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Some Experimental Surveys on the WWW Environments

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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, over a number of years, we have 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* 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 aspects such as: the design of a sample survey, including sampling methods; the construction of questionnaire sheets on Web pages; and actual survey procedures. Web 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, Web home pages and Web databases have been widely adopted.

2. Outline of the electronic survey

The greatest problem with regard to electronic surveys in Japan is that they are developing in advance of studies on survey methods in electronic environments, or of studies about their practical use for different purposes, although the computer is gaining popularity as fast as in the USA.

In contrast, in the USA, electronic surveys seem to have experienced several successive stages of development – by solving various problems of Computer Assisted Personal Interviewing (CAPI) (in the late 1960s), Computer Assisted Telephone Interviewing (CATI) (in the early 1970s), or because of related improvements in electronic surveys, along with substantial studies of them.

In Japan, however, the main focus has been concentrated on the technology of computers and networks, and thus there has been a lack of reflection about the concept of the electronic survey or about the Internet on which the surveys are actually conducted. In Japan, Web surveys have suddenly become popular without enough discussion about ‘what a Web survey is’ or ‘how the survey should be conducted’. As a result, surveys have been conducted not only by individuals, but also by corporations that are not specialized in the research field, although familiar with the use of the Internet. This has led to the present chaotic situation where scientific research is confused with the mere collection or retrieval of information. Effectively, this is not a survey, but merely a search.

Taking into consideration the situation described above, we can summarize the electronic survey in general as a framework that has following characteristics:

- (1) Systematic research with the aid of the computer in collecting data.
- (2) Research conditioned by the use of computer networks.
- (3) Research in which an 'electronic connection' defines the relationship between survey researchers (operational bodies) and respondents (including organizations). That is, a style of research involving 'machine-to-machine' relations as well as 'person-to-person' (or 'face-to-face') relations.
- (4) Research needs to be done into what is called a 'Web survey', which makes use of the Internet and Web software such as browsers and protocols.

Thus, the 'electronic survey' is defined as research conducted in Internet environments on the basis of the electronic exchange of information between interested parties connected by network, replacing P & P (Paper and Pencil), face-to-face interviewing surveys, mailed-paper questionnaires, and so on.

To summarize: in Japan, Web surveys have appeared on the Internet without the necessary preliminary procedures, while in Western nations, especially the USA, Web surveys have become popular through the various stages of substantial research mentioned above (1) – (4). This is the main cause of the distortion Japan is facing in the present situation.

Part of the background to the present situation is that more conventional surveys based upon standard sampling have long been in practice in Japan, but recently it has been more difficult to maintain this pattern of traditional research. These difficulties are due to unique characteristics of the local environment caused by the Freedom of Information Act (FOIA), limits to using the Residents' List, and the deterioration of the research environment, etc. This fact has also contributed to the spread of Web surveys.

3. Present state of online surveys in Japan

In recent years, we have seen a remarkable change in the environment of Web surveys. In Japan, there have been many participants in 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 symposia. However, no clear definition yet exists of an 'online survey' or 'electronic survey' in practical use, 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 surveys* or *Internet surveys* are conducted. We have paid special attention to examining the applicability and usability of those survey methods through the data gathered from our fieldwork, as described below. We have also tried to track and analyse 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 favour of technical or practical aspects of the use of the Internet, there can be argument 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 privacy problems. In such circumstances, Web 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 surveys continue to grow, yet are conducted in a climate of unreasonable expectation, criticism or misuse. Meanwhile, we can see various agencies and organizations beginning to take action. Such action includes discussions about the FOIA, which are common in many agencies (see some reports listed in references).

4. Research objectives and procedures

Taking into consideration the circumstances described above, we have planned our research in accordance with the policies and procedures explained in the following sections, to assess, analyse and compare Web surveys as objectively as possible. Our aims have been:

- (1) To make a more detailed analysis of the datasets acquired from 12 previously-conducted Web surveys;
- (2) To publish the results through extensive seminars and symposia; to discover what people really expect or want from Web 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 use the same questionnaires*; and
- (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 in Tables 1–5. In particular, in this paper, we will discuss aims (3) to (5) only in summary form.

5. Actual plan of the trial surveys

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 surveys now in use in Japan. The summary of our survey plan in 1998 is described below. Our actual surveys have been done, or are being done, along these lines.

