CHAPTER V

INFERENCE

Science as an epistemological method finds new challenges to its application at every stage. The survey research method, for instance, is under pressure to innovate in an attempt to increase response rates. Johnson and Owens mention the observation of De Leeuw and de Heer (2002) that a decline in response rates for surveys has been seen in the United States and other countries of the developed world for many years.

The importance of an adequate or high response lies in the fact that only then can it result in a representative sample (Litmun, 2002). The strength of a good survey lies in its sampling procedure, which has to ultimately result in generalisable data.

Fortunately, new modes of communication have opened up new opportunities for survey research. Among them are the new media, which are considered advantageous for survey research. The interactive feature of the Internet makes it rich enough to be used as a survey tool; notably the website and the email. This demands a re-look at the various aspects of survey methodology: sampling, response rates, costs, questionnaire design, length, and the technical aspects.

Studies focusing on the effectiveness of email as a survey mode go back to the second half of the 1980s. Findings have not been conclusive, and researchers advise that more context-specific and geographic-area specific studies be done to help reach an acceptable conclusion.

THE MAIN STUDY

‘The email questionnaire as an effective tool for data collection in mass communication research – a comparative study with the telephone interview and the traditional mail questionnaire as mediated data collection tools.’
Findings at a glance

AH 1. There is a significant difference in the total number of responses and the total number of non-responses got by email, telephone and postal mail survey questionnaires at the expected response rate of 60%.

AH 2. There is a significant difference in the number of responses got by email surveys, telephone surveys and postal mail surveys at the expected response rate of 60%.

AH 3. There is a significant difference in the number of responses and non responses got by the email survey at the expected response rate of 60%.

AH 4. The Null Hypothesis is accepted: There is no significant difference in the number of responses and the number of non-responses got by the telephone survey questionnaire at the expected response rate of 60%.

AH 5. There is a significant difference in the number of responses and the number of non-responses got by the postal mail survey questionnaire at the expected response rate of 60%.

AH 6. The Null Hypothesis is accepted: Within each survey type, there is no significant difference in the number of responses for simple and short; and complex and medium length questionnaires received in the email survey, in the telephone survey; and in the postal mail survey.

AH 7. There is a significant difference in the number of responses for simple and short questionnaires received in the email survey, the telephone survey and the postal survey.

AH 8. There is a significant difference in the number of responses for complex and medium length questionnaires received in the email survey, the telephone survey and the postal mail survey.
AH 9. **There is a significant difference** in the number of responses for simple and lengthy questionnaires received in the email survey, the telephone survey and postal mail survey.

NH 10. **There is no significant difference** in the number of completed responses and the number of incomplete responses for simple and complex questionnaires in the email survey.

No statistical analysis used since the number of incomplete responses is 0.

NH 11. **There is no significant difference** in the number of completed responses and the number of incomplete responses for simple and complex questionnaires in the telephone survey.

NH 12. **There is no significant difference** in the number of completed responses and the number of incomplete responses for simple and complex questionnaires in the postal mail survey.

(Chi square value = 0.17 is not significant at 1df, 0.05 level. But expected values were less than 5 for the incomplete category).

**Inference**

- **The telephone as a tool for academic research in mass communication holds a lot of promise in India.** This can be seen in the high response rate of almost 60%, in the expenses incurred (less than Rs.400) and the total response time (less than 13 hours or half a day).

- The email known for its advantages of time and cost, is highly ineffective in terms of response rates, receiving fewer responses than the postal mail questionnaire.

- The postal mail had a very low response rate, cost very high, and took a longer time than the email for responses to reach the researcher.
• The importance of the type of questionnaire – simple and short or complex and medium - is inconclusive because of poor response rates for email and postal mail.

• The capacity of the email and postal mail to collect large amounts of data is also inconclusive for the above said reason.

• For the telephone interview, the lengthy questionnaire holds promise. It had a higher response rate fewer incomplete responses than both the simple and short and complex and medium length questionnaire. The telephone, therefore, is also capable of collecting large amounts of data.

