



What type of Aussie are you?

See how you compare to the nation's 7 new political tribes

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Methodological justification

Profiling Australian mindsets

What types of people do you encounter in the streets every day? And what type of Australian do you seldom meet? How many different types of fellow countrymen and women do you actually have? These questions came to mind when we started to delve into the rich data now available on the differences and similarities in outlook of Australians that we collected with YourVote – an online application that asked voters about their political views. And the idea to profile voters in broader terms than their political convictions was born!

Next to political views, we wanted to profile Australians an array of personal beliefs and values, outlook in life, life-style and consumer patterns. The idea was to segment the Australian population – first based on their political issue positions and spread across the political landscape - into several clearly distinguishable voter types and thereafter include other aspects of daily life. This allows us to delve deeper into the psychological structure of Australian society and combine the rich YourVote data on political opinions with mentality characteristics in order to acquire a deep and profound understanding of what sets Australians apart from one another. And of course what unites them!

This test goes way beyond respondents' straightforward political profiles and incorporates personality traits, emotions, outlook in life, life-style and consumer patterns into more or less coherent patterns. Insights into the opinions, attitudes, lifestyles and personalities of Australians creates an attractive way to look at yourself – compared to others – and to better understand how you measure up to different political and social 'tribes' living next door to you!

Constructing such 'political personas' present an alternative perspective on the distribution of Australians within the social and political landscape. The construction of an initial questionnaire to be distributed to a non-probability a panel contacted via the YourVote application (hereafter referred to as YourVote) intended to identify which questions were most appropriate for identifying different Australian milieux and differentiating between society members.

This insight would allow for stratification based upon attitudinal responses and lifestyle preferences, and the construction of Australian 'political personas' – the ultimate goal of the interactive.

Constructing and distributing the initial survey

The original survey was constructed to identify elements of a person's societal opinions on a very broad range of attitudes, opinions, characteristics and intrinsic motivations. Its design was to measure a respondent's personal opinion on a variety of issues, as well as their consumption habits and other elements of their personality and lifestyle. The dimensions measured by these questions were broad-ranging and touched upon a large variety of social and other issues (see below).

Dimensions included in personas panel	No. of questions
Attitudes to Australia	9
Attitudes to areas within Australia	3
Politics	4
Attitudes to money/success	12
Education	3
Attitudes to work	3
Attitudes to the economy	4
Home ownership	6
Relationships	3
Social attitudes	6
Attitudes to technology	5
Travel	3
Sport/leisure	6
Media/culture	8
Food, smoking and gambling	11
Transport	3
Lifestyle questions	12

Table 1. Issues for personas panel, with number of questions measuring them.

From this master list of questions, a smaller set of items was extracted for the questionnaire that we send out on our panel for an initial test. Industry experts (including sociologists and social psychologists) were consulted during this refinement process in order to facilitate item reduction without the loss of measurement potential.

The questionnaire was distributed in early November 2016 to a panel of 9895 Australians that opted into our panel during the elections. Two more reminder emails were distributed prompting recipients to respond to the survey. The final number of respondents was 3320, representing a response rate of 33.5 per cent. While this date is not directly representative of the total population, it can be weighted to resemble Australia.

The outcome of a trial factor analysis on the data collected from YourVote identified four main groups:

1. Left-wing conservative voters (with left-wing economic preferences and monocultural, chauvinistic outlook and traditional family values);
2. Left-wing progressive voters (culturally permissive cosmopolitan Australians with left-wing economic preferences);
3. Right-wing conservative voters (citizens with traditional values, monocultural outlook and free-market economic preferences);
4. Right-wing progressive voters (those with a cosmopolitan and progressive values, though with free-market entrepreneurial spirit).

These groups were identified by the data collected in the personalities questionnaire, and further supplemented by the attitudinal values, lifestyle preferences and personal opinion data collected by the survey.

Analysing the profiling data

Upon retrieval of the panel data, it was merged with the existing dataset collected from YourVote and subjected to several analyses aimed at segmenting the Australian population into the "political personas".

Correlations were ran between variables, as well as a factor analysis that included all variables (117). This identified the items most strongly related. In addition, these analyses outline the dimensionality of the space in which the different types of Australian citizens can be positioned. Factor loadings were used to select the most important items to be included in the final questionnaire.

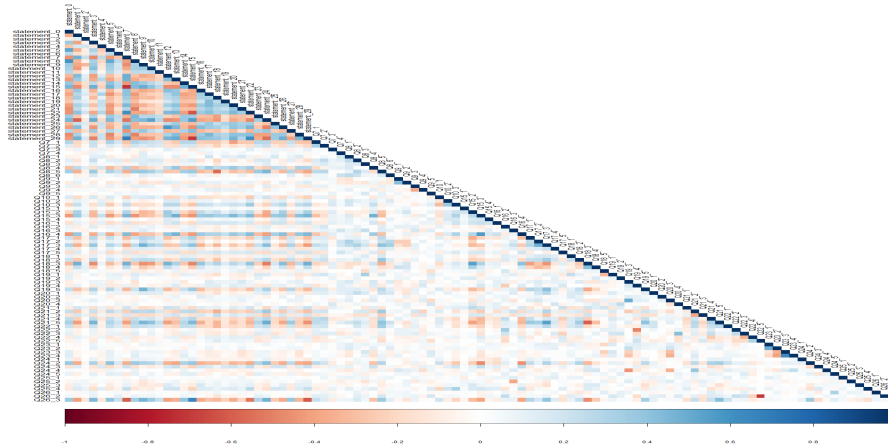


Figure 1. Correlation matrix of all variables included

The correlation matrix between all variables (statement_0 to statement_29; Q7_1 to Q10_3; Q15_1 to Q26_3). In figure 1, blue cells indicate positive correlation; red cells indicate negative correlation, while white (pale) cells indicate weak or no correlation. The graph indicates that there are strong correlations between indicators statement_0 to statement_29, items developed for the YourVote application. Weak correlations are identified between indicators Q7_1 to Q10_3 and Q15_1 to Q26_3 (new content). For this reason, variables are treated separately.

In order to reveal potential natural correlation in the data exploratory cluster analysis was ran using an unsupervised algorithm (k-means) with all 83 items, based on a Euclidean distance in an eighty-three dimensional space. Both three and six clusters were 'imposed' on the data. The six-cluster output was selected for analysis.

The results of the six-cluster analysis returned a low BSS/TSS¹ value indicating a low natural correlation among the total number of variables. However, the frequency distribution of variables in each cluster displayed a high concentration of positively and negatively skewed variables that were helpful in characterizing the clusters.

The skewed variables were selected and extracted from the total list of variables. The analysis was then rerun with the 34 extracted variables, eliminating the items with a normal distribution. The BSS/TSS value significantly increased, underling a latent structure in the data that can characterize personas with a qualitative interpretation of the skewed variables inside each cluster. This provides an initial overview of which items are best fitted to distinguish (the six) different types of Australians. The six 'imposed' clusters with the most discriminatory items are given below.

¹ Between sum of squares over the total sum of square

Item	CL1	CL2	CL3	CL4	CL5	CL6	TOT	
Q2_4	1	1	1	0	1	1	5	I am disillusioned with politics in this country.
Q7_1	1	0	0	0	0	1	2	Private schools offer a superior education to public schools.
Q7_3	1	1	1	0	0	1	5	It is important that my job provides a sense of personal fulfillment
Q8_1	1	1	1	0	0	1	4	We rely too heavily on foreign imports and should manufacture more in Australia
Q8_3	1	1	1	1	1	1	6	Owning my own home is very important to me
Q8_4	1	1	1	0	1	1	5	The price of housing is creating a class system in Australia
Q9_1	0	1	0	0	1	1	3	Technology is making my family life better
Q10_2	1	1	1	1	1	1	6	I'd be willing to pay more for milk if the supermarkets passed it on to dairy farmers
Q10_3	1	1	1	0	1	1	5	It is important to me that the food I eat has been sourced ethically
Q15_3	1	1	1	0	1	1	5	I think that the difference between high and low incomes should be smaller
Q15_4	1	1	1	1	1	1	6	I think it is important to know about my country's history.
Q16_1	1	1	1	1	1	1	6	I often discuss how things should be different in society.
Q16_4	1	1	1	0	1	1	5	All of us together have a responsibility to make sure that everyone has enough money to get by
Q17_1	1	1	1	0	1	1	5	It is bad for children to always be in the midst of children with different social backgrounds
Q18_3	1	1	0	0	1	1	4	Multiculturalism is a good thing.
Q19_1	1	1	1	1	1	1	6	Financial security is an important goal in my life.
Q19_5	1	1	1	0	1	1	5	I think it is better that the man is the breadwinner and the woman is in charge of the household.
Q20_1	1	1	1	1	1	1	6	There are certain manners of decent behavior by which everyone should abide.
Q21_4	1	1	1	0	1	1	5	My nationality is not very important to me.
Q21_5	1	1	1	0	1	1	5	Money is the best measure of success.
Q24_1	1	1	1	1	1	1	6	I am not very concerned with social and political developments
Q24_2	1	1	0	1	0	1	4	Poverty and inequality are a natural aspect of human development
Q24_3	1	1	1	0	1	1	5	There should be more limits placed on gambling.
Q25_4	1	1	1	0	1	1	5	I make a real effort to recycle waste.
Q26_3	1	1	1	1	1	1	6	Climate change is a natural rather than a man-made phenomenon
Q8_2	1	1	1	1	1	1	6	Australia needs a strong leader, who can quickly make decisions
Q8_5	1	0	1	1	0	1	4	National security is more important than individual freedoms
Q9_5	1	1	1	1	1	1	6	It is important to me to stay fit
Q15_2	1	1	1	0	1	1	5	I like different people, cultures, ideas and lifestyles around me.
Q18_4	1	1	1	0	1	1	5	I believe that change often results in improvements.
Q20_3	0	1	0	0	1	1	3	I sometimes feel that the future holds nothing for me
Q21_2	0	1	1	1	1	0	4	I am very proud of the country I live in.
Q23_3	1	1	0	1	1	1	5	I am able right now to make a major purchase like a car or appliance or furniture, or pay for a significant
Q27_7	1	0	1	1	1	1	5	I spend lot of time Playing sports

Table 2. Most important issues dividing six 'imposed' clusters of items

An exploratory factor analysis was run over all selected items. The initial analysis of the dimensionality of the feature space, based on factor analysis indicates a strong cultural divide and a socio-economic divide among the respondents. These dimensions can be considered the primary dimensions of political contest in Australia (which were also the main divider among parties and voters within YourVote).

