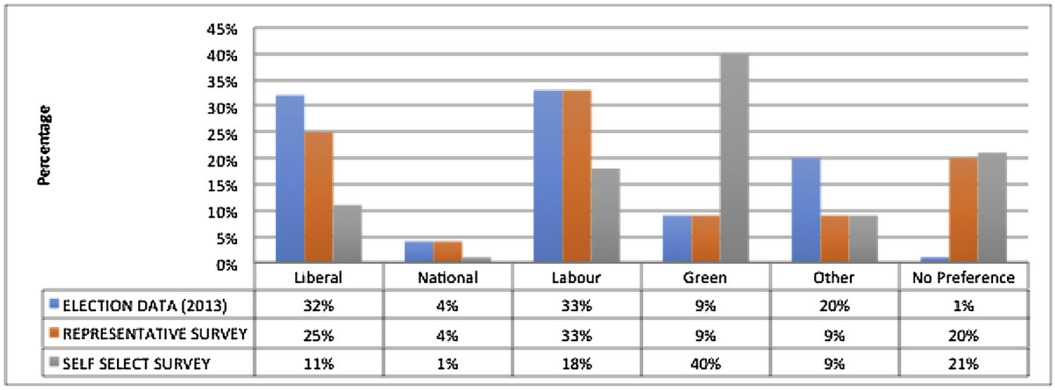
	18 or younger	19 - 24	25 - 34	35 - 44	45 -54	55 - 64	65 - 74	75 or older
NATIONAL CENSUS	25%	7%	15%	14%	13%	12%	8%	7%
REPRESENTATIVE SAMPLE	0.67%	5.90%	19.01%	19.59%	19.25%	17.95%	12.87%	4.75%
SELF SELECT SAMPLE	3%	9%	31%	18%	17%	13%	7%	3%

Fig. 4. Age Range Levels.



	$0 - $24,999	$25,000 - $49,999	$50,000 - $74,999	$75,000 - $99,999	$100,000 - $124,999	$125,000 - $149,999	$150,000 - $174,999	$175,000 - $199,999	$200,000 or more
NATIONAL CENSUS	21%	15%	11%	12%	10%	6%	6%	4%	10%
REPRESENTATIVE SAMPLE	11.96%	22.88%	19.02%	16.10%	8.47%	5.46%	2.35%	2.07%	2.92%
SELF SELECT SURVEY	15%	10%	16%	11%	12%	6%	7%	6%	9%

Fig. 5. Salary Range Levels.



	Liberal	National	Labour	Green	Other	No Preference
ELECTION DATA (2013)	32%	4%	33%	9%	20%	1%
REPRESENTATIVE SURVEY	25%	4%	33%	9%	9%	20%
SELF SELECT SURVEY	11%	1%	18%	40%	9%	21%

Fig. 6. Political Alignment.

two survey samples.

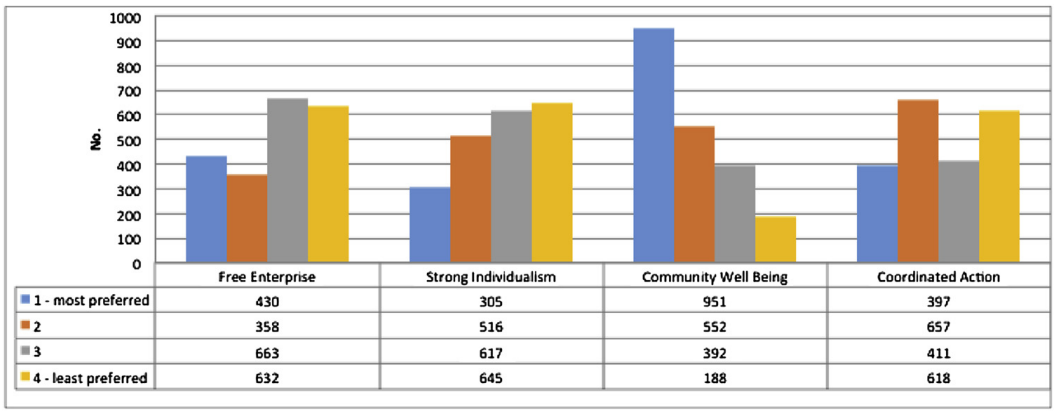
3.3. Scenario preferences

3.3.1. Representative sample

3.3.1.1. Preferred scenarios. Participants were first asked to rate their preference for each of the scenarios, from Most Preferred (1) to Least Preferred (4). The results are illustrated in Fig. 7 and were reviewed using three methodologies (i) 'first past the post' (ii) a combination of first and second preferences, and (iii) the Borda method (Fishburn, 1971).

