

DEVELOPING AND TESTING ALTERNATIVE TECHNOLOGIES FOR THE UK NRS

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Summary

Since July 1992 the UK National Readership Survey has been conducted by Computer Assisted Personal Interviewing (CAPI). RSL has been the pioneer of this method for readership research. Instead of a pen and paper questionnaire, the interviewer has a laptop computer which controls the interview. The respondent's prompt materials, including publication cards, are on paper. In the five year period since CAPI was introduced, both technology and our experience have moved on and it is time to look at the next generation of CAPI. This would have all of the show materials on the computer to be controlled in the interview either by the interviewer or by the respondent him or herself. The interviewer controlled show material on computer would represent a big step forward in terms of control, efficiency, accuracy and flexibility. The respondent controlled interview opens up even greater possibilities, a revolution of the current interview structure. It would reduce interviewer influence on the interview to zero.

At RSL we have developed the double screen CAPI system and have conducted a small-scale field pilot with it. We have also developed the touch screen pen pad and the touch screen audio systems which we have tested qualitatively in hall tests along with the double screen CAPI and the current CAPI system as used for the NRS.

On the basis of this developmental work, we see immediate potential for the NRS in the double screen CAPI. We also see great potential for the future NRS in the touch screen self-completion system either with or without audio.

Background

CAPI was introduced to the UK NRS in July 1992, with a number of key benefits over the pen-and-paper interview system:

- The elimination of the data entry stage and the speed of interview transmission by modem meant faster reporting.
- The increased control over the interview by the computer programme led to increased data quality.
- Data quality was further enhanced by higher levels of response to certain sensitive questions such as income.
- And CAPI lent a certain professionalism to the interviewer's task.

However, there are still aspects of the CAPI process where improvements and efficiencies could be made. For example:

- There is still a considerable amount of paper work such as the sample issue sheets and interviewer call records.
- All of the interview show materials are on paper, including the publication prompt cards: whilst the CAPI programme controls the order of asking the titles, we rely on the interviewer to ensure that the order of the card pack is correct.
- Apart from enhancing the current interview, we are also looking for new capabilities which could open up new or more complicated measurement opportunities than we currently employ. This could include more sophisticated filtering within the interview, issue or cover recognition, page traffic, sections readership and so on.

We believe that the advanced technology can help enhance the CAPI interview still further and open up new possibilities for the future.

Issues

There are a number of issues to consider when weighing up the pros and cons of alternative technologies.

- Is the interviewer a good or a bad thing? There has been much debate at previous Symposia on the subject of the "interviewer effect" or, in other words, the bias that the interviewer introduces into the interview on account of the way in which he or she administers the questions. On the other hand, received wisdom tells us of the importance of rapport building which the interviewer's presence allows for helping the respondent's understanding of the task.
- The degree of computer literacy across the population must also be taken into account: any future system must not be prone to any technophile/technophobe bias and should be at the lowest common denominator level of userfriendliness.

- Data accuracy is clearly a key consideration: we have observed improvements with CAPI and would look for even more improvements with a future system.
- Length of interview is an important factor both in relation to response rates and the economics of fieldwork time. However, we should remember that in comparing alternative technologies we are not necessarily comparing like with like in this respect.
- And finally alternative systems must be measured in terms of achieved response rates: different levels of acceptance/ rejection of a given interview system may be a contributory factor, as well as length of interview.

The Methods

RSL have developed three alternative methods applied to the NRS, all of which employ enhanced computer technology.

The first is the **double screen CAPI** system. In addition to the interviewer's standard laptop computer, as used in the current CAPI interview, a separate screen is used to present the show materials to the respondent. The respondent screen is connected to the interviewer's computer by means of either cables or a radio modem link, and it is the interviewer and the interviewer's computer which controls what appears on the respondent screen.

The second system we have developed is the **touch screen pen pad**. This is a very different approach from either of the CAPI systems as it relies on a self-completion methodology: the questions, the response frames and the show materials are all presented on the one small screen and the respondent indicates the responses by 'touching' the appropriate response boxes with a special 'pen'.

The third system is an adaptation of the touch screen: the **touch screen audio** system. Again, this is a self-completion approach using a pen to 'touch' the appropriate response boxes on the screen. However, rather than the questions appearing as text on the screen they are asked as speech via an audio-recording. For the purposes of the development work, we used a desktop PC, a 'tablet' with audio capabilities not currently available on the market; however, we believe that this technological development is only around the corner.

Testing

We have undertaken two phases of testing: a field test of the double screen method and two hall tests to test and compare all of the alternative methods.

The field test of the double screen system comprised 12 nationally distributed points with pre-selected addresses and all sampling procedures in line with the current NRS. NRS and CAPI trained interviewers were used for the test. A total of 82 interviews were achieved. The interview data allows us to look at gross readership results as well as response rates and interview timings.

Two hall tests were held to compare and contrast the alternative methods: they were in Uxbridge in the South East on two separate weekdays. Respondents were recruited into the halls using quotas on age, sex, social grade and working status to achieve a spread of the population. A total of 40 respondents were interviewed, 11 on each of the three alternative systems and seven on the current CAPI system. Interviews on each system were curtailed after 30 minutes after which respondents were debriefed on their experiences of the interview and shown the alternative systems to gauge their comparative reactions. Respondents were offered a cash incentive for their participation.

