

NEWSPAPER SECTIONS - A CHALLENGE TO MEDIA PLANNING

Kristian Arnaa and Rolf Randrup, Gallup, Denmark

Introduction

Comparing the level of information it seems that the difference between television and print is overwhelming and that the difference increases. Planning and buying of TV space are based on ratings of any TV station at any interval within a duration of a few seconds. The advertiser plans, buys and pays in accordance with number of viewers of the spot. Within print, however, we are in an entirely different world. We plan and buy according to probabilities of having been in contact with the vehicle which carry our message, based on historic data of 6 or 12 months averages. We might disagree on measurement principles - recency, frequency, going-through-the-book, etc. - it is of minor importance compared to the fact that print audience measurement are generations behind TV measurement in richness of details and relevance.

It seems unlikely that this gap will decrease. On the contrary, development within especially the newspaper-area illustrates this. During the recent years newspapers, all over the world, are more and more consistently divided into sections. In this context we are not concerned with weekly or sporadic supplements but with regular and/or daily sections which deal with their own topic, typically News and Debate, Entertainment, Business, Sports, Home and Garden etc.

In Denmark all Sunday papers are divided into sections. The largest consist of no less than 8 different parts, each functioning as an independent unit. As to weekday papers more than 75% of the total circulation of all newspapers are divided into separate sections, - only small or local papers have remained as one unit.

The first section readership measurements were conducted in 1991 by Gallup and it showed a tendency which has intensified over the years: the sections now appear to be independent units with their own separate audiences and own profiles. This fact makes the traditional AIR figure of the newspaper as one unit rather irrelevant as a planning factor, it might even be misleading. A new, generally accepted measurement system which takes into account the new situation, has not been developed. This leaves print behind in an information vacuum during a period where TV ratings are more accurate and detailed than ever. One cannot help suspect - highly subjective, admittedly, - that the print media has lost fortunes to the TV media, solely, because of the absence of attractive and operational tools.

Measuring Section Reading

Over time various methods have been used to measure sections and supplements in newspapers and magazines. The methods which Gallup have used over the latest years are described below.

Page-Traffic Measurement by Face-to-Face Interview

The earliest surveys about newspaper section reading in Denmark were conducted as ad-hoc face-to-face interviews and were not an integrated part of neither NRS nor TGI.

One of the advantages of the face-to-face method is that the interviewer can bring along the newspapers and sections they wish to have examined. Thus one does not depend on whether the respondent possess the issue, and in that way it is possible to measure out-of-home reading.

Another advantage is that the risk of misunderstandings of which sections the questions concern is reduced, as the interviewer and the respondent are looking at the same newspapers.

A third advantage is the ability of obtaining more detailed information on editorial contents as well as on advertising page by page.

One of the disadvantages is that in case of measurements of many different newspapers/sections, it might be too extensive for the interviewer to carry all the relevant material. This might be solved, if only questions about the newspapers and sections which the respondent has at hand are asked.

Page-Traffic Measurement by Telephone Interview

Until 1990 all page-traffic research in Denmark were conducted as face-to-face interviews, but in 1991 Gallup developed a method for page-traffic surveys, including measuring of sections, by means of telephone interviews.

This development was based on cost considerations and the wish for more continuous surveys of reading of newspaper sections and the constantly increasing number of sections and supplements. Approx. 5,000 interviews were conducted per year about sections.

The following questions about all or a selection of newspapers read the previous day were asked.

1. Was it the issue from yesterday you read?
2. If yes: Do you have the paper at home?
3. If yes: please fetch the paper, then I will ask you some questions about various items in the paper?
4. If fetched: Most papers are divided into sections and I would like to know which sections you read or looked at yesterday? (INT: Read out the titles of each section and ask whether the person read or looked in each section)
5. If fetched: Now I will ask you to look at page xx in section yy. Have you read or looked at anything on this page, no matter what?

The method proved to have a number of advantages. It was not as cost heavy as the face-to-face interviews. Interviews could be designed and changed on a day-to-day basis. Number of papers asked about could be reduced to a fixed number by use of filters. In time this became more and more essential due to the constantly increasing number of newspaper sections.