5.1. Types of Web-based Surveys in Japan

The variety of types of Internet surveys prevents us designing a comprehensive research model covering all situations. Various characteristics of Web surveys require us to set up a new framework to find out what position our experimental Web survey conducted on the supporting Web sites – the objects of our research – takes within today’s survey environments.

Therefore, we have classified existing Web surveys in Japan into three types, according to their methods of securing respondents as follows.

Type 1 – Panel Style: Finds contributors by ‘want ad’ or announcement on the Web, and conducts several successive surveys targeting all of them. The number of registrants would be about several thousand.

Type 2 – Resource Style: Finds contributors by want ad or announcement on the Web, and selects actual targets from among them. The number of registrants may vary from 10,000 to more than 100,000. This is the main type used in Web-based survey services and is 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 Style: 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.

5.2. Characteristics of the survey plan and its methods

In 1997, we conducted 12 trial surveys on the Web 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 Web survey environments of its own, and company D, which uses a survey system with 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 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 30 km 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 30 km of the Tokyo metropolitan area.

(b) Survey Periods

The Web surveys were conducted four times, each for the duration of at least one week, and almost at the same time, from February to March 1999.

(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 Web as a premise, so the same questionnaire cannot be used in ordinary sample surveys (conducted in Companies B and D).

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

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 taken from another survey were re-used).

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

5.3. Overview of Each Survey

The whole series of the surveys at each Web site are summarized in Tables 1–5. The Web surveys on Site B and Site C employed the Intra-resource sampling method, where respondents were randomly sampled from the registrants' list registered in the database on the server machine; that is, all the registrants were assumed to be a whole pseudo-population, from which three kinds of schedule samples were extracted randomly. The samples included registrants undergoing multiple extraction. We will refer to these as 'overlapped samples'. A request was made to each of the three samples to participate in the first, second and third surveys, and to the samples participating in the first survey to take part in the fourth survey, which was a repetition of the first. For the panel-style survey on Site A, we requested all the registrants to participate as respondents in every survey.

The respondents in the omnibus survey on Site B and those in the online survey on Site D were chosen from the Residents' List by means of ordinary probabilistic random sampling – the former by individuals and the latter by households.

6. Survey Results

The whole series of surveys has been completed, and we are now analysing the data collected. The summary of the surveys will be reported as follows.

6.1. Trends in Response Rates

First, see the trends in the response rates and re-response rates – one of the most important points for Web surveys. We will discuss here some of the interesting findings we have secured for each of our surveys.

(1) Low Completion Rate

In each of the Web surveys, the response rate was below 20%. Internet surveys, generally, tend not to have a high response rate. In our surveys on Site B and Site C, we see the same tendency. Panel-style surveys, like the one previously conducted on Site A, however, are said to show a higher response rate. The experimental surveys on Site A that used monitors and were conducted 12 times in 1997 showed a response rate of at least 40%. Compared with that, the response rates for the Web surveys here must be regarded as unexpectedly low. It is possible that something is wrong with the method of observing the panel of registrants.

(2) Decreasing tendency of response rate

For every site, particularly Site B and Site C, the response rate for the first survey was the highest; the response rates for the second and the third surveys are lower. This is partly because the questionnaire was longer in the second and the third surveys.

(3) High re-response (or re-participation) rate

Re-response rate is defined as the response rate where the respondents of the first survey also become respondents in the fourth survey. In these cases, the re-response rate has been high. Re-response rates for Sites A, B and C are about 64.0%, 71.4% and 69.9%, respectively.

(4) Virtual respondents

Members of an 'overlapped sample' are invited to participate in more than two different surveys, which can be found on Sites B and C. The virtual number of respondents within an overlapped sample calculated from the results of four surveys is shown below. Each rate in parentheses shows the rate of the virtual respondents within the overlapped samples. As a reference, the rate of the virtual respondents for the surveys on Site A are also shown, where all the registrants are asked to participate in all four surveys:

B Company: Requested twice (25.2%), three times (29.7%, 29.5%), four times (34.3%).

C Company: Requested twice (13.9%), three times (17.9%, 17.3%), four times (21.5%).

A Company: Requested four times (30.7%).

The rate of virtual respondents for Site B is greater than for Site C, and the number for both sites increases by about 4 points as the surveys progress. The number of virtual respondents for the four surveys at each site is about 30%. Comparison between each site tells us that on Sites B and A the rate of participants who participate in all the surveys (to which they are invited) is the highest, whereas, for Site C, only participants who are invited to the second and the third surveys show a similar tendency, and the participation rate is highest in the first (invited) survey.

