Figure 3.10. SAMPLE SURVEY DESIGN/EXECUTION: Canadian Census Data Gathering

The article EM9628 reprinted below and overleaf on page 3.62 in this Figure 3.10 is concerned with measuring difficulties that can arise in *census* data gathering, although the article contains material that is also relevant to survey sampling.

EM9628: The Globe and Mail, April 5, 1996, pages A1 and A6

GUERRILLA FORCE / *In the drive to account for everybody in seedy downtowns, census-takers know that just dropping off a form won't work.*

Tallying where none has gone before

Census warning futile in some areas

BY ALANNA MITCHELL
The Globe and Mail, Vancouver

THEY'VE listened to the advice about travelling in twos and leaving purses at home, but when the training session turns to what to do if they get stabbed with a needle, the intensity at the tableful of census-takers moves up a notch.

Don't touch the plunger is the first iron-clad rule. Just pull the syringe out and make the puncture bleed. Go to the hospital at once if you're injected, and take the needle so whatever was in it can be tested. A consoling thought: A dose of the anti-AIDS drug AZT within two hours can be remarkably effective in forestalling full-blown infection from the virus.

Call it urban-guerrilla training for the last census of the century. The dozen or so people gathered around this table are part of a nimble experiment designed to help enumerate the residents of 14,000 homes in Vancouver's notorious downtown east side. The project aims to tally the virtually uncountable, but it also risks putting the enumerators face to face with danger.

"It's different from the traditional view of census-taking, going around from nice little house, with a white picket fence, to nice little house," said Ellen Gee, chairwoman of sociology and anthropology at Simon Fraser University in Burnaby.

The project was developed here in Vancouver by Statistics Canada two censuses ago, and has proved so successful that it was exported to Calgary and Edmonton for the last census. On May 14, census day, it will be tested for the first time in the urban cores of Winnipeg, Toronto and Montreal.

It's a small slice of the massive census machine that even now is being cranked up for next month's count.

The ritual takes place every five years in Canada and has been conducted at various intervals since the first census in the colony of New France in 1666.

In all, this year's census effort will involve 50,000 workers (many, like the Vancouver crew, are hired for just a few weeks) and cost $347.4-million over the eight-year cycle of development, collection, analysis and publication.

But the census staff sitting around this table aren't doing the count the way it is done in most other parts of the country. They are trying to get information about people in Canada's poorest neighbourhood, an inner core that has more than its fair share of drugs, prostitution, homelessness, mental illness and illiteracy in several languages.

In other words, filling out the census form is not at the top of the list for many residents. But in an era when provinces are clamouring for accurate counts of every single marginalized group (scarce federal dollars depend on official numbers), what's a census-taker to do?

The solution: Instead of simply dropping off the census form with an admonition that it's a contravention of the Statistics Act not to fill it out, which would be the least of many residents' legal problems, the census-takers returned to the old-fashioned method of enumeration. They tried going door to door, face to face, and just asking the questions and ticking off the answers, confidentiality assured.

Getting the data in person has reduced costs tremendously, said Gail Fentiman, the second-in-command of the census for the Pacific region and one of the people who came up with the idea. Community leaders say the accuracy of the numbers has improved, too.

But the process means that this group of enumerators is in contact with members of the public for far longer than their counterparts who just drop off the forms. And while every enumerator across Canada gets safety training, the face-to-face interviewers in this program get extra.

In Vancouver, some of the safety problems have intensified even since the 1991 census, partly because volatile cocaine is replacing sleepy heroin as the drug of choice, police tell the census staff.

A map pinned to the wall above the table where the census staff are being trained outlines the area, which is divided into portions coloured pink, green, blue and red. Near the centre is the toughest area of all, coloured black. This is where several thousand men live in the so-called "hotels" along East Hastings Street, in rooms about 10 feet square with just a hot-plate and no bathroom.

Constable Dave Dickson, who runs a storefront safety office in the area, warns the census staff that the pairs of enumerators may have trouble capturing the attention of some of these men for the 15 to 30 minutes it will take to fill out the long form of the census, which has 54 questions and must be given to every fifth household. (The short form takes only a few minutes.)

He says the census takers will have to convince residents that they are not undercover police officers and advises them to conduct the questioning in the hall if possible.

"I don't know if I'd want to go in," he says. "Some of the rooms are moving. The door will open and you'll get this waft of odour. It's not a very nice job. Some of those hotels are pretty grungy."

Somebody asks about the wisdom of carrying a whistle to call for help.

"People aren't going to listen to it down there," Constable Dickson says. "There are screamers going off all the time down there and people don't pay any attention."

Barb Daniel, executive director of the Downtown Eastside Residents Association, advises census staff to steer clear of the communal bathrooms in the "hotels," where residents often inject drugs. They're sometimes spattered with excrement and blood, she notes.