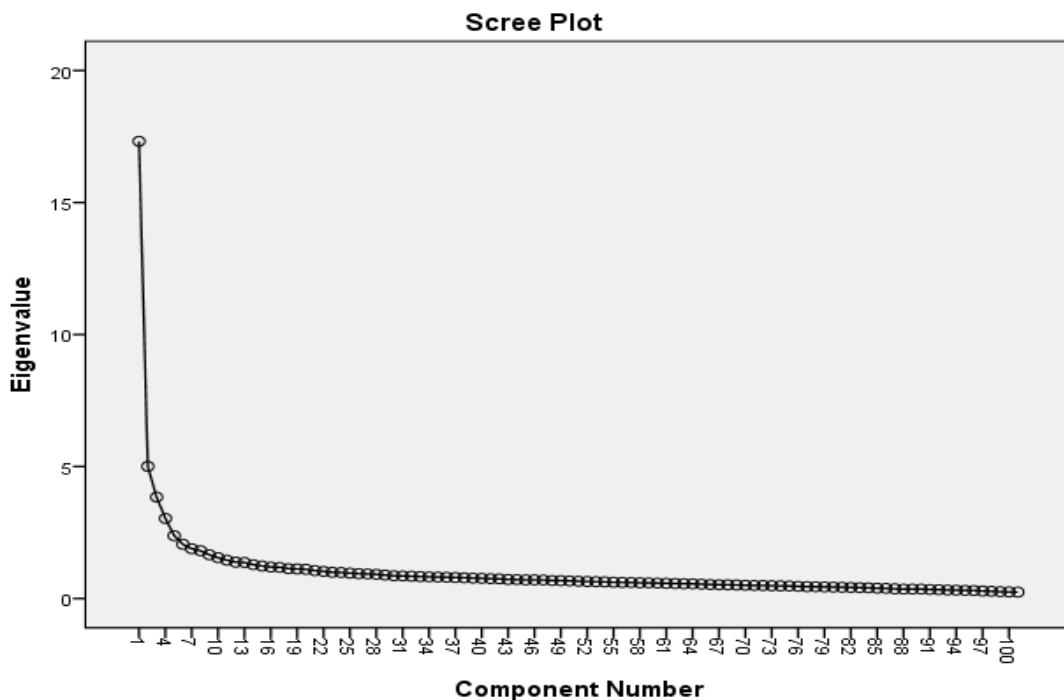


Figure 2. Dimensionality of the Australian issue space

However Australian society is more complex, and cannot be simply described using only dichotomous dimensions such as these. A subsequent look at the data's dimensionality revealed that the feature space could be further disaggregated into at least 5 relevant sub-dimensions (for factor loadings see appendix).

These sub-dimensions were identified through a series of factor analyses ranging from analyses of the full set of variables (a maximum of 101 indicators), as well as to analyses of smaller, specific sets of variables contributing more significantly to particular factor components.

Given the variables in the dataset, there is evidence that the following factors in particular drive the variation in indicators:

1. Respondents' positions on redistribution (e.g. positions on medical and social protection, banking and poverty);
2. Respondents' positions on climate change (e.g. positions on the Great barrier reef, global warming);
3. Respondents' positions on immigration and multiculturalism (e.g. offshore processing of asylum seekers);
4. Respondents' positions on traditionalism and authoritarianism (e.g. fear of change, positions on changes in Australia, respect for the elderly), and
5. Respondents' positions on consumerism (positions on lifestyle choices, spending and beauty).

The prominence of the fifth indicator suggests that consumer patterns are generating a relatively consistent dimension within Australian society, which is interesting to observe.

The variables used in the cluster analysis were further reduced using the results of this factor analysis. Variables that contribute most (factor loading of .5 or higher) to the aforementioned factors were extracted as variables of interest – to be considered for the future questionnaire.

	A	B	C
1	The government spends too much money on tackling climate change	statement_15	-0,721
2	In order to keep Medicare affordable, the government should further limit payments to GPs, even if this means patients have to pay more	statement_8	-0,688
3	Those who need healthcare should have to pay more of the costs themselves	statement_0	-0,681
4	Universities should be free to set their own tuition fees, even if this means higher cost courses for students	statement_5	-0,675
5	To what extent do you agree with the items below:Climate change is a natural rather than a man-made phenomenon.	Q26_3	-0,629
6	Offshore processing of asylum seekers should continue	statement_24	-0,624
7	The NBN as it is currently planned for rollout will meet the needs of all Australians	statement_14	-0,618
8	To what extent do you agree with the items below:I am feeling pretty good these days about how much money I can spend.	Q23_4	-0,608
9	To what extent do you agree with the items below:The way I look is very important to me.	Q26_2	-0,608
10	To what extent do you agree with the items below:Poverty and inequality are a natural aspect of human development.	Q24_2	-0,549
11	The government should establish a construction industry watchdog like the ABCC	statement_23	-0,536
12	Marriage should only be between a man and a woman	statement_9	-0,516
13	Australia should decrease foreign aid spending	statement_3	-0,493
14	There is no need for Australia to become a republic	statement_27	-0,491
15	Australias current humanitarian intake of refugees is adequate	statement_10	-0,469
16	To what extent do you agree with the items below:Elderly people today are not treated with enough respect	Q8_6	0,456
17	To what extent do you agree with the items below:At this time, I am cutting back on how much money I spend each week	Q23_2	0,489
18	To what extent do you agree with the items below:I am able right now to make a major purchase like a car or appliance or furniture, or pay for a significant home repair if I need	Q23_3	0,489
19	The government should establish a national independent commission against corruption	statement_19	0,494
20	Australian anti-terrorism laws interfere too much with individuals freedom of expression and privacy	statement_18	0,501
21	To what extent do you agree with the items below:The price of housing is creating a class system in Australia	Q8_4	0,518
22	Indigenous people should be recognised in the Constitution as Australias traditional owners	statement_12	0,52
23	To what extent do you agree with the items below:I like to treat myself with luxury goods sometimes.	Q22_2	0,523
24	No child asylum seeker should be placed in detention	statement_1	0,534
25	No extra payments for tests and screening should be passed on to patients using medicare	statement_21	0,536
26	To what extent do you agree with the items below:We rely too heavily on foreign imports and should manufacture more in Australia	Q8_1	0,549
27	The government should increase Commonwealth funding targeting public vocational education (e.g. TAFE)	statement_25	0,555
28	To what extent do you agree with the items below:I want to get to the very top in my career.	Q22_3	0,555
29	To what extent do you agree with the items below:My appearance is not a primary concern to me.	Q22_5	0,555
30	Political parties should use quotas to achieve gender equality in parliament	statement_16	0,562
31	To what extent do you agree with the items below:Everything is changing too often and too fast.	Q17_2	0,577
32	To what extent do you agree with the items below:I sometimes feel that the future holds nothing for me.	Q20_3	0,597
33	The government should increase funding for indigenous health programs	statement_26	0,607
34	To what extent do you agree with the items below:I feel let down by society.	Q19_3	0,617
35	To what extent do you agree with the items below:All of us together have a responsibility to make sure that everyone has enough money to get by.	Q16_4	0,621
36	To what extent do you agree with the items below:I think that there is too little emphasis on traditional values in Australia.	Q17_3	0,632
37	The government should establish a Royal Commission to identify misconduct in the banking and financial services industry	statement_17	0,637
38	The government should regulate for more affordable housing, even if this means higher taxes	statement_13	0,638
39	A higher proportion of federal government funding should go to public schools	statement_20	0,663
40	Penalty rates should be maintained for those working on Sundays and public holidays	statement_28	0,664
41	To what extent do you agree with the items below:I think that the difference between high and low incomes should be smaller.	Q15_3	0,669
42	The health of the Great Barrier Reef should be prioritised over coal mining	statement_22	0,704
43	The government should set higher renewable energy targets, even if this leads to higher electricity costs	statement_29	0,717
44	The government should introduce an Emissions Trading Scheme in response to climate change	statement_7	0,727

Table 3. Items with highest factor loadings on each of the five extracted dimensions (>.5).

Of these variables, a further subset was extracted where the strongest division among respondents was observed. This subset constituted variables with (1) a large standard deviation, and (2) variables with non-normal distributions. The list of selected indicators and their respective dimensions is presented below.

Redistribution	
To what extent do you agree with the items below: I think that the difference between high and low incomes should be smaller.	Q15_3
To what extent do you agree with the items below: All of us together have a responsibility to make sure that everyone has enough money to get by.	Q16_4
Pro-climate change policies	
The government should introduce an Emissions Trading Scheme in response to climate change	statement_7
The government should set higher renewable energy targets, even if this leads to higher electricity costs	statement_29
Anti-immigration	
Offshore processing of asylum seekers should continue	statement_24
No child asylum seeker should be placed in detention	statement_1
Traditionalism-authoritarianism	
To what extent do you agree with the items below: I think that there is too little emphasis on traditional values in Australia.	Q17_3
To what extent do you agree with the items below: Australia needs a strong leader, who can quickly make decisions	Q8_2
Consumerism-egoism	
To what extent do you agree with the items below: To me, one of the most enjoyable things in life is buying something new.	Q16_2
To what extent do you agree with the items below: The way I look is very important to me.	Q26_2

Table 4. Variables selected for the initial cluster analysis

In order to faithfully represent the actual data, the indicators presented above are merged using principal component analysis. These components are highly correlated to the original factors, thus, closely representing the dimensionality of the data. The principal components are used in cluster analysis.

