

## **The Internet in New Zealand: 2007–2009**

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## **Executive Summary**

The World Internet Project NZ survey has been conducted twice, first in 2007 (with 1529 respondents) and again in 2009 (with 1250 respondents). This report focuses on those changes that were statistically significant between the two surveys, and which indicate possible longer-term trends. It largely omits discussion of where there was no significant change.

### ***Internet Usage and Digital Divide***

The proportion of New Zealanders who use the Internet shows a small but significant increase from 2007 (79%) to 2009 (83%). The differences between ethnicities have reduced as a result of major increases in Māori and Pasifika use in 2009. However, there was no such trend in relation to household income. Those from lower-income households remain less likely than higher income households to use the Internet.

The uptake of home broadband connections has gone up considerably in two years, from 67% of users in 2007 to 83% (2009). For both surveys, those in small towns and rural areas remain the least likely to have a broadband connection at home, but it is these two groups which have also seen the largest growth. The overall urban-rural divide has lessened substantially in the two years between surveys, but is still evident – particularly in regard to differences between the three main urban centres and rural localities. Similarly, while young people are more likely to have a broadband connection, the differential across age groups decreased from 2007 to 2009. The use of mobile and wireless technology for accessing the Internet increased greatly, as did ownership of peripheral electronic devices.

The Internet is increasingly moving into the communal spaces of New Zealand houses, and out of private spaces such as studies and bedrooms. Usage in living areas such as lounge or dining rooms rose from 33% in 2007 to 45% to 2009.

### ***Rating the Internet and Activities Online***

There are signs that the Internet is becoming less important as a source of entertainment, with proportionally fewer people rating it highly in 2009 than in 2007. By contrast, the value of the Internet as an information source is rising.

The overall frequency of a range of online activities has increased in 2009. Almost all users across both surveys engaged in popular activities such as using a search engine, browsing the web and checking email. The change lies in the significant rise in the proportion of users who do these activities daily or several times a day.

In 2009 there have also been increases in several of the less frequent online activities, including watching videos, playing games online, looking for health information, and making or receiving phone calls online. More people are also using the Internet to access government and council related services and information, and to communicate with government officials. The only activity which decreased significantly between 2007 and 2009 is participation in chat rooms, especially for the 20–29 age group.

# Introduction and Methodology

The World Internet Project (WIP) is a longitudinal survey which investigates New Zealanders' usage of, and attitudes towards, the Internet. While the WIP also examines non-use, this comparative report focuses solely on significant changes in patterns of use across two studies. The telephone survey of a national sample has now been conducted twice, in 2007 and 2009. This report compares the data obtained from these two surveys. In general, it focuses on those aspects of Internet use which have changed significantly over the two years. This was achieved by investigating the results of the two surveys and conducting statistical tests to ascertain whether the differences found were likely to represent real changes in the New Zealand population, as against being caused by sampling error. Each comparison is briefly discussed alongside a graph which shows the proportions of respondents in each response category. To be consistent with the reporting style used in Smith et al. (2010), all graphs showing percentages display either 100% or 60% on the vertical axis. Each graph includes the following details:

- **Base:** A description of the set of respondents of whom the question was asked. In almost all cases, this is either all respondents or all Internet users. Some questions were asked of more restricted groups, depending on the relevance of the question to the group.
- **n:** The sample size of respondents to the question for each of the survey years. Sample sizes vary between different questions slightly due to refusals or other missing responses.
- **Results of statistical tests:** Pearson chi-square tests for nominal variables, and Somer's d tests (with their associated significance level) for ordinal variables, as explained below.

It should be remembered that the data reported is obtained from samples and that inference to the New Zealand population is only possible within the confidence limits specified in the methodological discussions of the two previous reports.

Key methodological details for the two surveys are given in Bell et al. (2008) and Smith et al. (2010). The 2009 sample comprises a combination of those respondents from 2007 who agreed to be re-interviewed as part of an ongoing panel, plus a new random sample. The responses for individuals are weighted according to gender, age, ethnicity, household size, and likelihood of landline coverage in a given area, so that the sample is representative of NZ demographics as at the 2006 census. Note that the 2007 report did not include 12–16 year olds, while the 2009 report does. For the present 2007/09 comparative report, the 2007 data were re-analysed in accordance with the 2009 criteria. Therefore, some of the results reported here for 2007 differ slightly from those originally published in Bell et al. (2008).

Additionally, certain questions in the survey were altered between the 2007 and 2009 surveys to the extent that they could not be compared. These include questions about the number of hours the Internet is used from various locations, the frequency with which respondents use social networking sites, and whether or not people do various activities online such as posting photos, videos, and audio.

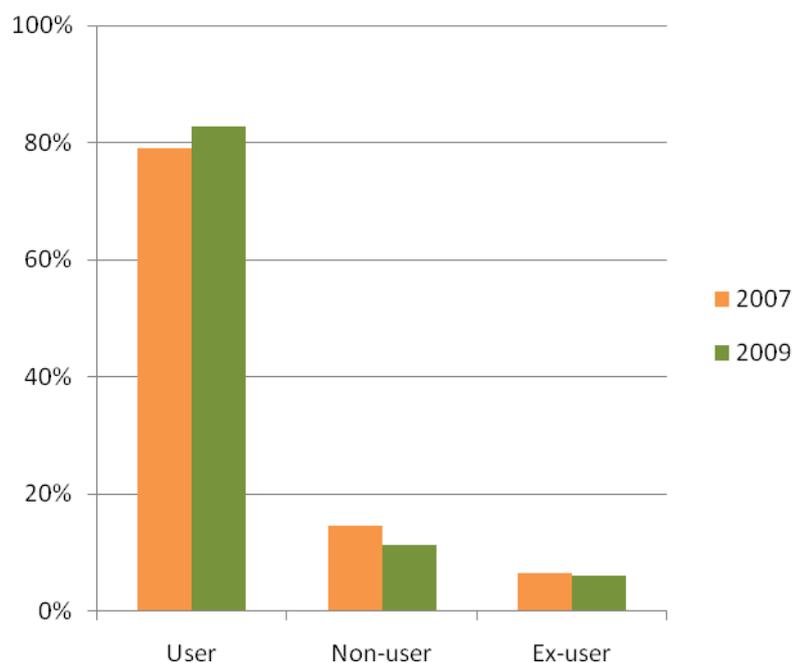
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Bell, A., Crothers, C., Goodwin, I., Kripalani, K., Sherman, K., & Smith, P. (2008). *The Internet in New Zealand 2007. Final Report*. Auckland, New Zealand: Institute of Culture, Discourse and Communication, AUT University.

