

What Determines Preferences for an Electoral
System? Evidence from a Binding Referendum.

(Supplementary Materials)

August 9, 2017

Table I: Support for MMP. *All* polling stations.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
% Labour	0.286*** (0.0112)	-0.0933*** (0.0117)	-0.0933*** (0.0117)	-0.0949*** (0.0116)	-0.0822*** (0.0120)	-0.0838*** (0.0119)	0.422*** (0.00890)
% National		-0.498*** (0.0137)	-0.498*** (0.0137)	-0.508*** (0.0136)	-0.464*** (0.0142)	-0.497*** (0.0138)	
% Alliance	0.535*** (0.0197)	0.146*** (0.0181)	0.146*** (0.0181)	0.132*** (0.0177)	0.155*** (0.0178)	0.138*** (0.0177)	
% Smaller parties							0.567*** (0.0120)
% REF. – % G.E.				0.628*** (0.0742)	0.639*** (0.0758)	0.636*** (0.0764)	0.683*** (0.0788)
log (# Polling stations)					-0.0396*** (0.00257)		
Total votes (in thousands)						0.0150*** (0.00227)	0.0144*** (0.00225)
Dummy Maori Electorate	0.0764*** (0.00571)	-0.0345*** (0.00471)	-0.0345*** (0.00471)	-0.0325*** (0.00595)	0.0377*** (0.00746)	-0.0416*** (0.00695)	-0.0534*** (0.00698)
Weights	YES	YES	YES	YES	YES	YES	YES
R ²	0.399	0.563	0.563	0.575	0.604	0.587	0.578
Observations	4,265	4,129	4,129	4,129	4,129	4,129	4,130

*** Significant at 1% level; **at 5% level; *at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling Station. % Smaller parties: Percentage of votes for all parties other than National or Labour. % REF. – % G.E.: (Total votes referendum-Total votes general election)/Total votes general election. log (# Polling stations): refers to the number of polling stations in the electorate. Weights are given by the ratio ‘#referendum votes at the polling station/# total referendum votes’. Robust standard errors.

Table II: Replication of Table 4 with clusters at the Area Unit level. Support for MMP at the Polling Station.

	General Roll only				All electorates			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Mean MB Area within AU	-112.3*** (41.17)	-91.93*** (35.28)	-94.83*** (36.62)	-45.91** (17.93)	-111.6*** (40.19)	-92.70*** (34.84)	-95.85*** (36.21)	-46.08*** (17.68)
Pop. Density	1.147*** (0.263)	0.743*** (0.260)	0.544** (0.275)	-0.241 (0.215)	1.132*** (0.262)	0.749*** (0.259)	0.534* (0.273)	-0.233 (0.214)
% Women	0.339** (0.146)	0.210 (0.145)	0.404*** (0.147)	0.154 (0.113)	0.326** (0.146)	0.203 (0.145)	0.402*** (0.146)	0.155 (0.111)
% Born in NZ	-0.281*** (0.0287)	-0.249*** (0.0287)	-0.265*** (0.0313)	-0.156*** (0.0229)	-0.273*** (0.0284)	-0.241*** (0.0284)	-0.258*** (0.0311)	-0.152*** (0.0228)
% Maori	0.116*** (0.0238)	0.0158 (0.0262)	0.0564* (0.0301)	0.156*** (0.0202)	0.105*** (0.0224)	0.0124 (0.0251)	0.0508* (0.0286)	0.152*** (0.0193)
% > 64 y.o.	0.0009 (0.0545)	-0.214*** (0.0636)	-0.196** (0.0898)	-0.0664 (0.0674)	0.0111 (0.0544)	-0.191*** (0.0635)	-0.156* (0.0888)	-0.0509 (0.0663)
% College degree	0.401*** (0.0472)	0.328*** (0.0506)	0.315*** (0.0592)	0.313*** (0.0490)	0.404*** (0.0474)	0.336*** (0.0508)	0.322*** (0.0593)	0.316*** (0.0491)
% < NZD 20,000	-0.0880* (0.0515)	-0.333*** (0.0654)	-0.247*** (0.0760)	-0.00716 (0.0546)	-0.101* (0.0520)	-0.334*** (0.0656)	-0.242*** (0.0753)	-0.00856 (0.0540)
Median income (in thousands of \$)	-0.386*** (0.0425)	-0.309*** (0.0472)	-0.286*** (0.0471)	-0.151*** (0.0317)	-0.392*** (0.0427)	-0.318*** (0.0472)	-0.292*** (0.0467)	-0.155*** (0.0316)
% Maori in Maori Roll (as in 1998)			-0.0292* (0.0167)	-0.0188 (0.0124)			-0.0244 (0.0165)	-0.0183 (0.0122)
% earns rents or dividends			-0.0365 (0.108)	0.362*** (0.0841)			-0.0574 (0.107)	0.351*** (0.0830)
% receives <i>some</i> benefit		0.496*** (0.0735)	0.554*** (0.0979)	0.0541 (0.0731)		0.469*** (0.0726)	0.514*** (0.0959)	0.0387 (0.0713)
% full employment			0.229** (0.0992)	0.200*** (0.0707)			0.238** (0.0988)	0.200*** (0.0701)
Maori electorate (dummy)					9.443*** (0.553)	9.464*** (0.558)	9.548*** (0.576)	-4.917*** (0.682)
Clustered SE	YES	YES	YES	YES	YES	YES	YES	YES
Weights	YES	YES	YES	YES	YES	YES	YES	YES
Party controls	NO	NO	NO	YES	NO	NO	NO	YES
R ²	0.316	0.339	0.351	0.660	0.329	0.349	0.361	0.660
Observations	3,104	3,104	2,961	2,960	3,617	3,617	3,449	3,334

