

# Electorate Voting Patterns, Preliminary Results 2020

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## 1 Introduction:

The flood of electoral information is well captured by the visuals provided by the media, but printed versions need to be supplemented so that overall patterns can be understood. This research note provides tables of candidate and party vote percentages by electorate (based on the total votes counted) and organised broadly north to south in geographical terms. The election night totals may be affected by special votes, including overseas, comprising some 17% of all votes cast. As well this working paper adds to the tabular presentation some more statistical measures.

The research note continues some of the analyses presented during election night but also draws on a long tradition of political ecological analysis provided by Professor Robert Chapman and more recently extended and reported in Jack Vowles (1989)<sup>1</sup>. This analytical strategy seeks to match census data to election results by electorate and party, placing individual votes in the context of wider communities. The Parliamentary library has arranged for electoral profiles to be developed from 2018 (and earlier)<sup>2</sup> census data, and I have drawn on a collective dataset of these in carrying out some investigations into the ways in which various characteristics of electorates shape their voting pattern.

Much of the presentation is statistical. Since the data are proportions, correlations are used in later tables. The relevant interpretations are:

- \*\* . Correlation is significant at the 0.01 level (2-tailed).
- \* . Correlation is significant at the 0.05 level (2-tailed).
- b. Cannot be computed because at least one of the variables is constant.

## 2 Overall results.

Preliminary election night results have awarded the Labour Party nearly 50% of party votes, the National Party just over one quarter and ACT and Greens some 8% each. Some 13 minor parties were under the 5% threshold.<sup>3</sup>

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<sup>1</sup> Jack Vowles. (1989). Playing games with electorates: New Zealand's political ecology in 1987. *Political Science* 41(1) pages 18-34. <https://doi.org/10.1177/003231878904100102>

<sup>2</sup> New Zealand Parliament. (2020). Electorate profiles 2020. <https://www.parliament.nz/en/mps-and-electorates/electorate-profiles>

<sup>3</sup> Electoral Commission. (2020). 2020 General election and referendums – Preliminary count. [https://electionresults.govt.nz/electionresults\\_2020\\_preliminary/index.html](https://electionresults.govt.nz/electionresults_2020_preliminary/index.html)

Table 1	PROJECTED				
	Party	Votes	% of Votes	Electorate Seats	List Seats
Labour Party	1,171,544	49.1	43	21	64
National Party	638,606	26.8	26	9	35
ACT New Zealand	190,139	8.0	1	9	10
Green Party	180,347	7.6	1	9	10
Māori Party	23,932	1.0	1	-	1
New Zealand First Party	63,534	2.7	-	-	-
New Conservative	35,971	1.5	-	-	-
The Opportunities Party (TOP)	33,727	1.4	-	-	-
Advance NZ	20,878	0.9	-	-	-
Aotearoa Legalise Cannabis Party	7,590	0.3	-	-	-
ONE Party	6,474	0.3	-	-	-
Vision New Zealand	2,780	0.1	-	-	-
NZ Outdoors Party	2,596	0.1	-	-	-
TEA Party	1,871	0.1	-	-	-
Sustainable New Zealand Party	1,469	0.1	-	-	-
Social Credit	1,351	0.1	-	-	-
HeartlandNZ	987	0.0	-	-	-
Total	2,383,796		72	48	120

### 3 Electorate Level Candidate Results.

Table 2a shows that of the parties likely to return to parliament, only Labour stood candidates in all 72 electorates. National stood candidates in 65, Greens in 58, ACT in 57, NZF in 26 and the Māori Party only in the Māori electorates. Minor parties varied in the spread of their candidates (e.g. the New Conservatives had candidates across all 72 electorates).

The two main parties have averages less dissimilar than might be expected (see Table 2a) given the aggregate results – but accounted for by National not standing in Maori electorates. Green and especially Act and New Zealand First are far more variable. (Table 2A includes the average vote proportion for all electorates, the standard deviation, the coefficient of variance (the standard deviation divided by the mean to indicate the extent of variation) together with the vote share of the lowest scoring (minimum) and the highest scoring (maximum) electorate.)

Table 2 Electorate Candidate votes

Table 2a: Electorate profiles: Total votes cast and per cent of votes won by party

Electorate	Region	Votes	Labour	National	Green	ACT	NZF	Maori
Northland	Northland	39596	36.85	38.72	3.29	2.79	11.47	.
Whangārei	Northland	38567	40.12	40.55	3.24	4.74	3.42	.
Auckland Central	Auckland	26509	32.32	28.54	34.18	1.40	.	.