Smith, P., Smith, N., Sherman, K., Goodwin, I., Crothers, C., Billot, J., & Bell, A. (2010). *The Internet in New Zealand 2009*. Auckland, New Zealand: Institute of Culture, Discourse and Communication, AUT University.

There has been a small but significant increase in the proportion of New Zealanders who use the Internet, from 79% in 2007 to 83% in 2009. This increase is matched by a decrease in the proportion of non-users, from 15% to 11%. There has been no significant change in the percentage of respondents who have used the Internet in the past but do not anymore.

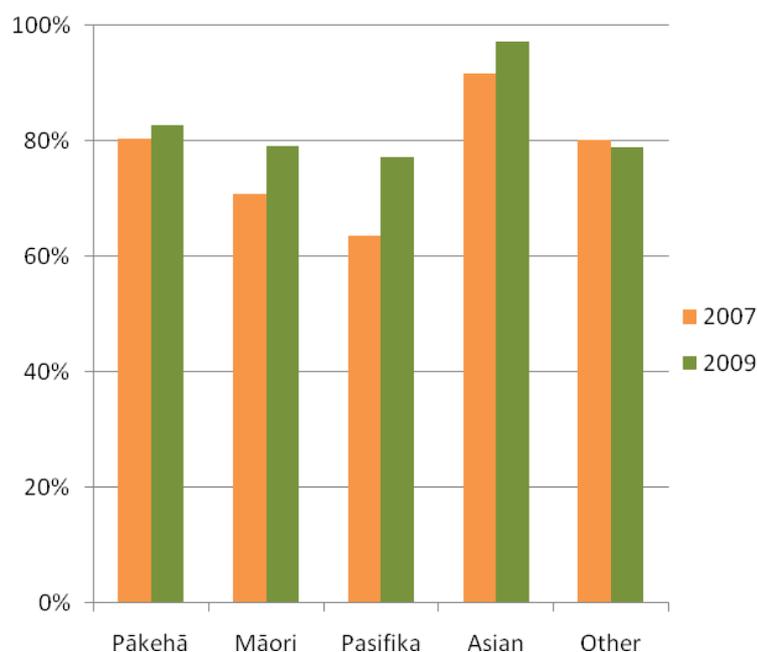
Figure 1: User status



Base: All respondents | 2007 n=1529; 2009 n=1250 | Chi-square p= .03

Internet use has increased for all ethnicities, though to differing degrees. The greatest increases were for Māori and Pasifika peoples, although they remain the lowest-using groups. The proportion of Māori respondents using the Internet rose by 8%, and the proportion of Pasifika Internet users increased by 13%.

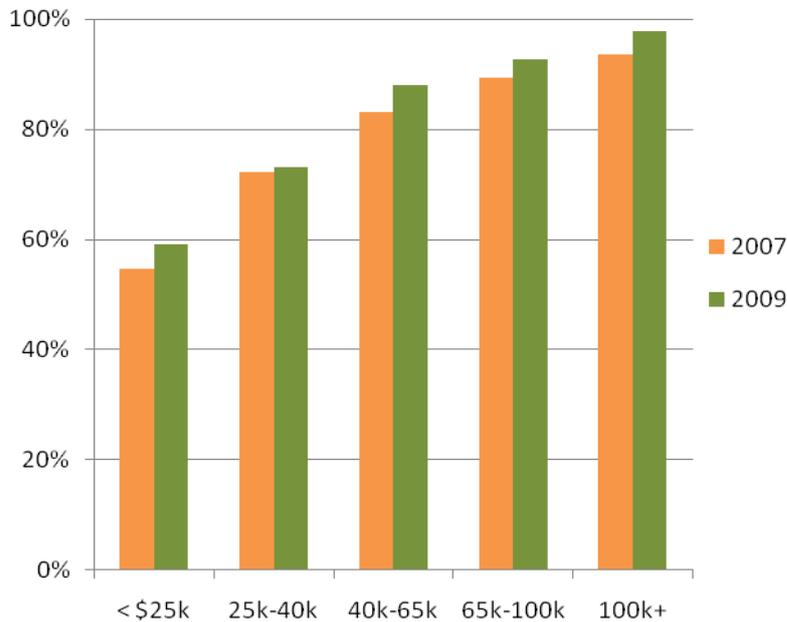
Figure 2: Use of Internet by ethnic group



Base: All respondents | 2007 n=1528, 2009 n=1250 | None of the differences for any ethnicities reach significance in chi-square tests, though the increase for Māori, Pasifika and Asian all approach significance with p<.1.

Differences across ethnic groups have diminished. The difference between those with the highest and lowest proportions of use (Asian and Pasifika, respectively) was 28% in 2007, down to 20% in 2009. The difference between Pasifika and Pākehā decreased from 16% to 6%.

Figure 3: Use of Internet by income level



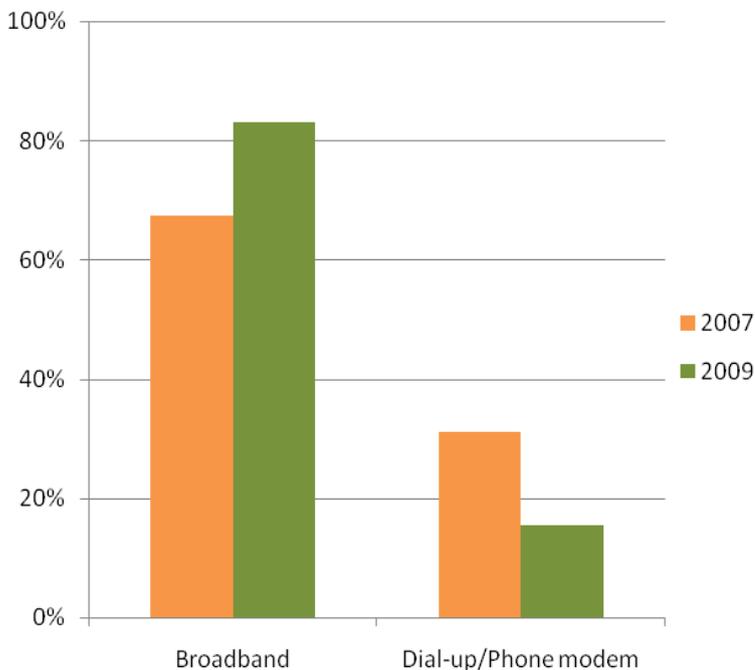
Base: All respondents | 2007 n=1348, 2009 n=1072  
 The increase for the 40-65k bracket approaches significance; Chi-square = .097  
 The increase for 100k+ is significant, Chi-square p= .017.