Using (1) a 'first past the post' methodology, the most preferred scenario was Community Well-being scenario (951 / 46%), scoring more than twice that of the second most preferred scenario, Free Enterprise (430 / 21%). Coordinated Action (397 / 19%) was the next most preferred scenario, followed by Strong Individualism (305 / 15%). Coordinated Action scored most strongly as a second preference at (32%), followed by Community Well-being (27%), Strong Individualism (25%), and Free Enterprise (15%).

The next analysis methodology involved combining the first and second preference scores. Of the 2083 responses in the survey, Community Well-Being scored most strongly at 73% when first and second preferences were combined (46% as first preference, 27%



	Free Enterprise	Strong Individualism	Community Well Being	Coordinated Action
1 - most preferred	430	305	951	397
2	358	516	552	657
3	663	617	392	411
4 - least preferred	632	645	188	618

Fig. 7. Preference for future scenarios.

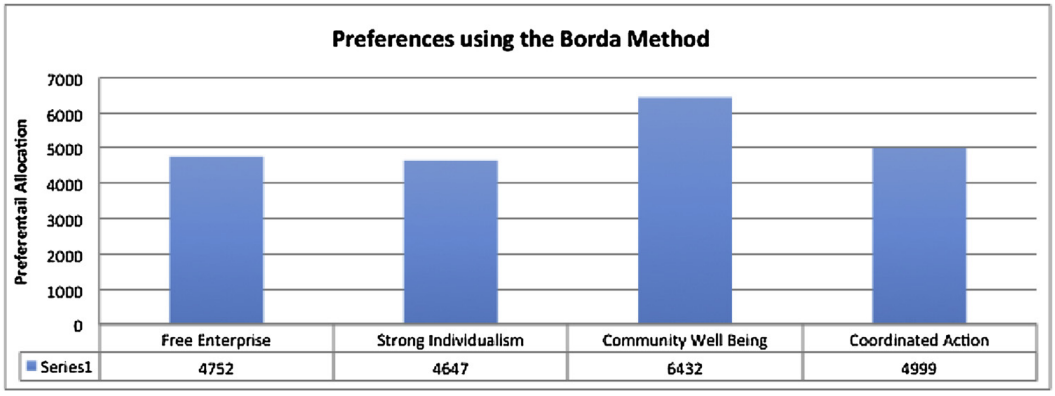


Fig. 8. Preferred Scenarios Analysis using the Borda Method.

as second), followed by Co-ordinated Action at 51% (19% as first preference, 32% as second), and Strong Individualism at 40% (15% as first preference, 25% as second). The weakest scenario using this analysis was Free Enterprise at 38% (21% as first preference, 17% as second),

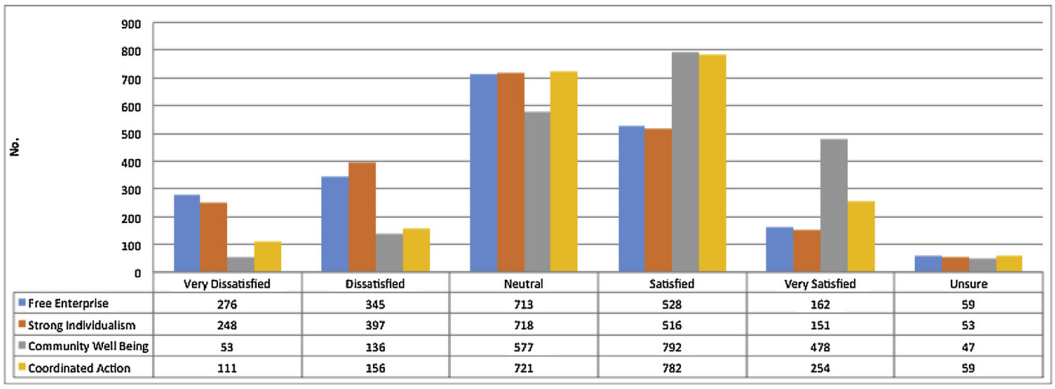
The final methodology used was the Borda scoring method. This enabled all of the preferences to be incorporated into a single result using a preferential voting method for allocation of results. A simple application of this methodology was used to calibrate first to forth preferences: n, n-1, n-2 and n-3. The Most Preferred result was scored at four (4) with n = 4 as there were four possible results. The second preference was scored at n -1 = 3, descending to the least preferred scenario which scored at n - 3 = 1. Using this preferential allocation methodology based on the total number of points, the strongest participant preference was again Community Well-being (6432 / 31% of total), followed by Coordinated Action (4999 / 24% of total), Free Enterprise (4752 / 23% of total), and Strong Individualism (4647 / 22% of total) (Fig. 8).