Botany	Auckland	31286	38.00	53.25	.	3.29	.	.
East Coast Bays	Auckland	36612	26.54	48.59	4.75	3.09	.	.
Epsom	Auckland	32636	23.17	14.83	6.50	50.39	.	.
Kaipara ki Mahurangi	Auckland	35986	34.39	46.70	5.36	6.52	.	.
Kelston	Auckland	28029	62.82	19.21	6.25	3.46	.	.
Māngere	Auckland	19328	71.69	14.03	6.77	.	2.73	.
Manurewa	Auckland	20851	69.70	13.61	2.83	.	3.39	.
Maungakiekie	Auckland	29313	42.41	44.39	6.32	3.09	.	.
Mt Albert	Auckland	33004	70.29	20.06	5.28	.	.	.
Mt Roskill	Auckland	29555	58.72	26.53	5.25	3.67	.	.
New Lynn	Auckland	34369	55.89	25.62	.	5.77	1.54	.
North Shore	Auckland	35365	36.05	47.31	5.23	3.79	.	.
Northcote	Auckland	33594	47.13	43.09	4.05	1.86	.	.
Pakuranga	Auckland	31483	29.29	60.28	3.87	2.51	.	.
Panmure-Ōtāhuhu	Auckland	22828	73.52	14.21	4.16	.	.	.
Papakura	Auckland	31726	32.90	51.58	4.48	3.79	2.06	.
Takanini	Auckland	27002	51.57	34.73	.	3.82	.	.
Tāmaki	Auckland	34319	31.08	54.08	6.90	5.24	.	.
Te Atatū	Auckland	31355	55.32	29.09	4.92	4.30	.	.
Upper Harbour	Auckland	32773	43.15	38.83	5.59	4.38	.	.
Whangaparāoa	Auckland	38121	34.23	54.27	.	3.65	.	.
Bay of Plenty	BOP	36973	36.40	45.79	.	4.60	.	.
Rotorua	BOP	32607	39.99	43.80	4.39	2.74	3.69	.
Tauranga	BOP	37364	37.92	44.43	3.69	4.04	3.17	.
Coromandel	Waikato-Taranaki	41180	36.51	46.72	6.45	3.17	.	.
Hamilton East	Waikato-Taranaki	32732	46.60	40.65	3.79	1.80	.90	.
Hamilton West	Waikato-Taranaki	33159	51.12	37.77	.	2.89	.	.
New Plymouth	Waikato-Taranaki	38585	46.84	42.90	.	1.92	.	.
Port Waikato	Waikato-Taranaki	34253	27.21	39.65	2.79	3.16	.	.
Taranaki-King Country	Waikato-Taranaki	34155	37.03	47.67	.	5.76	.	.
Taupō	Waikato-Taranaki	37772	35.45	49.36	4.16	4.02	.	.
Waikato	Waikato-Taranaki	34860	36.91	52.37	.	4.89	.	.
East Coast	HB-EC	36612	50.17	37.48	4.19	3.04	.	.
Napier	HB-EC	36471	50.59	38.18	4.16	2.25	.	.
Tukituki	HB-EC	36414	45.11	42.99	3.87	2.52	.	.
Ōtaki	Manawatu etc.	38526	46.53	43.24	4.05	1.99	.	.
Palmerston North	Manawatu etc.	33476	58.15	26.96	4.73	3.09	2.18	.
Rangitīkei	Manawatu etc.	36140	38.25	44.95	4.27	4.38	2.23	.
Wairarapa	Manawatu etc	39903	48.92	35.36	2.49	2.28	7.23	.

Whanganui	Manawatu etc	35894	54.21	35.21	3.11	.	.	.
Hutt South	Wellington	38658	48.69	42.76	2.17	.69	.63	.
Mana	Wellington	36288	60.48	23.98	8.94	.	.	.
Ōhāriu	Wellington	37204	52.63	25.77	4.45	1.80	2.20	.
Remutaka	Wellington	36897	67.51	20.80	3.33	2.18	1.35	.
Rongotai	Wellington	37726	57.23	14.73	14.25	2.15	1.03	.
Wellington Central	Wellington	38090	57.80	18.59	16.48	1.78	.	.
Kaikōura	North SI	37551	36.81	42.89	4.85	4.21	5.10	.
Nelson	North SI	38694	47.72	38.43	3.94	2.87	.	.
West Coast- Tasman	North SI	38289	47.73	34.50	4.77	3.27	1.55	.
Banks Peninsula	Canterbury	42453	51.91	25.52	11.87	3.39	1.35	.
Christchurch Central	Canterbury	32512	60.76	25.63	5.82	2.64	1.35	.
Christchurch East	Canterbury	33457	63.77	20.57	6.20	3.31	.	.
Ilam	Canterbury	38658	42.37	36.63	6.17	4.27	.	.
Rangitata	Canterbury	38309	49.27	40.18	1.64	3.18	.	.
Selwyn	Canterbury	37059	36.79	50.13	3.65	4.25	.	.
Waimakariri	Canterbury	40859	42.24	47.08	.	2.68	.	.
Wigram	Canterbury	32460	62.76	24.61	4.58	2.73	.	.
Dunedin	Otago-Southland	39203	53.07	19.09	14.67	2.86	1.82	.
Invercargill	Otago-Southland	35890	43.71	45.62	2.51	.	1.77	.
Southland	Otago-Southland	34685	36.73	51.37	4.59	.	.	.
Taieri	Otago-Southland	39493	56.28	29.35	4.35	2.82	2.97	.
Waitaki	Otago-Southland	38985	37.12	45.18	5.04	4.01	1.22	.
Hauraki-Waikato	Maori	17524	67.13	.	.	.	24.13	.
Ikaroa-Rāwhiti	Maori	19660	55.10	.	7.81	.	.	29.40
Tāmaki Makaurau	Maori	34319	22.43	.	10.58	.	.	19.80
Te Tai Hauāuru	Maori	19411	48.59	.	.	.	.	42.81
Te Tai Tokerau	Maori	20361	56.94	.	.	.	.	24.52
Te Tai Tonga	Maori	21933	50.74	.	11.24	.	.	25.01
Waiariki	Maori	20846	43.45	.	.	.	.	45.44
			72	65	58	57	25	6