While the digital divide appears to be lessening in terms of ethnicity, no such trend can be seen in proportions of Internet users according to household income.

In testing each income group individually, the only one which showed a significant increase in Internet use is the \$100,000 or greater group, rising from 94% to 98%.

The difference between the highest and lowest income groups for Internet use is the same in both 2007 and 2009 (39%).

Figure 4: Type of Internet connection



Base: Internet users | 2007 n=1109; 2009 n=965 | Chi-square p < .001

The most striking difference between the 2007 and 2009 findings is a large increase in the proportion of Internet users who have a broadband connection at home – rising from 67% in 2007 to 83% in 2009. Broadband is fast becoming the default mode of Internet access for New Zealanders.

There is a corresponding decrease in the proportion of people who have a dial-up connection, halving from 31% to 16%.

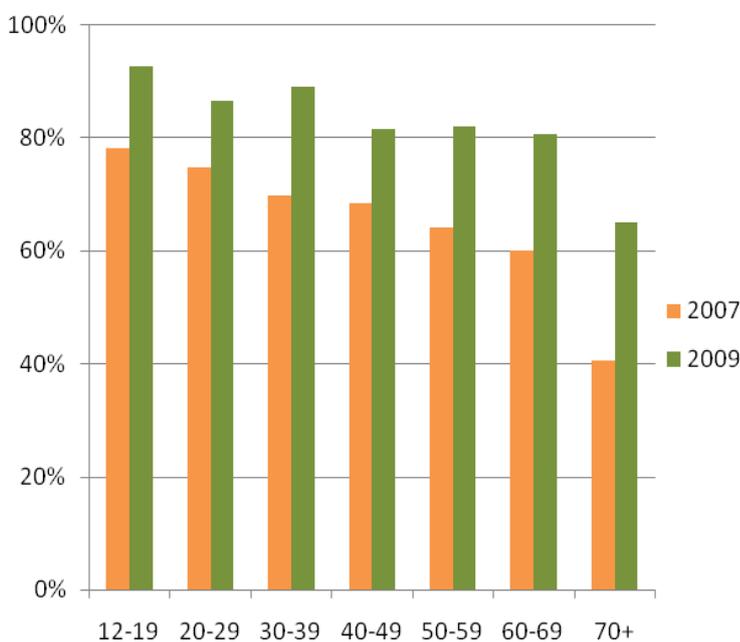
The proportion of Internet users with a broadband connection has increased across all demographic groups, and there are some signs of a lessening of the digital divide in broadband access.

In both years there is a trend for younger people to be more likely to have a broadband connection.

However, the size of this difference across age groups lessened between the two surveys. The oldest and youngest groups differed by 27% in 2009, compared to 38% in 2007.

The greatest increases in broadband connectivity are for older users, particularly those 70 and above, rising from 41% in 2007 to 65% in 2009.

Figure 5: Broadband connection by age



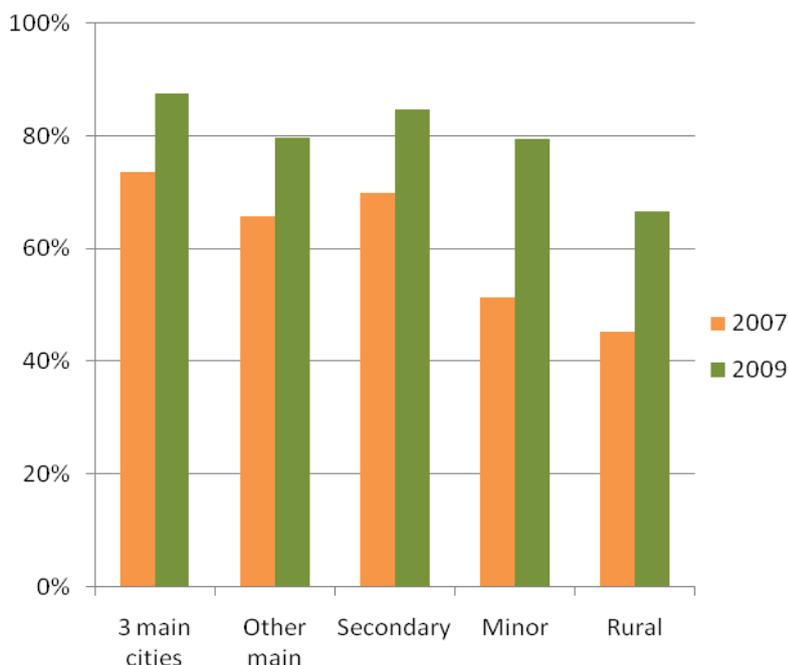
Base: Internet users | 2007 n= 1110; 2009 n=958  
The increase in the broadband usage was significant for all age groups; Chi-square  $p < .05$  in all cases.

The proportion of Internet users with a broadband connection at home increased for those living in both urban and rural areas of New Zealand. The largest increases were for those living in minor towns and rural areas.

The proportion of those in minor towns with broadband access showed a great increase from 51% in 2007 to 79% in 2009. Broadband also rose steeply in rural areas, from 45% to 67%.

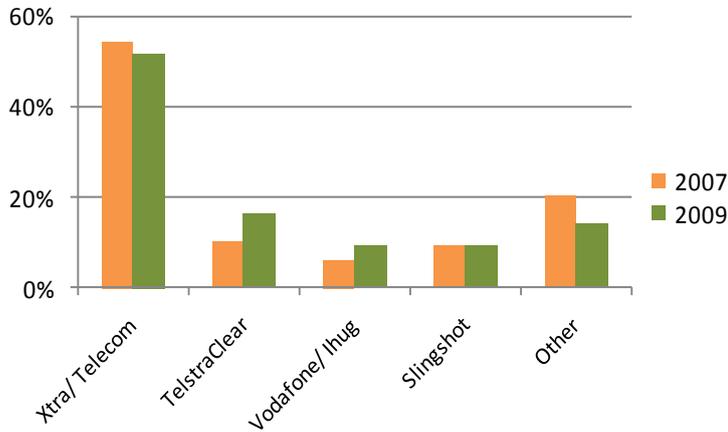
The difference between rural areas and the three main cities (Auckland, Wellington and Christchurch), while still substantial, dropped from 28% in 2007 to 21% in 2009.