Cluster validation procedure

This set of histograms present the distribution of variables used in the analysis. The variables create noticeable groups of values, which make the data suitable for cluster analysis

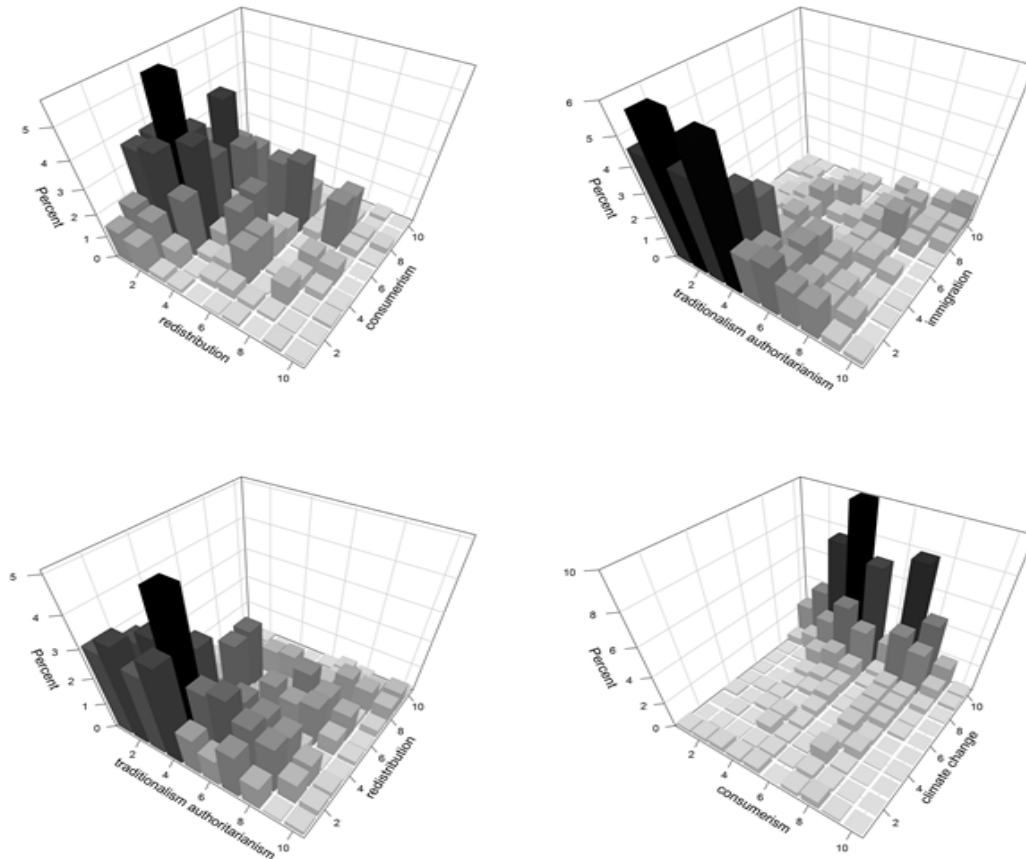


Figure 3. Histograms presenting the distribution of variables used within the analysis.

Validation procedure

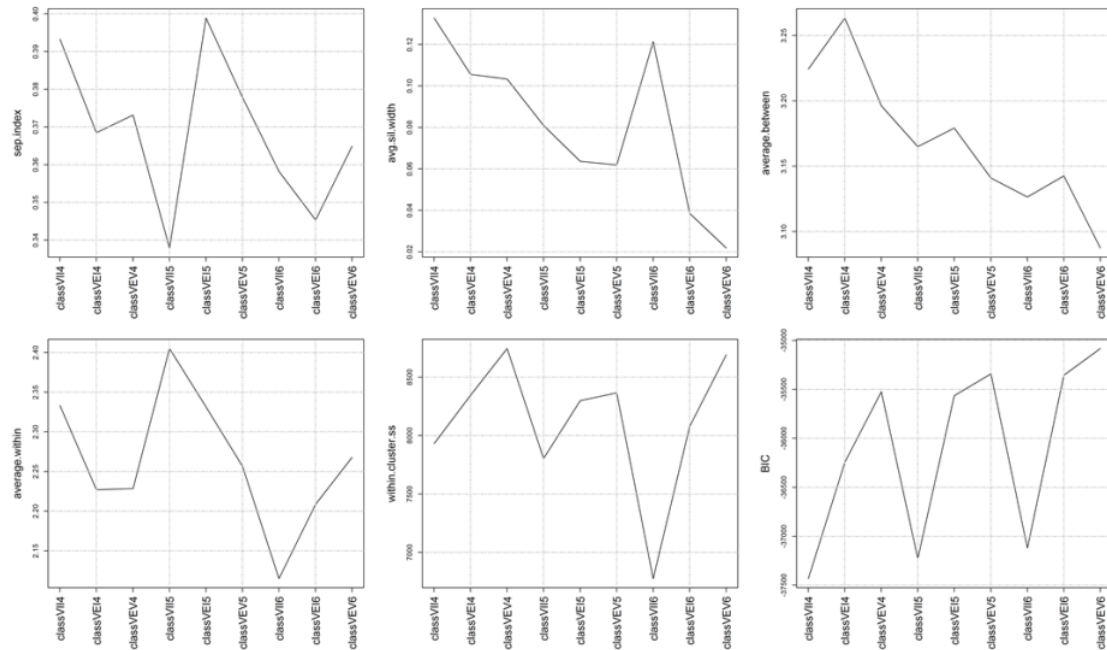
For the purpose of discerning clustering structure, two methods were selected: latent class/profile analysis (hereafter LCA) and k-means clustering.

LCA works on the principle of maximizing the likelihood of the observed data, where it is assumed that the data is generated by a mixture of underlying probability distributions. The features of the clusters (shape, volume, orientation) can be constrained. It is assumed that the clusters in Australian sample are different with respect to the volumes, without imposing any assumption considering to the shape of the cluster and their orientation in space. As log-likelihood function resembles the criteria employed in k-means, this method is selected to cross-validate the results.

Validity of produced classifications is assessed by the comparison of the following validation indexes: Bayesian information criterion, within cluster sum of squares, average distance within clusters, average distance between clusters, separation index and average silhouette width. On the basis of validity scores, the most optimal clustering solutions are selected. Furthermore, the clustering solutions are compared to each other to assess possible discrepancies.

The figures below compare validation indexes for classifications into four, five and six clusters produced by all three parameterizations. The validation scores indicate that the best cluster solutions are produced by varying volume and equal shape parameterization (VII) and varying volume and equal shape parameterization (VEI).

Due to the distribution and homogeneity of classes, the second clustering solution (VEI) is selected as the optimal solution. The comparison of this solution to the classifications based on the alternative methods is made below.



Figures 4a-f validation scores of selected clustering solutions in Australia

The division in four clusters based on VEI parameterization is similar with the remaining clustering solutions into four classes. The similarity between classifications in four clusters obtained by VII and VEI is 65 percent. However a somewhat higher similarity is observed between classifications in four clusters obtained by VEI and VEV – 75 percent. Furthermore, similarity between classification of data based on LCA VEI parameterization and k-means cluster analysis is 65 percent. The table below presents confusion matrices for each of the above-mentioned pairs of classifications.

Clusters	VEI and VII				VEI and VEV				VEI and kmeans			
	1	2	1	2	1	2	3	4	1	2	3	4
1	29.86%	0.78%	0.14%	1.49%	19.53%	0.00%	7.13%	5.60%	11.92%	0.07%	0.00%	0.03%
2	0.00%	9.82%	1.87%	0.00%	0.00%	11.68%	0.00%	0.00%	0.00%	9.82%	0.00%	1.87%
3	19.29%	10.09%	14.64%	0.00%	0.95%	10.70%	32.37%	0.00%	2.48%	5.40%	20.01%	4.38%
4	0.68%	0.00%	0.00%	11.35%	0.82%	0.00%	0.00%	11.21%	0.00%	14.40%	7.74%	21.88%

Table 5. Confusion matrices – comparison of classifications into four clusters.

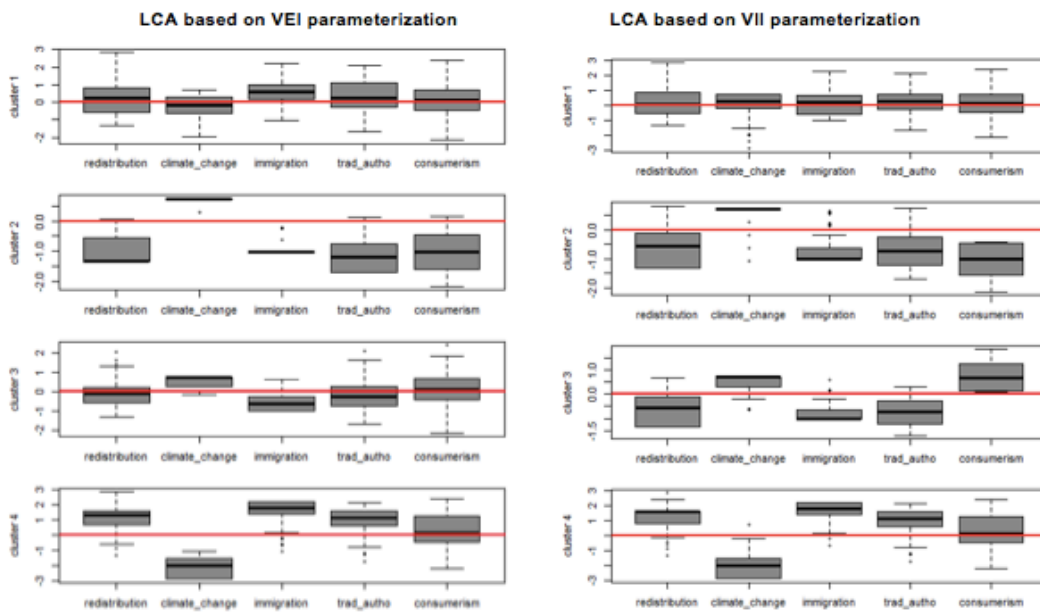
The table below demonstrates that main disagreement in clustering solutions considers the size of the classes. Namely, while there is little disagreement considering cluster 4, where size of cluster varies between 12 and 17 percent, there is a significant disagreement considering size of the clusters 1 and 3. In further analysis it is established that these are the clusters positioned in the center of