**Table 2b Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation	Coefft Var
Labour	72	22.43	73.52	46.9286	12.09320	25.77
National	65	13.61	60.28	36.6306	12.09053	33.01
Green	58	1.64	34.18	6.0215	4.83116	80.23
Act	57	.69	50.39	4.1258	6.34100	153.69

NZF	25	.63	24.13	3.6196	4.86072	134.29
Maori Party	6	19.80	45.44	31.1633	10.52331	33.77

Table 2c shows that the main opposition is between Labour and National party votes ( $R = -.773$ ) with Green party vote uncorrelated with Labour and with ACT moderately negatively related to National and also NZF. This means that electorates with a high Labour vote share usually have a low National vote, while electorate with a high ACT vote tend to have lower National and also NZF votes - but this pattern is not as accentuated as for the Labour/National opposition.

Table 2c Correlations

		Labour	National	Green	ACT
Labour Party	Pearson Correlation	1	-.773**	-.044	-.328*
	Sig. (2-tailed)		.000	.744	.013
	N	72	65	58	57
National Party	Pearson Correlation	-.773**	1	-.319*	-.224
	Sig. (2-tailed)	.000		.018	.094
	N	65	65	55	57
Green Party	Pearson Correlation	-.044	-.319*	1	-.021
	Sig. (2-tailed)	.744	.018		.889
	N	58	55	58	47
ACT New Zealand	Pearson Correlation	-.328*	-.224	-.021	1
	Sig. (2-tailed)	.013	.094	.889	
	N	57	57	47	57
NZF	Pearson Correlation	.140	.163	-.283	.051
	Sig. (2-tailed)	.505	.445	.191	.826
	N	25	24	23	21

### 3 Electorate Level Party Results.

Whereas the previous section considered candidate votes this section adds consideration of party vote shares per electorate.

Table 3B shows much less variation across electorates, partly because the full slate of options was available for each. Variation tends to increase with size of vote.

Table 3C shows similar patterns of correlation to that of Table 2C on electorate candidate vote although in several cases stronger. NZF is correlated with Labour, negatively with National, Greens & ACT. NC is correlated negatively with Labour & Greens, highly positively with National, and ACT. Top is highly correlated with Greens. ANZ is correlated with Labour and negatively with the other 3 main parties, as is support for the Maori Party.

Table 3A Electorate Party Vote: % won by each party by electorate:

Electorate	Labour	National	Green	ACT	NZF	New Conserv atives	TOP	ANZ	Maori
Northland	42.71	28.55	5.69	9.80	5.93	1.94	.93	1.92	.37
Whangārei	46.41	27.02	5.91	8.36	5.21	1.86	1.44	1.40	.28
Auckland Central	45.11	21.80	19.38	7.85	1.72	.51	1.98	.51	.21
Botany	45.75	38.64	3.01	7.15	1.49	1.38	.60	.34	.15
East Coast Bays	34.57	34.39	5.08	7.94	1.53	1.54	.90	.45	.13
Epsom	33.87	39.87	9.99	11.05	1.51	.50	1.69	.33	.23
Kaipara ki Mahurangi	39.24	35.10	5.91	11.67	2.61	1.46	1.17	1.33	.21
Kelston	61.42	17.74	8.25	4.47	2.61	1.32	1.02	.78	.45
Māngere	73.38	10.58	4.25	2.02	3.04	1.81	.46	.87	.87
Manurewa	71.38	14.22	2.99	2.09	3.04	1.79	.49	.69	.61
Maungakiekie	49.57	27.01	8.59	7.42	2.16	1.06	1.79	.50	.36
Mt Albert	48.27	19.35	19.70	6.23	1.89	.55	2.39	.25	.41
Mt Roskill	53.55	26.30	7.79	5.34	1.99	1.21	1.28	.39	.33
New Lynn	52.40	22.50	11.20	6.64	2.35	1.15	1.22	.80	.39
North Shore	40.41	35.18	7.68	10.25	1.90	1.22	1.76	.49	.21
Northcote	48.99	28.32	8.35	7.45	1.92	1.34	1.64	.55	.21
Pakuranga	40.33	39.91	4.32	9.01	2.14	1.32	.86	.44	.15
Panmure-Ōtāhuhu	72.13	13.01	4.06	2.59	2.62	1.24	.73	.69	.52
Papakura	40.41	39.05	3.70	9.35	2.93	1.60	.78	.55	.23
Takanini	52.60	31.71	3.16	5.13	2.11	1.72	.58	.49	.37
Tāmaki	36.92	38.40	7.23	12.47	1.64	.65	1.19	.34	.25
Te Atatū	56.27	23.34	6.35	5.35	2.61	1.39	1.03	.60	.58