Consequently one of the important advantages of the page-traffic technique, the quality of recognition level, were exploited. On the other hand one of the disadvantages was the lack of measuring out-of-home readership or readership among respondents who did not possess the paper.

Therefore the results were primarily based on buyers and subscribers. This was particularly a problem for newspapers with large share of work place reading (Business-papers). It was unknown whether reading patterns out of home were different compared to in-home reading.

Despite this uncovered areas the system was quickly accepted among the users. By now, the first continuous section measuring in Denmark was initiated.

Claimed Reading Measurement by Telephone Interview

During the period 1991 to 1995 a need to include information for the group of respondents, who for one reason or another were not able to fetch the paper, emerged. The need emerged, because of the increased polarisation between in-home and out-of-home reading.

The request was met as from 1996, where the questioning was changed. The respondents were no longer asked to fetch the paper, and instead all respondents who had read yesterday's paper were asked which sections they had read. Furthermore the number of interviews were increased to approx. 20,000 interviews per year.

In order to ensure that the correct sections were measured, the question was extended, so that the interviewers mention both the section number, section title and in some cases also described the content of the section. However it was still not possible to check whether the respondent and the interviewer referred to the same item. It might be a wrong paper or the correct paper but from the wrong day.

It was no longer possible to ask about reading of specific pages properly.

In principle measuring changed from page-traffic technique to claimed readership. How did this influence on findings? It turned out that if the respondents who presumably would have been capable of fetching the paper have they been asked to (subscribers and buyers) were isolated, the results from this group would be in line with the previous results.

Thus it was accomplished to develop a measuring method where section reading could be measured among all groups of readers by telephone interviewing.

Comparison of Page-Traffic and Claimed Reading

In order to test the two methods a pilot survey was conducted. The respondents who could fetch the paper were asked to do so and an ordinary page-traffic was made. The group who was unable to fetch the paper was asked whether they had it at home and under all circumstances they were asked about section reading.

Consequently the hypothesis was that the reading based on page-traffic should be on the same level as reading for all who had the paper at home, but could not/did not want to fetch it, whereas the results might deviate for the group not having the paper at home.

The table below shows the results for all daily papers put together. The first group is the respondents having fetched the paper, the second group are those who are having the paper at home, but who for one reason or another did not fetch it, a third group is those who did not have the paper at home, while a fourth group is an average of them all.

Table 2.1 - Comparison of people fetching and not fetching the paper

Section	Fetches paper (page-traffic)	Have paper at home, not fetched (claimed reading)	Do not have paper at home (claimed reading)	All respondents
Number of interviews	1364	494	2398	4302
1. section	92%	89%	87%	88%
2. section	83%	81%	72%	76%
3. section	60%	59%	57%	58%

Source: Gallup Pilot-study 1995.

As it appears, the difference between the two first columns is minimal. It can therefore be concluded that the difference between fetching the papers and not is not essential. Consequently page-traffic technique was replaced by claimed reading which includes in-home as well as out-of-home reading.

Connection to National Readership Survey

The interviews are not collected single-source with Index Danmark/Gallup (NRS). This is due to the fact that the total interviewing time would be too lengthy and lead to a reduced response rate. The information can therefore be used together with NRS in three ways. Firstly the information can be used as a supplement in connection with the detailed media planning, secondly the information can be merged/ascribed in Index Denmark/Gallup and thirdly the information can be used in a simulation model.

This is described in chapter 4.

Findings - Audiences and Profiles

In the previous section the methodical considerations which Gallup in Denmark has undertaken are reviewed together with the continuous measurement of section reading, which now is part of the National Readership Survey, Index Danmark/Gallup. The table below is a part of the latest database, 1st half-year 1997, stating some data which are typical to the market and which illustrate the kind of problems facing media planning.