In other words, 70% of registrants made no response to any of the four survey invitations. It must be noted that tens of thousands of registrants never means that you can get as many opinions.

6.2. Characteristics of the surveys

(1) Undelivered mail

Throughout the surveys on Site B there are about 15% undelivered mail messages. The figure for surveys on Site A and C is unknown because of deficiencies in the computer server system.

E-mails requesting cooperation are delivered to the registrants according to the enrolment information researchers have. If delivery to a particular registrant fails, his or her name should immediately be crossed off the list. However, this could not always be done promptly or in real time. Naturally, this affects the reliability of survey results.

(2) Multiple responses

Multiple response means that the same respondent gives a response several times in one survey. The survey results for Site A and Site B show that there are about 5% multiple responses. The time record of many such messages suggests that the respondents pushed a button repeatedly in transmitting their reply. (A few took a longer interval of a few days.)

For example, a quick response from the system will make it unnecessary for respondents to push the button repeatedly. Presumably, multiple responses are chiefly caused by some deficiency in the system – slowness in response, confusing manual operations, etc. Distribution of the time records suggests that most respondents are accessing around 11:00 p.m., the busiest hour for communication lines. Researchers, taking these circumstances into consideration, should construct such an operational system and a questionnaire so as to give as little stress and irritation as possible in responding.

In contrast, there is no multiple response in the survey results for Site C. This is because the system ensures identification of the respondents at the response time and prevents one respondent from making multiple answers. In this way, it may be possible to eliminate multiple responses, but at the same time, rigid systems that would not allow for the correction of mistakes are not necessarily preferable. Those respondents who sometimes wish to correct their answers afterwards account for around 30% in the second survey. Systems allowing cancellation of operational mistakes and correction of written mistakes would enable us to have more replies and acquire more reliable data.

(3) Existence of non-registrant responses

In the surveys on Site B, a few non-registrants' responses can be found. The rate is not large, as shown in Table 1. In the surveys on Site A and Site C, in which respondents are cross-checked with the registration information on the databases and identified after they have accessed the Web pages, there are no such responses.

(4) Systematic bias between schedule and collected samples

For each site (Sites A, B, and C), the rate of the 30 to 40 year age cohort among respondents is greater than that in the schedule samples. Consequently, we can observe a systematic bias in the demographic construction between the schedule samples and the collected samples.

Considering this, and the fact of low response rate, high re-response rate, and small virtual number of respondents, we are likely to listen solely to those who are active in responding to any Web survey. This fact must not be overlooked in interpreting and using Web survey results. The systematic bias mentioned here can be seen in Figures 1 to 3.

(5) Differences among demographic items

Comparing the registered and collected samples for the demographic items on each site, we cannot recognize whether variations occur by mistake or on purpose, but for every site a few respondents have altered some of their registered demographics.

6.3. Typical personality characteristics of the respondents

Specific tendencies and features found in the answers to questionnaires quoted from other surveys lead us to imagine the typical respondent's personality as follows:

- not satisfied in his or her present state (about life style, life stage, and so on);
- has high regard for his or her own hobbies or tastes;
- prefers simple or casual human relations to intimate ones;
- has high confidence in or expectations about technology.

Generally speaking, respondents seem to be more self-oriented than self-helpful. Even though they are likely to pursue their own advantage, they do not seem to be truly self-helpful people.

6.4. Survey over-participation in surveys

A question is provided about the frequency of participating in researches or questionnaires. Most respondents answered: "Once a month or more" – 63.6% for Site B, 77.4% for Site C, and 79.7% for Site A (for example, see Table 6). As for the question about their registration, more than 10% of the respondents to Site A's surveys were also respondents to Site C, and about 4% of the respondents to Site B's surveys were also respondents to Site C. Taking this into consideration, as well as the fact that the rate of participation by virtual respondents is about 30%, we can see that an unexpectedly limited number of people participate in various surveys and make repeated responses. Thus, our comparative experimental surveys have produced a clearer image of respondents to Web surveys. In discussing the usability and applicability of Internet surveys, we should clarify the points at issue by considering respondents' personalities and behaviours, and make objective suggestions about what can be accomplished with Web surveys.

7. Conclusion and future directions of Web survey

For some experimental surveys (at least during this time), data collection procedures on Web-based surveys have been well organized and conducted. However, among the greatest problems of Web-based surveys are the difficulty of identifying respondents and checking the

representativeness of the population. However, if we accept that it is possible to discuss the effective and practical use of Web surveys in spite of such problems, we must at least consider what we describe below.