*** Significant at 1% level; ** at 5% level; * at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling Station. All variables refer to *Area Unit* level data. Population density: (People per km^2)/1,000. Party controls: share of votes for Labour, for National, and for Alliance. Standard errors clustered at the Area Unit level. Weights are given by the ratio '#referendum votes at the polling station/# total referendum votes'.

Table III: Replication of Table 5 with clusters at the Area Unit level. Support for MMP at the Polling Station, by party support, with sociodemographic controls (General Roll only)

	(1)	(2)	(3)	(4)	(5)	(6)
% Labour	0.1038*** (0.0201)	0.6219*** (0.0667)	-0.1712*** (0.0161)	-0.1122*** (0.0179)	0.0539 (0.0447)	
% Labour × % Labour		-0.0073*** (0.0008)			-0.0025*** (0.0006)	
% National			-0.5979*** (0.0199)	-0.5365*** (0.0214)	-0.1474*** (0.0507)	
% National × % National					-0.0049*** (0.0006)	
% Alliance				0.1163*** (0.0248)	0.2382*** (0.0527)	0.5023*** (0.0620)
% Alliance × % Alliance					-0.0029*** (0.0008)	-0.0037*** (0.0009)
% National – % Labour						-0.1704*** (0.0079)
(% National – % Labour) ²						-0.0025*** (0.0001)
Clustered SE	YES	YES	YES	YES	YES	YES
Weights	YES	YES	YES	YES	YES	YES
Controls	YES	YES	YES	YES	YES	YES
R ²	0.365	0.402	0.654	0.660	0.701	0.650
Observations	2,961	2,961	2,961	2,960	2,960	2,960

*** Significant at 1% level; ** at 5% level; * at 10% level.

Dependent variable: Percentage of votes for MMP at the Polling Station. Controls used (all refer to Area Unit level): mean meshblock area, population density, % women, % born in NZ, % Maori, % college degree, % > 64 y.o., % < NZD 20,000, median income, % Maori in Maori Roll, % earns rents or dividends, % receives *some* benefit, % full employment. Standard errors clustered at the Area Unit level. Weights given by number of votes at the polling station.