The results demonstrate two key outcomes. First, participants in the Representative Survey clearly preferred the Community Well-being scenario, regardless of the methodology used. Second, strong participant support was still clearly evident for each of the other scenarios, although Strong Individualism had consistently weak support.

These findings do not provide an unambiguous way forward. However in policy formation it does highlight the divergence of preferences across the Australian public and therefore the importance of an approach to development that achieves an appropriate balance across economic, ecological and social outcomes. The results also provide some evidence that the attempts to minimise inherent bias in the survey through generic naming and scenario descriptions appeared to have been relatively successful.

3.3.1.2. Scenario satisfaction levels. The next area of analysis concerned participants' expectations about how satisfied they would be living under each scenario; they chose between Very Dissatisfied, Dissatisfied, Neutral, Satisfied and Very Satisfied for each scenario. Again the strongest preference was for the Community Well-Being scenario with over 60% of participants indicating they would be either Satisfied or Very Satisfied living in this scenario. Community Well Being was followed by Coordinated Action (50%), Free Enterprise (33%) and Strong Individualism (32%). When Dissatisfied and Very Dissatisfied results were reviewed, the highest dissatisfaction results were for the Strong Individualism scenario (31%), followed by Free Enterprise (30%), Coordinated Action (13%) and Community Well Being (9%) (Fig. 9).

3.3.1.3. Australia's future. Three additional questions were asked of participants regarding Australia's future. First, respondents answered 'Which scenario do you think other Australians would prefer?'. The highest percentage of participants thought other Australians would prefer the Community Well-Being scenario (52%), followed by Coordinated Action (19%), Free Enterprise (15%) and Strong Individualism (13%). This indicated consistency between the most preferred participant scenario (CW) and the scenario



	Very Dissatisfied	Dissatisfied	Neutral	Satisfied	Very Satisfied	Unsure
Free Enterprise	276	345	713	528	162	59
Strong Individualism	248	397	718	516	151	53
Community Well Being	53	136	577	792	478	47
Coordinated Action	111	156	721	782	254	59

Fig. 9. 'How satisfied would you be living in one of these scenarios?'.

the majority of participants perceived other Australians would prefer (CW).

A clear consistency was also observed between the results to the first three questions. Community Well-being was the most popular first preference, the most popular scenario in which participants would be most satisfied living, and the scenario perceived by participants as the most popular preference for other Australians.

An apparent disparity in the study was participants' responses to the following two questions 'Where is Australia now? and 'Where is Australia heading?' For 'Where is Australia now?' the highest number of participants perceived Australia to be in the Free Enterprise (38%) followed by Strong Individualism (26%). For 'Where is Australia heading?' the highest number of participants perceived Australia to be heading towards Free Enterprise (32%) when followed by the Strong Individualism scenario (30%).

There was therefore a clear dissonance between the results of these two questions and the strength of the representative sample participants' first preference for Community Well-being using all analysis measures. The perception by a majority of participants that Australia was not currently in, or heading towards, their preferred scenario (Community Well-being) could potentially explain some of the disenchantment with the political, social and economic systems observed in Australia.

3.3.1.4. Aspirations and life satisfaction. We also tested how participants' personal Goals and Aspirations were related to their scenario preferences. The key relationships noted were between first preference scenario choices and the Aspiration Index measure of preference for Intrinsic (personal growth, affiliation, community feeling) and Extrinsic (financial success, image, popularity) values and the life satisfaction measure.

