Creating the Capacity for Telephone Survey Analysis

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Over the past decade, two major realities have faced higher education. First, rising costs associated with running state colleges and universities have not been met with increasing state subsidies (Eckl, Hutchison, and Snell 1992; Lissner and Taylor 1996; McKeown and Layzell 1994). This has resulted in increased pressure on university faculty to seek external funding through grants and contracts (Phillips, Morell, and Chronister 1996; Schumacher 1992). Second, increasingly, universities and colleges have been called upon to provide relevant research and faculty service to enhance the quality of life and economic development in their states (Noftsinger 1996). Having a "broader institutional vision" in today's universities and colleges means creating external connections and linkages and coordinating and cooperating with state and local governments (Seymour 1989).

Major sources of outside funding for colleges include the federal government and state and local governments. Most federal research money has typically gone to the few large research universities that possess the research capabilities to meet federal priorities. State and local governments however, offer significant sources of outside funding for regional colleges and smaller state universities (Taylor, Meyerson, and Massy 1993).

The capacity of university and college faculty to perform surveys, especially telephone surveys, can attract funding from state and local governmental agencies. The proven ability to conduct surveys offers a viable route for the solicitation of external funding and can help establish an applied research link to state and local governments. Surveying is also a research task that most political scientists are uniquely suited to perform. While survey research has grown in popularity in traditional, academic political science research, it has also become a widely used tool of state and local governments (Webb and Hatry 1973). Through the use of telephone surveys, state and local governments can get data concerning a large population of citizens in a more timely fashion than mail surveys and at a cheaper cost than personal interviews (Ethridge 1994). Johnson and Joslyn (1991) suggest that telephone surveying might prove useful for state and local governmental agencies in providing data they can use to evaluate the effectiveness of their public programs and to learn more about problems in the population that need to be addressed by new or different programs.

My goal in this article is to encourage readers in the discipline to consider creating the capacity to perform telephone surveys and telephone survey analysis within their colleges and universities. To this end, I will discuss the details to consider when putting together a modestly sized and modestly priced survey analysis telephone bank. I will outline the costs incurred in the initial start-up and long-term maintenance of a survey analysis phone bank. Additionally, I will discuss computer hardware and software requirements, purchase of random telephone number samples, personnel issues, and security issues. I base these discussions on my experiences creating a six-station survey analysis phone bank within an existing networked computer facility, for the initial cost of about $5,000.[1]

The best strategy for selling the creation of a survey analysis phone bank is to point out that a variety of constituencies could derive long-term benefits from such a facility. First, and most important, faculty could bring in external grant and contract money for performing telephone surveys for state and local agencies. Once the facility exists, future grants to perform telephone surveys should pay for the long-term maintenance of the facility and possibly generate additional income. Second, political science students in classes such as political behavior, research design, and statistics could conduct surveys in order to learn the complete steps in survey analysis—instrument design and construction, administration, and survey data analysis. This would provide the students with real-world experience and job-related social science skills. Third, political science faculty could use a survey analysis phone bank to further their individual research agendas. Fourth, faculty in other disciplines across campus could also use it for their classes and/or furthering their personal research agendas. Finally, the administration could use the facility to solicit contributions from alumnae; or use it to conduct administrative telephone surveys.

Costs

There will be two sets of costs associated with the creation of a survey analysis phone bank: initial start-up costs and long-term maintenance costs. Since costs will vary, rather than detail what the costs would be in terms of exact dollar amount, I will detail where the costs will occur. Initial start-up costs include:

> setting up a computer network consisting of a file server and as many computers as desired telephone sur-

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vey stations (if this facility already exists, these costs are eliminated);

purchasing at least one ink jet or laser printer (a printer with color capability is desirable, since most survey analysis software allows for color statistical and graphical output of survey data);

purchasing and testing survey software (details on computer hardware and software requirements follow this section);

providing for the security of computer hardware and software (security issues are discussed later in this paper);

installing and activating telephone jacks;

buying or renting telephone units and headphones;

constructing sound-proofing wall partition dividing units; and

buying an initial sample of random telephone numbers purchased from a sampling company (the merits of purchasing random telephone numbers is discussed in a later section).