Upper Harbour	46.53	32.01	5.12	8.06	1.91	1.95	1.30	.56	.38
Whangaparāoa	38.84	38.13	4.43	10.89	2.15	2.26	1.09	1.05	.13
Bay of Plenty	41.83	33.43	4.37	10.42	3.01	2.21	1.55	1.45	.
Rotorua	45.79	29.56	4.47	9.34	3.65	1.83	1.51	1.21	.82
Tauranga	40.94	33.78	5.09	9.36	3.76	2.46	1.77	1.04	.29
Coromandel	42.70	33.68	5.26	9.94	3.06	1.58	.72	1.43	.19
Hamilton East	47.90	28.50	7.71	7.09	2.16	2.05	2.06	.60	.39
Hamilton West	51.14	26.47	5.47	7.25	2.65	2.05	1.97	.86	.41
New Plymouth	47.67	30.96	4.35	8.26	2.27	1.70	1.65	1.12	.43
Port Waikato	39.33	37.15	3.03	11.05	2.89	1.70	.86	.78	.23
Taranaki-King Country	36.51	37.49	4.40	11.84	2.82	2.82	1.06	1.14	.40
Taupō	43.84	33.84	3.51	10.30	2.78	1.56	1.26	1.00	.30
Waikato	38.54	38.65	3.20	10.83	2.75	2.53	1.13	.75	.28
East Coast	49.31	28.19	5.17	8.01	3.58	1.11	.79	1.47	.61
Napier	50.15	28.79	5.59	8.35	2.16	1.44	1.15	.78	.27
Tukituki	47.14	30.82	5.02	9.12	2.08	2.16	.94	.86	.36
Ōtaki	51.43	27.66	5.85	7.54	2.69	1.40	.97	.75	.28
Palmerston North	53.61	22.41	7.28	6.92	2.94	1.83	1.81	.81	.42
Rangitīkei	43.70	31.02	4.33	11.63	3.41	2.03	1.26	.89	.35
Wairarapa	47.40	29.90	4.91	9.38	3.42	1.45	1.01	.96	.25
Whanganui	51.26	26.80	4.49	8.22	3.35	1.65	.86	1.16	.50
Hutt South	54.29	22.78	9.21	5.82	2.32	1.17	2.04	.57	.40
Mana	57.48	19.16	9.55	5.87	2.28	.99	1.87	.69	.52
Ōhāriu	50.58	22.79	13.21	6.27	1.95	.84	2.67	.28	.32
Remutaka	57.96	19.55	6.87	6.27	2.99	1.56	1.81	.47	.38
Rongotai	51.78	13.56	23.52	4.01	1.91	.54	2.71	.34	.43
Wellington Central	42.56	15.05	30.71	4.98	1.12	.44	3.66	.18	.51
Kaikōura	44.10	30.73	4.94	11.61	2.90	1.88	1.06	.77	.14
Nelson	52.67	21.47	8.49	8.22	1.87	1.57	1.52	.97	.18
West Coast- Tasman	46.64	26.05	7.72	9.94	3.01	1.70	1.18	1.56	.18
Banks Peninsula	50.18	21.59	14.19	7.14	2.02	1.29	2.02	.77	.28
Christchurch Central	53.72	20.45	12.92	6.34	2.27	1.19	2.11	.69	.28
Christchurch East	60.68	17.27	8.30	6.43	2.59	2.11	1.35	.77	.31
Ilam	41.07	28.48	9.34	8.39	1.78	1.15	1.72	.40	.23
Rangitata	48.37	31.96	2.74	9.71	2.01	1.97	.85	.63	.
Selwyn	41.27	34.83	4.60	12.73	2.04	1.75	1.19	.64	.12
Waimakariri	49.49	28.68	4.33	9.35	2.14	3.02	.83	.62	.13
Wigram	54.38	21.67	8.98	5.87	2.13	1.62	2.44	.62	.26