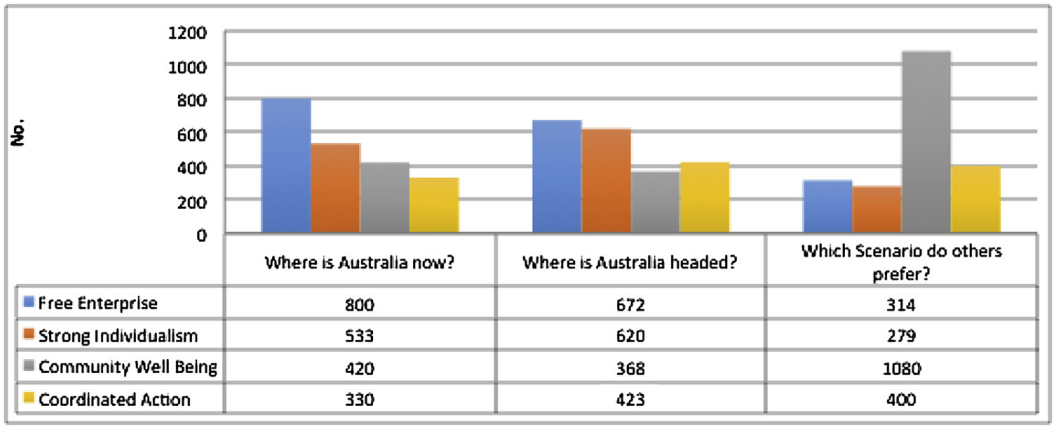
First, we observed that participants with first preferences for Community Well-being and Coordinated Action valued intrinsic aspirations more highly than those who chose Free Enterprise and Strong Individualism. It was also observed that this trend was reversed for participant preferences for Free Enterprise and Strong Individualism. Participants who preferred Free Enterprise and Strong Individualism placed stronger priority on extrinsic aspirations than did those with scenario preferences for Community Well-Being and Coordinated Action (Fig. 11).

Regrading the life satisfaction index, those who chose Free Enterprise as their first preference scored higher on the life satisfaction scale than did those who chose Community Well-being (Fig. 12). The converse relationship was also observed. Those who chose Community Well-being as their first preference scored lower on the life satisfaction index than those who chose Free Enterprise. These results raise the question as to whether there is a link between this result and the answers to the questions 'Where Australia is now?' and 'Where Australia is heading? (Fig. 10). Is the fact that life satisfaction is higher for those with first preference for the Free Enterprise scenario a result of their perception that this is where Australia is now and where Australia is heading? And conversely, is the life satisfaction of those who chose Community Well-being as their preferred scenario lower because they perceive Australia to be heading in a different direction (towards the Free Enterprise and Strong Individualism scenarios)? This result further raises the question of whether this lower level of personal life satisfaction extends to a societal level. Though it is not within the scope of this study to answer these questions, this finding does suggest the opportunity for further research in this area.

3.3.2. Self-select sample

3.3.2.1. Scenario preferences. As noted in the introduction, the value of conducting of a Self-select Survey in parallel to the Representative Survey was to provide the opportunity to examine differences between responses of participants who self-selected to participate and those from a national statistically representative random sample. This is of relevance in Australia due to the fact that both approaches are frequently used to determine Australians' preferences and subsequent public policy. For example, a Self-select survey approach was used to determine and set public policy in the Australian Same Sex Marriage postal survey (Bickers, 2017: Medhora, 2017) whereas a representative sample survey is more indicative of the participatory referendum approach used to determine public policy on Australia as a republic in 1999.

It is therefore of interest to note that of the 492 responses to the Self-select Survey, a similar result for the highest preference to that of the Representative Survey was observed. In the Self-select survey 47% selected Community Well-being as their first preference and 14% as their second preference. However, the preferences for other scenarios in the self-select survey were somewhat different



	Where is Australia now?	Where is Australia headed?	Which Scenario do others prefer?
Free Enterprise	800	672	314
Strong Individualism	533	620	279
Community Well Being	420	368	1080
Coordinated Action	330	423	400

Fig. 10. Participants preferences and responses on (a) where Australia is now, (b) where Australia is heading, and (c) which scenario others prefer.

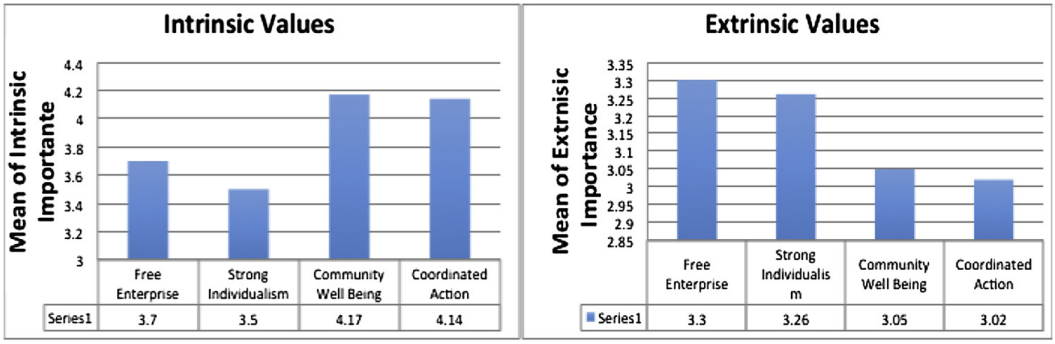


Fig. 11. Comparison of scenario preferences with intrinsic and extrinsic values.

