

# DIVIDE AND UNITE - SPLITTING THE SUMMOSCANNER AND DATA FUSION

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## Introduction

This paper will deal with the latest developments of the SummoScanner, the national readership survey in Holland. The following topics will be presented in the paper:

1. The unsuccessful attempt to limit the number of publications measured in the SummoScanner to a maximum, by denying access to new titles. This was prohibited by anti trust legislation.
2. The declining willingness of the public to participate in (lengthy) survey research. It was demonstrated by analyses in cooperation with the University of Amsterdam that attempts to stop the declining response rate had a negative effect on the overall level of print readership outcomes.
3. The test SUMMO is performing to deal with the problem of questionnaire overload by splitting the measurement of print media in two halves and then merging the data afterwards by means of a data fusion.

## Some History

In the paper "The importance of being constant" (Tchaoussoglou, Van der Noort, Berlin, 1995) the problem of questionnaire overload was dealt with in relation to declining readership figures. It was shown that adding questions over a period of time in the telephone interview had a negative effect on the readership results, despite the fact that these questions were added in the second half of the interview. i.e. after the print media questions. Interviewers play a crucial role in this relationship; Interviewers are paid per hour and have nothing to gain from speeding up the interview. But knowing how long the interview takes, they have to deal with the increasing pressure to keep the interview within acceptable time limits for the respondent.

Telephone research may seem more sensitive to questionnaire overload, but the negative relationship between questionnaire length and survey results was also convincingly demonstrated for face to face research in the paper "The interviewer effect on readership levels" (Gregg Lindner ea., Berlin, 1995)

The lessons SUMMO drew, were first to keep the questionnaire as constant as possible, not adding anymore 'nice to know' topics or questions for individual SUMMO members. Second the declining readership results facilitated the transition from the FRY-method (for over 10 years the trademark of the SummoScanner) to a more 'conventional' Recent Reading method (Tchaoussoglou, Van der Noort, Vancouver 1997). Since it was in particular the 'first time read yesterday' question that suffered from instability.

## SummoScanner: Some Backgrounds

In this paragraph some basic background information is given about the SummoScanner, the national readership survey in the Netherlands. The telephone survey SummoScanner is an ongoing measurement of the readership of print media together with radio listening, television viewing and a broad range of socio-demographic data. The annual sample amounts n=24,000 persons of 13 years and over. Target group data are collected single source by a mail, self-completion questionnaire. This 'Doelgroeponderzoek' (Target Group Survey, n=12,000) is issued as a separate database with all SummoScanner data linked to it. The average issue readership in the Target Group Survey is calibrated on the outcomes from the SummoScanner.

The interviewing time for the telephone SummoScanner depends heavily on the number of titles a person reads and varies mostly between 20 and 40 minutes. After a couple of introductory questions, the interview starts with the general filter 'do you ever read'. This question is asked for:

- 10 national dailies
- 46 regional dailies (only the relevant ones per region are asked)
- 112 weekly, fortnightly and monthly magazines

After passing the 'ever read' filter, the media questions involved are recent reading (*when last read*), source of copy, time spent reading (*yesterday readers only*), recent or older issue and frequency of reading.

The net average interviewing time is 27 minutes, which is divided as follows:

Print media	13 minutes
Radio, television etc.	7 minutes
Socio demographics etc.	7 minutes

### Again Declining Readership Results

The SummoScanner results published in August 1998 covering the preceding year (1998-II/1999-I) showed an overall decline in readership levels. For dailies the relative decline in average issue readership was on average 6% and for magazines 10%. Since circulation figures were on average stable, the major publishers asked SUMMO to investigate the cause of this apparent discrepancy. This study was conducted under the guidance of an independent consultant from the University of Amsterdam.

The detailed analyses showed that, although some negative market developments in non-subscription readership were not unlikely, two external factors also contributed to the decline:

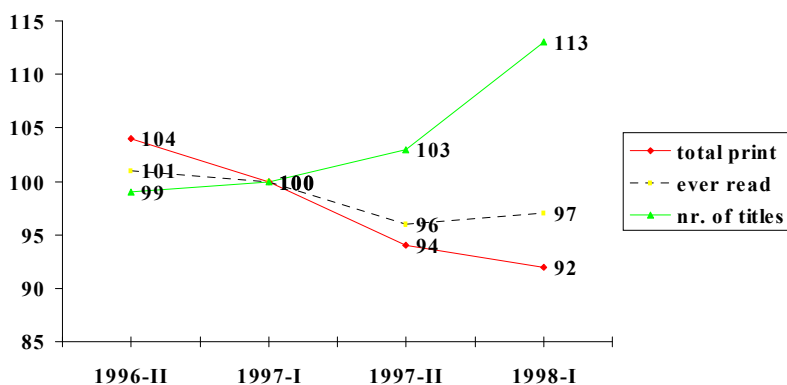
1. The growing number of titles measured in the SummoScanner
2. The declining willingness of the public to participate in (lengthy) survey research.