Table IV: Descriptive statistics, New Zealand Election Study, 1993 survey

	Full 1993 Dataset		Cross-sectional analysis dataset	
	Mean	Std. Dev.	Mean	Std. Dev.
Voted for MMP in 1993 Referendum	0.51	0.5	0.55	0.5
Voted for FFP in 1993 Referendum	0.4	0.49	0.45	0.5
Did Not Vote in 1993 Referendum	0.09	0.29		
Voted for Change in 1992 Referendum	0.58	0.49	0.63	0.48
Supported FPP in 1992 Referendum	0.21	0.41	0.22	0.42
Did Not Vote in 1992 Referendum	0.21	0.41	0.15	0.36
Age	47.9	16.9	46.9	15.8
Female	0.51	0.5	0.48	0.5
NZ European	0.9	0.3	0.93	0.25
Maori	0.06	0.23	0.04	0.19
Other Ethnicity	0.05	0.21	0.03	0.17
Immigrant	0.17	0.38	0.17	0.38
No Qualifications	0.29	0.46	0.25	0.43
School Qualifications	0.39	0.49	0.39	0.49
Non-University Post-School Degree	0.2	0.4	0.23	0.42
University Degree	0.11	0.31	0.13	0.34
Employed	0.57	0.5	0.6	0.49
Retired	0.24	0.42	0.21	0.41
Non-Employed	0.2	0.4	0.19	0.39
Personal Income (thousands)	23.6	19.8	25.5	21
Personal Income Missing/Don't know	0.21	0.41	0.1	0.3
Personal Ideology - Extreme Left	0.08	0.27	0.08	0.28
Personal Ideology - Left	0.1	0.3	0.11	0.32
Personal Ideology - Central	0.32	0.47	0.33	0.47
Personal Ideology - Right	0.13	0.34	0.15	0.36
Personal Ideology - Extreme Right	0.08	0.27	0.09	0.29
Personal Ideology - Don't Know	0.29	0.45	0.23	0.42
General Trust - (Strongly) Agree	0.65	0.48	0.66	0.47
General Trust - Neither Agree/Disagree	0.12	0.33	0.14	0.35
General Trust - (Strongly) Disagree	0.18	0.39	0.17	0.37
General Trust - Don't Know	0.04	0.19	0.03	0.16
Trust Government - (Strongly) Agree	0.31	0.46	0.32	0.47
Trust Government - Neither Agree/Disagree	0.18	0.38	0.19	0.39
Trust Government - Disagree	0.37	0.48	0.38	0.49
Trust Government - Strongly Disagree	0.08	0.27	0.08	0.27
Trust Government - Don't Know	0.05	0.23	0.03	0.18
Knows Previous MP's name	0.75	0.43	0.8	0.4
Political Interest - Very Interested	0.15	0.36	0.17	0.37
Political Interest - Somewhat	0.48	0.5	0.53	0.5
Political Interest - Slight or less	0.36	0.48	0.3	0.46
Reads Newspaper - Often or Sometimes	0.63	0.48	0.68	0.47
Reads Newspaper - Rare or Never	0.37	0.48	0.32	0.47
Religion - None	0.25	0.43	0.28	0.45
Religion - Catholic	0.14	0.34	0.13	0.34
Religion - Protestant	0.6	0.49	0.58	0.49
Religion - Non-Christian	0.02	0.13	0.01	0.12
Politically Engaged (min=0; max=3)	2.23	1	2.56	0.75
Supports Principles of MMP (min=-4; max=4)	0.06	1.51	0.06	1.62
Voted Strategically in 1993	0.07	0.26	0.07	0.25
Did not vote in 1990	0.09	0.29	0.08	0.27
Voted for National in 1990	0.46	0.5	0.48	0.5
Voted for Labour in 1990	0.33	0.47	0.32	0.47
Voted for Alliance in 1990	0.07	0.25	0.07	0.26
Voted for Other parties in 1990	0.05	0.21	0.05	0.22
Whether changed vote from 1990 to 1993	0.47	0.5	0.43	0.5
Support to National (min=1; max=5)	2.81	1.3	2.82	1.35
Support to Labour (min=1; max=5)	2.89	1.12	2.83	1.11
Support to Alliance (min=1; max=5)	3.2	1	3.2	1.01
Did not vote in 1993	0.08	0.27	0.01	0.1
Voted for National in 1993	0.34	0.47	0.39	0.49
Voted for Labour in 1993	0.3	0.46	0.3	0.46
Voted for Alliance in 1993	0.18	0.39	0.2	0.4
Voted for Other parties in 1993	0.1	0.3	0.11	0.31
Auckland	0.23	0.42	0.24	0.43
Wellington	0.1	0.29	0.1	0.3
Christchurch	0.1	0.29	0.1	0.31
Other cities	0.27	0.45	0.28	0.45
Town	0.1	0.3	0.09	0.29
Countryside	0.2	0.4	0.19	0.39
Observations	2251		1296	

Table V: Replication of Table 8 in the paper, with (i) standard errors clustered at the Area Unit level (Panel A); and (ii) Maori electorates included (Panel B). Determinants of differential turnout across Referendum and General Election.