Table 3.1 - Section Readership. Percentage of AIR: Berlingske Tidende, Sunday

	Total	Men	Women
Number of interviews	452	233	219
Section 1: News	91%	92%	90%
Section 2: Sports	47%	63%	30%
Section 3: Culture	75%	73%	77%
Section 4: Background, features	53%	50%	57%
Section 5: Food, fashion, holiday	62%	58%	67%
Section 6: Homes, real estate	47%	45%	49%
Section 7: Business	56%	64%	47%
Section 8: Cars	36%	57%	15%
Read at least 1 section	100%	100%	100%
Read at least 2 sections	90%	93%	88%
Read at least 3 sections	84%	87%	82%
Read at least 4 sections	73%	76%	70%
Read at least 5 sections	56%	61%	50%
Read at least 6 sections	37%	46%	28%
Read at least 7 sections	20%	28%	12%
Read at least 8 sections	9%	12%	5%
No. of sections read (average)	4.7	5.0	4.3

Source: Index Danmark/Gallup 1st half year 1997.

Table 3.2 - Section Readership. Percentage of AIR: Jyllands-Posten, Sunday

	Total	Men	Women
Number of interviews	570	315	255
Section 1: News	94%	95%	92%
Section 2: Background, feature	71%	72%	70%
Section 3: Culture & TV	72%	71%	74%
Section 4: Jobs & Money	63%	60%	45%
Section 5: Traffic, cars	44%	63%	19%
Section 6: Leisure, holiday	58%	61%	54%
Section 7: Local news	38%	42%	33%
Section 8: Better homes	34%	34%	34%
At least 1 section	100%	100%	100%
At least 2 sections	94%	97%	90%
At least 3 sections	87%	90%	82%
At least 4 sections	72%	79%	64%
At least 5 sections	55%	62%	46%
At least 6 sections	34%	41%	26%
At least 7 sections	17%	21%	13%
At least 8 sections	10%	13%	6%
No. of sections read (average)	4.7	5.0	4.3

Source: Index Danmark/Gallup 1st half year 1997.

The figures show the reading of sections in the two largest Danish Sunday papers, "Jyllands-Posten" (national coverage 23%) and "Berlingske Tidende" (national coverage 14%). All figures are percentages of the respective newspapers' normal audience figures (AIR). The following conclusion can be drawn from the summary:

1. No section achieve readership figures in line with the general Average Issue Readership. This is a common phenomenon. In Gallup's measurements of all Danish papers' sections in 1997 not a single section had readership in line with AIR.
2. 1st section is always the overall news section, always with the largest audience. The following sections have smaller audiences, depending of the topics and their degree of selectivity. The readership of Sport, Motor, Business is often half or less of the total issue readership.
3. The sections segment the newspaper, primarily according to sex. Sport, Motor and Business often have 2-3 times as many male readers as female readers. Very few newspapers are capable of compensating for this masculine tendency in form of sections with equivalent feminine appeal, thereby the total benefit of the paper to women is smaller than it is to men. Similar differences apply to other areas, especially division according to age. The conclusion is that it is pointless to talk about a particular demographic profile of the readership. The newspaper must be regarded as a common household product. One part appeals to the housewife, a second to the husband, a third to the oldest daughter and a fourth to the oldest boy.
4. Very few - ratio 10% - consume the entire paper with all sections. In average 4.7 of the 8 sections are read, which corresponds to an utility degree below 60%.

The fact that each section has its own readership profile and that nobody has readerships in line with the newspaper's general Average Issue Readership, puts the focus on our usual measurements concepts. What is the purpose of readership figures if the audience is unobtainable? What is the need of information of a general profile of the media if this does not correspond with the profile of the section which is used for the advertisement? In Denmark The National Readership Survey is sponsored mainly by two parts, the media industry and the advertising agencies. From the very beginning the agencies have strongly advocated information on section readership, whereas the attitude among media have been somewhat half-hearted. This reaction is natural. Initiatives that tend to reduce readership figures or increase cost per thousands is considered a handicap in intermedia competition.