The telephone as a survey mode

As the above hypotheses show, the telephone is the most effective of the three mediated tools for survey:

• The telephone was successful in achieving a significantly high response rate (almost 60%, the same as the expected response rate).

• The telephone was significantly more effective than the other two tools, the email and the postal mail, in terms of response rate and time.

• The telephone, though more expensive than the email as a survey tool, was significantly less expensive than the postal mail as a survey tool.

• The Study showed that the telephone was also capable of collecting large amounts of data.

• The telephone was found to be the most cost – effective tool in terms of response rate, time and cost.
Recommendations

The telephone interview for academic research in mass communication has a lot of potential in India, even though the rising number of marketing calls may pose a problem.

- One important area for further research for the telephone as a survey tool is to find ways to reduce the number of incomplete responses.

- The questionnaire should be simple and should provide respondents lots of opportunities to talk and express themselves.

- Avoid too many options for close-ended questions.

- Avoid complex rating scales.

- Pre-notification may or may not be necessary. A proper self-introduction, a clear, short explanation of the research and its purpose are important in creating the right impression.

- Permission may be obtained to conduct the interview during the first phone call itself. If that is not possible, fix a schedule that is convenient for the respondent.

- Strictly follow all rules of etiquette.

- Telephone directories that are widely available in book form, in compact discs or even online are reliable sources for sampling.

The email questionnaire as a survey mode

The email as a survey tool for a large population in the present study achieved an insignificant response rate of 5.77%. While the late 1990s saw a rise in the use of the email for data collection by researchers, studies showed a corresponding decrease in the response rate to email surveys. From response rates of about 46% in 1995-1996, email response rates had reduced to 31% in 1998-1999 (Sheehan, 2001).
Study A, ‘Effectiveness of the Gmail questionnaire with the ‘open as a google document’ option for response: A study among Gmail users’, with a poor response rate of 3 out of a sample size 75, proved that ease of use of email for response (by using the ‘open as a google document’ option) was not enough to persuade email users to respond to the questionnaire.

Theories of message production, reception and interpretation are considered core theories in communication, and may be of use here to explain email user behaviour towards receiving mails from strangers, be they academic in nature or commercial mails. As Kim Sheehan (2001) says, the challenge is to find techniques to persuade email users to open and read the mail rather than delete it straightaway.

Relevance Theory: Sperber and Wilson’s Relevance Theory underlines the importance of the relevance of the message (to the receiver) and the understanding of the context in the proper inference of the speaker’s message and intentions (Littlejohn, 1996).

Expectancy -Value Model: According to Palmgreen and Rayburn’s Expectancy- Value model, the use of a medium depends on the belief that the medium in question has some attribute that will result in an expected outcome and on the personal evaluation of that outcome. An interesting aspect of this theory is that it allows for both positive and negative attitude towards; and positive and negative use of; media. A negative personal evaluation of the outcome can result in the avoidance of the use of that particular medium for a particular purpose (McQuail, 2005).

The Elaboration Likelihood Theory, developed by Richard Petty and John Cacioppo as a summary of many other attitude-change theories, states that people have different ways of processing persuasive messages. (An attitude may be defined as ‘a predisposition to act in a positive or negative way toward an object’.) The theory deals

with the probability of the expansion or elaboration of a message by the receiver. This likelihood depends on the way a person processes the messages: using the central route or the peripheral route.

The central route involves active processing of the message, while the peripheral route involves less elaboration or thinking about the message. However, most people use both the routes, with difference in degrees.

Two important factors influence the likelihood of elaboration: Motivation and ability.

According to Petty and Cacioppo, motivation depends on the relevance of the topic, different arguments about the topic from a large number of people, and an individual’s personal orientation towards argument and critical thinking.