"You can talk about it all you want, but when you really get into it, you can freak out," Ms. Daniel tells the group.

There are other pieces of advice, some of it from the staff of the needle exchange, the second-largest exchange in North America behind New York City. Never sit on chairs (a prime hiding place for used needles). Never touch the walls (drug users will often spray the final contents of a syringe on them). Consider carrying a plastic toothbrush holder, the perfect size for an abandoned needle.

(*continued overleaf*)

Get out of the way if someone coughs, because the incidence of highly contagious tuberculosis is great in some parts of the neighbourhood. And forget trying to enumerate on "cheque day," which is the day the welfare cheques arrive, or on the day after.

The staff assembled here are supervisors. They will hire roughly 200 others for $9.50 an hour to do the door-to-door interviews for a couple of weeks starting on census day. Most of the supervisors, and the people they will eventually hire and train in these safety measures, live in the area and are fiercely proud of it. They are unshockable and will hire people who are too. It's one of the keys to the program's success.

"The job qualification, basically, is grinding poverty," Ms. Daniel from the resients association tells the census staff. "Class tells. It does. I'm sorry."

The enumerators have the backing of the street-wise community associations in the area. In fact, the major community players, who know the value of a census statistic when they see one, have become intensely involved in persuading people who live there to participate.

For some, the efforts to include marginalized groups in the census are proof that they are no longer being ignored by authorities.

"What Census Canada does is validate that these people exist," said Carole Brown, coordinator of the Ray-Cam Co-operative Centre on East Hastings Street.

It was not always so, of course. George Emery, a historian of demography at the University of Western Ontario in London, noted that censuses of the last century tended to miss counting groups such as racial minorities or the poor, much less get detailed information about them. Even several decades ago, there was less emphasis on counting everyone.

"The people at the bottom end of the social scale have a better chance of being left out than others," he said.

Today, that politic has changed, partly because the provinces and Ottawa are in such pitched battles over who pays for the poor's programs.

In the United States, this very issue has become a nasty political and legal fight because the census in 1990 missed about 1.6 per cent of the population, many of them from minority groups and urban cores. Because so much federal money rode on the count, and because many of those missed were big users of federal aid programs, the issue landed before the Supreme Court.

But one of the legacies of the failure to count well in the inner core is that the United States will begin counting only 90 per cent of the population in the 2000 census, and then mathematically estimate the rest. In an admission of the difficulty of enumerating these groups, U.S. statisticians reckon this will actually improve accuracy, as well as shave the better part of $1-billion off the census tab.

The idea is anathema here, where the adamant goal next month is to count every single resident.

"I guess, as an organization, we pride ourselves in our professionalism and the quality of the information we gather," said Jim Selley, the top Statscan official in the Pacific region.

Countdown

Census makers

It's nearly census day, and Statistics Canada is gearing up to count nearly 30 million Canadians, with some 50,000 workers preparing to carry out the census at a cost of $347.4-million. But there's a problem: How does the agency persuade residents in the troubled inner-city cores, rife with drugs, prostitution, illiteracy and homelessness, to take the time to fill out a census form and mail it back to the government?

Guerrilla training

Instead of dropping the form off, as they do in most other parts of Canada, the Vancouver office of Statscan is experimenting with face-to-face enumeration, using interviewers who ask questions and then tick off the appropriate boxes. Started two censuses ago, the program is saving money and producing a better count. By next month's census, it will have been introduced to most of the major cities in Canada.

Not for the demure

The program puts enumerators into far longer contact with some of the most volatile residents in Canada. So they need special, rather gritty training to get them through.

1. What *population attribute* is the major concern of the Canadian census? Explain briefly.

2. The second paragraph of the right-hand column overleaf on page 3.61 states that ..... *the long form of the census ..... has 54 questions and must be given to every fifth household. (The short form takes only a few minutes.)* Discuss the *statistical* advantages and disadvantages of using a Plan which involves both the long and short forms.

3. List, in point form, the *statistical* difficulties mentioned in the article EM9628 that the census-takers in Vancouver's downtown east side will face; identify clearly the places in the article from which you take your answers.
   - For each difficulty, explain briefly which component of the *overall error* it is likely to contribute to.

4. In the third-last paragraph of the article EM9628 (in the right-hand column above), it is stated that the 2000 census in the U.S. ..... *will begin counting only 90 per cent of the population ..... and then mathematically estimate the rest.* List the essential steps in such estimating.
   - What does the article give as the *advantages* of such estimating over actual enumeration?
   - Discuss critically the statement later in the same paragraph: .... *statisticians reckon this will actually improve accuracy.*

The article EM9628 reprinted overleaf and above is also used in Figure 8.9 of the STAT 220 Course Materials and in Statistical Highlight #43.