7.1. Mutual trust between survey researchers and respondents

To obtain reliable results through Internet surveys, there must be mutual trust between survey researchers and respondents. Researchers should take great care to get honest responses from the respondents. The following matters, at least, should be considered.

(1) Incentives and the size of questionnaires

In many cases, it seems that respondents recognize that their responses are done at their own cost. We have found in many of the free answers the opinion expressed that lottery incentives are not desirable. Too many questionnaires with poor incentives produce negative reactions among registrants. If they feel that sending their answers costs them too much, they may try to recoup their losses. However, that does not mean that excessive incentives are preferable, as this could endanger the reliability of the survey results.

In relation to this, careful attention must be paid to the responding systems and the respondents' costs. For example, if respondents have been informed of a procedure of downloading a whole page of questionnaire, disconnecting the line, filling in their answers, reconnecting, and sending the answers, they can reduce their response cost. For this purpose, a questionnaire consisting of only one page is preferable. Site C, because its operating system has a limit to the length of one page, was obliged to present the questionnaire divided into some pages. Such a design is not quite appropriate.

(2) Allaying distrust

In response to the question 'About the information distribution on the Net' in the second survey, many hope for some limitation to anonymity and some regulation of the use of the Internet. For example, respondents seem to have much greater distrust for the Internet than might be expected, and such awareness is reflected in their answers to the questions about their reaction to participating in the Web surveys – in the second survey many of them chose the options 'The researchers are reliable' (60%) and 'The aim and objective of the survey is understandable' (70%). It is necessary for researchers to make information about the operators and the purpose of the survey as public and transparent as possible.

(3) Disclosure of survey results

More than 40% of the respondents to the second survey chose that to be informed of the results was one of the necessary conditions of participating in surveys. The rate was as high as that to the option 'Not so many questions'. It is not surprising that no reassurance will prevent respondents wondering if it is in fact a genuine survey or if it is done for some other purposes.

The respondents managed by Site A, for example, consist of two panels: for the first, registration was done at the beginning of the fiscal year 1997, and for the second, at the end of the same fiscal year. In the trial surveys in 1997, only the first panel was used as our research target. Then, when we requested participation again, we informed the respondents of the 1997 surveys about the results of the previous surveys (although too late). The results of this year's surveys

tell us that those who participated in the first panel survey in 1997 account for a larger proportion of the respondents to this year's surveys than those in the second: 57.7% for the first, 62.9% for the second, 60.6% for the third, and 58.6% for the fourth, respectively. Considering such a long interval of time, we conclude that the disclosure of the survey results has contributed to so many registrants from among those who participated in the first panel survey conducted on Site B in 1997.

(4) Identification of respondents

To make Web survey results more reliable, we need to solve the problem of identifying respondents. For example, when information at the response time differs from that registered, we can do nothing but ask the respondent to check which is right. As it is, it is difficult even to grasp the real number of registrants or respondents. Identification is so difficult because the Internet is a network of computers, and is not a person but a machine that is to be identified.

Many Web surveys use the e-mail address for identifying respondents. However, our surveys included questions on how many e-mail addresses respondents have, and whether they share e-mail addresses (see Table 7 and 8). The main results were:

- The distributions of the number of e-mail addresses available are similar among the three sites.
- Less than 20% of respondents have only one e-mail address.
- About 20% of respondents share an e-mail address with others.

These facts mean that the e-mail address cannot necessarily be an identifier of a particular person. Therefore, we must seek some means of tracing back and identifying respondents – sending requests for participation by mail, for example.

7.2. Other remarkable features

(1) From where responses are sent or accessed

The distributions of response time show that many respondents sent their replies while at work. Related ethical problems and questions of how to deal with them should be discussed.

(2) Special measures for juveniles

Some respondents are under the age of 15 years. Juvenile Internet users are growing in number. Discussion is necessary about the registration of minors and the collection of privacy information from such children.

(3) Problems caused by conflicts among surveys by different sites

Our results show that several sites are sharing comparatively few groups of respondents. For respondents, the sites that can promise great benefits at low cost are preferable. At present, the sites seem to be competing for registrants, but when it comes to the quality of survey results, they will be competing for a higher response rate. We are afraid that a competition to provide incentives may cause a serious deterioration in the environment. It may become necessary for incentives to be regulated in some way.