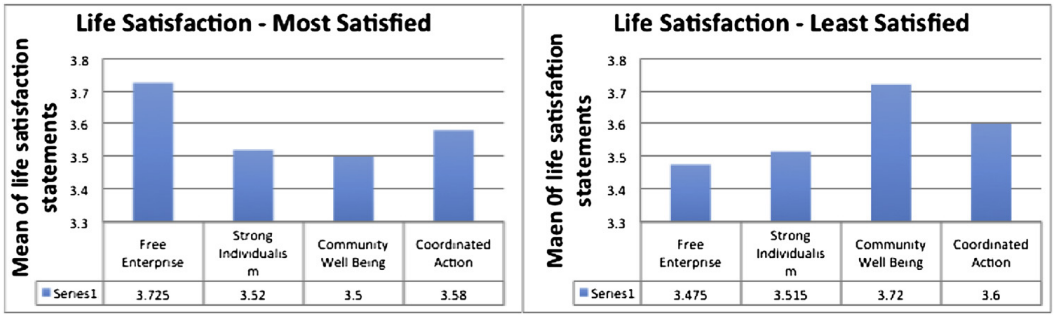


Fig. 12. Comparison of scenario preferences with life satisfaction parameters.

than in the Representative Survey. Coordinated Action was the second most popular choice, with 15% selecting it as first preference and 38% as second preference. Next was Strong Individualism, with 5% as first preference and 10% as second, and finally Free Enterprise with 5% as first preference and 6% as second (Fig. 13). This reversal of secondary results might be explained by the much higher Green politically aligned participants in the Self-select sample than in the Representative sample, as noted in Fig. 6.

3.3.2.2. Scenario satisfaction levels. These results were also reflected in the pattern of responses to the questions 'How satisfied would you be living in one of these future scenarios'. The most popular choice for first preference was Community Well-Being and second preference was Coordinated Action (Fig. 6). This was a similar result to that see in the Representative Survey (Fig. 14 Fig. 14)

3.3.2.3. Australia's future. When asked 'Where is Australia now?' the highest number of Self-selected participants chose the Free Enterprise scenario (45%), a similar pattern to that noted with the Representative sample. This result was also observed for the question 'Where is Australia headed?' When asked this question, the highest percentage of participants selected Free Enterprise (51%), with Community Well-being (5%) scoring the lowest result (Fig. 15). The greater extremes in these results compared to the Representative sample could be potentially explained again by the higher Green party aligned representation in the Self-select sample compared to the Representative Sample (Fig. 6).

The responses to the question 'What scenario do you think others prefer? were similar in pattern to the Representative Sample. The self-selected sample did however again demonstrate slightly greater extremes, as seen in Fig. 15. This result could represent a difference between Representative and Self-select surveys. In these two surveys methodologies a stronger perception that others have