The effects of these trends will be discussed in more detail in the next paragraphs.

### Number of Titles

Keeping the questionnaire as constant as possible seems a relatively easy thing to do, but of course any media survey has to adapt to the changing media scene. SUMMO had especially to ‘cope’ with it’s own success: a growing number of (mainly special interest) titles wanted to be measured in the SummoScanner. In the space of one year (from 1997 till 1998) the number of magazine titles measured had grown from 96 to 108.

Interviewing time and number of titles



Despite this 13% increase in number of titles to be measured, the interviewing time for the print media section declined 8%. This can largely be explained by the decline in the number of screens. When less respondents pass the filter, the print media section of the questionnaire takes less time; so the decline in interviewing time could reflect a real change in readership levels.

The interviewing time needed to ask the ‘ever read’ filter question remained constant at 5 minutes, but this means that per title less time is taken.

Comparing the SummoScanner with a balloon, it looks like we have reached our maximum volume. Pumping more air in it does not inflate the volume anymore it only increases the pressure. In other words adding new titles in media research has an adverse effect on the screening of existing titles.

The variation in screen-in rates and its effect on average issue reach is well documented in the Readership Research Symposia. The soft definition of readers we have been using for a long time in the Dutch readership surveys (and which time again proves not to be open for discussion among publishers) certainly adds to this problem. 'Which of the following publications do you ever read or look in, it does not matter where (at home, at work, neighbors, family or elsewhere) even if it is only once in a while'. It's evident that such a question is open to different interpretation. The more titles you ask, the less inclined a respondent will be to give a positive response.

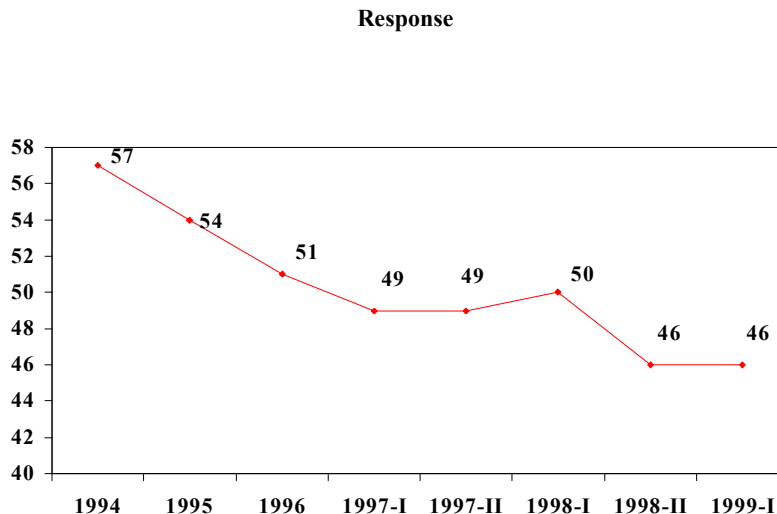
In the arrangements made between SUMMO and INTERVIEW♦NSS the maximum number of magazine titles to be measured was set at 90. This number was set as a sort of guarantee of the quality of the interview. Having passed well beyond this limit and being confronted with the problem of declining readership results, the Board of SUMMO then issued a title stop: new applications for measurement in the SummoScanner would no longer be accepted.

It is evident that this offered no real long lasting solution that could last long, since the members of SUMMO (especially the agencies) really want more titles to be measured. Moreover a publisher of a new business magazine, confronted with this 'title stop', made a complaint to the Dutch Anti Trust Authority, arguing he was blocked from fair competition on the advertising market. This complaint was judged sound and so SUMMO was forced to find a solution.

### Response Levels

The declining willingness of the public to participate in surveys forms a growing problem for research agencies. Telephone research especially suffers from the negative effects of the increase in telemarketing activities.