Figure 6: Broadband connection by urban-rural



Base: Internet users | 2007 n= 1110; 2009 n=967  
The difference across years was significant for all areas (with chi-square  $p < .005$  in all cases) except for secondary areas, for which the difference approached significance (chi-square = .071).

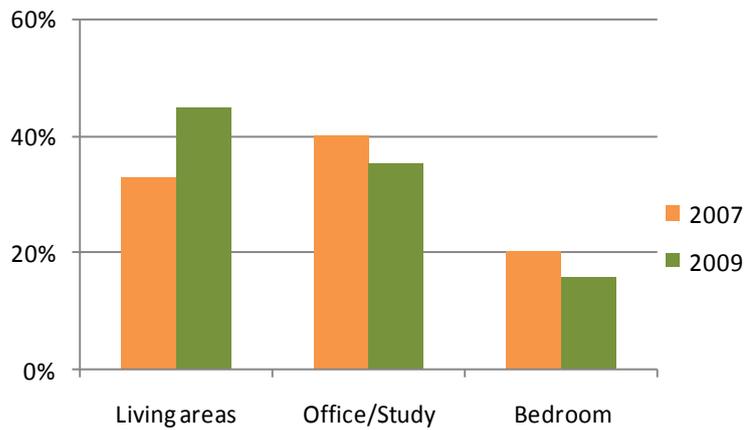
Figure 7: Internet Service Provider (ISP)



Base: Internet users | 2007 n=1087, 2009 n=947 | Chi-square p < .001

While Telecom (Xtra) continues to be the ISP of choice for most Internet users in both surveys, other providers have increased their market share from 2007 to 2009. TelstraClear increased from 10% to 16%, and Vodafone/Ihug increased from 6% to 9%. However, the shift has been more from 'other' providers than from Telecom.

Figure 8: Main location in house for using Internet



Base: Internet users | 2007 n=1046; 2009 n=933 | Chi-square p < .001

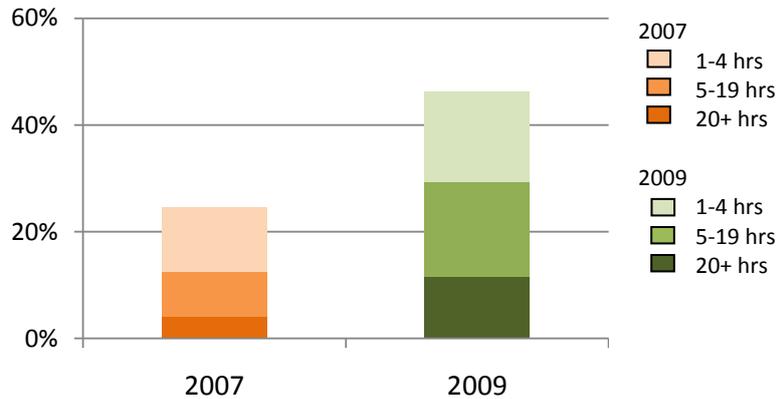
The Internet is increasingly moving into the open, communal spaces in the house. The percentage of people who use the Internet mainly in living areas (including lounge, dining room and kitchen) rose from 33% to 45%.

Correspondingly fewer people use the Internet mainly in a private space, with office/study locations, dropping from 40% to 35%, and Internet access from a bedroom decreasing from 20% to 16%.

46% of Internet users now access the Internet via a wireless computer for one hour or more per week. This has nearly doubled, up from 25% in 2007.

The proportion of people who use the Internet through a wireless computer for 20 hours or more per week has increased markedly, from 4% to 12%.

Figure 9: Hours online per week via wireless computer



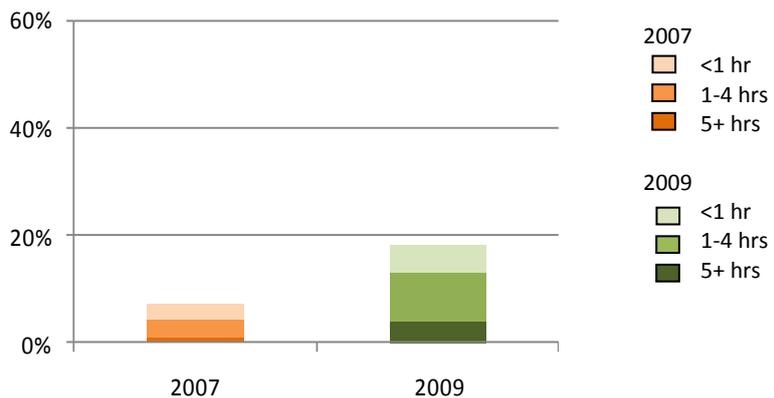
Base: Internet users | 2007 n=1203; 2009 n=1019 | Somer's d= +.234; p < .001

While relatively few users access the Internet via a cellphone or other mobile device, the proportion doing so has risen steeply, from 7% in 2007 to 18% in 2009.

This change is most marked for those with a household income over \$100,000. Their mobile access to the Internet has more than tripled, from 10% in 2007 to 35% in 2009.

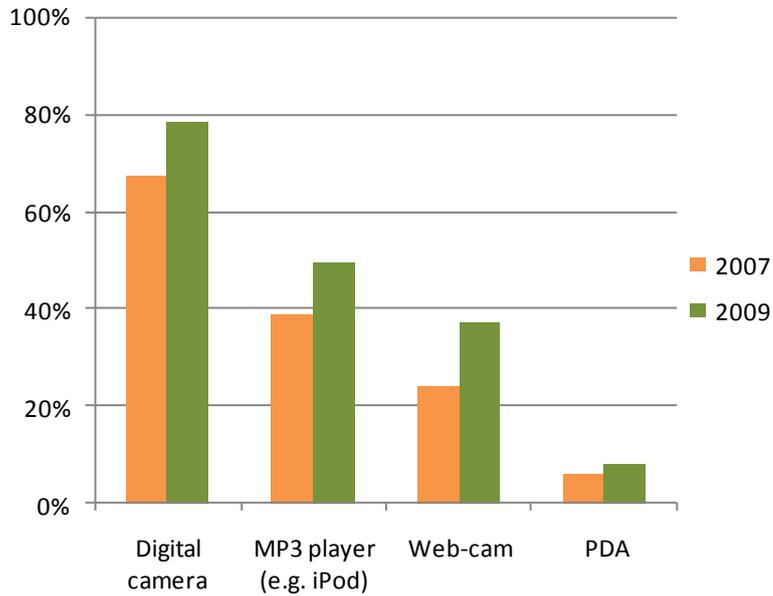
Significant growth in mobile access was found for all age groups under 60. The greatest growth was for those aged 20–29, where the increase was from 7% to 25%.