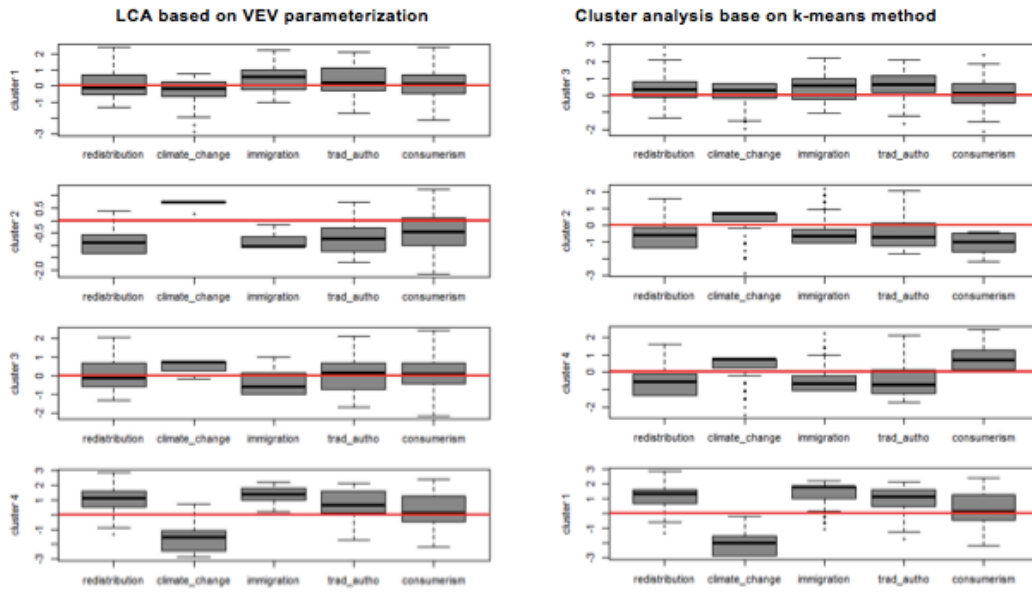
feature space and which share significant similarities.

Clusters	VEI	VII	VEV	K-means
1	32%	50%	21%	28%
2	12%	21%	22%	30%
3	44%	17%	40%	28%
4	12%	13%	17%	14%
Total	100%	100%	100%	100%

Table 6. Comparison of size of clusters produced by cluster methods.

However, despite the difference with respect to the size of the clusters, the clustering methods produce clusters of similar profile. The boxplots below present distribution of indicators used in cluster analysis across each cluster and the method that was used to produce it. The boxplots demonstrate that the clusters are quite similar in structure despite the variation in cluster size.





Figures 5a-d. Comparison of boxplots of clusters across the indicators used in cluster analysis

Segmentation of Australian electorate

The four clusters were plotted along the 5 dimensions extracted from the factor analysis for further interpretation. Each time three-dimensional spaces are presented, so the alignment of each cluster can be observed, and differences are readily apparent. These can be observed below.

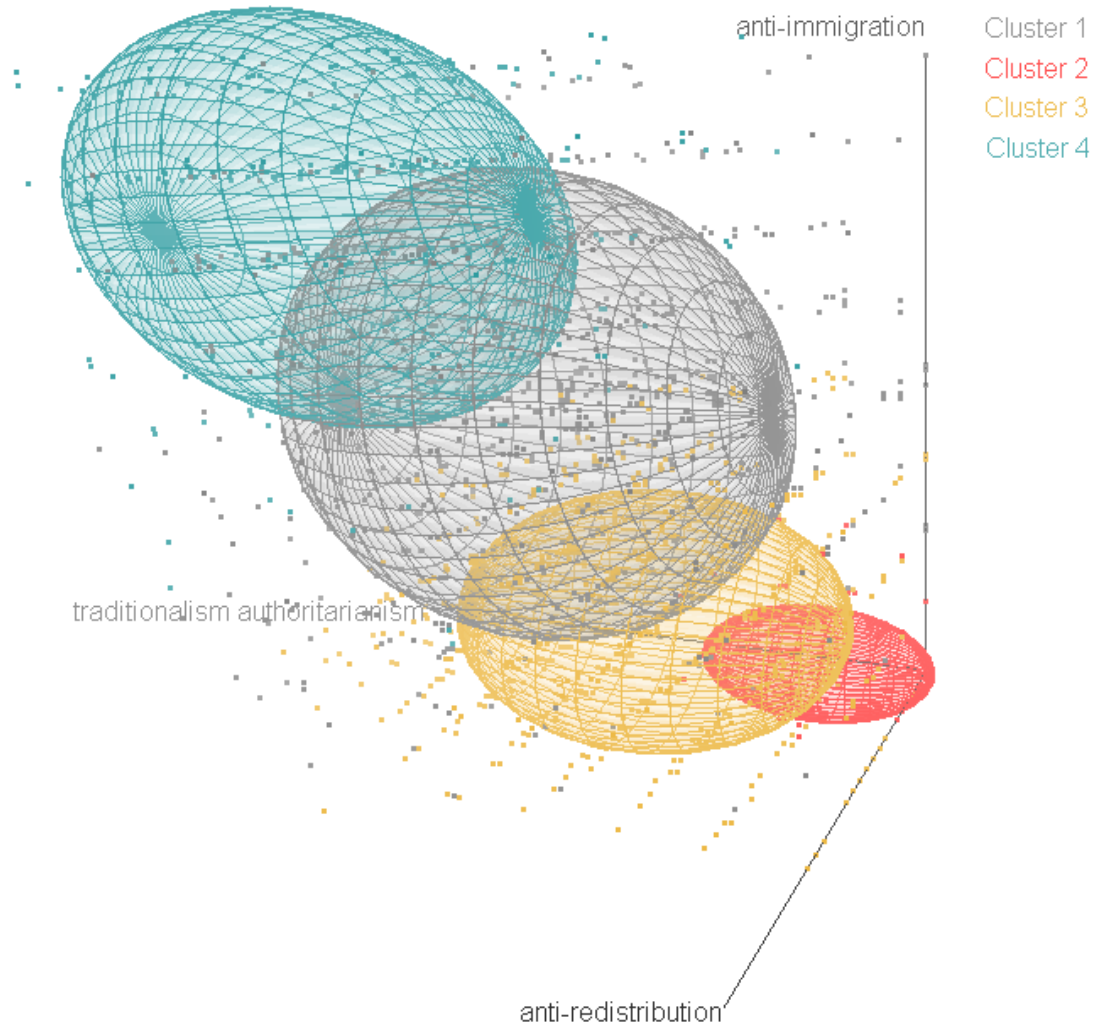


Figure 6. Position of cluster in space: anti-redistribution, anti-immigration, traditionalism-authoritarianism

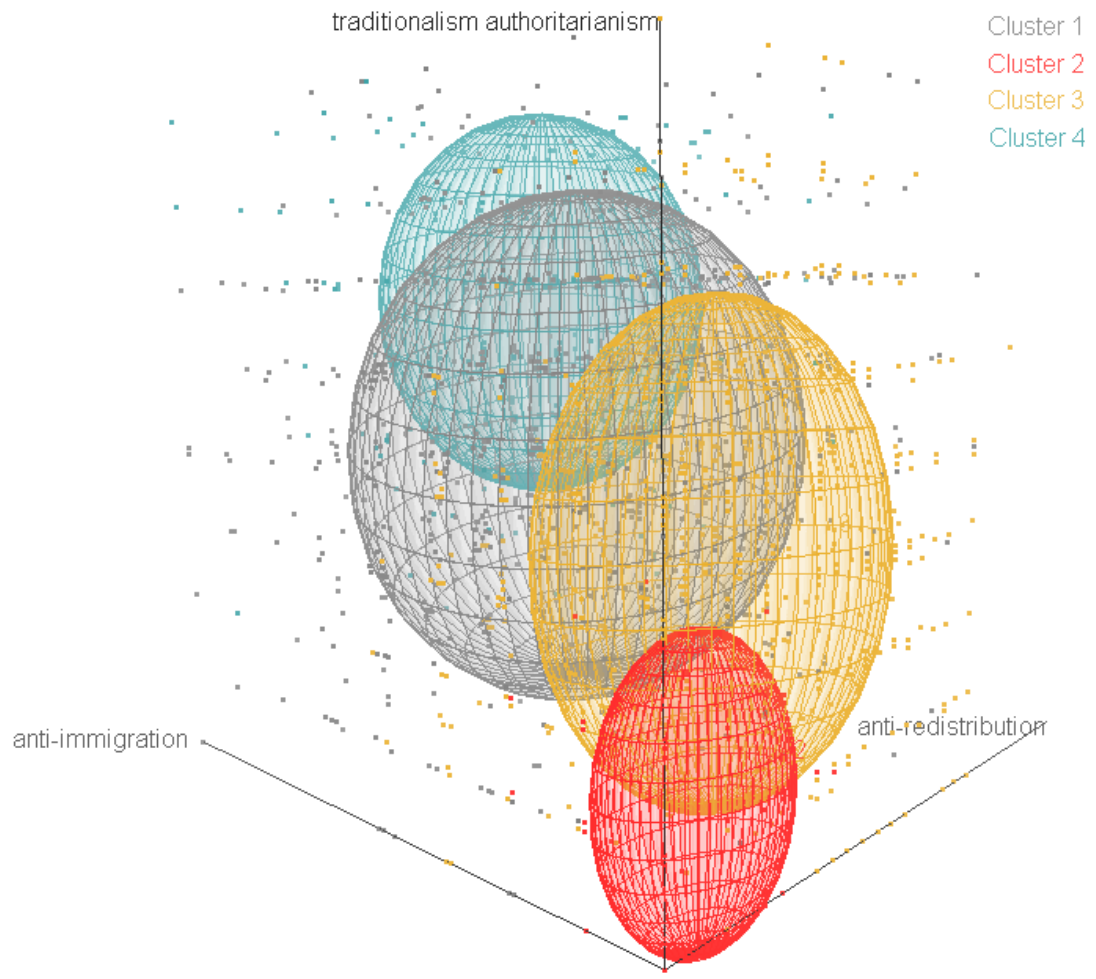


Figure 7. Anti-redistribution, anti- immigration and traditionalism-authoritarianism: an alternate angle