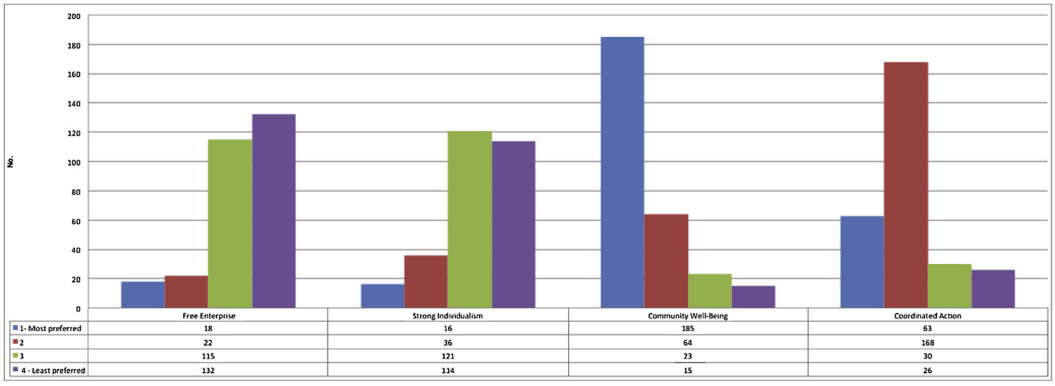
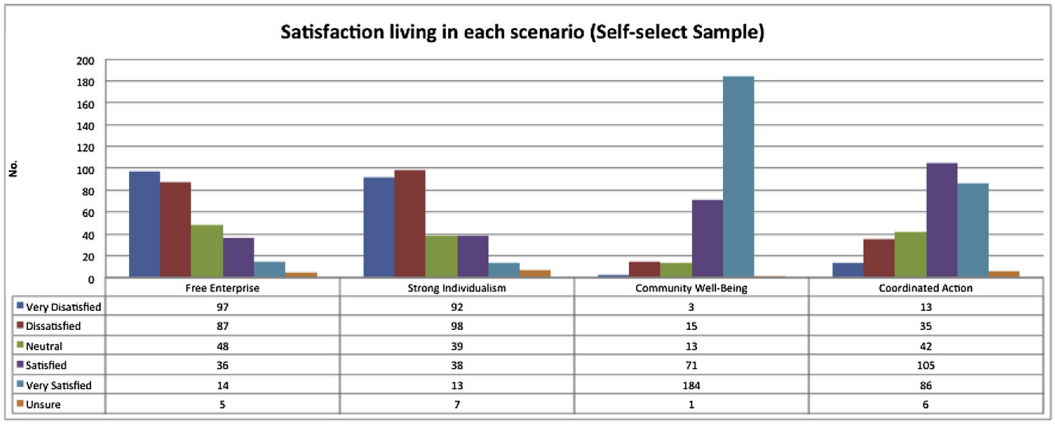
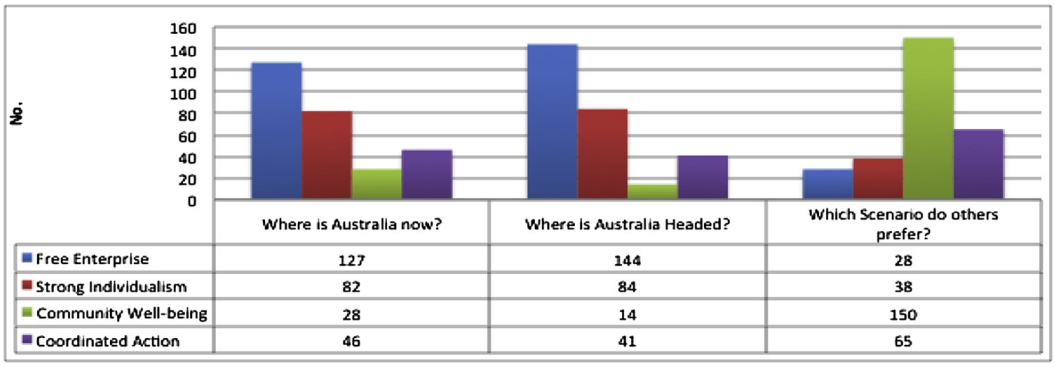


Fig. 13. Preference for future scenarios.



	Free Enterprise	Strong Individualism	Community Well-Being	Coordinated Action
Very Disatisfied	97	92	3	13
Dissatisfied	87	98	15	35
Neutral	48	39	13	42
Satisfied	36	38	71	105
Very Satisfied	14	13	184	86
Unsure	5	7	1	6

Fig. 14. 'How satisfied would you be living in one of these scenarios?'.



	Where is Australia now?	Where is Australia Headed?	Which Scenario do others prefer?
Free Enterprise	127	144	28
Strong Individualism	82	84	38
Community Well-being	28	14	150
Coordinated Action	46	41	65

Fig. 15. Australia's future responses.

similar views to participant views was observed in Self-select survey population compared to the Representative survey population. It is recognised that the sample size of the Self-select survey was relatively small. However given that both Self-select surveys and national referendum surveys have been used to set public policy in Australia, this differential could also be relevant for further research.

