Using the Internet in New Zealand elections and support for e-voting

Charles Crothers

Abstract
The use of the Internet for voting and other related purposes is a key area of discussion worldwide, although only touched on in a few New Zealand publications. It is seen by many as something of a panacea – a ‘technical fix’ – that might repair the falling rates of participation in democratic elections, while others are horrified that it might subvert important aspects of democracy. In order to ascertain interest in e-voting in particular and also the broad pattern of the use of the Internet around elections, this article analyses portions of the data collected by the 2014 and earlier rounds of the New Zealand Election Study, together with data from other studies. As well as a considerable battery of questions relating to e-voting in the last two rounds, the New Zealand Election Study has had a measure of Internet access embedded within a question of Internet use in relation to the preceding election. This goes back to the 1999 survey round and so long-term trends can be documented.

Keywords
E-voting, Internet political site-visiting, voting decline

Introduction
Internet voting is one of the last frontiers for Internet use: it just seems difficult to many to trust the Internet for such a ‘sacred’ purpose, although maybe it is more allowable when elections such as those at local level have less import. This possibility has been under active policy discussion in various jurisdictions, including New Zealand, for a couple of decades. There have been some experiments and some surveys about trust in Internet voting that have been commissioned. However, even if there is yet to be wide support for the central act of voting to be entrusted to the Internet, many ancillary activities and services can be, in particular, obtaining information diffusely or in more targeted ways, or more actively participating in political debates. The availability of the

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2014 New Zealand Election Study (NZES) provides a useful opportunity to present data relevant to the debate concerning e-voting, and also to uncover underlying patterns of election-related Internet usage. The study foregrounds interest in e-voting but also moves back to examine the general ways in which Internet use permeates political activity since support for e-voting is nested within wider processes and understandings.

This study endeavours:

1. to indicate the level and sources of support around policy recommendations concerning political uses of the Internet;
2. to analyse the extent to which New Zealanders use the Internet for political or electoral purposes, for what particular purposes (obtaining information, interacting with candidates, parties, officials, etc.), and how this has changed over the last few elections; and
3. to provide a profile and sociological explanation of the political uses of the Internet in terms of the social characteristics (age, gender, ethnicity, etc.) of those using it in various ways.

A terminological and conceptual note is in order: ‘electronic voting’ is the broadest term as relevant technology can be deployed within a polling booth or at a distance (as in i-voting or e-voting). ‘E-voting’ refers particularly to the act of exercising a ballot choice whereas ‘e-electoral’ denotes activity around an election campaign period and ‘e-politics’ can refer to the wider penumbra of politically related activities surrounding this. The differences between on-site and remote e-voting are likely to involve major differences in attitudes. E-voting stands with several non-polling-booth alternative voting systems (e.g. postal voting), and some valuable lessons may be gleaned from experiences with these.

**Background: The case for and against e-voting**

Internet voting systems are still seldom deployed, but they are gaining popularity, being used for government elections and referendums in the UK, Estonia and Switzerland (in some cases, particularly for expatriates), as well as municipal elections in Canada and party primary elections in the US and France. Based on the results of trials in 13 of 26 cantons, the Swiss government plans to introduce e-voting for all Swiss citizens by the end of 2015. This creates some, but not much, international pressure for adoption in New Zealand. Policy development in New Zealand has been faltering but some recent impetus seems to have been gained that makes examination of relevant evidence timely.

A crucial background to consideration of Internet voting in New Zealand has been the worrying downward trending in turnout over the past few decades for both local and national elections, especially so in by-elections. Since there has been institutional

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continuity, these changes have happened outside the voting system, but attention to the institutional system governing voting seems called for.

The New Zealand Parliament’s Justice and Electoral Select Committee’s report sees the benefits of e-voting for democracy and government as:

- including previously isolated groups in democratic processes;
- supporting the New Zealand Disability Strategy and New Zealand Bill of Rights Act 1990, and fulfilling New Zealand’s international obligations under the United Nations Convention on the Rights of Persons with Disabilities and the International Covenant on Civil and Political Rights;
- preventing voting methods from contributing to continued declining participation;
- providing options to cater to shifting preferences in an increasingly technological society;
- improving the certainty of election results by eliminating human error and allowing special votes to be counted quickly; and
- contributing to state-sector goals regarding accessibility, trust and networked services.