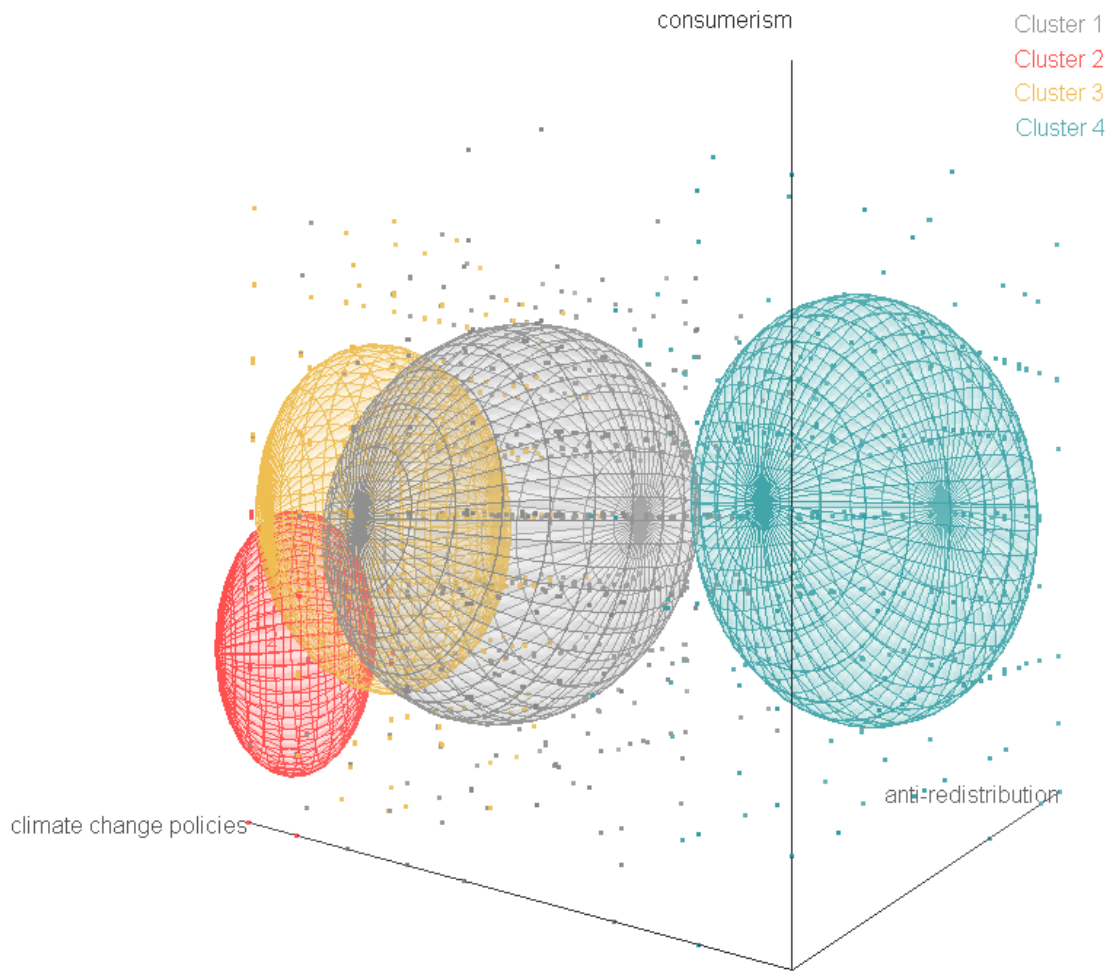


Figure 8. Position of cluster in space: consumerism, climate change, and anti-redistribution

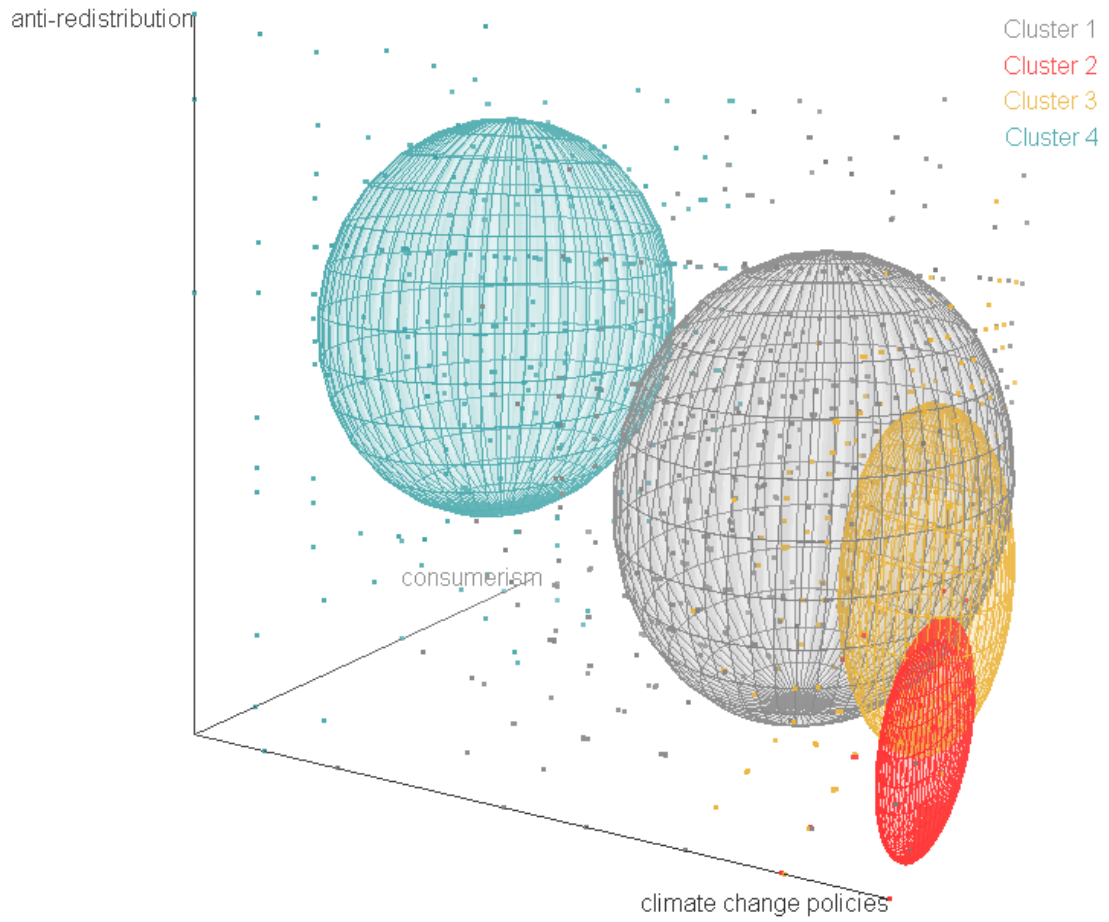


Figure 9. Consumerism, climate change and anti-redistribution from an alternate angle

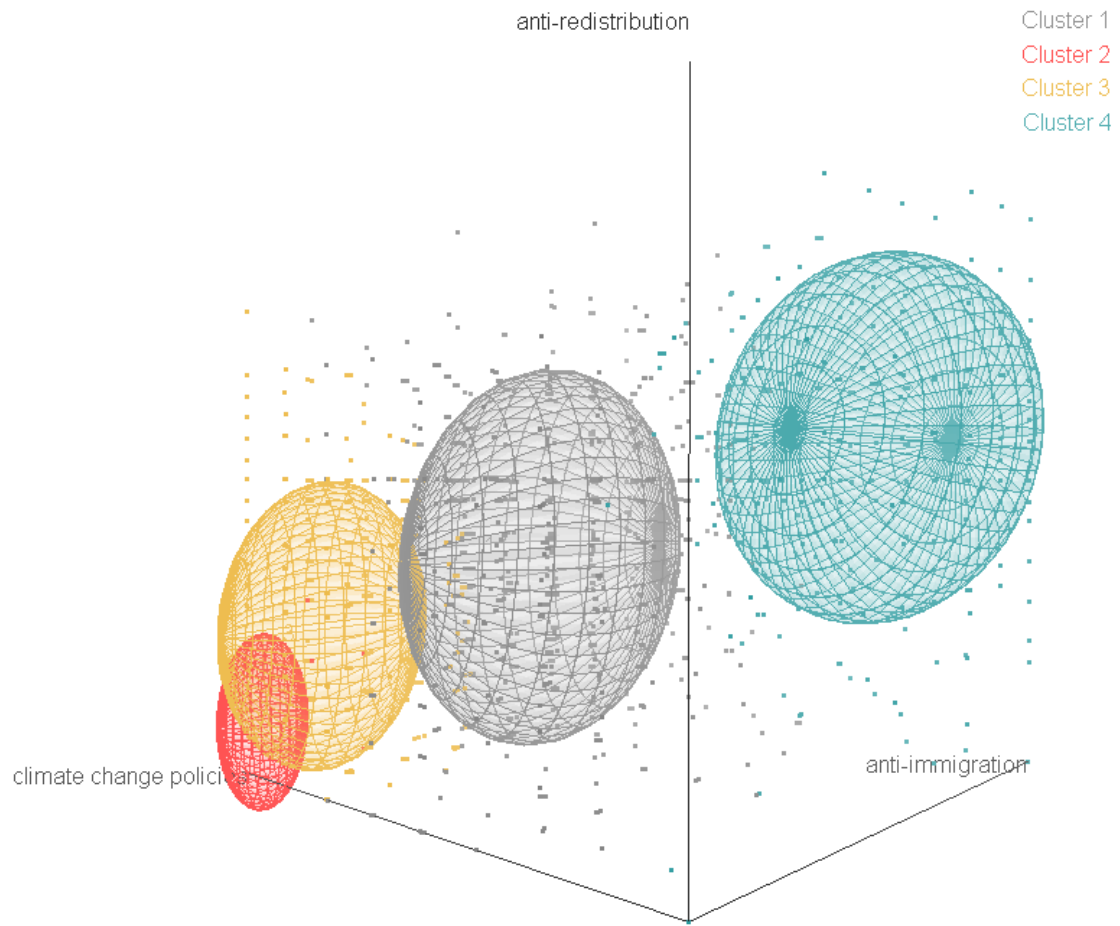


Figure 10. Clusters in the space: anti-redistribution, anti-immigration and climate change