Dunedin	55.16	14.07	17.86	5.37	2.21	.87	2.72	.45	.29
Invercargill	47.51	30.30	3.17	9.67	3.07	2.21	.98	.94	.15
Southland	38.52	36.84	4.89	12.60	2.06	1.52	1.34	.90	.11
Taieri	58.77	21.54	5.15	7.43	2.66	1.13	1.19	.50	.12
Waitaki	43.76	31.62	5.26	11.68	2.05	1.90	1.18	.98	.11
Hauraki-Waikato	64.67	3.83	6.28	1.39	3.70	.42	.99	2.46	11.33
Ikaroa-Rāwhiti	67.38	2.22	6.20	.84	3.85	.42	.71	2.30	11.53
Tāmaki Makaurau	33.35	1.79	5.99	.59	2.41	.30	.59	.91	6.85
Te Tai Hauāuru	62.32	3.09	6.51	1.18	3.70	.33	1.05	2.38	14.96
Te Tai Tokerau	60.77	3.58	7.20	1.34	7.71	.44	1.02	2.53	9.78
Te Tai Tonga	59.53	5.56	11.84	2.78	3.59	.75	1.83	1.90	8.38
Wairiki	60.98	2.45	5.64	1.00	3.95	.41	.93	2.50	17.21
72	72	72	72	72	72	72	72	72	70

Table 3B Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Coeff Variation
Labour	72	33.35	73.38	49.3217	9.07259	18.39
National	72	1.79	39.91	25.3358	10.25081	40.46
Green	72	2.74	30.71	7.3785	4.94549	67.03
ACT	72	.59	12.73	7.4758	3.16337	42.31
NZF	72	1.12	7.71	2.6768	1.01773	38.02
New Conservatives	72	.30	3.02	1.4427	.61538	42.65
TOP	72	.46	3.66	1.3641	.60951	44.68
ANZ	72	.18	2.53	.9037	.55633	61.56
Maori	70	.11	17.21	1.4333	3.52667	246.05

Table 3C Correlations

	Labour	National	Green	ACT	NZF	New Conservat ives	TOP	ANZ
Labour	1	-.739**	.040	-.759**	.276*	-.243*	-.076	.395**
		.000	.738	.000	.019	.040	.528	.001
	72	72	72	72	72	72	72	70
National	-.739**	1	-.354**	.904**	-.334**	.586**	-.126	-.697**
	.000		.002	.000	.004	.000	.292	.000
	72	72	72	72	72	72	72	70
Green	.040	-.354**	1	-.259*	-.288*	-.537**	.816**	-.038



	.738	.002		.028	.014	.000	.000	.758
	72	72	72	72	72	72	72	70
ACT	-.759**	.904**	-.259*	1	-.238*	.570**	-.032	-.637**
	.000	.000	.028		.044	.000	.791	.000
	72	72	72	72	72	72	72	70
NZF	.276*	-.334**	-.288*	-.238*	1	.003	-.307**	.462**
	.019	.004	.014	.044		.983	.009	.000
	72	72	72	72	72	72	72	70
New Conservatives	-.243*	.586**	-.537**	.570**	.003	1	-.264*	-.521**
	.040	.000	.000	.000	.983		.025	.000
	72	72	72	72	72	72	72	70
TOP	-.076	-.126	.816**	-.032	-.307**	-.264*	1	-.188
	.528	.292	.000	.791	.009	.025		.120
	72	72	72	72	72	72	72	70
Anz	.286*	-.447**	-.270*	-.306**	.767**	-.143	-.341**	.774**
	.015	.000	.022	.009	.000	.232	.003	.000
	72	72	72	72	72	72	72	70
Maori	.395**	-.697**	-.038	-.637**	.462**	-.521**	-.188	1
	.001	.000	.758	.000	.000	.000	.120	
	70	70	70	70	70	70	70	70

#### 4 Patterns between Candidate and Party Vote

In this section the relationship between the patterns from the two votes are considered. Presumably they are likely to be close unless voters 'split' their vote, perhaps for 'tactical voting' reasons. Whereas the pattern of candidate v party vote is tight for Labour and National it is uncorrelated for Green and ACT. Candidate to left/above and Party votes to right/below.