Disadvantages, summarised by Zvulun, include:

- voters do not have the experiences of going to the polling booth, waiting in the queue and perhaps having discussions with other voters, which presumably promotes enthusiasm and encouragement to participate in elections;
- by allowing voters to vote early, there is a chance that they will want to change their opinion during the campaign, having gained further knowledge about the issues and candidates, but it may be too late;
- increasing voter turnout with postal voting applies more to those who have tertiary education and high socio-economic status; and
- fraud and undue pressures can occur in postal or e-voting, although it can also happen at the polling booth.

History of voting systems in New Zealand

Arrangements for voting over this century have not changed at the national level, except marginally due to the move to a ‘two-vote’ system of MMP-aggravated complexity. On occasions, referenda have been added to the voting task, and postal voting has also been

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used for national-level referenda. In 1997, a mail referendum on compulsory retirement saving was carried out and other referenda have also been carried out by mail, with steadily decreasing turnout.

However, over the last two-and-a-half decades, local authority voting has been uniformly postal. Local voting is usually accompanied by ballots for District Health Boards and sometimes Licensing Trusts and so is usually more complex, as well as taking place in a more information-deficient environment as there is limited party formation in local elections to structure policy options and indicate the qualities of candidates.

Some lessons applicable to e-voting can be learned from the history of postal voting as a non-polling-booth alternative. This emerged in the aftermath of the First World War, with its dislocation of mainly men to army camps and hospitals, becoming available for the 1928 (and subsequent) national elections for soldiers, people with disabilities and those with an illness: some 8000 postal votes were cast in 1928. Local postal voting began in the 1960s in a few councils and gradually spread. In the 1974 local elections, counties using postal voting had turnouts that averaged 70%, compared to a 50% average for those not using postal voting. In the 1983 local election, the eight borough councils using postal voting increased their voter turnout compared with the 1980 local election, with significant increases of between 4% and 45%. Auckland, Christchurch, Hamilton and Waitemata changed over for the 1986 local elections and by the 1989 elections, postal voting had become mandatory for all local councils, although choice returned for 1992 – only Lower Hutt City Council reverted and secured a 26% turnout compared with an average of 50%. However, by the 2004 local elections, voter turnout decreased back to earlier levels, seemingly revealing that there had been a ‘novelty factor’ that had then abated. Turnout has remained steady thereafter, with some spikes when there is particular interest, such as in the early Auckland SuperCity election.

What do the voters think? Several surveys have been carried out which suggest that postal voting is not of great concern to respondents. A 2004 survey by the Otago Public Opinion Research Centre found that of 224 participants, only 20 commented on the

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postal voting method, with 11 being unhappy with this mode: either due to the security of the votes and the possibility of fraudulent papers or because they felt that postal voting discourages turnout. A Hamilton consultation suggested that postal voting did not favour Maori, although the reasons advanced pertain to engagement with local elections more generally. From an organisational viewpoint, mail voting is certainly cheaper in terms of staff costs, and e-voting would undoubtedly be cheaper still.

Current New Zealand situation

Interest in Internet voting began in the mid-2000s. In 2008, a draft long-term strategy for e-voting was put forward to the Minister of Justice by the New Zealand Electoral Commission (EC), which suggested trials of phone and Internet voting in three elections starting in 2014. This led to a decision on whether to offer that as an option to all voters in 2023. The proposal was that 2000 blind or disabled voters would be invited to vote by Internet or phone in the 2014 election. Up to 5000 people qualifying for special and advanced voting, such as New Zealanders living overseas, would be added in 2017, with the number of such voters able to vote online increasing at each election. People taking part in the electronic voting trials would need to vote in advance, during a 17-day window before polling day, but they could then override their e-vote, if they wished, by voting at a polling booth on the day of the election.

The Report of the Justice and Electoral Committee’s Inquiry into the 2011 general election particularly commented on e-voting, seeing it as:

potentially making voting more convenient and appealing for voters who would otherwise have cast special votes and for the growing number of people who relate to online communities; and improving access for non-native speakers of English. E-voting could also help

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8. Speculative discussions concerning costs are scattered through a large grey literature that is beyond the focus of this article. Costs can be deceptive, although clearly the costs to voters in casting their vote, the costs of setting up and maintaining polling stations, and especially the costs of counting are cheaper. However, if a mixed system retaining some polling stations is used, costs could be high. Also, set-up costs (including the purchase of hardware/software and the hiring of consultants) might be very expensive (unless off-the-shelf programs are available) and, worse, these might continue at a considerable level since technology and security threats may continue to evolve and need defences to be kept up, so the initial investment may have a short life. Spectacular expense levels for some pilots have been recorded: a 2000 Pentagon experiment cost nearly US$75,000 per solider-voter. See, for example, ‘Elections and Technology’, available at: http://aceproject.org/ace-en/topics/et/eth/eth02/eth02b/eth02b4
reduce the number of errors that voters make on ballot papers and special declarations, thus reducing the number of votes that have to be disallowed.9