The second factor, ability, is self-explanatory. However high the motivation, if the ability of the receiver to think critically about the topic is low, then the likelihood of elaboration is low and vice versa.

Elaboration, therefore, depends on the motivation of the receiver and his/her ability to use the central route, whereas non elaboration is a result of lack of motivation or the person’s inability to use the central route (Eagly and Chaiken, 1993; Littlejohn, 1996).

Elaboration-likelihood model is extremely useful in understanding the response behaviour of receivers of persuasive and other kinds of messages.

The relevance of an email questionnaire to a respondent could be at four levels:

- the relevance of using the email as a survey tool itself,
- the relevance of the person sending the email questionnaire,
- the relevance of the survey topic to the respondent and
- The relevance of the context in which the email is sent.
Ability will not be considered a negating influence in this case, because email users in India are generally educated and exposed to some medium or the other.

However, in physical terms, lack of time, lack of personal access to a computer necessitating the use of cyber cafes or office computers for personal work, and the costs involved in spending time online to respond to the questionnaire may work strongly with lack of motivation to result in non-response.

**Study B,** ‘Effectiveness of email as a survey tool – a study among members of Orkut, an online social network group’, used relevance of the sender of the message as a persuasive factor in getting responses to the email survey. The response rate of 33.8%, though encouraging, was not significant. While the 33.8% response rate may be attributed to relevance of the person sending the questionnaire, the lack of context relevance was probably the reason for the below average response.

**Study C,** ‘Effectiveness of the email as a survey tool - An experiment using purposive snowball sampling, mixed modes of contact and high topic salience’; aimed at satisfying all the motivational factors, by maintaining the relevance of the sender, the message, the channel and the context. The Study was successful in getting 57 responses as against the targeted 50.

Research has found that members of the original sample group who receive email requests to take part in online surveys tend to pass along the information through word of mouth (WOMC) and forward the email requests to others (Russell and Norman, 2006). To investigate this phenomenon, they developed and tested a *two-stage flow of effects* model comprising constructs that they considered influential in forwarding survey questionnaires to other email users.

Constructs identified and tested by them were:

- Involvement in the survey topic,
- Relationship or commitment with the survey,
• Size of the social network, comprising those who share a common interest.

• Self interest, based on exchange theory, assuming that higher the self interest, lower the chances of WOMC and forwarding of the survey.

The study found that involvement (relevance) and relationship with the survey topic positively and significantly influenced WOMC. It was also found that more often that not, those who indulged in word of mouth communication about the topic ended up forwarding the survey to others. The study concluded that a deeper involvement in and a stronger relationship with the survey topic increased the likelihood of the original sample respondents sharing the topic with people with whom they had a stronger tie.

The topic of the email Study C, ‘Strangers in the inbox- A study on the attitude and response behaviour of email users towards mails from strangers, spam, bulk mail and forwards’; gave an insight into email user behaviour in various situations. Among other things, the Study found that more than half the respondents delete mails from strangers. Very few actually read them and respond positively or negatively depending on the content (6/57). This could explain the poor response to the email questionnaire in the main Study and Study A.

51 of the 56 respondents say that they don’t mind email questionnaires as long they are from known people. Again, this could explain not only the poor response to the main Study and Study A, but also the encouraging responses to Study B and Study C.

Theories of message reception assume great importance in understanding why email users behave this way. According to Osgood’s Learning Theory, every external stimulus in the environment is met with a response. This response depends on the meaning that the person attaches to the stimulus he or she is exposed to. This meaning is internal or the internal representation of the stimulus. Therefore, an external stimulus results in an internal representation, which in turn acts as an internal stimulus that results in an external response or behaviour.

According to Osgood, meaning is unique to each person because it is based on his/her own experience with the external stimulus. The meaning, therefore, is
connotative and expresses itself as an emotional response to the object (external stimulus). Experience here need not be direct experience with the stimulus. It could be indirect for example, it could be something that a person has read /heard about. Osgood assumes that meanings can be measured as adjectives (Littlejohn, 1996).

