The Online Survey in Japan: An Evaluation of Emerging Methodologies

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1. Background and objective of the study

Electronic surveys have been the most obvious and most promising developments among the many changes occurring in survey environments. In our research during a few years, we encountered many changes in this field with both positive and negative characteristics. Our research has had two main purposes. Firstly, we have sought to clarify in the light of practical methodology what social and legal problems are involved in new survey methods, namely, *Web-based* or *Internet surveys.* Secondly, we have attempted a systematic study of the relationships that exist between conventional approaches and the more recent survey methods. This study has dealt with such aspects as design of a sample survey, including sampling methods, the construction of questionnaire sheets on Web pages, and actual survey procedures. Web-based surveys are widely used today, especially in the field of market research, and various attempts have been made by others engaged in survey research to find replacements for conventional interviewing, mailing and Omnibus surveys. In addition, in business and applied sciences, including market research into consumer behaviour, electronic surveys that make use of e-mail, WWW home pages, and Web databases have been widely adopted.

2. Present state of online surveys in Japan

In recent few years, we can have seen a remarkable change in the environment of Web-based surveys. In Japan, there were many participants in the scientific seminars and researchers' meetings, as well as in the institutional symposium that we organized. It is worth noting that many researchers and business people, especially those engaged in market research, showed great interest in these seminars and symposiums. However, no clear definition yet exists of an 'online survey', despite intensive discussion on the matter. Unfortunately, however, there are inflated expectations and much confused thinking about the nature of such surveys. Therefore, we have focused our research on the nature of the survey environments in which such electronic survey methods as the so-called *Web-based surveys* or *Internet surveys* are conducted. We have paid special attention to examination of the applicability and usability of those survey methods through the data gathered from our fieldwork as described later. We have also tried to track and analyze many survey procedures, including actual survey design, as comprehensively as possible. We have done this by comparison with related or earlier surveys as well as by group discussion and analysis of various research reports.

In addition, various problems have arisen about the Internet environments themselves, which are the subject of widespread discussion. Some of these relate to the background of changing human relationships. Partly because information is weighted in favor of technical or practical aspects of the use of the Internet, there can be arguments about the merits or demerits of the Internet's primary functions. It seems that communication on the Internet is once more under scrutiny, especially because of problems of privacy. In such circumstances, Web-based surveys that emphasize only some aspect of technological innovation have become popular without sufficient critical examination. Therefore, these surveys are being conducted under conditions of doubtful legitimacy. Moreover, problems arise because software development cannot keep up with the speed of hardware innovation. Consequently, we are faced with a situation where Web site surveys continue to grow,

yet are conducted in a climate of unreasonable expectation, criticism or abuse. On the other hand, we can see various agencies and organizations beginning to take action. Such action includes discussions in relation to the Freedom of Information Act, which are common in many agencies (see some reports listed in references).

3. Research objectives and procedures

Taking into consideration the circumstances described above, we have planned our research in accordance with the policies and procedures explained below, in order to assess, analyze and compare Web-based surveys as objectively as possible. Our aim has been:
(1) To make a more detailed analysis of the datasets acquired from the twelve Web-based surveys conducted in the past.
(2) To publish the results through extensive seminars and symposia; to discover what people really expect or want from Web-based surveys in the light of, for example, freedom of information considerations.
(3) To examine how we should establish standards for Web surveys through practical fieldwork.
(4) To take a leading role with other supporting organizations, in order, for example, to have every organization conduct their surveys *at the same time, and to use the same questionnaires*.
(5) To make an objective assessment of the survey environments, clarifying similarities and differences between them.

The detailed procedures corresponding to each item of our plan are summarized below. In particular, in this paper, we will discuss the aims of items (3) to (5) only through brief summaries, since all the data have not yet been analysed in writing this paper.

4. Introduction of the survey plan

Based on our research results in the past (Ohsumi 1997a, 1997b, Yoshimura and others 1998), we have designed a new plan. We have decided, from our experience and from the results of the information collected that it is necessary to categorize the contents of the Web-based surveys now in use in Japan. The summary of our survey plan in 1998 is described later. Our actual surveys have been done, or are being done, along these lines.

4.1 Types of Web-based survey in Japan

We have classified existing Web-based surveys into three types according to their methods of securing respondents.
Type 1 – Panel Style: Finds contributors by "want ad" or announcement on the WWW, and conducts several successive surveys targeting all of them. The number of the registrants would be about several thousand.
Type 2 – Resource Type: Finds contributors by want ad or announcement on the WWW, and selects actual targets from among them. The number of the registrants may vary from 10,000 to more than 100,000.This is the main type used in Web-based survey services and classified into the following methods: a) Intra-resource open method – Asks the registrants for cooperation through banner ads or other means, but does not request each of the registrants to participate; b) Attribute-narrowing-down method – Narrows down the population by gender, age, vocation, etc. Sends e-mail requesting cooperation. Often halts the survey when the number of answers desired is attained; c) Sampling method – Selects respondents at random from among the registrants. Sends e-mail requesting cooperation.
Type 3 – Open Type: Publishes the questionnaires on the Web and asks for cooperation by banner ads or other means. Does not sample individuals. Often used in Internet user-profile surveys conducted by sites well known for their search services.

4.2 Characteristics of the survey plan and its methods

In 1997, we conducted twelve trial surveys on the WWW with the cooperation of a survey company. According to the above classification, these were "Panel-style surveys." Our findings led us to plan other trial surveys for comparison, on the assumption that we would conduct our actual survey simultaneously on three distinct Web sites. For these surveys, we set up the following objectives:
(1) To compare the results of Web surveys administered *almost simultaneously at three different Web sites*, and in which *the same questionnaires* were used.
(2) To conduct the surveys four times with the fourth a repetition of the first survey.

