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SAMPLING and SURVEY SAMPLING: How Polls Are Conducted

The four newspaper articles reprinted in this Highlight #78 describe some of the matters involved in applying the FDEAC cycle to a political poll to use resources efficiently, to try to manage the limitations imposed by study error and non-response error on Answers to the Questions, and to enable the likely magnitude of sample and measurement error to be quantified.

EM9336: The Globe and Mail, September 18, 1993, page A2

Paper Making

BY JOHN KING
Deputy Managing Editor

RING, ring.

"Hello ... I'm calling from ComQuest Research Group, a national market research company. We are conducting a survey to determine people's attitudes toward current events. The survey takes approximately 10 minutes ..."

Please don't hang up. It's *The Globe and Mail's* polling company calling, and a computer has selected your household as one of 1,500 to represent average Canadians.

The news department of *The Globe and Mail* has been conducting its own polls since 1984 to help us identify trends and tell Canadians more about themselves. We decided early this summer that polling would be an important part of our coverage of the federal election campaign. The major political parties all conduct private polls; the results of our own polls can help our readers to better understand the reasoning behind each party's strategy.

Planning for the poll that was published on Thursday and Friday (September 16 and 17) of this week began about a month ago with a conference call between parliamentary reporter Hugh Winsor, poll supervisor Jim Matsui and me.

After several rewrites and a night of "pretesting" with 25 telephone interviews, we settled on 13 election-related questions. Some were new. Some were repetitions of questions we had asked in previous polls so we could track how public opinion was changing.

ComQuest's computer randomly chose a selection of listed telephone numbers that would give us a good cross-section of Canadian society. For seven evenings, 60 interviewers in Toronto and 40 in Montreal dialled out, starting with calls to Atlantic Canada and finishing each night about seven hours later with calls to British Columbia, where the local time was 10 p.m.

When the interviewers reach a home, they ask for one specific person – the resident who has most recently had a birthday and who is also at least 18. If there is no answer at the number, or if the person we want to speak to isn't there, the interviewers arrange to call again, sometimes as many as six times, to help make sure the polling "sample" is truly representative of Canadians.

Just a few years ago, poll results used to take weeks to assemble. ComQuest's interviewers sit at a computer terminal on which they record your answers.

The final calls for this poll were made to British Columbia at 1 a.m. Toronto time on Wednesday. A ComQuest staffer stayed up all night printing tables from the computer. Mr. Matsui spent the morning checking for mistakes, then delivered the results to us at *The Globe.*

Hugh Winsor's story analyzing the poll was being published on our presses across the country on Wednesday (September 15) night, less than 24 hours after our last calls were made.

EM9334: The Globe and Mail, September 16, 1993, page A8

How Globe Poll was conducted

The Globe Poll is a survey of 1,446 Canadian citizens 18 years old and over in the 10 provinces, conducted from Sept. 8 to 14 by ComQuest Research Group, a division of BBM Bureau of Measurement.

The sample for the poll is based on listed telephone numbers. Homes were selected randomly from this list and one person was randomly selected within each household to be interviewed. No substitutions were allowed. Data from the interviews were adjusted to reflect the age, sexual and regional composition of Canada, based on the 1991 census.

The size of the sample is expected to yield a reflection of all Canadian voters to an accuracy of plus or minus 2.6 percentage points 19 times out of 20.

For results from smaller sub-samples, based on region, the likely deviation is larger. The possible deviation in either direction for regional results is: 8.8 percentage points for Atlantic Canada, 5.1 for Quebec, 4.2 for Ontario, 9.4 for Manitoba and Saskatchewan combined, 8.6 for Alberta and 7.5 for British Columbia. When comparisons are made between results for Quebec and the rest of Canada, the probability of deviation in either direction for results from the rest of Canada is three percentage points.

Results have been rounded to the nearest percentage point. Figures ending in .1 to .4 were rounded down; figures ending in .5 to .9 were rounded up.

Where parties and leaders were mentioned in questions, their order was rotated randomly.

NOTE: The article *How Globe Poll was conducted* reprinted above, and the article *Public less receptive to polling* given overleaf on page HL78.2, refer to a political poll whose results were presented under the headline: **Poll shows PCs, Liberals neck and neck** on pages A1 and A8 of *The Globe and Mail* of September 16, 1993.

1 Outline, in point form, the *statistical* issues related to Questions with a descriptive aspect, that are raised in the third paragraph of the middle column of the first article *Paper Making* reprinted in this Highlight #78: *After several re-writes ..... how public opinion was changing.*

2 Discuss critically, from a *statistical* perspective, the first sentence in the fourth paragraph of the middle column of the first article *Paper Making* reprinted above: *ComQuest's computer randomly chose a selection of listed telephone numbers that would give us a good cross-section of Canadian society.*

(*continued overleaf*)

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EM9333: The Globe and Mail, September 16, 1993, page A8

Public less receptive to polling

The Globe and Mail

Although public-opinion polls are taking on more and more importance in how election campaigns are designed and run (and in the making of public policy generally), they are becoming more and more difficult to do, according to Canada's leading survey researchers.

