

Chapter III

Opportunities and Constraints of Electronic Research

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ABSTRACT

In the past decade, many paper-and-pencil surveys and measures have been converted into electronic formats for administration via the Internet. In this paper, the evolution of methods of administering surveys and measures is briefly traced. This is followed by an outline of the major opportunities and constraints associated with conducting surveys and measures within the electronic environment. The paper concludes with a consideration of the appropriate situations for use of electronic surveys and measures.

BACKGROUND

Methods of administering surveys and measures have changed over time. Up until the 1970s, face-to-face interviewing was the dominant form of surveying. With the widespread acceptance of the telephone, telephone surveys became the standard methodology in the 1980s and 1990s, although mail surveys were also widely used (Dillman, 2000). The use of stand-alone computers enabled these methodologies to be advanced through the use of computer-assisted interviewing and computer-assisted testing (Epstein & Klinkenberg, 2001).

The Internet can be seen as providing a further stage in the evolution of survey and measure administration. With the introduction of the Internet, early electronic surveys were conducted using e-mail, typically in a text-only format (Topp & Palowski, 2002). The introduction of hypertext markup language 2 (HTML 2) in 1994 provided the means for form-based surveys and measures on the World Wide Web, with the first academic surveys administered on the World Wide Web in 1995 (Birnbaum, 2004). Since this time, the growth of research studies conducted on the World Wide Web has been exponential (Birnbaum & Reips, 2005). A decade on from the first Internet surveys, it is timely to examine the advantages and disadvantages of electronic surveys and measures.

OPPORTUNITIES

The Internet provides a range of unique opportunities for the administration of surveys and measures. These are summarised in Table 1 and expanded.

Sampling

The Internet provides researchers with an additional or alternative source of research participants. Recruitment for research purposes can be conducted online through various methods including Web sites, postings to online communities, and e-mail. Alternatively, there are specialised commercial services that will select and contact samples from within their existing subject pools (Kraut, Olson, Banaji, Bruckman, Cohen, & Couper, 2004).

The Internet provides access to worldwide samples (Mitchell, Paprzycki, & Duckett, 1994, Smith & Leigh, 1997) without the problems associated with managing international time differences and working schedules (Foster, 1994). This reduces the reliance on college students or other

Table 1. Opportunities associated with electronics surveys and measures

• Sampling: ▪ Access to world wide populations ▪ Access to specialized and hidden populations ▪ Potential for increased statistical power • Potential savings: ▪ Time ▪ Resources ▪ Costs • Unique capabilities ▪ Multimedia graphics and sound ▪ Programmability • Reduction in errors ▪ Item completion ▪ Automated data entry • Convenience • Reduced demand characteristics • Advantages to the research participant ▪ Convenience ▪ Voluntary nature of participation enhanced ▪ Tailored questions ▪ Immediate feedback possible
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local groups as research participants (Kraut et al., 2004). Even within a defined population (e.g. members of an organisation), different samples may be obtained using electronic recruitment and surveying (Ross, Tikkanen, & Mansson, 2000).

The Internet also provides increased access to hidden or specialised populations. For example, Duncan, White, and Nicholson (2003) used the WWW to successfully recruit and survey "successful" illicit drug users (i.e. those not presenting for treatment or arrested), producing the largest known sample of this group (nearly 2,000 in the first 3 months of the survey). The large sample sizes enabled by Internet research can provide the researcher with increased statistical power (Hewson, Laurent, & Vogel, 1996).

Savings in Time, Resources, and Costs

The electronic administration of surveys and measures can be fast, as well as resource- and cost-efficient. Online recruitment reduces the time and cost associated with the recruitment of subjects (Kraut et al., 2004). The dispatch and turn-around time in electronic research is faster than that for off-line research (Kiesler & Sproull, 1986; Mitchell et al., 1994; Thach, 1995). Distribution lists can be set up on e-mail programs to send surveys to large groups in one go. Where all stages of the survey process (contact, response, and follow up) are conducted electronically, substantial savings can be made in the amount of time taken for fielding a survey (Fricker & Schonlau, 2002).

Internet research removes the need for a physical laboratory and the continued presence of researchers/research assistants. The requirements for physical space, resources, and paper are diminished. The reduction of paper used is an environmentally friendly measure (Schuldt & Tooten, 1994). The time and resources associated with data entry are reduced or removed.

The major additional costs of administering survey and measures electronically are the fixed

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