During September 2013, acting on local government sector requests, the Minister of Local Government announced a working party to investigate Internet voting, with its report released in August 2014. Then, in December 2014, the Associate Minister of Local Government announced that the government had agreed to continue work to enable a small number of local authorities to trial online voting in the 2016 local elections. The current situation is provided by the EC discussion in ‘Participation – 2014 and Beyond’.10 The EC’s ‘2014 Participation Strategy’ sets out goals for 2014 and the EC’s strategy for promoting participation.11 Their starting point was a conference and workshop on voter participation in May 2014. Three key streams of EC work are:

- starting a national discussion on the implications of declining voter participation;
- providing public information and education resources that facilitate participation; and
- research on what affects participation.

Most recently, the EC has reported that although the government considers that e-voting for parliamentary elections is not a 2017 priority, it will continue to monitor overseas developments. An appropriate first step would be enabling online voting for overseas voters and those with disabilities. However, e-voting would require substantial additional funding, early policy decisions and legislative amendments, whereas the EC’s immediate priority is responding to the impact of increased advance voting and the changing needs and expectations of voters.

In addition to being an electoral issue, in an interesting 2014 political interlude, the role of the Internet in New Zealand and world politics was brought to centre-stage with the launch of the New Zealand Internet Party, which then allied with the left-wing Mana Party and attempted to build bridges to young Internet-linked people. Surprisingly, perhaps reflecting the Mana rather than the Internet portion of this party, neither its age distribution nor Internet connectivity differed markedly from that of the general population, thus belying one of its hoped-for appeals. Moreover, the Internet–Mana alliance plummeted in the elections and then melted down. However, this episode is not further considered in this article as it appears that a political foregrounding of the Internet does not seem to necessarily impact on electoral considerations.

**Literature**

A research centre that is dedicated to this topic, Harvard’s ‘Internet & Democracy’ project, is a useful depository.12 There have been a considerable number of survey

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12. Available at: http://blogs.law.harvard.edu/idblog/
studies in the US, in particular, Pew studies have laid down a solid descriptive foundation. As well as reports on institutional changes and on the results of surveys, some studies have used experimental designs to tease out significantly important design factors. This account begins with coverage of the Swiss situation before moving on to US and wider literatures, and then to New Zealand studies; also, then moving from consideration of e-voting issues to more general political use of the Internet.

The introduction of postal voting in some Swiss Cantons increased average electoral turnout by 20 points. A survey conducted in 2001 by the Centre for Research on Direct Democracy suggested that the introduction of Internet voting could increase turnout by up to nine points, particularly among the least inclined to vote in the 18 to 40 age range. The eGov Trendbarometer survey conducted regularly by Bern University of Applied Sciences during the 2000s showed that two-thirds of Swiss citizens wanted to be able to vote online. Surveys conducted in 2003 and 2004 showed that 79% of young people between 18 and 29 were considering voting online. The share of online votes in Geneva, where there has been particular experimentation with e-voting, is relatively stable at around 20%, whatever the total turnout. This suggests that there is a stable and constant core of voters who prefer to use the Internet over any other method, whatever the type of ballot (municipal, cantonal or federal). In sum, Chevallier, Warynski and Sandoz found that e-voters were characterised by the following:

- loyalty (90% of Internet voters also vote at the next election on the Internet);
- coming to a great extent from those previously using postal voting;
- differing in terms of socio-demographic variables only by age (younger) and income (higher);
- gender and level of education not playing a significant role, when matched with age and income;
- being used by citizens of all political horizons with two small biases (more e-voting from the Ecologist Party and less from right-wing populist parties);
- having a high subjective level of information technology (IT) skills;
- any significant socio-economic and demographic or political effects disappearing when combined with the range of variables, so that the key drivers are confidence in working with the Internet and in one’s own computer skills; and
- once they have tried e-voting, this tends to lock them in for future e-voting.