Figure 10: Hours online per week via mobile device



Base: Internet users | 2007 n=1204; 2009 n=1018 | Somer's d= +.109; p < .001

Figure 11: Ownership of digital devices



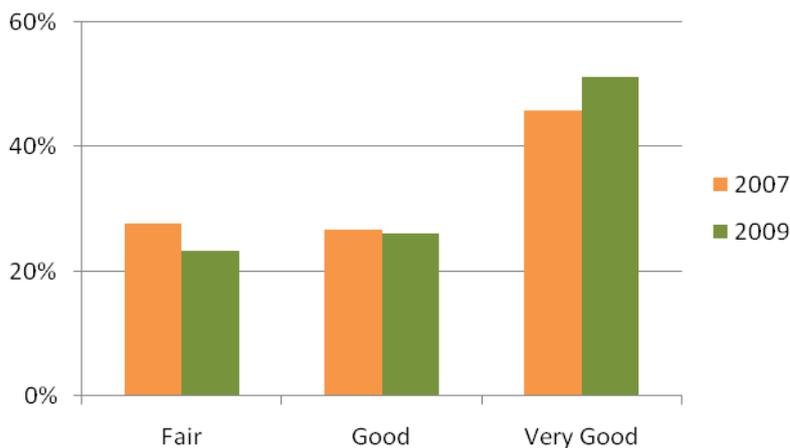
Base: All respondents  
 Digital Camera | 2007 n=1528, 2009 n=1250 | Chi-square p < .001  
 MP3 player | 2007 n=1526, 2009 n=1247 | Chi-square p < .001  
 Web-cam | 2007 n=1515, 2009 n=1242 | Chi-square p < .001  
 PDA | 2007 n=1513, 2009 n=1241 | Chi-square p = .052

There was a significant increase in the proportion of New Zealanders who own various digital devices.

78% now have a digital camera, compared to 68% in 2007. Just under half of the 2009 respondents have an mp3 player such as an iPod, up from 39% in 2007. 37% of 2009 respondents have a web-cam, compared to 24% in 2007.

The use of Personal Digital Assistants (PDAs) has remained low, increasing only slightly from 6% to 8%.

Figure 12: Rating of ability to use Internet



Base: All respondents | 2007 n=1497, 2009 n=1223 | Somer's d = +.074; p = .001

In 2009, there was an overall increase in respondents' rating of their ability to use the Internet.

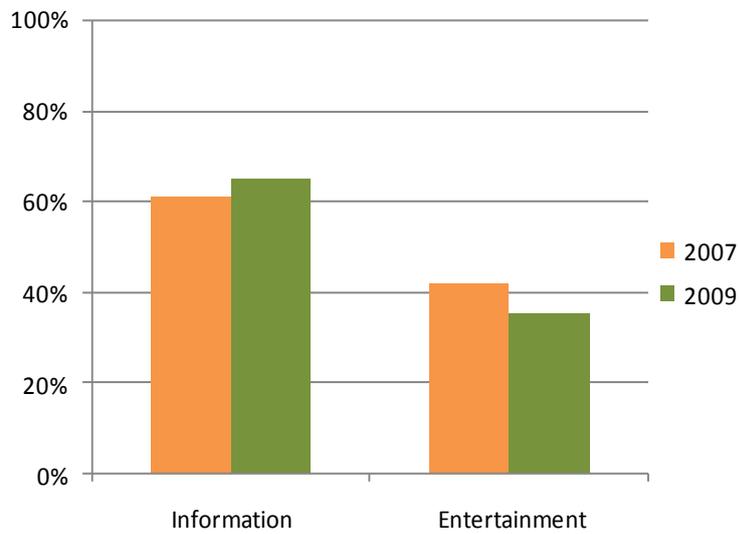
A higher proportion of people rated their ability to use the Internet as very good in 2009 (51%) than in 2007 (46%). The proportion who rated their ability as only fair decreased from 28% to 23%.

In 2009, ratings of the Internet as a source of information rose, while ratings for it as a source of entertainment fell.

65% of people in 2009 rated the Internet as an important source of information, up from 61% in 2007.

However in 2009 fewer people (35%) rated the Internet as an important source of entertainment than in 2007 (42%).

Figure 13: Rating the Internet as a source of information and entertainment



Base: All respondents  
 Entertainment | 2007 n=1506; 2009 n=1240 | Somer's d= -.076; p < .001  
 Information | 2007 n=1508; 2009 n=1237 | Somer's d= +.061; p= .004

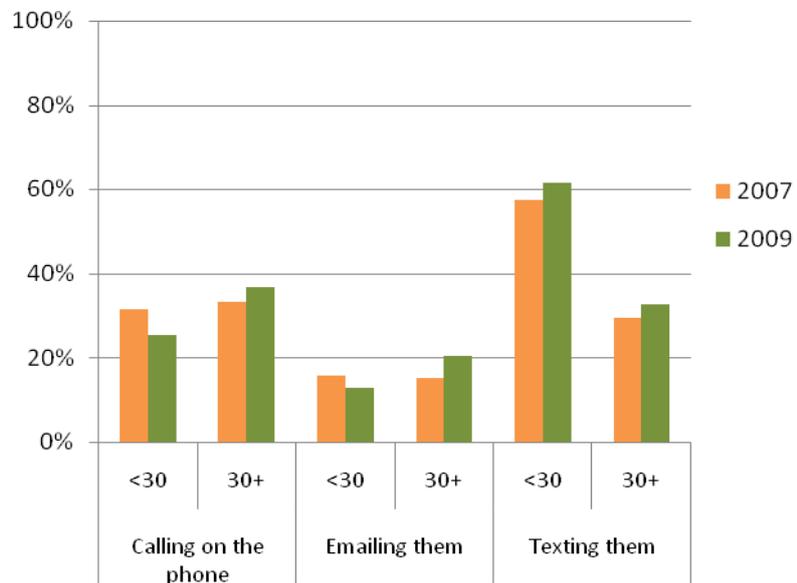
Respondents were questioned about how often they contact their family and friends in different ways.

There was little change between 2007 and 2009 except when age is considered.