Table 4: Candidate v Party Votes

		Labour	Labour	National	National	Green	Green	ACT	ACT
Labour	Pearson Correlation	1	.850**	-.773**	-.607**	.274*	-.328*	-.328*	-.619**
	Sig. (2-tailed)		.000	.000	.000	.020	.013	.013	.000
	N	72	72	65	72	72	57	57	72
Labour	Pearson Correlation	.850**	1	-.692**	-.739**	.040	-.334*	-.334*	-.759**
	Sig. (2-tailed)	.000		.000	.000	.738	.011	.011	.000
	N	72	72	65	72	72	57	57	72
National	Pearson Correlation	-.773**	-.692**	1	.846**	-.536**	-.224	-.224	.753**
	Sig. (2-tailed)	.000	.000		.000	.000	.094	.094	.000
	N	65	65	65	65	65	57	57	65
National	Pearson Correlation	-.607**	-.739**	.846**	1	-.354**	.291*	.291*	.904**
	Sig. (2-tailed)	.000	.000	.000		.002	.028	.028	.000
	N	72	72	65	72	72	57	57	72
Green	Pearson Correlation	-.044	-.018	-.319*	-.366**	.687**	-.021	-.021	-.255
	Sig. (2-tailed)	.744	.893	.018	.005	.000	.889	.889	.053
	N	58	58	55	58	58	47	47	58
Green	Pearson Correlation	.274*	.040	-.536**	-.354**	1	.002	.002	-.259*
	Sig. (2-tailed)	.020	.738	.000	.002		.990	.990	.028
	N	72	72	65	72	72	57	57	72
ACT	Pearson Correlation	-.328*	-.334*	-.224	.291*	.002	1	1	<b>.246</b>
	Sig. (2-tailed)	.013	.011	.094	.028	.990			.065
	N	57	57	57	57	57	57	57	57
ACT	Pearson Correlation	-.619**	-.759**	.753**	.904**	-.259*	.246	.246	1
	Sig. (2-tailed)	.000	.000	.000	.000	.028	.065	.065	
	N	72	72	65	72	72	57	57	72

## 5 Social correlates of Party Vote

'Ecological correlations' means that the correlations are between electorate characteristics and are necessarily reflected at the individual level. Also ecological correlations tend to be higher than the correlations calculated at the individual voter level (such as can be generated from appropriate survey data). A positive correlation means that the pattern across electorates is for each to have higher scores or lower scores on the voting share and the electorate characteristic.

The correlations are calculated only for the 65 general electorates as the information on Maori electorates is on a different basis. The small number of cases means that obtaining statistical significance is difficult. A broad selection of electorate social characteristics are deployed. Further multivariate analysis would be required to obtain a best-fit model. Labour support is correlated with children (therefore suggesting support by middle age adults) while Greens have tight support in 'young' electorates, whereas National and especially ACT support is highest among 'older' electorates.

While ACT support is high amongst high NZ-born electorates, Green support is correlated with low NZ-born electorates. National & especially ACT support is higher where electorate ethnicity is high in terms of NZ-European whereas its sharply negative for Labour support. Māori electorate support for Greens is negative, but positive for MELAA (Statistics NZ's Middle Eastern Latin American grouping) while Pacific support for Labour is very high and negative for National/ACT. Interestingly, ACT support is negative with high Asian electorates. Higher proportions of those professing NZ ethnicity are associated with ACT.

Labour voting electorates are revealed as most religious and ACT voting electorates as least. In terms of languages, English-speaking electorates score highly with ACT while Samoan speaking is associated with Labour voting.

Labour electorates are more likely to be regular smokers, with Green electorates negative. National and Act are high married electorates whereas Labour and Greens aren't. National & ACT electorates are more likely to own their dwelling, but not Green. National and ACT are (self) employed while Labour and Greens are wage-earning. Manager are associated with National & ACT but professionals with Greens. Overall, Labour is lower in terms of the NZSEI index and Greens very high. Proportion involved in the agriculture industry has high correlations – positive with National and ACT negative for Labour and Greens.

In general across the characteristics covered in Table 5, the relationships between electorate characteristics and voting follow a Greens/Labour/National/Act continuum, but with some exceptions.

Table 5: Correlations of Party Vote and Social Characteristics of Electorates

		Labour	National	Green	ACT
sex M	Pearson Correlation	.061	-.014	-.127	.092
	Sig. (2-tailed)	.631	.913	.313	.468
	N	65	65	65	65
0-14	Pearson Correlation	.326**	.060	-.664**	-.109
	Sig. (2-tailed)	.008	.634	.000	.387
	N	65	65	65	65
15-29	Pearson Correlation	.248*	-.474**	.630**	-.543**
	Sig. (2-tailed)	.047	.000	.000	.000
	N	65	65	65	65
30-44	Pearson Correlation	.191	-.258*	.385**	-.408**
	Sig. (2-tailed)	.128	.038	.002	.001
	N	65	65	65	65
45-59	Pearson Correlation	-.463**	.458**	-.230	.625**
	Sig. (2-tailed)	.000	.000	.066	.000
	N	65	65	65	65
60-74	Pearson Correlation	-.376**	.406**	-.358**	.616**
	Sig. (2-tailed)	.002	.001	.003	.000
	N	65	65	65	65
&5+	Pearson Correlation	-.304*	.355**	-.331**	.474**
	Sig. (2-tailed)	.014	.004	.007	.000
	N	65	65	65	65
Same as usual residence:	Pearson Correlation	.132	.016	-.206	.004
	Sig. (2-tailed)	.294	.901	.100	.972
	N	65	65	65	65
birthplace, NZ	Pearson Correlation	-.105	.097	-.262*	.426**
	Sig. (2-tailed)	.405	.442	.035	.000
	N	65	65	65	65
European	Pearson Correlation	-.501**	.280*	.064	.651**
	Sig. (2-tailed)	.000	.024	.610	.000
	N	65	65	65	65
Māori	Pearson Correlation	.109	.011	-.351**	.022
	Sig. (2-tailed)	.387	.934	.004	.864
	N	65	65	65	65
Pacific Peoples	Pearson Correlation	.728**	-.485**	-.124	-.669**
	Sig. (2-tailed)	.000	.000	.326	.000