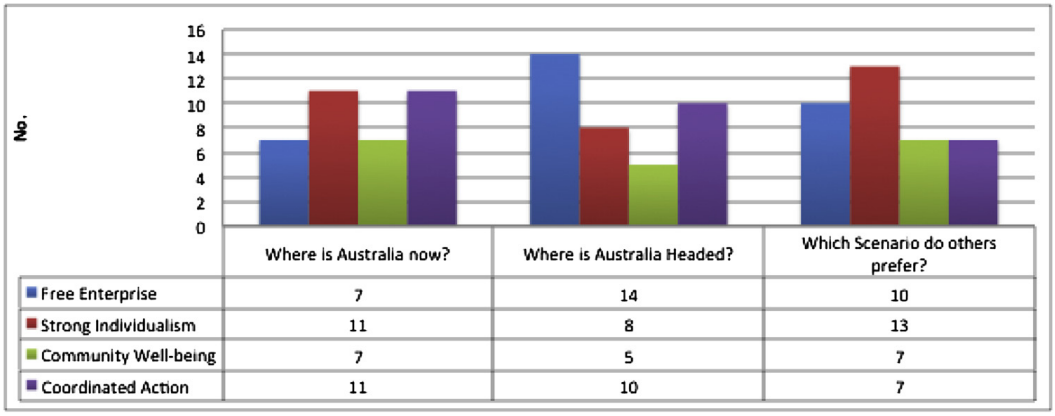
3.3.2.4. Political alignment. To further explore potential key drivers behind the greater extremes observed in the results from the Self-select Survey compared to the Representative Survey, Self-select participants who recorded their political alignment as Liberal/National Party and as Green Party were compared on the following three questions: (i) Where is Australia now? (ii) Where is Australia heading? (iii) Which scenario do others prefer?

The results of this analysis revealed that Liberal/National Party affiliation participants had a lower perception of Australia being currently in the Free Enterprise (19%) scenario and a stronger perception that Australia was in the Coordinated Action (31%) scenario compared to the Representative sample, who perceived Free Enterprise at 38% and Coordinated Action at 16%. When Green Party aligned participants responded to the same questions the highest number responded that Australia was now in the Free Enterprise (40%) scenario compared to the overall Self-select sample results of 45% perceiving Australia in the Free Enterprise scenario (Fig. 15). The small sample size of these populations however precludes any confident conclusions from these observations (Fig. 16).

The most contrasting result observed between the Self- select survey and the Representative survey was the answer to the question of which scenario others prefer. The Liberal / National Party aligned participants were most likely to believe that others preferred Strong Individualism and Free Enterprise, whereas the Green Party aligned participants believed that Community Well-being was most preferred by others (Fig. 15). These results raise the question of whether Self-selecting participants have a greater perception that other Australians have similar views to themselves. Although this was not an area of specific focus in this research and the small sample sizes of both the Liberal / National Party and Green Party aligned samples limits drawing any firm conclusions, the results further highlight the opportunity for additional research in this area (Fig. 17).

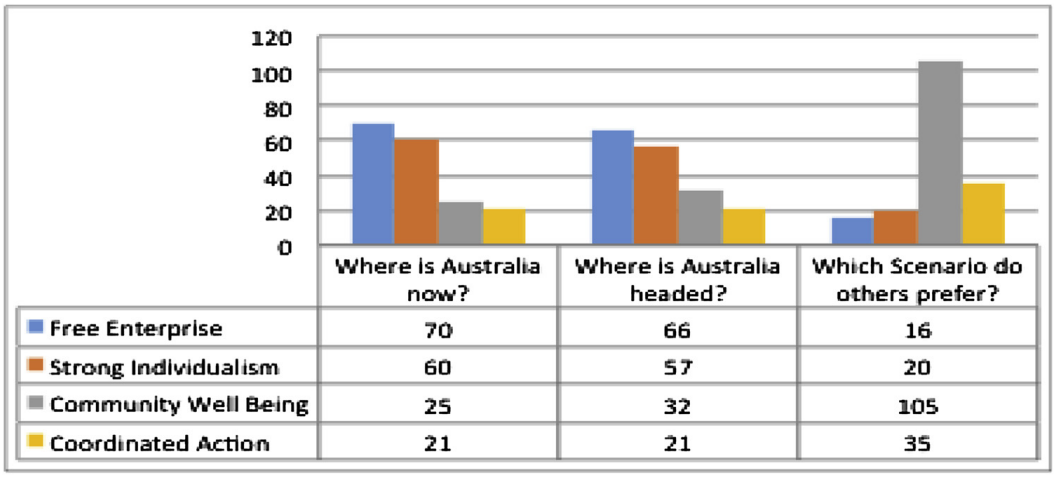
3.4. General feedback and methodology

An open-ended question was included in both surveys, thus providing the opportunity for the researchers to gain feedback on both the survey itself and a greater understanding of the participant scenario preferences. Over 50% of participants answered the open-ended question in the survey. Many included comments on the survey itself, as well as information about how they heard about the



	Where is Australia now?	Where is Australia Headed?	Which Scenario do others prefer?
Free Enterprise	7	14	10
Strong Individualism	11	8	13
Community Well-being	7	5	7
Coordinated Action	11	10	7

Fig. 16. Liberal / National aligned participants preferences and responses on (a) where Australia is now, (b) where Australia is heading, and (c) which scenario others prefer.