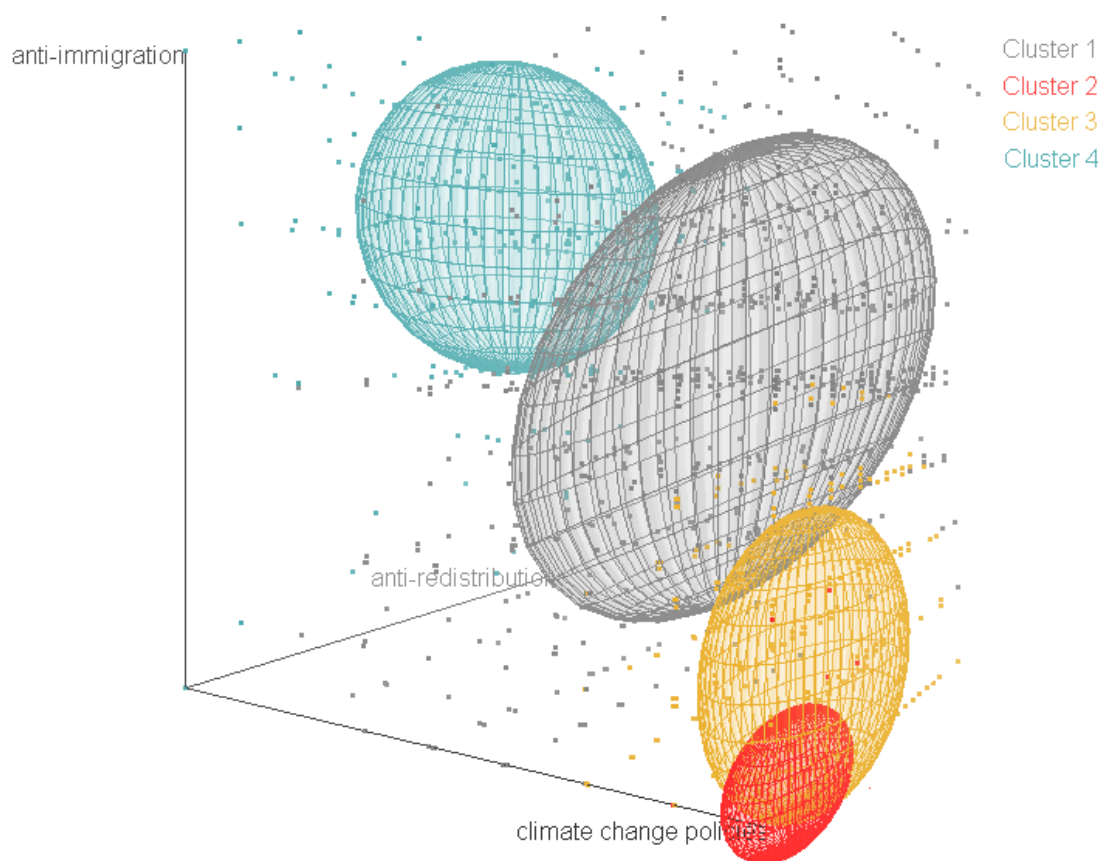


Figure 11. Clusters in the space: anti-redistribution, anti-immigration and climate change, alternate angle

Making sense of the item pattern

The main characteristics of the clusters, along with estimated cluster size², are summarised below. Supplementary figures and tables further explaining these variables can be found in the appendix of this document.

Cluster 1: Alex Average and Matthew Median.

The first cluster represents 32 percent of the sample. Respondents are predominantly males (~82%), and are, on average, slightly younger (cluster mean age is 50 years, sample mean age is 52 years). The respondents that fall in this cluster typically take the middle ground on issues, and do not have a distinct profile in this respect. Respondents oppose distribution in this cluster, but this is not a defining characteristic. Similarly, they are anti-immigrant, do not support climate change policies, and are slightly authoritarian and traditionalist. However, scores on these features are not pronounced.

The distribution of obtained education within the total sample is reflected in this sample, with some underrepresentation of university and postgraduate education. Voters within this cluster are more likely to support the two major parties (the ALP or the Coalition), and a lot less likely to support minor or micro parties, such as the Greens. Furthermore, members of this cluster generally access their news through traditional sources, such as television, print media and magazines.

² In the non-probability sample, based on bootstrapping of the large dataset.

Cluster 2: Miss Emily Green.

Representing 12 percent of respondents, this cluster was of average age (52 years old) and comprised of 36 percent women (the share of women in the sample is 29.6 percent). Respondents displayed a very strong tendency to support climate change policy, were typically pro-redistribution, and were distinctively not anti-immigrant, nor authoritarian/traditionalist. Respondents were also non-conformist (low consumerism and egoism). Individuals who had achieved a higher education level (university or postgraduate) were significantly overrepresented in this cluster.

The most distinctive characteristic of these voters was a very high share of individuals who would support the Greens (57% in the Lower house, 69% for the Senate), while not a single respondent would vote for the Liberal party. Compared to the sample's distribution, the support for Labor is also somewhat lower within this cluster. These voters reported that they typically sourced their news through social media, and are more likely to spend their time talking about politics, and reading books.

Cluster 3. Sarah and Daniel Portside

The largest share of respondents (44%), this cluster was composed of a typically younger population (age?) and was approximately 22 percent female. Like cluster one, this cluster did not present a distinctive profile. To some extent, respondents support redistribution and were not anti-immigration. Marginal support for climate change policies was also observed. In this respect, the third cluster can be perceived as the inverse of the first cluster, to an extent. Unlike the first cluster, university educated respondents were overrepresented in this cluster.

The share of respondents who would likely vote for the Liberal party were underrepresented in this cluster, while voters for the ALP and the Greens make up the majority. Interestingly, the share of voters in this cluster who would support the Greens (49%) in the Senate elections is larger than that of the ALP. These voters typically sourced their news from traditional media sources, much like cluster one.

Cluster 4. Jack Outback

The fourth cluster comprises 12 percent of respondents where almost 37 percent are women. This is on average the oldest cluster (mean age is 55 years). This group of respondents strongly opposes redistribution and does not support climate change policies. They are vehemently opposed to immigration and tend to be traditionalist and authoritarian. The share of respondents with higher education in this cluster is significantly lower than other clusters. The share of voter who supports Liberals is strongly overrepresented, ranging between 77 and 82 percent. These voters are less likely to spend a lot of time talking about politics or on social media, but rather they are more likely to spend time with family or playing sports. They typically get their news through traditional means such as television or printed newspapers.

Size of the clusters

Finally, the table below presents bootstrap estimates of the size of the clusters produced using LCA and VEI parameterization.

Clusters	Australia		
	Cluster proportion	95% bootstrap confidence intervals	
1	32.3%	30.5%	33.9%
2	11.7%	10.5%	12.9%
3	44.0%	42.1%	45.8%
4	12.0%	10.8%	13.3%

Table 7. Cluster proportions in Australia

Persona construction

The personas were created from three different sources, (1) YourVote and the persona quiz combined dataset, (2) the persona quiz data only; and (3) the extensive analysis outlined above.

The principle component analysis previously mentioned was used to guide the interpretation of the personas, using the cleavages identified. All statements were arranged from highest positive factor loading, to highest negative factor loading within each dimension. These statements were then interpreted using the following guidance; "If there was a person who strongly agreed with all these statements, and strongly disagreed with these others, who are they and what would they be like?" This was an iterative process, with the personas being reassessed and repositioned as progress was made selecting statements and validating the data's interpretation.

An additional panel was conducted by ANU using a probability sample to verify that the results could be replicated within the wider population. Several new questions were introduced in this panel in order to test their potential for differentiation among respondents.

The responses of the probability sample were subject to a principle component analysis using a varimax rotation, and an unrotated analysis. The results of this were compared to the principle component analysis of the personas panel, with small but significant differences in the dimensions identified. This included a very strong nationalistic streak within the population, likened to a 'Trump' style constituency, with strong notions of political disillusionment, politicians being out of touch, and a desire for more Australian manufacturing.

The size of the personas was calculated according to an agreement/disagreement formula (+2 for most agreement/-2 for most disagreement). Calculated sizes within the probability sample can be seen in the table below. Final positioning of personas on each statement was guided by the results of the probability sample wherever possible to ensure accurate representativeness of the Australian population.

	Frequency	Percent	Valid Percent	Cumulative Percent
1 Passionate cosmopolitan	477	18.3	18.3	18.3
2 Ambitious saver	257	9.9	9.9	28.2
3 Activist egalitarian	473	18.2	18.2	46.4
4 Lavish mod con	144	5.5	5.5	51.9
5 Disillusioned pessimist	317	12.2	12.2	64.1
6 Cautious traditionalist	778	29.9	29.9	94
7 Antiestablishment firebrand	157	6	6	100
Total	2603	100	100	

Table 8. Persona sizes according to probability sample (these sizes do not account for the proportion a respondent adheres to each persona)

Statement selection for the interactive online Persona test

The final interactive was to consist of 30 statements used to assign scores to respondents according to their alignment with each persona. The initial selection of statements was guided by the k-means cluster analysis previously discussed. The final statements were selected from YourVote and the personas panel, with additional statements tested in the ANU probability sample, and an additional panel conducted by Kieskompas. These statements were selected according to their relevance by the team at Fairfax Media.