Pollsters are finding it increasingly difficult to reach enough of the right randomly-selected people to give their results statistical validity – and the latest Globe poll, conducted by ComQuest Research Group, is no exception.

Pollsters often have to call four or more telephone numbers to obtain one completed interview.

The phenomenon is referred to technically as the response rate, the number of telephone calls that have to be made to get the necessary number of interviews. Toronto and Vancouver are now the most difficult cities in Canada in which to do public-opinion polling, in part because of the busy lives people live, the increasing use of answering machines and general fatigue from telemarketing and polling.

The overall response rate for the new Globe Poll was 28 per cent in the country as a whole, a rate that compares favourably with other polls of this type, according to the poll supervisor at ComQuest Research Group.

That means that to interview 1,502 respondents, of whom 1,446 were eligible voters, 5,290 eligible telephone numbers had to be dialled.

Because of the difficulties in Toronto, the response rate in Ontario (26 per cent) is slightly lower than the national average.

For the Globe Poll, ComQuest Research Group makes several calls to a selected household to interview a specific individual who is selected through a probability sampling procedure.

Respondents have the right not to participate in a survey and about 50 per cent of the people contacted refused to participate in the Globe Poll.

EM9343: The Ottawa Citizen, October 22, 1993, page A2

How the poll was conducted

In its election poll for Southam News and CTV, the Angus Reid Group interviewed 3,329 Canadians of voting age by telephone on Monday, Tuesday and Wednesday nights.

To counter resistance from respondents watching the World Series, about 40 per cent of the interviews were conducted Monday – when there was no game – with the remaining portion distributed evenly over the following two evenings.

The pollsters, also worried about resistance from respondents not wanting to be surveyed by political parties, clearly stated the poll was being conducted for the media for release later in the week.

To get the 3,329 interviews, the polling firm made more than 20,000 calls. But more than half the calls were placed to businesses, fax machines or numbers no longer in service. The remaining non-respondents were either not home, refused to be interviewed or could not speak French or English.

In the end, Reid interviewed 498 respondents in British Columbia, 501 in Alberta, 198 in Saskatchewan, 201 in Manitoba, 615 in Ontario, 597 in Quebec, 202 in New Brunswick and Nova Scotia, 197 in Newfoundland, 93 in Prince Edward Island and 25 in the Yukon and North-west Territories.

Several provinces were intentionally oversampled to provide a more accurate regional picture of voter behavior. However, when calculating national results, the numbers were statistically weighted to reflect the actual regional, age and sex distribution of Canada's population based on the 1991 census.

Nineteen times in 20, the overall results of a poll of this size are considered accurate to within two percentage points, plus or minus, of what they would have been had the entire adult population been asked the same questions.

Margins of error for provinces are larger – four percentage points in Ontario and Quebec, 4.5 points in Alberta and B.C., 10 points in P.E.I. and seven points in the other provinces.

Questions about the Bloc Québécois were generally limited to Quebec respondents and those about the Reform party to the rest of Canada. The margin of error for Canada, excluding Quebec, is 2.5 points.

NOTE: The article EM9343 *How the poll was conducted* reprinted above refers to a political poll whose results were presented under the headline: **Liberals set for majority, poll** *says* on pages A1 and A2 of *The Ottawa Citizen* of Friday, October 22, 1993, three days before the 1993 federal election.

3 Explain briefly the *statistical* implications of the statement in the second paragraph of the first article EM9333 *Public less receptive to polling* reprinted above: *Pollsters are finding it increasingly difficult to reach enough of the right randomly-selected people to give their results statistical validity.*

4 Compare and contrast the reasons given in the two articles EM9333 and EM9343 reprinted above (on *this* side of the Highlight) for having to make a number of telephone calls far in excess of the number of completed interviews (*viz*. 5,290 and 20,000+ calls for 1,502 and 3,329 interviews, respectively).

- In light of the information on the reasons for 'non-response', comment briefly on the figures of 28% and 26% given in the first article above for the respective national and Ontario response rates in *The Globe and Mail* poll.

5 Explain briefly the basis of the 'margin of error' of 'two percentage points' for *The Ottawa Citizen* poll, given in the third-last paragraph of the article EM9343 *How the poll was conducted*.

The four articles reprinted in this Highlight #78 are also used in Figure 8.4 of the STAT 220 Course Materials, in Figure 3.4 of the STAT 231 Course Materials and in Figure 3.1a of the STAT 332 Course Materials.