(4) Need for simultaneous and longitudinal surveys by many sites

From the results of a series of trial surveys, it is possible that respondents to Web surveys account for only a small part of the potential panels or registrants among Internet users. This kind of bias cannot be adjusted through analysis or weighting of demographic items. To appropriately interpret and use survey results, it is necessary to understand the characteristics of the group of respondents and how typical they are of the Internet user population on occasions when surveys are taken. In this sense, we need 'longitudinal surveys' to clarify the characteristics of the respondents on the Web, rather than a single-shot survey seeking ad hoc responses.

(5) Others

In concluding, we may summarize our findings as follows.

- We have obtained stable and somewhat similarly (systematically) biased response tendencies from the similar results among the three sites, in spite of the low response rates.
- We may have discovered a typical respondent to Web surveys. Many participate in many surveys.
- In Web surveys, it may be quite feasible to conduct repeated and longitudinal surveys.
- It is necessary to encourage registration and secure a stable group of respondents. Operational bodies of the Web survey must try to keep their registrants for longer periods.
- Consideration of security and privacy is necessary.
- It is also necessary to make survey results public, on the premise that information should be shared. Web surveys can be very different from conventional ones in that they can provide results in real time.

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Note:

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Table 1. Summary of the Web-based survey (for Site B: Intra-resource sampling method)

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	Awareness of daily life	Internet	Consumer behaviour; purchasing policy	Awareness of daily life
Incentives (as book coupons token)	1,000 respondents by lot	1,000 respondents by lot	1,000 respondents by lot	1,000 respondents by lot
Number of Registrants	21,867	21,867	21,867	21,867
Schedule Samples	5,000	5,000	5,000	5,000
Number of No Responses (%)	742 (14.8)	881 (17.6)	785 (15.7)	858 (17.2)
Unregistration (%)				5 (0.1)
Number of Collected Responses	1,109 (22.2)	954 (19.1)	1,044 (20.9)	884 (17.7)
Multiple Responses (*%)	30 (*2.7)	59 (*6.2)	90 (*8.6)	61 (*6.9)
Responses by Non-registrants (*%)	34 (*3.1)	28 (*2.9)	30 (*2.9)	25 (*2.8)
Valid Responses (%)	1,045 (20.9)	867 (17.3)	924 (18.5)	798 (16.0)

note: *% shows percentage to Number of Collected Responses.

Table 2. Summary of the Web-based survey (for Site C: Intra-resource sampling method)

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	Awareness of daily life	Internet	Consumer behaviour; purchasing policy	Awareness of daily life
Incentives (as points token)	100 respondents by lot	100 respondents by lot	100 respondents by lot	100 respondents by lot
Number of Registrants	55,714	55,714	55,714	55,714
Schedule Samples	10,000	10,000	10,000	10,000
Unregistration (%)	122 (1.2)	139 (1.4)	136 (1.4)	122 (1.2)
Number of Collected Responses	1,258 (12.6)	971 (19.7)	937 (9.4)	774 (7.7)
Valid Responses (%)	1,258 (12.6)	971 (19.7)	937 (9.4)	774 (7.7)

Table 3. Summary of the Web-based survey (for site A: panel-style)

Survey	1st	2nd	3rd	4th
Period	3/1/99-3/8/99	3/9/99-3/16/99	3/17/99-3/23/99	3/24/99-3/30/99
Theme	Awareness of daily life	Internet	Consumer behaviour; purchasing policy	Awareness of daily life
Incentives (as goods token)	100 respondents by lot	100 respondents by lot	100 respondents by lot	100 respondents by lot
Number of Registrants	3,969	3,969	3,969	3,969
Schedule Samples	3,969	3,960	3,957	3,956
Number of Collected Responses	713 (18.0)	670 (16.9)	635 (16.0)	517 (13.1)
Multiple Responses (*%)	47 (*6.6)	48 (*7.2)	34 (*5.4)	26 (*5.0)
Valid Responses (%)	679 (17.1)	644 (16.3)	617 (15.6)	503 (12.7)

note: *% shows percentage to Number of Collected Responses.