Origins	Question
YourVote	Marriage should only be between a man and a woman
	The government should set higher renewable energy targets, even if this leads to higher electricity costs
	Offshore processing of asylum seekers should continue
Personas Panel	People these days put too much emphasis on their careers over family
	I believe that buying luxury goods is wasting money
	The way I look is very important to me
	I like my life to be organised and predictable
	Everything is changing too often and too fast
	There is no such thing as too much personal freedom
	I think that there is too little emphasis on traditional values in Australia.
	To me, one of the most enjoyable things in life is buying something new
	If you give people too much freedom they abuse it
	I feel let down by society
	I prefer to spend my money now, rather than saving it for later
	You can only move forward in this life if you take risks
	I want to get to the very top of my career
I constantly set myself higher goals, which I strive to achieve	
Australia has become a nanny state	
I would rather spend my money on experiences than assets	
Probability Sample	Closing nightclubs earlier to reduce alcohol-related violence makes sense
	It is primarily an individual's responsibility to keep themselves safe from harm
	Immigrants cause more economic problems than they solve.
Kieskompas Panel II	Australia should decrease the number of migrants allowed into the country.
	I would be willing to pay higher tax in exchange for more public investment in health and education.
	I would be willing to see my home stop growing in value to improve housing affordability.
	The government should do more about housing affordability, even if it means more people move into my neighbourhood.
	Globalisation - the increasing movement of products, money, jobs, culture and people around the world - has not been beneficial for people like me.

Table 9. Additional statements investigated, to supplement those identified by k-means.

An additional principle component analysis was conducted on these 37 selected statements, and personas were placed on each statement (on a 5 point scale – Strongly Disagree to Strongly Agree). This was done according to the direction of the factor loading. This was due to the fact that each persona had distinctive opinions regarding only a selection of statements, not every single one. For those factor loadings that were insignificant, personas were allocated a neutral score (Neither Agree Nor Disagree).

This second principle component analysis was compared to the analysis of the probability sample to identify and extract the 15 most differentiating statements for each persona from the total. These statement collections per persona were then cross-referenced with the each other persona according to their ability to differentiate. This did not reduce the total number of questions from 37 to 30, but allowed for further insight of where statements could be removed without a loss of differentiation. Several statements were removed due to overlap and irrelevance, ensuring a broad range of issues and opinions being represented in the interactive.

Final calculation of the personas was conducted on an item-by-item basis, rather than a score per dimension. This ensured that no bias or generalization was introduced by calculating the adherence to a dimension, and then to a persona. The tool was designed to include a dominant persona allocated to a respondent, with their adherence to additional personas listed below. Null scores were also presented, for respondents to see not only which personas they identified most with, but also those that were completely alien to their responses.

Appendix

The tables and figures below present distribution of the defining variables within the each cluster.

Distribution of demographics within clusters

Cluster	Average age	Percent of females
1	49.7	17%
2	51.7	36%
3	50.5	22%
4	55.1	37%

Distribution of education within clusters

Education	1	2	3	4	Whole sample
I did not complete secondary school (<16)	2.48%	0.59%	1.18%	2.92%	1.74%
Secondary school (<16)	9.18%	3.55%	6.24%	12.83%	7.65%
Further education (<18)	8.10%	5.33%	6.00%	10.20%	7.10%
Technical/vocational education	17.60%	14.79%	13.81%	24.78%	16.46%
University education (degree)	30.56%	35.80%	35.83%	29.74%	33.40%
Postgraduate education	32.07%	39.94%	36.94%	19.53%	33.65%
Total	100.00%	100.00%	100.00%	100.00%	100.00%

Distribution of occupation within clusters

	1	2	3	4	Whole sample
Professional/Managerial	51.67%	48.63%	51.63%	45.43%	50.56%
Sales/Clerical	5.17%	4.26%	6.06%	5.90%	5.54%
Technical/Skilled	7.97%	12.46%	8.92%	12.98%	9.50%
Manual work/Labourer	1.72%	1.22%	1.12%	2.36%	1.47%
Other	33.48%	33.43%	32.27%	33.33%	32.92%
	100.00%	100.00%	100.00%	100.00%	100.00%

Electoral support of parties within clusters

If the Australian federal election for the Lower House (the House of Representatives) were held today, which of the following parties would you vote for as your first preference?

Cluster	1	2	3	4	Whole sample
Liberal/National/LNP/CLP	25.88%	0.00%	3.24%	81.57%	18.67%

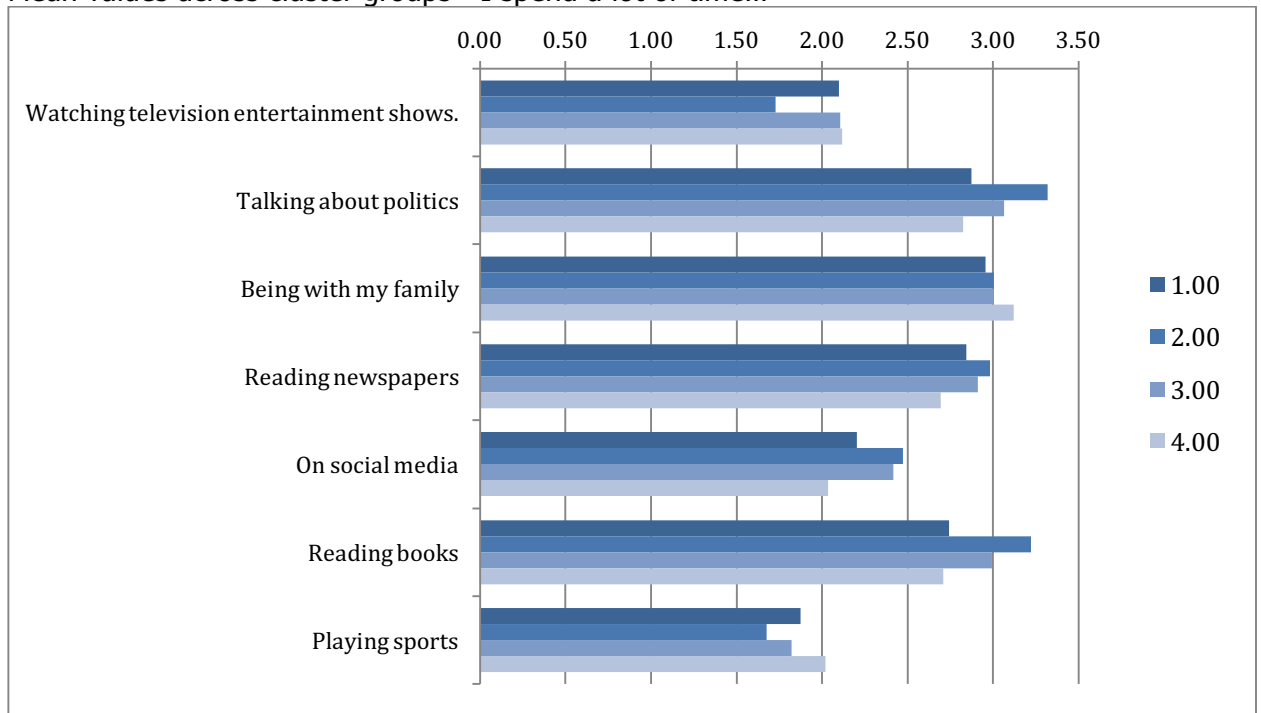
(Coalition)					
Labor	44.47%	37.27%	48.55%	4.10%	41.00%
The Greens	15.41%	57.14%	36.99%	0.00%	28.49%
Palmer United Party	0.12%	0.00%	0.00%	0.00%	0.04%
Nick Xenophon Team	5.65%	2.80%	5.40%	3.75%	4.99%
Family First	0.47%	0.00%	0.08%	1.71%	0.37%
Katters Australian Party	0.24%	0.00%	0.00%	1.71%	0.26%
Independent	7.76%	2.80%	5.74%	7.17%	6.18%
Total	100.00	100.00	100.00	100.00	100.00
	%	%	%	%	%

Electoral support of parties within clusters

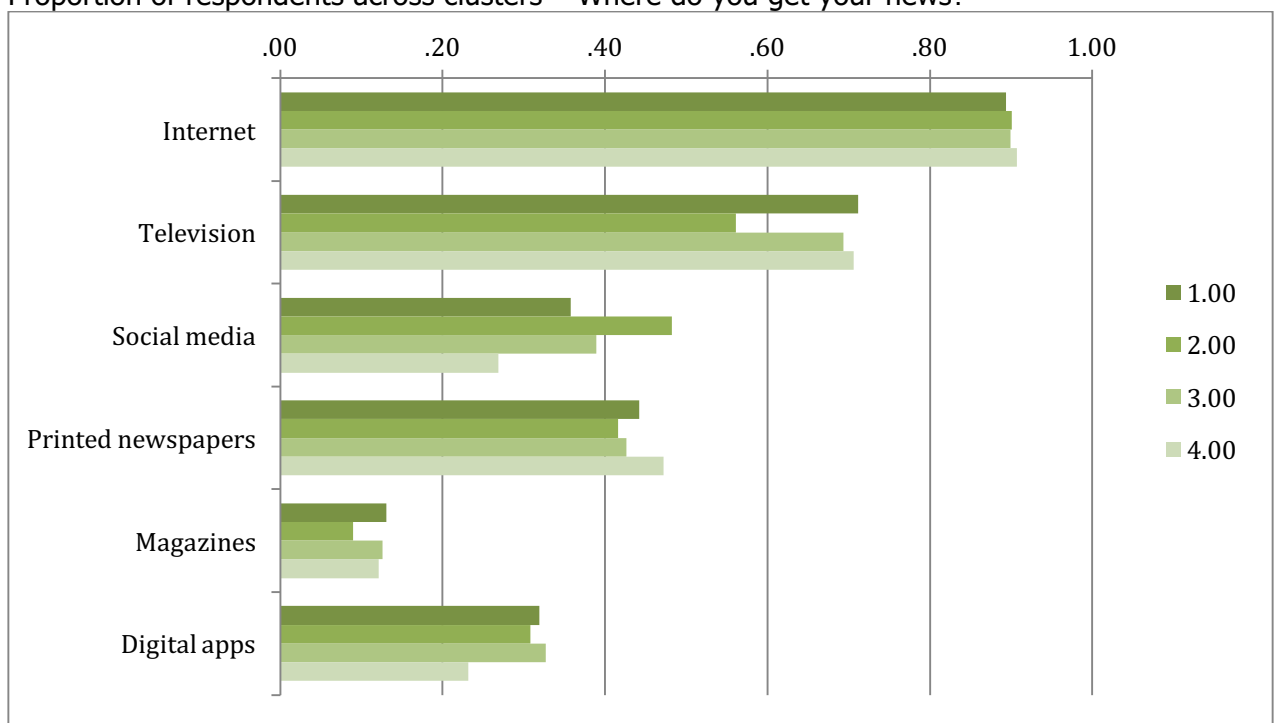
If the Australian federal election for the Upper House (the Senate) were held today, which of the following parties would you vote for as your first preference?