It must be noted that most universities and colleges contract with a private company to provide communications services. Therefore, it is likely that all work involving the installation of phone jacks and providing of telephone and headphone units must be done by this company.

Long-term maintenance costs will include monthly rental on each telephone unit, a monthly service charge for each telephone line, and costs related to computer and printer use. Ideally, if the survey analysis phone bank brings in external funding, obsolete computer and printer hardware will be updated on a regular schedule.

Once the facility is operational, grant proposals must be written for telephone survey work. Costs associated with performing a telephone survey include:

paying overhead (includes use of survey analysis facility and computer hardware);

purchasing random telephone numbers from a sampling company;

paying personnel, including the tele-

phone interviewers, survey supervisor, and principal investigator;

paying for long-distance telephone calls (most state institutions will have a contract for long-distance services on a per-minute basis);

conducting or contracting for statistical analysis; and

generating the final report.

Computer Hardware And Software Requirements

A full-service, up-to-date survey analysis phone bank must, at a minimum, have a computer network comprised of at least the same number of personal computers (PCs) as planned telephone survey stations, which are linked by a network file server. A laser jet or ink jet printer (preferably one that prints in both black and white and color) is also necessary for printing results and reports.

At my university, an existing networked social science computer lab housing 20 PCs linked to the university's network file server and two laser jet printers provided the perfect setting for the new survey analysis phone bank. The telephone lines and jacks were installed at one end of the room closest to the six PCs dedicated for telephone surveys. One network version and six site licenses for the survey software were purchased. The survey software was loaded onto the network file server and made available for use on only the six designated PCs.

There are many types of computer software capable of helping users perform the four tasks necessary in conducting telephone surveys: (1) creating a survey questionnaire, (2) conducting an actual telephone survey, (3) recording data, and (4) statistically analyzing data. Simple and inexpensive software can be loaded onto a network file server and can be made available for use on as many computers as one wishes to pay license fees for. The interviewer must do manual telephone calling. Computer assisted telephone interview (CATI) software, which fully automates calling, is more expensive and is only appropriate for use with

a computer network. CATI systems can either randomly generate a telephone number and dial it, or can be programmed with a list of randomly selected telephone numbers and will dial up those numbers for each telephone-site-licensed survey station on the network. While the sophistication of a CATI system is desirable, the initial costs are generally prohibitive. Ci3 CATI for Windows, a well-respected system developed by Sawtooth Technologies, costs $6,600 for six telephone survey stations. This includes a $3,000 base price, plus $600 per survey station (see www.sawtooth.com/pages/prod1. html).

A surprising number of survey software packages met the criteria of affordability (approximately $1500 total cost for six telephone survey stations); capability (creates survey instruments, records survey data, statistically analyses data, and graphically depicts data); and user friendliness (menu-driven and compatible with Windows95). Descriptions of these software packages, as well as downloadable sample software may be found on their respective manufacturers' web sites:

SURVEYWIN, by Raosoft, Inc (www.raosoft.com/surveywi.html)

Snap Professional, by Mercator Corporation (www.mercatorcorp. com/snapprof.html)

Market View, by Research Systems (www.resys.se)

PinPoint, by PinPoint (www.logo. com/pinpoint)

Survey Select, by Saja Software, Inc. (www.surveyselect.com)

Survey Chef, by Princeton Cybernetics, Inc. (www.princetoncyber. com/SurChef.htm).

After evaluating each of these software packages, I choose Survey Said by Marketing Masters (www. surveysaid.com/).[2] This software is Windows-based, making it very user friendly for the telephone interviewers. The main package was installed on a network server and individual user interfaces were installed on each of the networked PCs. The to-

tal cost of this software for the six computer stations was approximately $1300. This software consists of three separate programs:

1. Question Librarian: This program aids in the construction of the survey questionnaire instrument. Using Question Librarian, the interviewer may construct any length of survey instrument consisting of any type of closed-ended and open-ended questions. The interviewer may also program in skip patterns (e.g., "If you answer 'YES' to question #5, then skip to question #9").

2. Survey Respondent: This program displays the survey questions on the interviewer's computer screen. Responses from the telephone interviewee are entered at each individual PC and compiled and saved into a single database housed on the file server.