Table 4. Summary of the Omnibus survey (for B site: Conventional Sampling and Omnibus)

Survey	1st	2nd	3rd
Period	2/4/99-2/14/99	2/18/99-2/28/99	3/24/99-3/30/99
Theme	Awareness of daily life, Goods, Services	Attitudes to daily life	Awareness of daily life, Internet
Incentives (as book coupons token)	All respondents	A respondents	All respondents
Schedule Samples	1,075	900	900
Valid Responses (%)	758 (70.5)	630 (70.0)	630 (70.0)
Invalid Responses (%)	317 (29.5)	270 (30.0)	270 (30.0)
Temporary Absence (%)	133 (12.3)	86 (9.6)	99 (11.0)
Long Term Absence (%)	21 (1.9)	13 (1.5)	20 (2.2)
Moving (%)	34 (3.2)	43 (4.8)	24 (2.7)
Refusal (%)	115 (10.7)	119 (13.2)	119 (13.2)
Others (%)	1 (0.1)	3 (0.3)	

Table 5. Summary of the Online survey (for site D: Online Survey)

Survey	1st	2nd
Period	3/13/99-3/15/99	4/12/99-4/13/99
Theme	Awareness of Daily Life · Goods · Services	Awareness of Daily Life · Goods · Services
Incentives (as points token)	All respondents	All respondents
Schedule Samples	750	750
Valid Responses (%)	612 (81.6)	529 (70.5)

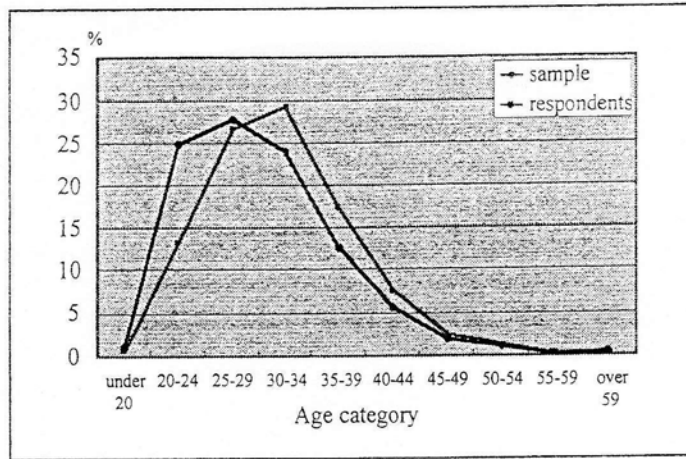


Fig. 1 Differences between sample and respondents in age (Site A, the 2nd survey)

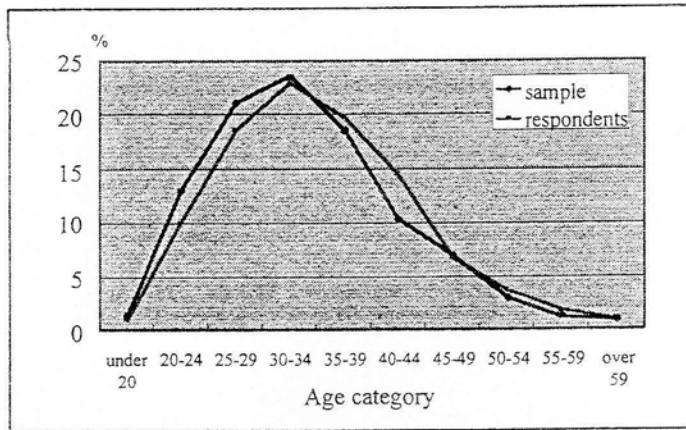


Fig. 2 Differences between sample and respondents in age (Site B, the 2nd survey)

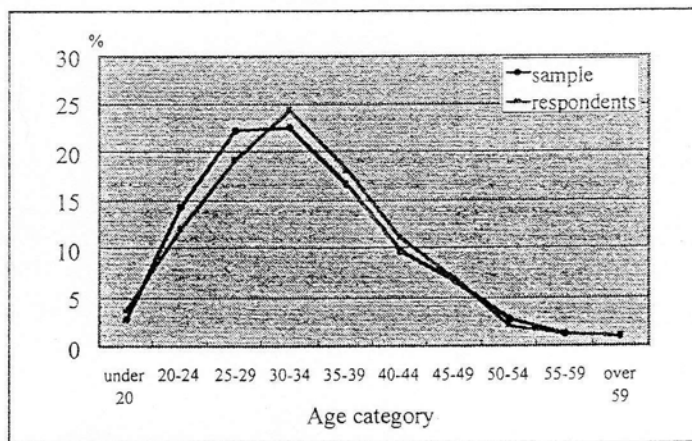


Fig. 3 Differences between sample and respondents in age (Site C, the 2nd survey)

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