The Internet has opened up new tools of communication, most of them with the promise of anonymity. This has been exploited by both senders and receivers of messages, thus creating new meanings and new experiences in the process of online message production and reception. Emails from strangers, apart from being considered an intrusion of privacy, are also treated with suspicion. Frauds, virus threats and other negative aspects of email as an interactive platform have given a negative connotation to a stranger’s email in the minds of the email user.

The Social Judgement theory of Muzafer Sherif and his associates can be used to further support this point. According to the theory, individuals judge a message on the basis of internal anchors which are reference points taken from their experiences, and ego involvement, which is the amount of relevance of an issue to the receiver.

A positive internal anchor and high ego involvement help in positive judgement.

A positive judgment would indicate an acceptance of an issue or a persuasive message. (Littlejohn, 1996)

Internal anchors, like Osgood’s internal representation, play an extremely important role in the response behaviours of email users to mails from strangers. Commercial mail, porn mail, mails from strangers requesting financial assistance, hoaxes that declare the email user a winner of large amounts of money, virus attacks from harmful mails – all these form strong negative reference points to most email users.

Such negative anchors alone are enough to make the email user either ignore the mail by not opening it/checking it out or simply delete the mail.
It could be argued that the negative reference points can outweigh ego involvement in such cases. Even if a receiver finds the subject of the email interesting, if the mail is from a stranger, the judgment could be negative, and hence, the response also negative (ignore or delete). On the other hand, even if ego involvement is low, a positive reference point can influence the email user to respond to a questionnaire. The positive reference point could be that the email questionnaire is sent by a person known to the user.

This positive reference point (known person) assumes greater importance than any other factor, resulting in response in most cases.

This can be further supported by the **theory of reciprocity**. According to the theory of reciprocity, people reciprocate in a similar manner, to intentions and outcomes that are perceived to be kind or unkind. Kind/unkind actions refer to actions that have already occurred and also to expected future actions. Research in the various social sciences, literature, and economics has found that reciprocity has a significant effect on ones behaviour. People are known to reward kind actions and punish unkind ones. Their study highlighted the importance of intention: the outcome of an action was reciprocated differently by different people based on their perception of the intention of the person’s action. This explains the success of the purposive snowball sampling method. The very idea of requesting friends to complete the online questionnaire and act as online field aides was founded on positive reciprocity. In the second phase, questionnaires were forwarded to friends and others with whom the online field aides had cordial relationships and positive reciprocal actions could be taken for granted.

**The email and telephone as survey modes**

What is it that makes people respond to a stranger on the telephone and avoid any such communication on the email?

Cho and La Rose (1999) state, “Privacy violations on the Internet can provoke extreme reactions because the Internet expands the boundaries among the self, social
units, and the rest of the world…. Intrusions in the private cyberspace of our personal computers can violate the privacy boundary between the self and the world in a way that a letter in the mail box or a telephone call from a stranger does not”

They accuse online researchers of committing three types of privacy violations: that of physical, informational and psychological privacy. According to them, pre-notification and post-notification further compound the problem.

In India, telephone interviews are still a novelty. On the Internet, frequent emails (personal, marketing, research, porn, chain mails etc) from strangers are common and have created negative attitudes and response behaviours for such mails.

Also, the email, being virtual in nature, gives the sender an anonymous, amorphous, and unreal quality if he or she is not known to the receiver, resulting in even more low motivation to respond positively. The telephone caller, even though faceless, is not unreal, and is less anonymous because one can actually hear a voice and talk back to it.

With the email, the user has a choice to ignore it totally by not opening it at all, or straight away delete it. This is not the same with the telephone, especially the landline. Only in very extreme conditions do people choose not to answer a phone that is ringing. Even with landline phones that indicate the caller’s number and name (if listed), the internal anchor is not negative enough to ignore the call.