In the graph below the response rates for the SummoScanner in recent years are shown. The response rate was still at a level of 57% in 1994 and declined at a rate of 3% per year, dropping under 50% in 1997.



Stopping this decline in response rates became a high priority in the second half year of 1997. This was done by further training the interviewers and stressing the importance of a good response. One of the performance criteria for interviewers to qualify for the SummoScanner became also his/her ability to persuade people to participate. Interviewers with too low response rates were no longer selected for the SummoScanner. As can be seen in the graph, this policy was more or less successful: during the second half of 1997 and the first half of 1998 the fall in response levels indeed was stopped.

Not foreseen however was the fact that these actions had a negative effect on the readership levels. It turned out in the analyses afterwards over this period, that there is a negative correlation between the response rate of an interviewer and the average number of screen-ins the interviewer registers. The reason for this could be that by persuading people to co-operate, who actually

don't feel much for it, an extra time pressure is felt to keep the interview within acceptable time limits. It may also be that people inclined to refuse, indeed score lower readership levels. An indication of this is the fact that the readership levels among SummoScanner respondents who also participate in the mail Target Group Survey are higher than among those who refused to participate in the Target Group Survey.

This relation between response rates and research outcomes was also demonstrated in an experimental research by Pondman & Smit (in: Smit E. G., Mass Media Advertising, Amsterdam, 1999). Two groups of interviewers were compared, one group was especially trained in getting people to participate in the survey and the other group was not. It turned out that the measured advertising recall in a lengthy questionnaire was significantly lower in the response-trained group.

### Short-Term Solution

The results of this study in combination with the need to extend the media list made it urgent to find a short-term solution. It also gave impetus for the search for alternatives, starting experiments with CAPI and self-completion via Internet.

For the short term it was proposed by INTERVIEW♦NSS to split the telephone data-collection of the SummoScanner into two separate parts, asking only half of the number of titles in each part. These two databases would then be merged afterwards by means of a fusion procedure.

The aim of splitting the SummoScanner is twofold:

- improving the quality of data-collection by reducing the length of the questionnaire for respondents
- making it possible to extend the list of publications measured

The splitting of the data-collection into two parts could offer a solution for the problem of declining readership and response levels and would make room for new media to be measured. This is always with the proviso that the fusion procedure indeed could reproduce the single- source database to an acceptable degree. This latter was tested beforehand using the existing database of the SummoScanner.

### General Design of the Split and Fusion

The general design of the split of the SummoScanner was as follows

- Total sample size will be raised from n=24,000 to n= 32,000.
- Splitting will result in two totally equivalent telephone surveys (Scanner-1 and Scanner-2) in terms of sample design, fieldwork procedures, average interviewing time etc., each with a yearly sample size of n=16.000.
- The measurement of print media in each survey should contain homogeneous groups of print media (for instance dailies, women's monthlies, PC magazines etc.). So titles that belong to the same category are kept together in the same measurement.
- Other questions (TV , Radio etc) will also be divided over the two surveys, except for a block of common socio demographic variables needed for the fusion.
- The fused database will contain 32,000 records with, for each respondent, a complete (partly ascribed) data-record .
- Reading probabilities will be calibrated and based on the AIR measured before fusion (i.e. based on a sample of n=16,000).

The choice of common variables posed us with a dilemma. Media behaviour should be preferably included in the common fusion variables. On the other hand interviewing time for common variables should be as limited as possible.

The solution for this, was to test a *four way split design* for the print media:

- Print media are divided in 4 sets: A, B, C and D
- Scanner-1 is split in two variants: AB (n=8000) and CD (n=8000)
- Scanner-2 is split in two variants: AC (n=8000) and BD (n=8000)

Four fusion's are performed:

- AB with BD, exchanging A and D
- AB with AC, exchanging B and C
- CD with AC, exchanging A and D
- CD with BD, exchanging C and B

In this way it is possible to use in the fusion a large number of common media information (frequency claims). Each respondent however is still asked about only half of the titles.

The following groups were made:

*Set A:*

national dailies  
youth/music magazines  
hobby magazines

*Set B:*

general/women's weeklies  
sport/football magazines  
child care/ health magazines

*Set C:*

Radio TV magazines  
Automobile Association magazines  
Glossies

*Set D:*

Car magazines  
Opinion/business magazines  
Other magazines

Regional dailies are measured in the whole sample. The same goes for very small publications for which the sample of readers based on n=16,000 would become too small.