(3) To conduct two ordinary surveys (for example, omnibus surveys with interviewing) *at two different sites at about the same time*, using questionnaires as similar as possible to those used on the Web sites.

Several research companies accepted our proposals to collaborate with us in promoting this project. The summary of the survey plans is presented below.

(a) Survey Methods

The actual surveys were done with the collaboration of companies A, B, and C, each of which has WWW survey environments of its own, and company D, whose survey system uses some answer-only communication devices connected to telephone lines. The methods used (types of Web surveys) and the target respondents for each site are as follows:

Company A: Web survey – Panel style; there were 2,000 registrants in each of the two groups.

Company B: Web survey – Resource style with sampling procedures; the number of the planned-samples was 5,000. They were randomly sampled from a group of 21,867 registrants.

Company B: Sample survey – Omnibus style and interviewing method; respondents sampled from eligible voters living within 30km of the Tokyo metropolitan area.

Company C: Web survey – resource style with sampling procedure; 10,000 planned-samples selected out of 55,714 registrants by simple random sampling procedure.

Company D: Conventional sample survey – answer-only communication devices installed at home; the planned samples selected from eligible voters living within 30km of the Tokyo metropolitan area.

(b) Survey Periods

The Web-based surveys are to be conducted four times, each for the duration of at least one week, and almost at the same time, from February to March.

(c) Construction of the Questionnaires

The outline of the questionnaires for each survey is described below. The second survey assumes respondents' daily use of the WWW as a premise, so the same questionnaire cannot be used in ordinary sampling surveys (conducted in Companies B and D).

The first survey: 'Awareness of daily life' involved five questions with face sheet. The questions dealt with the following issues: 'How you feel about your life' cited from a study of the Japanese National Character and the items used In the other surveys; such as 'Human relations', 'Consumption', 'Awareness of politics,' and so on.

The second survey: 'About the Internet environments' involved nine questions with face sheet. The questions dealt with the following aspects of the Internet: 'knowledge' of and 'reaction' to the Net (the original questions designed by us); user's frequency; attitudes toward it, 'how you are involved in it'; e-mail address; offering of information; membership or registration services; information distribution; Internet surveys; anonymity, multinominality, and so on.

The third survey: 'About various commercial products and services' involved four questions with face sheet; about department stores; personal computers; TV news programs; how you feel about these products and services (the questionnaires cited from another survey were re-used).

The fourth survey: 'Awareness of daily life' was a repeat of the first survey.

(d) Survey Results

Since the whole series of the surveys has not yet been completed, we cannot report the details of the results. However, as examples, a part of the results obtained from two Web sites is summarised as Tables 1 and 2. Many problems have arisen that we would not have anticipated before starting the surveys, for example, problems related to respondents' machines and maintenance of the server or data by survey administrators. Such problems are accepted as specific features of Web-based survey environments, and they were complicated because of our use of more than one WWW site. Our observations over the usability and applicability of Web-based surveys and the comparison of the results with those of the other surveys will be exhibited in a forthcoming report and in our presentation in the meeting. We are continuing with a variety of analyses and examining the information gained from the series of surveys that we conducted during a few years. We are paying special attention to the representativeness of samples, response rates, participation rates, privacy problems, and secrecy of the acquired data including these problems with a positive attitude about the potential of Web-based survey environments of the future.

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Table 1. Summary of the Web-based survey (for Site B)

Survey	1st	2nd	3rd	4th
Period	1/28/99~2/4/99	2/10/99~2/17/99	2/25/99~3/5/99	3/11/99~3/18/99
Theme	Attitudes to daily life	Internet	Consumer behaviour; purchasing policy	Attitudes to daily life
Incentives (as a book token)	1,000 respondents by lots	1,000 respondents by lots	1,000 respondents by lots	1,000 respondents by lots
Registrants	21,867	21,867	21,867	21,867
Planned samples	5,000	5,000	5,000	5,000
Collected samples (%)	1,045 (20.9)	867 (17.3)	924 (18.5)	798 (16.0)

Table 2. Summary of the Web-based survey (for Site C)

Survey	1st	2nd	3rd	4th
Period	2/16/99~2/23/99	3/3/99~3/11/99	3/12/99~3/19/99	3/23/99~3/30/99
Theme	Attitudes to daily life	Internet	Consumer behaviour; purchasing policy	Attitudes to daily life
Incentives (as goods token)	100 respondents by lots	100 respondents by lots	100 respondents by lots	100 respondents by lots
Registrants	55,714	55,714	55,714	55,714
Planned samples	10,000	10,000	10,000	10,000
Collected samples (%)	1,258 (12.6)	970 (9.7)	936 (9.4)	773 (7.7)

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RÉSUMÉ

Nous présentons la situation globale de l'investigation par l'internet (Internet surveys) au Japon, et nous montrons les projets et les résultats d'une serie des enquêtes réalisées par le même questionnaire pendant la même période par les plusieurs établissements spécialisés dans l'investigation. Pour examiner la possibilité de l'utilisation du média de l'internet nous avons réalisé aussi ces enquêtes d'une façon coopérative (Omnibus survey) par l'interview pour les personnes échantillonées par le moyen ordinaire. Nous présentons globalement l'examination comparative sur tous les résultats.