Panel A: Clusters at the Area Unit level.				
Dependent variable: Turnout Referendum (%) - Turnout General Election (%) (polling station level)	(1)	(2)	(3)	(4)
Pop. density	-0.0253*** (0.0094)	-0.0245** (0.0095)	-0.0050 (0.0104)	-0.0057 (0.0102)
% Women	-0.0056 (0.0043)	-0.0048 (0.0043)	0.0020 (0.0044)	0.0029 (0.0044)
% NZ born	0.0052*** (0.0011)	0.0051*** (0.0011)	0.0046*** (0.0011)	0.0041*** (0.0010)
% Maori	-0.0010 (0.0007)	-0.0009 (0.0007)	0.0003 (0.0009)	0.0007 (0.0009)
% 65 y.o. or older	0.0014 (0.0017)	0.0015 (0.0017)	-0.0005 (0.0028)	-0.0011 (0.0028)
% college degree	0.0070*** (0.0016)	0.0069*** (0.0017)	0.0082*** (0.0016)	0.0073*** (0.0016)
% < NZD 20,000	-0.0015 (0.0017)	-0.0016 (0.0017)	0.0021 (0.0025)	0.0015 (0.0026)
Median income in thousands of \$	0.0017 (0.0012)	0.0017 (0.0012)	-0.0015 (0.0013)	-0.0020 (0.0013)
% receives some benefit			-0.0052* (0.0029)	-0.0043 (0.0029)
Labour share in polling station (%)			-0.0033*** (0.0006)	-0.0008 (0.0009)
National share in polling station (%)				0.0033*** (0.0011)
Alliance share in polling station (%)				0.0040*** (0.0013)
Other controls	YES	YES	YES	YES
Clustered SE	YES	YES	YES	YES
Weights	YES	YES	YES	YES
R ²	0.0685	0.0690	0.0957	0.1017
Observations	3,104	3,104	2,961	2,960

Panel B: Including Maori electorates (clusters at the electorate level).				
Dependent variable: Turnout Referendum (%) - Turnout General Election (%) (polling station level)	(1)	(2)	(3)	(4)
Pop. density	-0.0269*** (0.0095)	-0.0259*** (0.0096)	-0.0071 (0.0101)	-0.0080 (0.0101)
% Women	-0.0060 (0.0044)	-0.0052 (0.0044)	0.0012 (0.0048)	0.0025 (0.0048)
% NZ born	0.0054*** (0.0014)	0.0054*** (0.0014)	0.0048*** (0.0013)	0.0041*** (0.0013)
% Maori	-0.0002 (0.0010)	-0.0001 (0.0010)	0.0021 (0.0016)	0.0024 (0.0015)
% 65 y.o. or older	0.0021 (0.0023)	0.0023 (0.0023)	0.0012 (0.0035)	0.0004 (0.0034)
% college degree	0.0075*** (0.0028)	0.0075*** (0.0028)	0.0088*** (0.0022)	0.0076*** (0.0020)
% < NZD 20,000	-0.0019 (0.0019)	-0.0021 (0.0019)	0.0026 (0.0024)	0.0021 (0.0024)
Median income in thousands of \$	0.0017 (0.0014)	0.0017 (0.0014)	-0.0018 (0.0015)	-0.0025* (0.0014)
% receives some benefit			-0.0069* (0.0036)	-0.0059* (0.0035)
Labour share in polling station (%)			-0.0025*** (0.0009)	0.0008 (0.0017)
National share in polling station (%)				0.0042** (0.0017)
Alliance share in polling station (%)				0.0054** (0.0024)
Maori electorate	0.0253 (0.1693)	0.0245 (0.1689)	0.0633 (0.1822)	0.1337 (0.2168)
Other controls	YES	YES	YES	YES
Clustered SE	YES	YES	YES	YES
Weights	YES	YES	YES	YES
R ²	0.0585	0.0590	0.0797	0.0903
Observations	3617	3617	3449	3334

(See next page for notes) *** Significant at 1% level; **at 5% level; *at 10% level.

Panel A. All variables refer to Area Unit. Variables not shown: Mean meshblock area within Area Unit, % Maori in Maori Roll, % earns rents or dividends, % receives some benefit, % full employment. Standard errors clustered at the Area Unit level (1,376 clusters). Regressions weighted by polling station # votes.

Panel B. All variables refer to Area Unit. Variables not shown: Mean meshblock area within Area Unit, % Maori in Maori Roll, % earns rents or dividends, % receives some benefit, % full employment. Standard errors clustered at the electoral district level (99 clusters). Regressions weighted by polling station # votes.