3. Survey Manager: This program helps researchers analyze and report survey response data. Simple univariate and bivariate statistics can be done with Survey Manager. Univariate and bivariate color graphic displays are also available to researchers. Additionally, the data (in ASCII format) can be exported to other existing statistical software packages, (e.g., EXCEL, SPSS, SAS) for analysis and display.

The principle disadvantage of the Survey Said software is that it does not dial the telephone or generate random telephone numbers. The interviewer must manually dial the appropriate telephone number and talk to the interviewee over the phone while entering their responses on the computer. Headphone sets provide an appropriate way to free up the interviewer's hands (after dialing the telephone number) for entering interviewees' responses into the computer.

Random Telephone Numbers

Unless the survey analysis phone bank is equipped with an expensive CATI software system (which can generate random telephone numbers), researchers will need to obtain lists of random telephone num-

bers for the population to be surveyed. The most expedient way to obtain such lists is to purchase them from telephone sampling companies. Therefore, it is important to factor the initial cost of several sample telephone lists into the start-up costs of a survey analysis phone bank. Sample lists can be used to test the equipment, train personnel, and demonstrate capabilities to potential funders. After start-up, the cost of purchasing the sample telephone lists can be passed onto clients interested in paying for you to conduct a telephone survey.

Each company differs in the methodology they use to generate accurate random lists but the methodologies are considered scientifically valid. Before deciding to order a sample list of random telephone numbers from a company, it is a good idea to consider the following:

What is that company's sampling procedure?

Can the company generate a stratified sample based on strata important to the survey?

Is there a required minimum of telephone numbers to purchase?

How many telephone numbers are needed to conduct a valid survey?

What is that company's cost per telephone number?

How quickly can the company prepare and deliver lists?

Does the company screen out telephone numbers assigned to businesses, FAX machines, cellular phones, and duplicate household phones?

Wiggins (nd) provides a helpful comparison of how three major sampling companies—Genesis, Survey Sampling Inc., and Scientific Telephone Samples—answer the above questions.

Personnel

Direct personnel costs, such as telephone interviewers' salaries, are not factored into initial start-up costs. Additionally, direct personnel

costs will be included in subsequent survey grant proposals. This does not mean, however, that researchers can avoid making important decisions regarding survey personnel during the creation of the survey facility. Appropriate staffing levels (at a minimum, telephone survey interviewers and a survey supervisor) and salaries must be determined. Also, personnel procedures, training, and scheduling requirements must be set. Finally, creating a handbook of standard operating procedures for survey personnel should be considered.

Issues to be covered in such a handbook include: selection criteria for survey personnel; employment paperwork, wages, and pay periods; scheduling rules; training of new survey personnel on how to record telephone responses using the computer system and the survey software; performance evaluation of interviewers; and rules of interviewing and telephone etiquette. The handbook created by Cobb (1996) offers an excellent model for a survey facility personnel handbook.

Security Issues

Security requirements are important to consider because meeting them may incur some initial costs. At a minimum, telephones and jacks need to be secured when not in use for survey purposes. (If telephones connected to the jacks sit around, unauthorized persons *will* make long-distance calls.) Additionally, all computer equipment must be secured. Much of this can be handled by having the principal investigator of any telephone survey be responsible for securing phone lines, telephone units, and computers. The facility should have locking doors with only a limited number of keys going to select, authorized personnel. A survey supervisor may need to monitor the facility during times when telephone surveys are being conducted. Finally, the survey response data must be secured in the computer network file server. This may be accomplished with a series of passwords, available only to the survey team, to get into the survey data file.

Conclusions

Today, the role of faculty at institutions of higher learning includes seeking external funding, via grants and contracts, to make up for decreases in state appropriations. While this responsibility is not welcomed by all faculty, it is a reality. It, therefore, behooves faculty to consider what skills they possess that might be of use to outside funding sources, such as state and local governmental agencies. Political scientists, commonly trained in survey analysis skills, should consider the role they could play in assisting state and local governmental agencies by performing vital telephone survey research of an applied nature. Creating the capacity for telephone survey analysis requires some modest initial and long-term investment, but future rewards, in terms of successfully funded grants and contracts, can compensate for those costs in the long run.

Notes

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2. The author has no financial interest in any of the products or companies mentioned in this paper.

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