A 2002 study conducted by Quris (Quris, 2002) found that 52% of respondents straight away deleted emails from people whose names they did not recognise. Forty per cent of them also deleted permission email marketing letters. Fifty nine per cent of the respondents felt that email marketing messages were useless to them. About half the respondents rarely or never check spam/bulk mail, and an almost equal number always delete mail marked spam/bulk.

The Pew Internet and American Life Project on spam and email user behaviour towards it (2007) compared the results with a similar study conducted in 2003 (Fallows, Deborah, 2007). According to the Pew survey which was conducted using telephone interviews, 71% of email users used filters to block spam and 44% reported to having taken additional efforts to make it difficult for others to get their email address. While 46% of them almost never check their spam mail, 51% reported to checked their spam mail at least once in a while.

While spam has not kept users away from using the email, 19% said that spam had resulted in a decrease in the use of email. About 55% of respondents reported to having lost trust in the email because of spam.

According to the Pew survey, there has been an increase in spam, but unlike earlier, most email users are less bothered by it. Twenty eight per cent of respondents in 2007, as against 16% in 2003, say spam is not at all a problem. While 51% of respondents in 2007, found it annoying but not a problem, the figure was 57% in 2003. However, a mere 4% of the respondents in 2007 as against 7% in 2003 reported to having responded positively to spam.

The 2006 study by Grimes (Grimes, 2006) tried to find out if spam or commercial emails had any influence on the respondent’s online activities, especially those that were known to provide information to spammers, like chat rooms, online shopping, etc. The survey also studied the ways in which email users avoided spam, and if they supported taxing of parties that sent such commercial messages.

A convenience sample of 142 select volunteers was surveyed. Interestingly, respondents gave different definitions to spam, but the largest number of them (42.3%) defined it as ‘All e-mail I don’t want.’ While 72% of respondents report that they strongly dislike spam, a little more than half the respondents, mostly male, have tried anti-spam filtering programmes. An overwhelming majority, that is, 80% of the respondents, were against any kind of email tax against parties indulging in spam.
‘All email I don’t want’ rather neatly explains the resistance of email users to the exploitation by researchers of a rich medium with unlimited capabilities. As a communication technology, the Internet has revolutionised the way people interact. But ultimately, it seems that, being a de-massified, personal medium, its applications may also be conditioned by social (here, email users) acceptance and use.

**Model for successful email survey**

The purposive, snowball sampling method for data collection using the email as a survey tool can be used to help increase response rates for email surveys of large populations.
1. **Mode**

The mode for the survey was single mode: the email questionnaire. Mixed mode was at different stages of contact.

2. **Sampling**

Sampling was purposive. Respondents were selected based on relevance of demographics. In the second phase, sampling was purposive snowball sampling. Some phase III respondents also sent the questionnaires to their contacts.

- Purposive sampling ensures that the strata of email users required for the study purposes can be reached.

- Snowball sampling ensures that similar types of respondents are selected. It can be generalised to similar population of email users.

- Purposive snowball sampling can be used for a large population of email users.

3. **Approach**

This involved pre-notification, administration of questionnaire, post-notification using mixed mode approach:

- Pre-notification at phase I by the researcher is imperative.

- Pre-notification for phase I respondents should be personal. It should be done using the mixed mode approach: on the phone (for cell phones even just SMS will do, depending on the kind of relationship between the researcher and the prospective respondent), face to face, or online chat.

- Post-notification can also be done with a reminder email, apart from the above mentioned modes.

- Post-notification both at phase I and at phase II (by email respondents cum fieldworkers) within three days to a week of sending the questionnaire is
helpful. However, more than three reminders are not recommended. Bombarding contacts with reminders is not part of etiquette; it could even have a negative effect on relationships.

- Introduction and subject matter sent by online field aides to friends in phase II are extremely important. The online field aide can make it persuasive, especially if pre-notification is not done. (Eg. Friends, your answers are extremely important. Please fill it in and mail it back to my address asap) It should end with the signature of the email field aide and responses should be sent to the field aide’s email id; which is then forwarded to the researcher (only this strategy worked).