Fewer under 30s used a phone on a daily basis in 2009 than in 2007, while more over 30s contacted friends and family by email in 2009.

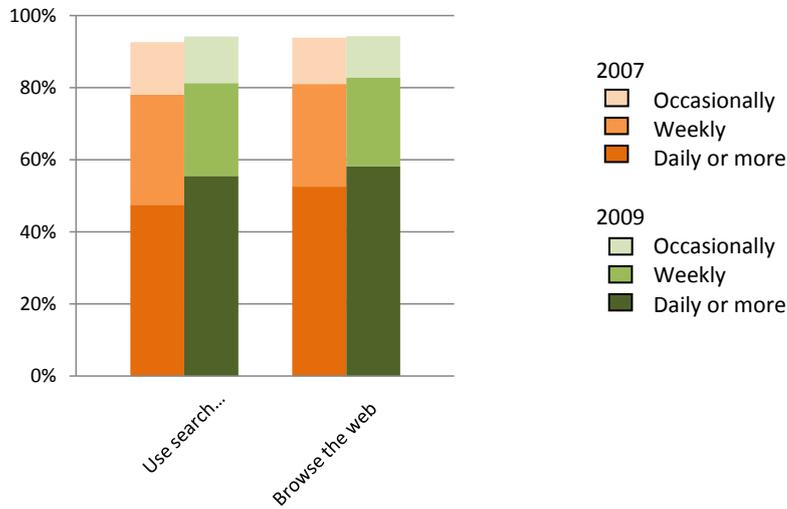
But there was an increase overall in the proportion of people who text family and friends daily.

Figure 14: Daily contact with friends and family by phone, email and text, according to age



NB: This graph shows only the proportion of people who do each activity on a daily basis, it does not show other frequencies.  
 Base: All respondents | 2007 under 30s n=446; 2007 over 30s n=1080; 2009 under 30s n=273; 2009 over 30s n=965  
 Phone: under 30s Somer's d= -.087 p=.039; over 30s Somer's d= +.037 ns  
 Email: under 30s Somer's d= -.070 ns; over 30s Somer's d= +.109 p < .001  
 Text: under 30s Somer's d= +.080 p=.062; over 30s Somer's d= +.066 p=.007

Figure 15: Frequency of searching and browsing online

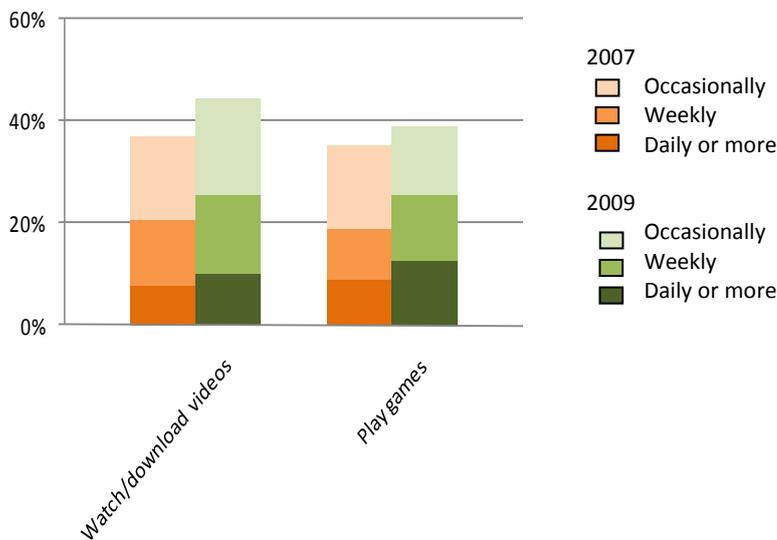


Base: Internet users | 2007 n= 1208; 2009 n= 1033  
 Search engine: Somer's d=.111; p<.001  
 Browse the web: Somer's d=.072; p=.002

Figures 15–21 show the frequency of online activities which have changed significantly since 2007. There were many other online activities which did not change between 2007 and 2009, for example downloading audio material.

More than nine out of 10 Internet users stated that they use search engines and surf or browse the web in both 2007 and 2009. However, there has been an increase in how often people do these activities. Well over half of Internet users now use search engines and browse the web every day.

Figure 16: Frequency of online entertainment activities



Base: Internet users |  
 2007 n= 1208; 2009 n= 1033  
 Videos: Somer's d=.077; p<.001 | Games: Somer's d=.052; p=.014

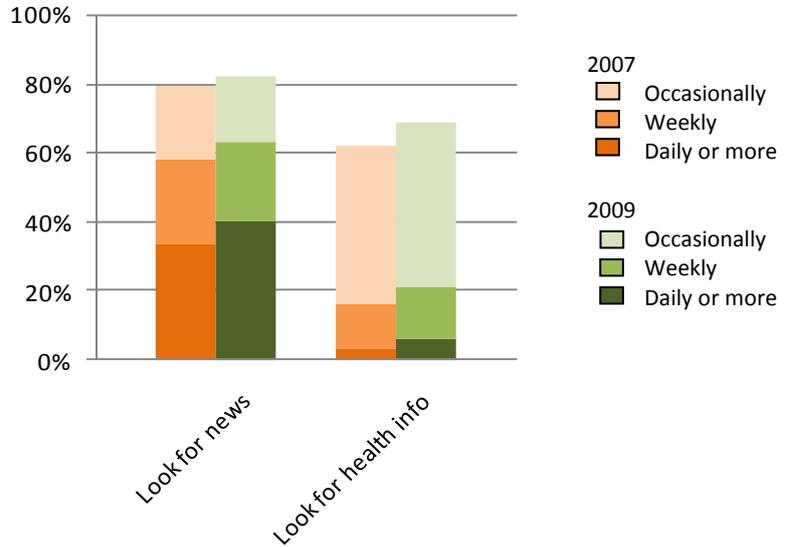
There has been a general increase in downloading videos or watching them online. In 2007, 37% of Internet users did this at least occasionally, increasing to 45% in 2009.

Similarly, there has been an overall increase in the proportion of people who play games online, particularly for daily and weekly game-playing.

More people searched on the Internet for news, daily or more often, in 2009 than in 2007.

There has been an overall increase in the proportion of users who look for health information online (from 62% to 69%), although most of these continue to do so monthly or less often.