Stromer-Galley reviewed findings from existing studies that have investigated the efficacy of alternative voting methods (e.g. absentee balloting) which found that (in the US) those who tend to use alternative voting methods are older people and those with high educational attainment, high household incomes, who exhibit political involvement

and are politically conservative. Their survey found that a slight majority of participants favoured casting their vote at booths and that less than a quarter preferred Internet-based voting or using absentee ballots. Being female, well-educated and Internet-savvy increased respondents’ preferences for Internet-based voting; being a Republican increased preference for absentee balloting; and being older, a homeowner and possessing strong political commitments raised preferences for polling places. Their findings concerning age reverse those claimed in their literature review. Herrnson et al. studied the early 2000s’ nationwide push to update voting systems that often involved heavy investment in electronic voting systems. These reforms arose from electoral troubles in US elections. They report on a series of multi-method usability studies, finding that while these systems work well, they have shortcomings that raised concerns among a minority of voters. Survey data from the Arizona 2000 general election campaign was used to examine the opinions of registered voters (n = 501) towards Internet voting. It showed that almost half of survey respondents opposed Internet voting and that Internet voting could change the socio-demographic and ideological compositions of those voting, although this effect was not much remarked on in the survey participants’ open-ended responses.

Turning to wider studies, the Pew Internet and American Life Project reported that 38% of all Americans online were using the Internet as an information source by 2012, climbing from 24% and 12% in the 2008 and 2004 elections, rather than the more traditional reliance on newspapers and television. Weber, Loumakis and Bergman explore whether the Internet mobilizes or demobilizes US citizens using Survey2000, finding a positive relationship between engagement on the Internet and civic and political participation, while exacerbating the pre-Internet socio-economic biases in relation to these. Lariscy, Tinkham and Sweetser used a telephone survey of Georgia voters (n = 574) to understand how use of the Internet as a political information source varies with perception of political participation, political information efficacy and cynicism, and whether it is underpinned by generational differences. Digital natives

differ in having more individualistic perceptions of political involvement rather than more traditional forms. While the more cynical are less inclined to search for political information online, these people are often those with particular abilities to do so. Use of the Internet can involve a rather different experience and require different skills because of the more two-way, conversational and social capabilities of the Internet, as compared to the one-way broadcast of political information. Some may be attracted by this. Lariscy, Tinkham and Sweetser hypothesise that those with high political efficacy will be more favourable to Internet voting, whereas the cynical will be repelled. Some support for these findings was obtained.

Other countries have also been the focus of studies. Wenzel and Feliksiak endeavour to determine whether accessing online political content has any influence on voting independent of socio-demographic factors in Poland, using data from a survey conducted after the 2011 parliamentary elections \( (n = 969) \).\(^{20}\) They find an independent effect of political activity on the Internet on voting behaviour, whereas more passive use of Internet material does not have the same effect. Konieczny uses data from international, US and Polish online surveys on the effects of the distribution of social movement organisations, age of organisations and activists, numbers of activists and supporters, and organisation goals on the success of email, static websites, phones and social networking, contrasted with the relatively poor performance of blogs, podcasts and online petitions.\(^{21}\) Schoen and Faas analysed online and offline surveys conducted in the run-up to the 2002 German election to show that online surveys yield biased results and that e-campaigning reaches only a tiny fraction of the electorate.\(^{22}\)

Experimental studies have also been deployed, which allow better control over effects. Kaid focuses on the relative impact of traditional media such as television and the Internet on voters through an experimental study that tested the effectiveness of exposure to advertising, debates and news from the 2000 US presidential campaign.\(^{23}\) The results suggested that Internet exposure resulted in higher evaluations for both 2000 presidential candidates but that the debates were the only format in which there were substantial differences in evaluations. Traditional television and Internet exposures led to differences in information-seeking and political behaviours, while not necessarily reducing levels of political cynicism. Tedesco examined the effects of Web interactivity in a pre-test–post-test experiment \( (n = 271) \) between subjects in experimental (high) and


control (low) interactive conditions. Exposure to highly interactive Web features resulted in significant increases in political information efficacy and such participants were also significantly more likely than those in the low interactive condition to indicate that voting was an important behaviour.

Supplementing individual-level studies, Schussman and Earl study the e-movement for voters to redefine their participation in the US electoral process by promoting ‘strategic voting’, which emerged during the 2000 US presidential election. As a movement that emerged online, explanations may need to adjust pre-Internet social movement theories. The authors find that individual biography plays a strong role in the generation of strategic voting leaders, but in different ways compared to earlier movement leadership processes.