- It would, however, be unethical to make the contacts wrongly assume that the research is being done by the fieldworker himself/herself.

- Mixed modes can be used for pre-notification and post-notification.

- Online field aides should also be reminded to post-notify non-respondents among their friends who were sent the email questionnaire.

- The researcher should be sent a Bcc of every email questionnaire sent by the online field aide so that she/he can keep count of the number of email questionnaires sent. This is important to calculate response rate.

4. **Personalisation**

The study was highly personalised, with the researcher and the online field aides sending the questionnaire individually or to a maximum of four or five contacts, whose names were mentioned. The introduction was also informal and friendly in tone.
5. **Questionnaire**

   The questionnaire had mainly close-ended questions, written in an informal style, and some of them had rating scales.

6. **Topic salience**

   The topic, which dealt with email user behaviour towards forwards, spam, bulk mail and mail from strangers, was considered highly interesting and relevant.

7. **Findings**

   The effectiveness of the purposive snowball sampling method with high topic salience was measured against the number of responses received as against the number of expected responses, and the time taken for the responses to arrive.

i. **Response**

   The purposive snowball sampling method was successful in achieving more than the expected number of 50 responses.

ii. **Time**

   a) The experience of the researcher shows that most responses come within a few days to a week. Therefore, post-notification was done within three days of sending the questionnaire.

   More than three reminders were avoided for phase I respondents, phase I online field aides, and for phase II respondents. The entire survey can be completed in three weeks.
The purposive snowball sampling method takes longer than the regular email survey. However, this method is ideal for a large population survey where respondents are normally spread out geographically.

**Advantages of the purposive snowball sampling method for email survey**

- Purposive snowball sampling can be representative of particular strata of people if the required strata are clearly defined, identified and targeted for response.

- Purposive snowball sampling can be used to collect data from a large population of email users.

- Purposive snowball sampling can be used in more than two phases, where the respondent of one phase in turn takes on the role of online field aides for the next phase. But it is imperative that pre notification is done and prior assent taken from the respondent before he/she takes on the role of online field aide.

**Disadvantages of the purposive snowball sampling method for email survey**

- The control of the researcher over data collection and sampling is weakened after phase I, especially when it comes to pre-notification and post notification.

- If the rules of strata are not followed strictly, it may result in wastage of data collected.
The Postal mail as a survey tool

The study has shown that the postal mail is not a viable survey tool in India, in terms of response rate, cost and time.

Use of the postal mail is not recommended, even in a mixed mode survey.

Applications of the Study

Though research in this area is being conducted for the past four decades, not much has been done in India. In fact, the researcher did not come across a single such study done in India, targeting Indians as respondents.

1. The researcher has suggested a model for successful email surveys for a large population of email users, using purposive snowball sampling.

2. The sampling method used in Study C was successful in getting 57 responses as against a target of 50. Cost incurred was low and responses came within two days to less than a week.

3. The present study has shown that the telephone can be used successfully for surveys in India.

4. Research in the US has shown decreasing response rates to email surveys. The main Study also supports these findings, in an Indian context.

5. The Study further tried to find out why email users are unwilling to respond to email questionnaires. The findings help throw light on opinions and attitudes of email users, and emphasises that they respond to email questionnaires only if sent by known people.

6. The present study also shows that as elsewhere in the world, the effectiveness of postal mail survey is low in terms of response rate, costs and time; thus making it old and obsolete.
Recommendations for Further Research

1. Study the effectiveness of using mixed survey modes for adequate response rates using random sampling. This necessitates that the research has more than one contact information about the respondent.

2. Study the role of incentives in increasing email responses

3. Conduct studies to test the effectiveness of computers (off-line) as survey modes, in shopping complexes and other public places in India.

4. Conduct studies to test the effectiveness of the mobile phone as a survey mode.

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