Figure 17: Frequency of online information seeking activities: News and health



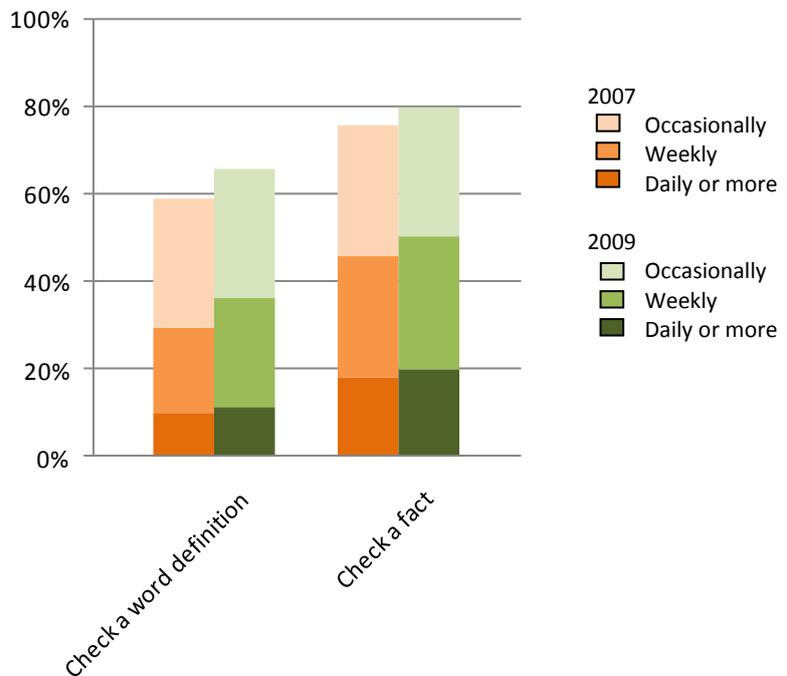
Base: Internet users | 2007 n= 1208; 2009 n= 1033  
 News: Somer's d=.075; p=.002 | Health: Somer's d=.076; p=.001

The proportion of people who sometimes check the definition of a word online has increased, from 59% to 66%.

Frequency of checking a fact online has also increased, with 81% of respondents doing so in 2009, compared to 76% in 2007.

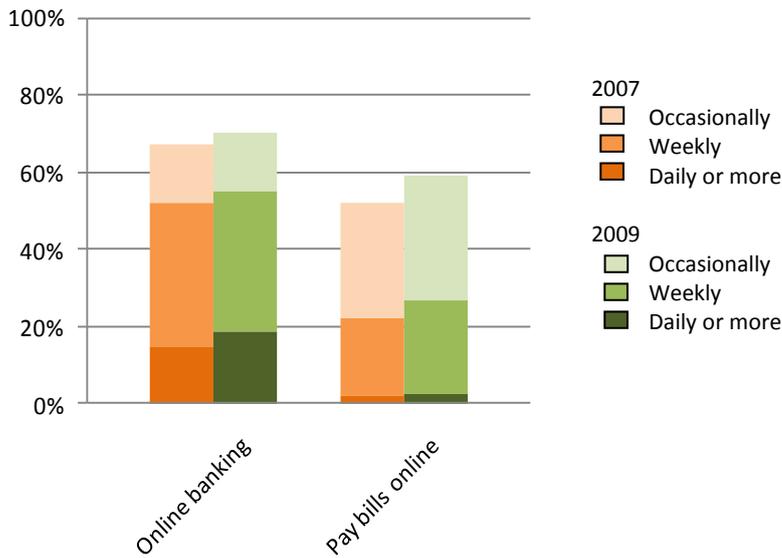
There was a slight decrease in the proportion of people who used the Internet to participate in distance learning, but no change in the frequency with which the Internet was used as a teaching tool in school or university classes.

Figure 18: Frequency of online education activities



Base: Internet users | 2007 n= 1208; 2009 n= 1033  
 Check a word: Somer's d=.073; p=.002 | Check a fact: Somer's d=.053; p=.026

Figure 19: Frequency of online financial activities

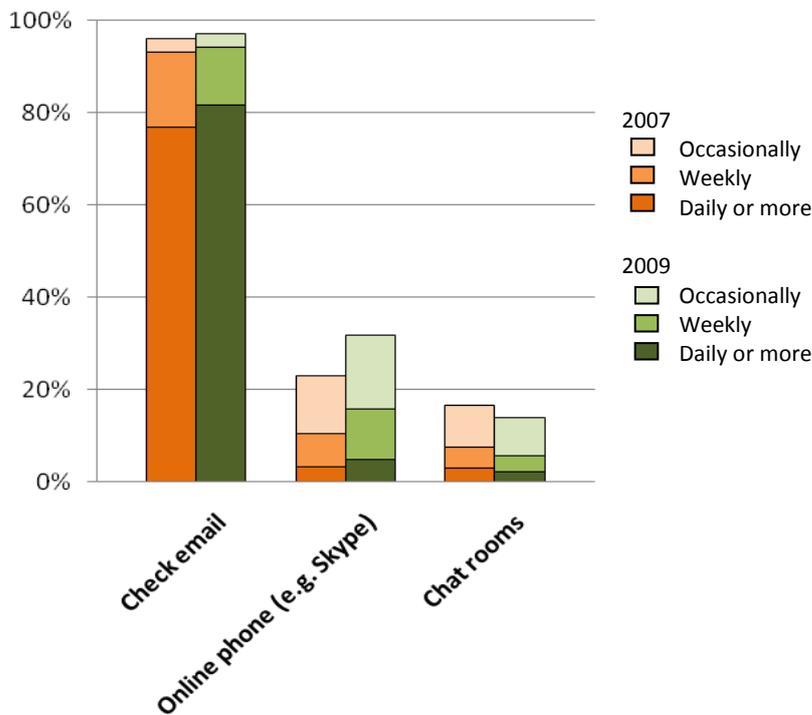


Base: Internet users | 2007 n= 1208; 2009 n= 1033  
 Use online banking: Somer's d= +.052; p= .027 | Pay bills: Somer's d= +.074; p= .001

More Internet users used their bank's online services on a daily basis in 2009 (19%) compared to 15% in 2007. There has also been an increase in the proportion of users who pay bills online (up from 52% to 59%).

The frequency with which people made online purchases, however, did not change across the two survey years.