Further studies widen the interest to institutional aspects. Wagner and Ruusuvirta look at online voting advice applications (VAAs), which have become very popular, and which may therefore significantly influence voting behaviour. Given such effects, it is important to reveal the designed model of party choice built into these VAAs. The authors assess how well VAAs follow the proximity model by comparing their depiction of policy positions against expert surveys and party manifestos. They find that party positions presented by VAAs show strong convergent validity with Left–Right and economic positions, but compare less favourably on immigration and environment measures. The authors provide a sharp critique, suggesting that the voting advice given to users is also inherently limited since VAAs: mostly disregard accountability, salience, competence and non-policy factors; treat policy positions and not outcomes as paramount; and can be subject to strategic manipulation by political parties who supply information about their policies. Clearly, care is needed in their construction.

Other studies take a wider angle to examine the change processes involved in the adoption of e-voting. Xenakis and MacIntosh explore trust in the e-electoral process based on analysis of the 2002 and 2003 UK e-voting pilots. They indicate that broad community trust was needed to support the deployment of the pilots. Finally, there are broader effects. Jackson points out that the Internet has stimulated voting research by

giving access to appropriate data and offering rapid and wide dissemination of data and discussion, with an especial emphasis on research that has arisen because of electoral difficulties in the US.²⁹

A small number of studies have been carried out in New Zealand. An EC study found that 46% of respondents would prefer to vote online while 39% would not.³⁰ The study also found that a quarter of New Zealanders were not confident that they could vote privately online without someone else unduly trying to influence their vote. In a later repeat study, the EC found:³¹

- Over half (56%) of voters would still prefer to vote in person at a polling place.
- Just under a third (32%) said they would prefer to vote online using a computer or a mobile Internet device. Young voters were more likely to prefer this mode of voting (49%).
- Preference for voting online was much higher among non-voters; over half (53%) of non-voters said they would prefer to vote online using a computer or a mobile Internet device. Non-voters were less likely than voters to say they would prefer to vote in person at a polling place (22% vs 56%). Young non-voters were more likely than the rest to say they would prefer online or mobile voting (67%).

Statistics New Zealand included a question on Internet voting in their 2009 and 2012 Household ICT (HHICT) surveys, which showed high (and slightly increasing) support (57% in 2009, rising to 61% in 2012) for e-voting in both local and national elections.³²

Supporters of e-voting include people who are:

- younger voters rather than older (with the exception of the youngest group) – this is a strong pattern;
- tertiary-educated;
- employed;
- European and others, compared to Maori and (notably less) Pasifika; and
- very broadly, those with increasingly higher personal incomes.

More recently, a Massey University survey conducted by academics and students from their politics programme targeted 18- to 24-year-old students (n = 288) to gauge

their attitudes to the then upcoming general election. Of respondents who indicated that they did not intend to vote, 75% said they would be more likely to vote if online voting was introduced, while only 51% said they would be motivated to vote by a NZ$50 payment.

Methodology

NZES is a useful source of information, from 1999 onward, on the gradually extending use of the Internet for political purposes. In the earlier surveys, there was only a single question on Internet use, although this has continued to be asked in the subsequent election surveys. The question has two steps: whether the person has access to the Internet and then whether or not they use it for political purposes. From 2008 onward, NZES surveys asked a battery of questions concerning website visits, with the 2011 survey including parallel questions in relation to the election and also the referendum on MMP. The range of websites asked about in the survey was extended in the 2011 round, which also probed into respondents’ access to the Internet from various situations.

The questions on the Internet available for the 2014 survey round include:

- access to the Internet;
- means of contact from political parties, including Internet;
- using the Internet to get news or information about the election;
- visiting party and electoral official websites; and
- receiving ‘alerts’.

Information in this article on views on e-voting comes from other surveys, although (later on in the questionnaire) the NZES 2014 round included:

If you had a choice between voting on the Internet or voting at a polling place, which of the two would you prefer?

If you were able to vote online, how confident would you be about the security?

If you could have voted on the Internet in this election, do you think that you would have been more or less likely to vote, or would it have made no difference?