Findings

As the **double screen CAPI** underwent a greater degree of testing we have more detailed findings than on the touch screen systems. First, let us look at the results of the field test. An overall response rate of 40% was achieved. Whilst on the face of it this appears disappointing, we believe that most of this shortfall was accounted for by teething problems with the new system (indeed when CAPI was first introduced a similar downward trend in response occurred which seems to support this hypothesis). Other indicators were fairly positive: the achieved demographic profile was broadly in line with the demographic profile recorded on the current NRS; machine timings indicated an interview length which was, if anything, slightly shorter than the current CAPI interview; and gross readership results of the major publication groups were in the right order of magnitude (although we cannot strictly compare given the small sample size of the test and the fact that the data are unweighted). In total, the readership results compared with NRS results, were as follows:

Index of Readership
(NRS July 1996 - June 1997 = 100)

	RPY	AIR
All publications	105	101

(Base: 82 double screen CAPI interviews)

There are 'pros' and 'cons' of the **double screen CAPI**, based on our observations as well as on interviewer and respondent feedback.

The 'pros' were as follows:

- The order of presenting the show materials is controlled by the computer (which represents a huge advantage over the current CAPI).
- There are innumerable options for how to show stimuli to the respondent compared to paper show materials, for example: titles can be shown first as a group then individual titles can be highlighted within the group; for the detailed readership questions an individual title masthead can be enlarged; and alternative response frames, for example for source of copy, can be shown on the screen alongside the title to which they apply. All of these enhancements serve to focus the respondent's attention more clearly on the specifics of the question which should in turn lead to increased data quality.
- The interview was observed and also perceived by interviewers to be more efficient than the current CAPI method; and indeed this was supported by the machine timings of the field test.
- A contributory factor to the improved efficiency was the lack of paper show materials to handle.
- This in turn contributed to the more sophisticated image of the double screen CAPI compared to the current CAPI.
- As regards the interviewer presence: from the respondent's point of view the second screen had the benefit of depersonalising the interview process compared to the current CAPI (as though the interview was between the computer and the respondent) and this could help with levels of response to the more sensitive questions; and on the other hand the interviewer's presence was a benefit in that he or she controlled the pace of the interview and was on hand to answer any queries the respondent might have.

The 'cons' of the double screen were seen particularly in comparison to the touch screen self-completion methods and they were very much from the respondent's point of view:

- The lack of perceived privacy on account of the interviewer's presence.
- It seemed less fun than the touch screen 'do it yourself' methods.

However, compared to the current CAPI the benefits of the double screen CAPI are clear, as seen from the list of 'pros' above.

The 'pros' of the **touch screen pen pad**, based on the hall test findings were as follows:

- It was more private for the respondent.
- It could be done at respondents' own pace.
- It was more fun and interactive than the interviewer-administered methods.

The main drawback, however, of this method was that the interview was observed as being much longer than all of the other systems. This was partly on account of the lack of an interviewer to maintain the pace and partly on account of respondents taking longer to read the questions than to listen to the interviewer or a recorded voice reading out the questions.

A contributory factor was the fact that we had tried to "translate" the current NRS interview structure into the new technological variants - that is preserving the procedures of the readership questions, from card sort to read-past-year to recency and frequency and finally to sections and quality of reading questions, as closely as possible to the current NRS CAPI interview. This is clearly not the ideal for the self-completion method. Further work is needed to make what appears on the screen look more attractive, logical and efficient. Too long an interview would possibly result in greater order effects than would be desirable.

The **touch screen audio** system shared all of the benefits of privacy, respondent control and the interactive element of the touch screen pad, plus the added benefit of the voice: it offered some novelty value but also an important human element; it was more effective at focusing respondent's attention on the question in hand (compared to the on screen questions); and, as a result, it maintained a faster interview pace. Whilst the respondent was in control of when to move to the next question, the voice gave greater urgency to this than was the case with the self-completion pad without audio.

Both touch screen methods, with or without audio, would be likely to take longer than the current CAPI and the double screen CAPI systems, mainly due to the lack of an interviewer presence to keep the interview moving forward and guide the respondents through the questions. Additionally, the self-completion methods were observed as being more prone to respondent misunderstandings and response errors without the interviewer there to clarify and guide. However, this interviewer control was seen by many respondents as a "pressure" on them, sometimes resulting in hastily given and perhaps false claims. We should be aware that our current judgment is very much based on criteria relating to the existing CAPI system and this should not be a

constraint for the future: length of interview is not necessarily a negative if respondents are able to complete the interview at their leisure and therefore consider their answers more carefully; dispensing with the interviewer may bring benefits in terms of fieldwork efficiency; and whilst we should be aware of the difficulties of asking complex questions in a self-completion format, future developments should be approached from the point of view of a complete re-design of the interview for self-completion, incorporating simpler questions and clearer guideline, rather than translating the current NRS interview procedures.

Conclusion

The developmental work we have conducted to date has been an extremely educative process. We were able to compare and contrast several alternative technologies at the same time. Our initial conclusion is that the double screen CAPI, with the many benefits over the current CAPI system is a real possibility which could be introduced into the current NRS framework of sampling and interviewing immediately (pending a larger field test for reassurance). It is technically ready and seems to find both respondents' and interviewers' acceptance. Testing the touch screen methods has, however, opened our eyes to the longer term possibilities of a self-completion methodology for the NRS, perhaps in the context of a mixed method approach of sampling and recruiting for different population groups. Removing the interviewer influence has methodological as well as economic advantages. With the two touch screen methods, we have the choice between the audio and the non-audio version. The audio version on current assessment seems to offer greater clarity on the screen and better pacing of the interview. The non-audio version might be easier to implement technically. However, for both versions, more work needs to be done.