Singapore Phone Book as a Sampling Frame for Social Investigation in Singapore

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Introduction

Telephone interviews has gradually become an important method used by researchers for obtaining individual or household data in Singapore. According to responses to a questionnaire received from 8 major social and marketing research organisations in Singapore on the types of surveys conducted by them in 1987, on an average, 20% of their surveys conducted in Singapore used telephone interviews. Among the reasons for its popularity are the speed of making contacts and obtaining data; the convenience of conducting the interview either from a central location or at prescribed home, unsupervised and at their own hours; and the relatively low cost compared with personal interviewing because no time is lost in travelling and locating respondents. Experience in America has shown that the cost of a telephone survey will seldom exceed two-thirds of the comparable costs for a personal interview (Payne 1974). Many researchers in Singapore collect data by telephone for the reason that every household has a telephone. In fact, official data have shown that in 1987, 624,074 telephone lines were subscribed for residential use and this number is approximately equal to the number of households estimated from the 1987 Singapore labour force survey. However, an important prerequisite for a good telephone survey is the availability of a reliable, up-to-date and accurate telephone directory which can be used for generating a representative sample for data collection. While almost all the Singapore households can be reached by telephones, it should be noted that 13% of the subscribers are not listed in the Singapore phone book. The danger of sampling bias introduced through the absence of unlisted numbers could become a serious problem if the sample selected has become non-representative of the population under study. In this article, we will examine the usefulness of the Singapore phone book as a frame for sampling selection and data collection. Furthermore, in the light of some of the findings from a sample
survey conducted in March 1988 on telephone subscribers in Singapore, we will compare and test the statistical differences of the major characteristics between unlisted and listed subscribers in the Singapore phone book so as to identify the weaknesses of the phone book as a sampling frame; determine the reasons why subscribers want unlisted numbers. The article will also look into the feasibility of the use of random digit dialling as a sampling method in telephone interviews in Singapore.

**Singapore Phone Book**

As telephone ownership is universal in Singapore, the Singapore telephone book, which appears in two separate volumes entitled Residential Listings and Business Listings, can be a convenient sampling frame for marketing research and social investigation.

The Singapore phone book is published yearly and it includes name, sex, telephone number and address without postal districts of every residential and business subscriber.

When used as a sampling frame, the phone book has some apparent drawbacks. One major drawback is that 13% of the more than 800,000 business and residential subscribers are unlisted. More seriously, these missing elements may have certain characteristics distinctly different from the listed ones, and are likely to result in a bias especially with respect to income and occupation as evidenced in many other countries.

Information available in the phone book, published in July every year with 1st March as the cut-off date for the inclusion of names, is up-to-date only on this day and as soon as it becomes available after each publication, its reliability deteriorates further until the release of the new phone book. The same problem is faced by researchers in other countries. A survey in the United States revealed that in California, about 10 percent of the total subscribers still having telephones during the last month of a phone book's one year lifespan cannot be reached by their listed numbers (Rich 1977).

Sampling bias arising from multiple listing of names may be small in Singapore but the sampler should keep in mind that it is not uncommon to find Singapore households subscribing to two or more telephone lines at the same or different addresses and having their names listed more than once in the phone book.

While the residential listings may be used as a convenient frame for sampling individuals or households in a telephone survey, mail survey or personal interviews, it should be noted that, as a sampling frame, the residential listings is very incomplete, not only has it excluded a large number of unlisted subscribers, a significant number of other subscribers are also