Standard data analysis techniques are deployed in this article: the description of frequency distributions, correlational and factor analysis to reveal patterns, and multivariate analysis (analysis of variance and, in particular, Multiple Classification Analysis (MCA) are used to examine the extent to which social background characteristics and some e-use variables are correlated with Internet e-political uses.
Results

Trends

A summary of top-line results from the Internet-relevant items included in the 2014 NZES study includes:

1. Views on e-voting. Now, one-third of respondents prefers to e-vote while two-thirds remain conservative, preferring polling booths. Confidence levels in Internet voting are quite high (50%), with under one-fifth not being at all confident. However, the subjectively assessed net effect on voter turnout is very small: the 15% being more likely to vote are offset by 10% being less likely. This set of results is strongly intercorrelated so that the degree of confidence in the technology is locked in to preferences.

2. Completion of the questionnaire online (12%).

3. Modes of access to the Internet: work (40%); home (80%); mobile device (50%); other (8%); none (10%) – the mean numbers of types of access = 1.8 (+/-1.1 standard deviation).

4. Use of Internet to access information concerning the election (50%).

5. E-election activity: contacted by, persuaded by, visited and signed up through text/social media/blog. There are a variety of levels of activity but they are mainly quite small. However, 6% each visited a political blog, and/or signed up for online news from a party/candidate and/or visited YouTube. The EC was a popular visitor site (11%). Respondents as passive recipients reported that the Labour Party, National Party and the Greens showed a very small amount of activity while the remaining parties have almost undetectably low levels of activity. Emails and website-related activity are more significant than texting. Among modes of persuasion, only social networking sites show a significant level of activity (8.5%). Levels of visiting websites are much higher, though: 17% for a party; 6% for a candidate. The cumulations table also shows that email and then social media were more, although not very vigorously, active, with texting negligible. So, older modes of e-communication prevail. On average, only 0.6 visits to sites were made by respondents. Much of this is seemingly political activity as normal but carried out online and of no particular significance for online studies as opposed to voting studies more generally.

between a predictor and dependent variable. MCA can show the effect of each predictor on the dependent variable, both before and after taking into account the effects of all other predictors in a less restrictive way than some alternative analytical approaches. All coefficients are expressed as deviations from the overall mean, not from the unknown mean of the excluded class in each set. The constant term in the predicting equation is the overall mean, not some composite sum of means of the excluded subclasses. Moreover adjusted and unadjusted subgroup means are presented in the same table, which can be used to detect the amount of intercorrelations between the predictors. See: http://www.unesco.org/webworld/idams/advguide/Chapt5_3.htm
Table 1 shows that access steadily increased over the period, from nearly two-thirds of respondents in 2002 to 85% in 2011.\(^{36}\) Interestingly, the political non-use of the Internet among those with access has been fairly stable, with just under 50% not using their access in relation to the election for 2002, 2005 and 2011, although 2008 has a slightly lower figure. The referendum attracted less Internet-based interest than the simultaneously occurring election. The overall proportion of active users has increased, especially those claiming multiple visits. Again, the referendum attracted less interest.

Visits to politically relevant sites were measured (for the 2011 and 2008 rounds) using a simple yes/no response. Visits to party websites ran at 13% for both years, but only at 2% in relation to the referendum. Local MPs’ sites attracted 3% in 2008 rising to 5% in 2011, whereas local/other candidates’ websites attracted only 2–3%. The Parliamentary website was popular at much the same level, whereas the EC was of more interest, with 10% of visits, then rising to 15%, this time including the referendum. News media websites were the most popular. Blogging was steady at 5%, whereas YouTube uses declined. The Referendums website attracted 7% but the two rival referendum-related ‘campaigns’ attracted less than 2%.

For 2011 to 2014, on average, respondents made 1.51 (+/−0.94) visits for 2011, rising to 1.80 (+/−1.1) for 2014. Their means of access (of the four provided for in the question) were home (nearly 80%), work (over 40%), mobile devices (25%) and elsewhere (5%). Trivial proportions only had access outside their home. However, the availability of devices and fashion quickly changes such proportions, as the jump to half with Internet connection via mobile phone over the three years since 2011 indicates.

**Factors supporting e-voting**

In this section, some quite specific hypothesis-driven cross-tabulation analyses are explored that concern conditions under which trust in e-voting is more likely to be enhanced (tables available upon request).

The first analysis is drawn from the 2011 round and relates experience with use of Internet banking, a use that has a high security risk, to interest in voting online. There is a

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36. This compares broadly with other phone or mail studies and so is an indirect test of bias in NZES. Census data on Household ICT access is considerably lower for all time-points.
moderately strong pattern (eta = .221, with preference for Internet voting as the dependent variable). Shifting to the 2014 round, the next analysis tests for the ideological or political shaping of interest in e-voting. There is a broadly similar pattern, although the ‘younger’ Greens had a higher support for e-voting while the ‘older’ New Zealand First had relatively fewer in favour. However, even the Internet Party had support for e-voting of less than a quarter, refuting expectations that means of voting might have appealed to their supposedly computer-savvy clientele. Internet/Mana, Labour and New Zealand First had substantial proportions of opponents (eta = .129, with increased likelihood of voting as the dependent variable).