### Testing the Split and Fusion

To test whether the fused database indeed gives a good reproduction compared to a single source measurement, the split design was simulated on the existing database of the SummoScanner, randomly splitting a sample of n=32,000 and then performing a fusion according to the above design. The results of the fused database could then be compared to the original single source database.

This test should give the following answers:

1. what is the best set of common socio demographic variables for performing the fusion
2. How well will the overall general outcomes be represented after fusion?
3. How well are relations between variables represented?

The test would especially focus on:

- AIR of titles in specific target groups not controlled for in the fusion procedure.
- Duplication between titles and cumulation of reach.

The fusion test was performed by Sesame Systems Ltd. Their ascription methods are based on the widely documented and endorsed 'hot-decking' method, with added refinements for better control of media results.

### Results of the Test

The results of the test were very encouraging.

The fusion variables used were sex, age, standard of living, urbanisation, education level, marital status, frequency of TV viewing, frequency of radio listening, frequency of reading of common print titles.

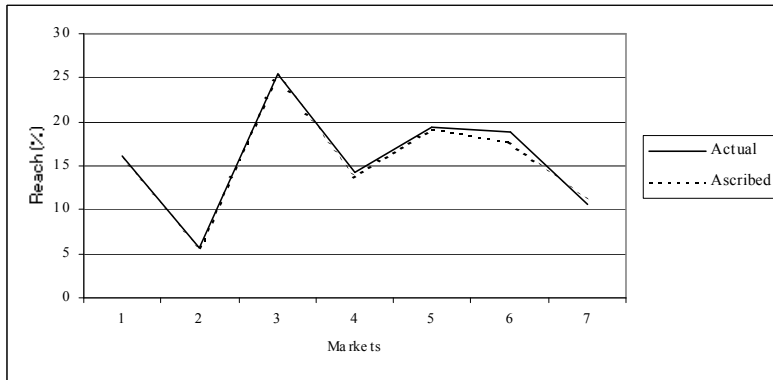
We tested average issue reach, total reach and duplication for all titles for the following target groups:

- 1 All
- 2 Male, 25-49
- 3 Female, high standard of living
- 4 Car owners Opel
- 5 Responsible for daily shopping and customer of Albert Heijn supermarket
- 6 Frequent viewers RTL-4 (commercial TV station)
- 7 Frequent cinema visitors

The markets 4 to 7 are not controlled for in the fusion. On the whole the results from the fused database matched very well with

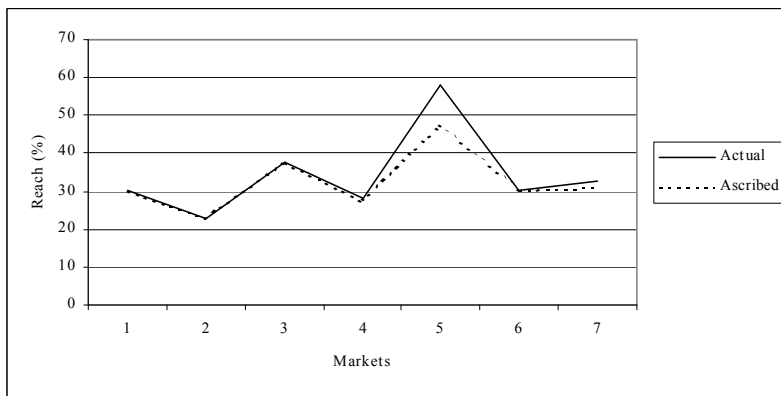
the original database, both for reach levels and duplication. In the graphs below two examples, based on average issue readership, are given for two magazines: Margriet, a women's weekly and Allerhande, a free monthly magazine distributed by Albert Heijn in its supermarkets.

**Margriet**



The results for Allerhande showed one of the few instances that for very specific target groups the ascribed results might give under-estimation, leading to a somewhat less marked readership profile. In this case market 5 consists of clients of Albert Heijn, where the magazine Allerhande is distributed.

**Allerhande**



Although the overall results of the test were very convincing, the publishers of special interest magazines in particular feared that results in their specific key markets would suffer from the fusion.

Based on the test results the following decisions were made by SUMMO.

- Starting from July 1999 the four-way split design is implemented for the SummoScanner.
- Further analyses will be performed for key target groups specified by the individual members
- Further improvements will be made by means of calibrating results for key target groups.

These further analyses and refinements will have to be completed by the end of this year. In March 2000 the first publication based on the fused SummoScanner database can be expected.