	Where is Australia now?	Where is Australia headed?	Which Scenario do others prefer?
Free Enterprise	70	66	16
Strong Individualism	60	57	20
Community Well Being	25	32	105
Coordinated Action	21	21	35

Fig. 17. Green aligned participants preferences and responses on (a) Where Australia is now? (b) Where Australia is heading? and (c) Which scenario others prefer?.

survey. Both validation and criticism of aspects of the survey approach were received. The concerns about the survey itself were regarding the 'characterisation' of the scenarios themselves. This is useful feedback and highlights the issues identified above concerning research using scenarios and scenario descriptions. As highlighted at the outset, these open-ended responses reinforced: (i) the importance of researchers undertaking all possible measures to ensure that scenarios and their descriptions are plausible (ii) that potential issues of inherent bias are addressed and (iii) the importance of using established research when including forecasts of important events, as was done in the current survey when providing alternative descriptions of Great Barrier Reef scenario outcomes (Bohensky et al., 2011).

The use of the open-ended question in the survey also allowed for feedback on the language, concepts and descriptions involved in the scenarios. Only a small number of participants reported problems with comprehension or level of detail. The majority of participants who commented in the open ended question reported that they were comfortable with the scenario planning approach, the scenario descriptions, and the underlying parameters of the scenarios. Overall, the feedback indicated that within the groups surveyed, meaningful engagement was achieved.

The amount of information on each scenario was also a point of discussion among participants. The presentation of the scenarios in bullet point format, across a range of key economic, social, business, political, and environmental factors, and with a 'news story' to capture the key elements of each scenario, was used by the researchers to achieve a balance between content, accessibility, and time required by the participants. This strategy was validated by the positive participant feedback received on this approach in the open-ended question in both the Representative Survey and the Self-select Survey. This positive feedback supported the value of the use of national surveys based on scenario planning approaches to provide a format for facilitating a national discussion on desired futures and building a broad consensus, as well as a mechanism for determining public preferences and resultant public policy.

Developing the *Australia: Our Future, Your Voice* survey therefore highlighted a number of challenges. Any attempt to use scenario planning to contribute to an informed national conversation and debate about Australia's future necessitates trade-offs between depth of engagement, comprehension, and rates of response. These impacts can however be potentially minimised using the survey methodologies and materials that leverage previous national and international research and that are pretested to minimise any potential descriptive bias.

4. Conclusions

In reviewing the results of this study five points emerge as key findings.

First, although the results of the Representative and Self-select Surveys showed some differences, the areas of consistency highlighted a number of key trends that can be tested further. The consistent first preference for a scenario that focused on the pursuit of Community Well-being was evident using all analytical methodologies and across both sample populations. The observation that this finding was not dependent on political alignment demonstrates a broadly shared preference for a more community-oriented and sustainability focused future for Australia compared to a more individualistic society and GDP-driven economy. Further, intrinsic vs. extrinsic value orientation was identified as a key predictor of scenario choice. Although the survey demonstrated clear preferences for specific scenarios, scenario preferences were well represented across all of the scenario options. This highlights the need for policy makers to address the requirement for balance in addressing the scenario parameters. It also raises questions about the use of the simple 'sound-bite' approaches to political campaigning such as 'Jobs and Growth'. This study demonstrates that the Australian political and social landscape is clearly more complex than can be addressed with simplified approaches.

Second, and perhaps the most important observation in this research, was the discrepancy between both sample participant preferences for where they would like Australia to be and the future scenario in which they would be most comfortable living on the one hand, and Australia's current situation and the perceived direction that Australia is heading on the other hand. This finding suggests that it is important for future research to explore and further understand this discrepancy.

Third, although the results from the Representative and Self-select samples were by and large similar, there was some evidence that participant preferences and perceptions differed across several areas. This raises questions about the use of the different public survey methodologies (self-select survey methodologies versus more representative referendum survey methodologies) to determine policy and legislative changes on issues such as same sex marriage and Australians republic preferences.

Fourth, this study demonstrated the viability and opportunities for researchers and policy makers to combine scenario planning with national survey methodologies to help determine national preferences and address the complexity of understanding and managing social change.

Finally, the majority preference for Australia's future direction, combined with the strength of the results for each of the alternative futures, highlights the importance of an informed national debate on both Australia's future direction and how to address the apparent discrepancy between the type of future the majority of Australians would prefer and where they perceive the country is currently heading.

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Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.futures.2018.12.002.

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