Cluster	1	2	3	4	Whole sample
Liberal/National/LNP/CLP (Coalition)	23.83%	0.00%	2.63%	76.89%	16.93%
Labor	34.77%	20.20%	30.39%	3.03%	27.72%
The Greens	20.64%	69.87%	49.12%	0.38%	37.31%
Palmer United Party	0.12%	0.00%	0.09%	0.00%	0.08%
Nick Xenophon Team	13.51%	3.97%	11.47%	8.33%	10.90%
Family First	0.25%	0.00%	0.00%	3.79%	0.48%
Independent	6.88%	5.96%	6.30%	7.58%	6.58%
Total	100.00	100.00	100.00	100.00	100.00
	%	%	%	%	%

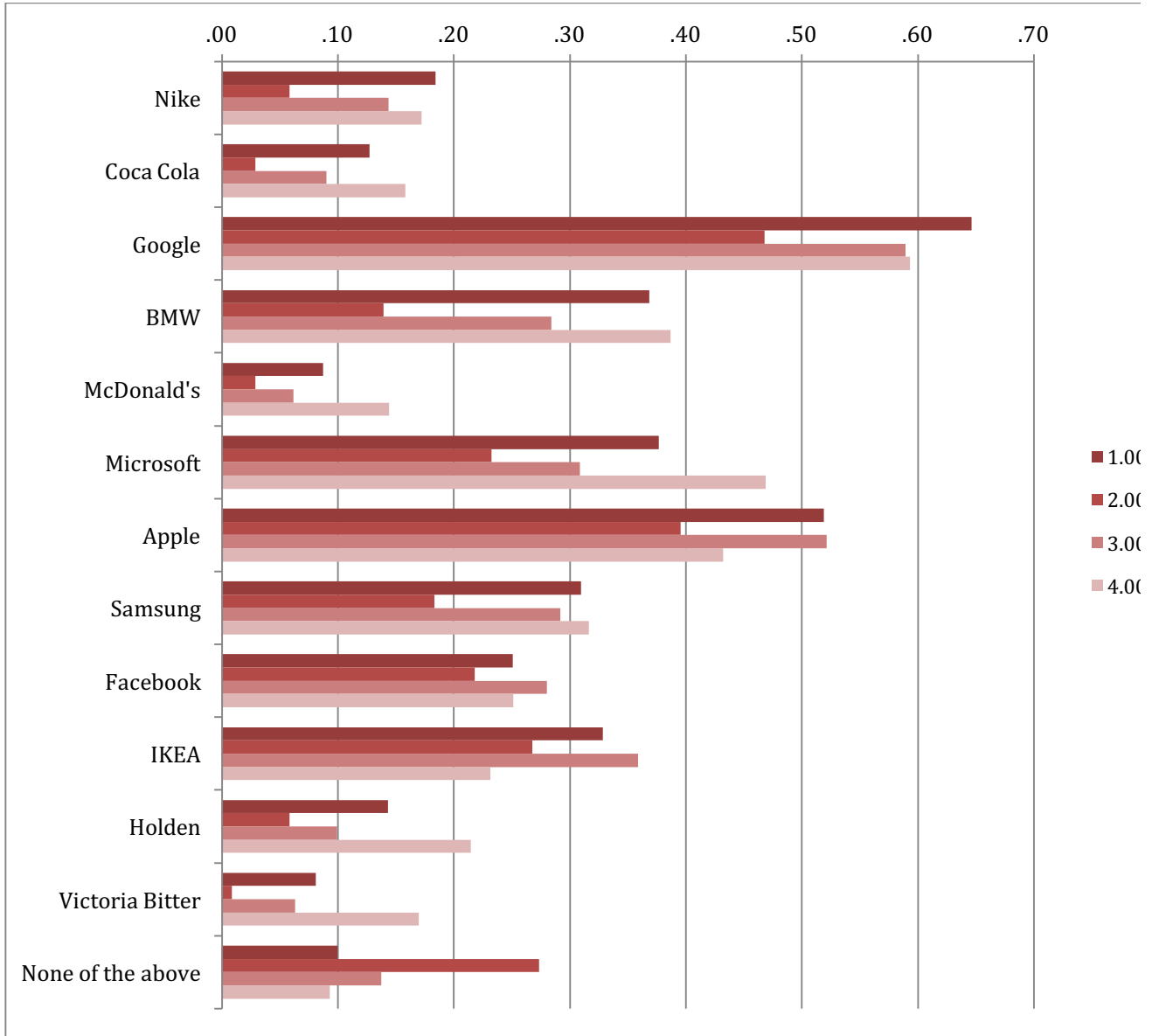
Mean values across cluster groups - I spend a lot of time...



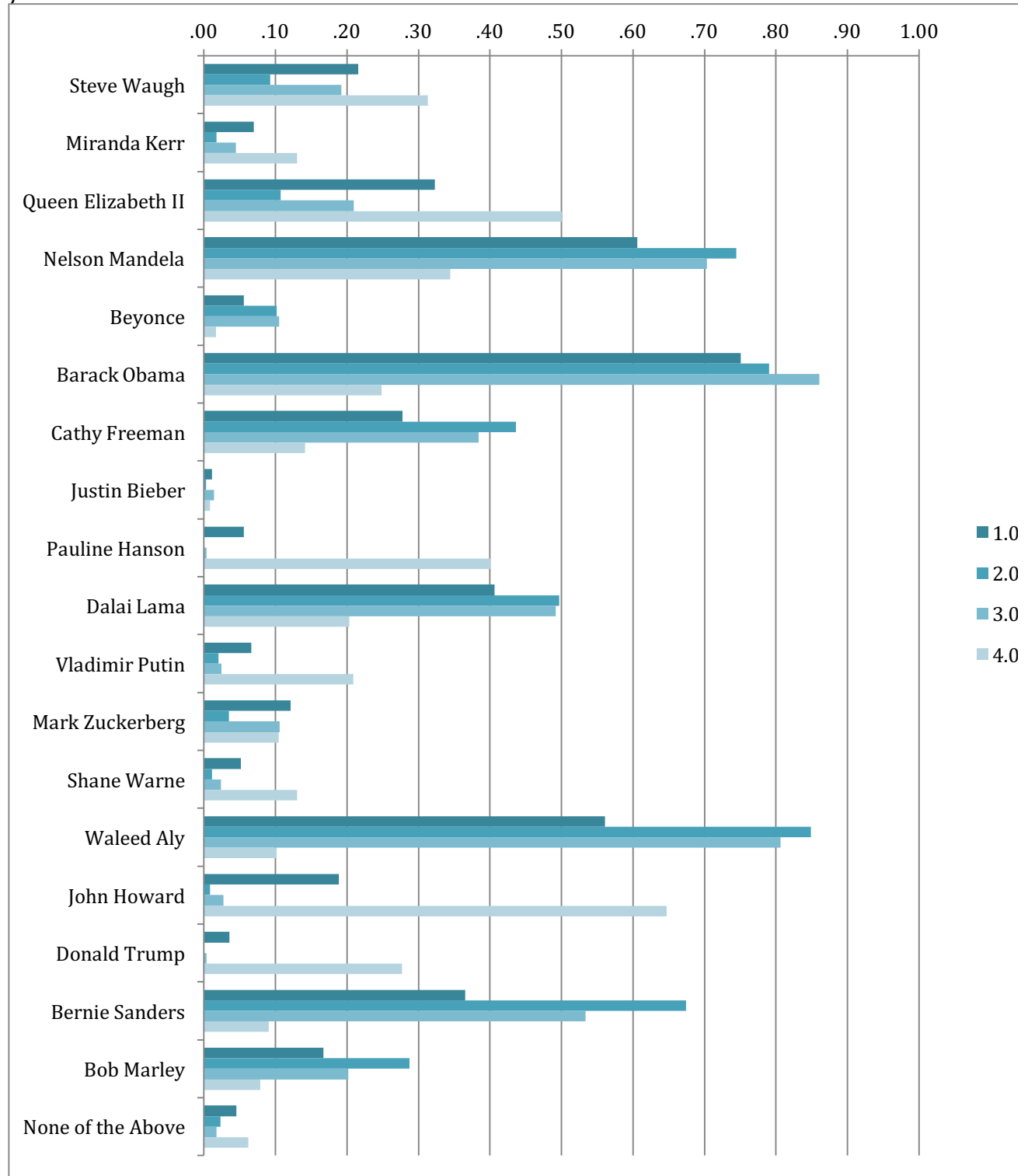
Proportion of respondents across clusters – Where do you get your news?



Which of the following brands appeal to you? – Proportion of respondents across clusters



Proportion of respondents across clusters – Which of the following brands appeal to you?



Proportion of respondents across clusters – What kind of music genres do you like to listen to?