	N	65	65	65	65
Asian	Pearson Correlation	.143	-.060	.158	-.454**
	Sig. (2-tailed)	.255	.636	.209	.000
	N	65	65	65	65
Middle Eastern Latin American	Pearson Correlation	.020	-.191	.547**	-.350**
	Sig. (2-tailed)	.876	.127	.000	.004
	N	65	65	65	65
Other Ethnicity	Pearson Correlation	-.283*	.140	.079	.373**
	Sig. (2-tailed)	.022	.266	.531	.002
	N	65	65	65	65
New Zealander(19)	Pearson Correlation	-.189	.019	.059	.422**
	Sig. (2-tailed)	.132	.878	.640	.000
	N	65	65	65	65
English	Pearson Correlation	-.343**	.117	.092	.548**
	Sig. (2-tailed)	.005	.351	.467	.000
	N	65	65	65	65
Māori	Pearson Correlation	.116	-.038	-.257*	-.026
	Sig. (2-tailed)	.357	.766	.039	.839
	N	65	65	65	65
Samoan	Pearson Correlation	.767**	-.536**	-.088	-.708**
	Sig. (2-tailed)	.000	.000	.486	.000
	N	65	65	65	65
Māori descent	Pearson Correlation	.079	.038	-.362**	.058
	Sig. (2-tailed)	.533	.761	.003	.644
	N	65	65	65	65
No religion	Pearson Correlation	-.626**	.285*	.291*	.595**
	Sig. (2-tailed)	.000	.021	.019	.000
	N	65	65	65	65
Buddhism	Pearson Correlation	.088	-.046	.243	-.398**
	Sig. (2-tailed)	.485	.715	.051	.001
	N	65	65	65	65
Christian	Pearson Correlation	.514**	-.159	-.469**	-.329**
	Sig. (2-tailed)	.000	.207	.000	.007
	N	65	65	65	65
Regular smoker	Pearson Correlation	.435**	-.216	-.446**	-.122
	Sig. (2-tailed)	.000	.084	.000	.332
	N	65	65	65	65
Married, not separated	Pearson Correlation	-.416**	.722**	-.698**	.556**
	Sig. (2-tailed)	.001	.000	.000	.000
	N	65	65	65	65

Separated divorced or dissolved widowed surviving partner	Pearson Correlation	.000	.109	-.422**	.301*
	Sig. (2-tailed)	.998	.388	.000	.015
	N	65	65	65	65
Never married and never in a civil union	Pearson Correlation	.351**	-.658**	.775**	-.602**
	Sig. (2-tailed)	.004	.000	.000	.000
	N	65	65	65	65
Partnered	Pearson Correlation	-.484**	.675**	-.583**	.705**
	Sig. (2-tailed)	.000	.000	.000	.000
	N	65	65	65	65
Hold in a family trust	Pearson Correlation	-.780**	.710**	-.088	.752**
	Sig. (2-tailed)	.000	.000	.487	.000
	N	65	65	65	65
Own or partly own	Pearson Correlation	-.181	.249*	-.380**	.468**
	Sig. (2-tailed)	.148	.046	.002	.000
	N	65	65	65	65
Do not own and do not hold in a family trust	Pearson Correlation	.444**	-.478**	.368**	-.688**
	Sig. (2-tailed)	.000	.000	.003	.000
	N	65	65	65	65
No children	Pearson Correlation	.110	-.450**	.827**	-.436**
	Sig. (2-tailed)	.382	.000	.000	.000
	N	65	65	65	65
Full time study	Pearson Correlation	.164	-.257*	.308*	-.416**
	Sig. (2-tailed)	.191	.039	.013	.001
	N	65	65	65	65
Wages, salary, commissions, bonuses etc paid by my employer	Pearson Correlation	.267*	-.426**	.533**	-.430**
	Sig. (2-tailed)	.031	.000	.000	.000
	N	65	65	65	65
Self-employment or business I own and work in	Pearson Correlation	-.786**	.600**	.029	.783**
	Sig. (2-tailed)	.000	.000	.820	.000
	N	65	65	65	65
Interest, dividends, rent, other investments	Pearson Correlation	-.678**	.392**	.335**	.542**
	Sig. (2-tailed)	.000	.001	.006	.000
	N	65	65	65	65
Regular payments from ACC or a private work accident insurer	Pearson Correlation	-.014	.140	-.500**	.400**
	Sig. (2-tailed)	.915	.266	.000	.001
	N	65	65	65	65
New Zealand Superannuation or Veteran's Pension	Pearson Correlation	-.311*	.363**	-.383**	.556**
	Sig. (2-tailed)	.012	.003	.002	.000
	N	65	65	65	65
	Pearson Correlation	-.198	.069	.046	.219