There is a clear age pattern, with the youngest generation indicating a strong support for e-voting that will undoubtedly continue into the future and be swelled by subsequent generations (eta = .244, with increased likelihood of voting as the dependent variable). Those with more access options are more likely to prefer to vote online (eta = .274, with increased likelihood of voting as the dependent variable).

Those using the Internet for political purposes combining some political interest with e-technical capability would be more likely to vote if there was an online option (eta = .149, with increased likelihood of voting as the dependent variable). It gets a bit more complicated looking at the extended version of these results, though, as there is some evidence of a curvilinear relationship peaking at those using the Internet for information about the election once or twice and then falling again, although there is a steady decline in those less likely to vote (eta = .199, with increased likelihood of voting as the dependent variable).

Might e-voting tap the interest of non-voters? An analysis shows a very strong pattern (eta = .220, with changing voting intention as the dependent variable).

Lastly, I formed a new variable identifying whether respondents voted at national or local levels of government, or both. It is possible that those voting locally are also those who prefer postal voting as a mode. Only 10% claimed to vote for neither level while nearly two-thirds voted for both: a quarter voted nationally (in polling booths) and under 5% only for local elections (by post). Some further cross-tabulations did not reveal

### Table 2. Visits to websites (percentages).

<table>
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<th>% Yes</th>
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<th>2011 election</th>
<th>2011 referendum</th>
<th>2014</th>
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<td>Visited party website</td>
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<td>12</td>
<td>2</td>
<td>17</td>
</tr>
<tr>
<td>Visited local MP’s website</td>
<td>3</td>
<td>5</td>
<td>1</td>
<td>6</td>
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<tr>
<td>Visited local candidates’ website</td>
<td>2</td>
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<td>NA</td>
<td></td>
</tr>
<tr>
<td>Visited other candidates’ website</td>
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<td>3</td>
<td>1</td>
<td></td>
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<tr>
<td>Visited Parliament website</td>
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<td>Visited news media website</td>
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</tr>
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<td>Visited referendums website</td>
<td>NA</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Visited Campaign for MMP</td>
<td>NA</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Visited Campaign for Change</td>
<td>NA</td>
<td>1</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Visited a political blog site</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td></td>
</tr>
</tbody>
</table>
further patterns other than that voting for both increases with age, or, more specifically, generation, with a small group more likely to vote only locally in the 31 to 70 age ranges. So, it seems unclear whether the introduction of local e-voting will cascade over into national e-voting when these both become possible.

Factor analyses of site-visiting

What are those searching for political and electoral information looking at? In this section, patterns of site-visiting are explored. In 2008, the factor analysis produced two components. The first combines general websites together with generic political sites (e.g. New Zealand elections, party sites), whereas the second involves local websites (concerning candidates).

For 2011, the pattern seems rather different: the first factor seems to involve more quasi-official sites (whether local or national), while the second focuses only on generic sites. MMP campaign sites capture the third factor and the final involves the official sites for elections and the referendum. When asking the same questions in relation to the referendum, the same pattern is produced, albeit with different weightings and order.

Finally, the more limited 2014 set yielded but one factor, which may also suggest that politically related Internet use is becoming more diffuse. It is difficult to infer whether there are particular patterns of politically related use and perhaps different types of respondent lying behind these. The more complex 2011 pattern may emerge only at a more detailed level, and may therefore be worthy of further exploration.

Multivariate analyses

Table 3 shows the MCA equations of each of the study’s main dependent variables. They differ in terms of overall level of explanation: number of access types is most well explained, together with use of the Internet for election purposes and visits and use of media to push a ‘political’ point. In terms of explanatory factors, several have small or negligible net effects: gender, ethnicity (although it sometimes has a marginal importance), housing status, subjective social class, marital status, size of settlement and island. The others do, however, have strong effects. Age is always the most powerful predictor, while both occupation and education have substantial effects in most equations, more especially occupation. When Internet skill and voting propensity variables are included in the equation (not shown), several of the social background variables become non-significant while the ‘new’ items become important.