Figure 20: Frequency of online communication activities



Base: Internet users | 2007 n=1208; 2009 n=1033  
 Email: Somer's d= +.090; p < .001 | Online phone: Somer's d= +.088; p < .001 | Chat rooms: Somer's d= -.030; p=.05

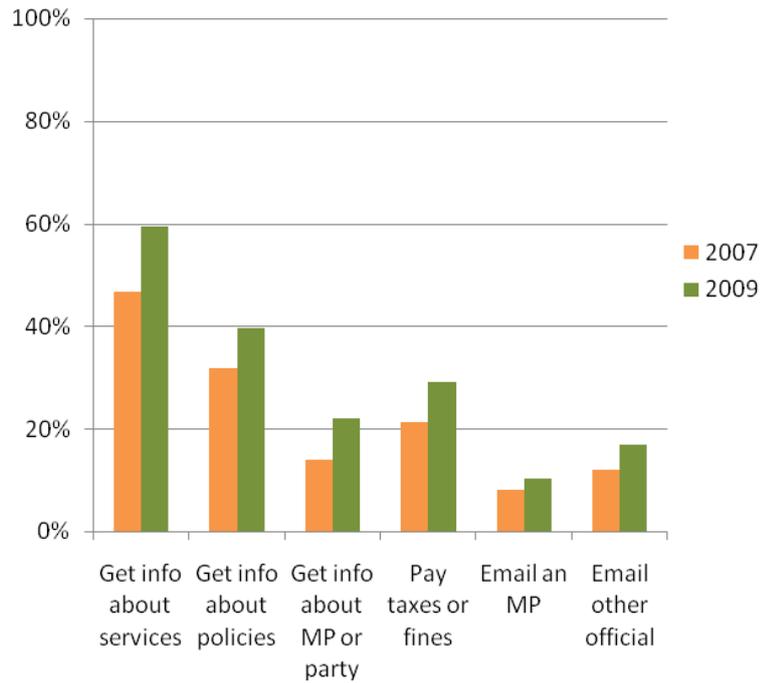
Checking email is one of the most frequent online activities. There was a notable increase in the proportion of people who check their email once or more each day, up from 77% in 2007 to 82% in 2009 ('daily' and 'several times a day' are conflated on this graph). Making or receiving phone calls over the Internet (e.g. through Skype) increased from 23% in 2007 to 32% in 2009.

The only activity which showed a significant decrease in frequency of use across the whole survey was participation in chat rooms, decreasing from 17% to 14%. This was driven almost entirely by a large drop in the 20–29 age group. Other age groups were more stable between the surveys.

There has been an increase in the proportion of Internet users who have accessed Government or Council information and services online.

The use of the Internet for interactive services and to communicate with Government officials has also increased. More people have paid taxes or fines using the Internet in 2009 (29%) than in 2007 (21%). The proportion of users who have accessed information about an MP, a political party or a political candidate online has also increased, from 14% to 22%.

Figure 21: Use of Internet for Government related purposes

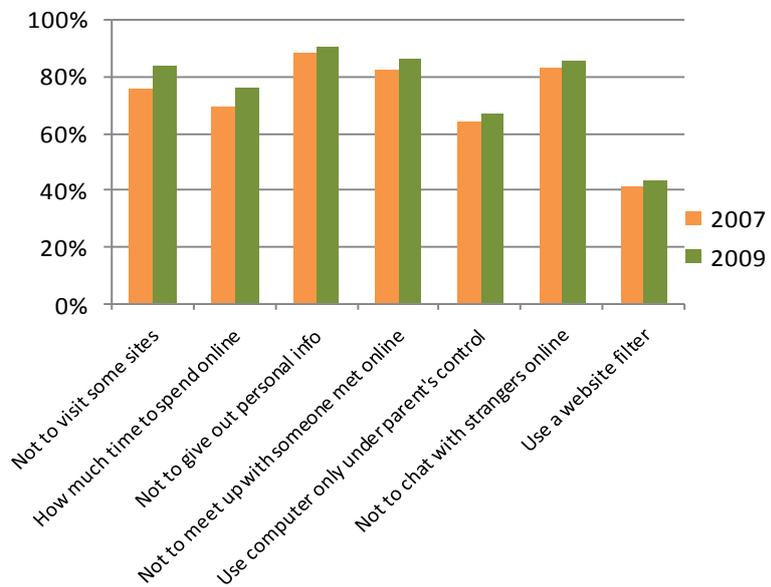


Base: Internet users | 2007 n=1209; 2009 n=1032  
All differences significant in chi-square test at p= .001 level, except Email an MP, p= .055

Of those households with Internet users under 18, there is an overall increase in the proportion that set rules concerning Internet use.

While most of these changes are not statistically significant individually, overall they indicate a general tendency for the implementation of rules to have increased slightly.

Figure 22: Rules for under 18s



Base: Adult Internet users with an under-18 year old in their household who uses the Internet | 2007 n=350; 2009 n=290  
Not to visit some sites, chi-square p= .014 | How much time to spend online; chi-square p= .068  
None of the other differences approach significance

## Appendix: Statistical Procedures

The primary means of determining changes is through the use of statistical tests. Pearson chi-square tests were used for nominal variables and Somer's d for ordinal variables. The Pearson chi-square test is a non-parametric test for tables of counts, where a significant result means that the distribution of counts is different across the two years. All of the tests are two-sided, meaning that no pre-judgment is made about the directionality of differences. The changes which occurred over time on each variable can be calculated using Somer's d, with year of survey as the independent variable. A positive coefficient from a Somer's d test relates to an increase in the value of the responses to the variable over time, with 0 indicating no effect and 1 complete change between the two years. The questions with ordinal responses include those relating to frequency of activities, and those where ratings are given on a scale, such as ability to use the Internet, or the importance of the Internet. For ordinal data, the Somer's d coefficient represents the overall change, while the graphs display the data in a more simplified form. For example, responses to frequency questions represent those who stated that they do something monthly or less using the label 'occasionally', while those who said they do something daily or several times a day have been grouped together under the label 'daily or more'.

As the 2009 sample includes both returning respondents and a fresh sample there are certain difficulties in comparing the data from the two surveys. In this report, the statistical tests have been conducted based on the assumption that both waves are independent, which means that some of the differences reported might not have reached significance if paired tests had been used. The ideal approach would be to calculate the statistics separately for the panel sample and for the 'top-up' sample, but this would require presenting each result twice and has not, therefore, been undertaken for the purposes of the present report. In future years, changes in the panel of returning respondents will be able to be examined in more detail. The 95% confidence intervals have not been reported for each table but are in the range of +/-2.9% for those results with large sample numbers, based on all respondents, and in the range of +/-3.6% for those results based only on Internet users. These estimates of confidence intervals are based on the assumption that the two samples are independent.