Other superannuation, pensions, or annuities (other than NZ Superannuation, Veteran's Pension or war pensions)	Sig. (2-tailed)	.115	.587	.713	.080
		65	65	65	65
Jobseeker Support	Pearson Correlation	.586**	-.428**	-.209	-.451**
	Sig. (2-tailed)	.000	.000	.094	.000
		65	65	65	65
Sole Parent Support	Pearson Correlation	.557**	-.386**	-.257*	-.448**
	Sig. (2-tailed)	.000	.002	.038	.000
		65	65	65	65
Supported Living Payment	Pearson Correlation	.579**	-.560**	.045	-.478**
	Sig. (2-tailed)	.000	.000	.723	.000
		65	65	65	65
Student Allowance	Pearson Correlation	.220	-.476**	.623**	-.509**
	Sig. (2-tailed)	.078	.000	.000	.000
		65	65	65	65
Other government benefits, government income support payments, war pensions or paid parental leave	Pearson Correlation	.730**	-.491**	-.323**	-.494**
	Sig. (2-tailed)	.000	.000	.009	.000
		65	65	65	65
Other sources of income including support payments from people who do not live in my household	Pearson Correlation	-.202	-.233	.805**	-.140
	Sig. (2-tailed)	.107	.061	.000	.267
Paid Employee 2018	Pearson Correlation	.758**	-.650**	.158	-.810**
	Sig. (2-tailed)	.000	.000	.210	.000
	N	65	65	65	65
Employer	Pearson Correlation	-.793**	.762**	-.308*	.903**
	Sig. (2-tailed)	.000	.000	.013	.000
	N	65	65	65	65
Self employed and without employees	Pearson Correlation	-.703**	.519**	.049	.642**
	Sig. (2-tailed)	.000	.000	.697	.000
	N	65	65	65	65
Managers 2018	Pearson Correlation	-.834**	.761**	-.154	.841**
	Sig. (2-tailed)	.000	.000	.222	.000
	N	65	65	65	65
Professionals	Pearson Correlation	-.155	-.177	.754**	-.248*

	Sig. (2-tailed)	.216	.159	.000	.046
	N	65	65	65	65
Technicians and Trades Workers	Pearson Correlation	.252*	.006	-.528**	.035
	Sig. (2-tailed)	.043	.965	.000	.780
	N	65	65	65	65
Community and Personal Service Workers	Pearson Correlation	.388**	-.469**	.101	-.245*
	Sig. (2-tailed)	.001	.000	.423	.049
	N	65	65	65	65
Clerical and Administrative Workers	Pearson Correlation	.285*	-.146	.007	-.461**
	Sig. (2-tailed)	.021	.244	.954	.000
	N	65	65	65	65
Sales Workers	Pearson Correlation	.338**	-.189	-.051	-.490**
	Sig. (2-tailed)	.006	.132	.686	.000
	N	65	65	65	65
Machinery Operators and Drivers	Pearson Correlation	.579**	-.227	-.544**	-.288*
	Sig. (2-tailed)	.000	.068	.000	.020
	N	65	65	65	65
Labourers	Pearson Correlation	.188	-.002	-.487**	.176
	Sig. (2-tailed)	.133	.987	.000	.160
	N	65	65	65	65
NZSEI	Pearson Correlation	-.331**	.018	.660**	-.064
	Sig. (2-tailed)	.007	.886	.000	.612
	N	65	65	65	65
	Sig. (2-tailed)	.000	.000	.002	
	N	65	65	65	65
Paid Employee 2018	Pearson Correlation	.758**	-.650**	.158	-.810**
	Sig. (2-tailed)	.000	.000	.210	.000
	N	65	65	65	65
Employer	Pearson Correlation	-.793**	.762**	-.308*	.903**
	Sig. (2-tailed)	.000	.000	.013	.000
	N	65	65	65	65
Self employed and without employees	Pearson Correlation	-.703**	.519**	.049	.642**
	Sig. (2-tailed)	.000	.000	.697	.000
	N	65	65	65	65
	Sig. (2-tailed)	.007	.886	.000	.612
	N	65	65	65	65
	Sig. (2-tailed)	.000	.000	.002	
	N	65	65	65	65
Agriculture Forestry and Fishing 2013	Pearson Correlation	-.324**	.367**	-.385**	.607**
	Sig. (2-tailed)	.008	.003	.002	.000
	N	65	65	65	65



Other helping or voluntary work for or through any organisation, group or marae:	Pearson Correlation	-0.164	-0.033	0.095	0.320**
	Sig. (2-tailed)	0.191	0.792	0.451	0.009
	N	65	65	65	65
total hours worked in employment per week,, aged 15 years and over 60+	Pearson Correlation	-0.425**	0.497**	-0.430**	0.687**
	Sig. (2-tailed)	0.000	0.000	0.000	0.000
	N	65	65	65	65