Conclusions

Internet voting is clearly no panacea or quick technological fix. There is considerable demand in New Zealand. However, there are different estimates of that demand depending on the survey: highest for the HHICT survey, lower for NZES, where respondents had to choose alternatives. At present, self-estimations of the net effect on turnout are that this will be small. The social background characteristics associated with a higher interest in e-voting include age and class, but, more particularly, e-skills and confidence, as measured more indirectly by the number of access modes and extent of
### Table 3. ANOVAs summary table.

<table>
<thead>
<tr>
<th>Medium of completion</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. access types</td>
<td>Used Internet for information about election</td>
<td>Visits</td>
<td>How confident would you be about the security and privacy of voting online?</td>
<td>If you could have voted online, would it have changed the likelihood of your voting?</td>
<td>Have you used social media sites to promote an issue?</td>
<td>Medium of completion</td>
</tr>
<tr>
<td>F1: Respondent’s gender</td>
<td>.065</td>
<td>.098</td>
<td>.081</td>
<td>.054</td>
<td>.047</td>
<td>.025</td>
<td>.116</td>
</tr>
<tr>
<td>F22: Most important ethnicity consolidated</td>
<td>.060</td>
<td>.088</td>
<td>.098</td>
<td>.057</td>
<td>.091</td>
<td>.088</td>
<td>.134</td>
</tr>
<tr>
<td>Census defined age groups</td>
<td>.494</td>
<td>.264</td>
<td>.226</td>
<td>.171</td>
<td>.279</td>
<td>.322</td>
<td>.143</td>
</tr>
<tr>
<td>F17: What is your housing status? Respondent occupation</td>
<td>.089</td>
<td>.063</td>
<td>.101</td>
<td>.096</td>
<td>.134</td>
<td>.071</td>
<td>.089</td>
</tr>
<tr>
<td>F9: What class do you see yourself as? F8 Collapsed highest education</td>
<td>.222</td>
<td>.175</td>
<td>.149</td>
<td>.106</td>
<td>.095</td>
<td>.134</td>
<td>.121</td>
</tr>
<tr>
<td>F28: Marital status F5: Size of area usually lived in Island</td>
<td>.070</td>
<td>.077</td>
<td>.017</td>
<td>.129</td>
<td>.020</td>
<td>.045</td>
<td>.080</td>
</tr>
<tr>
<td>.171</td>
<td>.177</td>
<td>.154</td>
<td>.050</td>
<td>.029</td>
<td>.052</td>
<td>.075</td>
<td></td>
</tr>
<tr>
<td>.073</td>
<td>.074</td>
<td>.057</td>
<td>.096</td>
<td>.099</td>
<td>.031</td>
<td>.079</td>
<td></td>
</tr>
<tr>
<td>.043</td>
<td>.124</td>
<td>.086</td>
<td>.034</td>
<td>.065</td>
<td>.058</td>
<td>.050</td>
<td></td>
</tr>
<tr>
<td>.050</td>
<td>.021</td>
<td>.065</td>
<td>.019</td>
<td>.035</td>
<td>.053</td>
<td>.020</td>
<td></td>
</tr>
<tr>
<td>Overall R2</td>
<td>471</td>
<td>283</td>
<td>.206</td>
<td>083</td>
<td>128</td>
<td>188</td>
<td>126</td>
</tr>
</tbody>
</table>
political use. This echoes overseas findings. However, the potential is considerable since the key groups targeted by policy goals exhibit strong interest in e-voting. Moreover, interest is age-related, which suggests a brighter future for e-voting. However, extension to other modes of voting needs to be carefully monitored to ensure that it does not maintain, let alone increase, the social class and other biases currently pertaining. However, it is not just opinion among individual citizens that counts, as support for the rolling out of e-voting or any other electoral change requires careful institutional support and build-up over time, as the Swiss example demonstrates, by beginning with local elections where the stakes are usually seen as not so high. Moreover, there are crucial intervening variables, especially trust and confidence in the voting system in general or trust and confidence in similar systems, such as postal voting. Also, e-voting might well be addictive, as the Swiss experience has shown: once e-voted, always e-vote. Reviewing the Swiss experience from 2001 through 2005 with eight official rounds of e-voting, Chevallier, Warynski and Sandoz, argue that success owes more to a tightly controlled development process than to technology.37 It is this controlled development of the relevant technology that is crucial to overcoming the major barrier of ensuring ongoing trust in the security and integrity of the e-voting system.

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