However, any professional knows that the number of individuals who observe a particular advertisement is always smaller than the average issue readership. The question is whether reduced readership of sections has an impact on advertising response. The following table is an extract from a database comprising more than 1000 advertisements in the newspaper-group Berlingske Tidende in Denmark.

The table contains findings from tests of 131 advertisements in the news-section and 72 advertisements in the business-section of Berlingske Tidende. The results are recognition figures based on page-traffic techniques.

Table 3.3 - Readership and Advertising Recognition in Two Sections in Berlingske Tidende (weekdays).

	Section 1 News			Section 2 Business			Index Section 1 = 100	
	Readership, percentage of AIR	Recog nition	No. of ads	No. of interv.	Recog nition	No. of ads	No. of interv.	Index
Readership, percentage of AIR	95%			64%			67%	
Advertising recognition								
All advertisements	48%	131	3721	36%	72	3721	75	
Computer, computer equipment advertisements	45%	22	1867	34%	30	3313	76	
Finance, insurance advertisements	47%	16	2457	34%	30	3313	72	
Men, all advertisements	47%	131	1907	41%	72	1907	87	
Women, all advertisements	50%	131	1814	29%	72	1814	58	
Men 35-54, all advertisements	44%	131	678	42%	72	678	95	

Source: Berlingske X-Ray Advertising Test 1st half year 1997. Index Danmark/Gallup 1st half year 1997.

The first line of the table states that 95% are readers of section 1 (News) and 67% are readers of section 3 (Business). All figures are based on the normal Average Issue Readership of Berlingske Tidende. The ratio of readership of the two sections is 67.

The remaining figures are advertising recognition findings of advertisements based on 3721 respondents who fulfil the definition of readership of the particular copy of Berlingske Tidende.

If decreased readership of section 3 compared to section 1 should be directly reflected to advertising response, the ratio of recognition findings should be identical to the ratio of readership, 67. However, the ratio is 75 which indicates that the smaller section 3 audience responds more to advertisements in this section than the bigger section 1 audience responds to advertisements in section 1.

The difference between ratios of readership and advertising recognition is small and might be influenced by differences of types and sizes of advertisements in section 1 and 3. In the table advertisements within specific trades, - computer/equipment and finance/banking/insurance -, are isolated. Advertising of this kind is typical for section 3. However, recognition is only slightly above the recognition of same types of advertising in section 1 taking into consideration the different readership audiences.

Finally advertising recognition is analysed by sex and men aged 35-54. The typical section 3 reader is a middle aged, white collar male which is reflected by the figures. They indicate advertising response in section 3 that equals section 1 within target groups which tie in with the readership profile of section 3.

Although these figures are not of general application - they deal with two sections of a particular newspaper - they correspond findings from hundreds of advertising tests carried out during recent years. Section readership supplies more accurate - and realistic - information on the size and nature of the audience which receive the advertising message than the traditional Average Issue Readership. The audience might be smaller in specialised sections with limited audiences. However, this is not necessarily a disadvantage to the advertiser. If the target group of the campaign is well defined and if it matches readership profile of the section, the advertising message is concentrated towards people who are interested and motivated and who receive the message within the frame of an editorial environment which is helpful to the communication process. Thus the figures show a tendency towards higher advertising recognition figures proportionately in special sections than in general sections which appeal to all readers.

The application of section readership figures does not suggest that the advertiser gets less value for money. The general average issue readership might supply a larger audience. However, the value of this enlarged audience is very limited. It represents readers outside the target group, without need for the product or intentions to buy and readers who even might be irritated to be exposed to the advertisement.

Usage of Measurement of Sections in Media-planning

The purpose of conducting a survey describing the reading of sections is generally to obtain greater knowledge about how papers are read. This knowledge are to be used by the newspapers themselves, editors and for sales and purchase of advertisement space.

The editors can use this knowledge within product development in efforts to include new segments of readers, while the advertisement departments can use this knowledge for more targeted sales activities directed at selected segments/advertisers, as it can help reducing the number of irrelevant contacts by taking into consideration the advertisers target groups.

The space buyers can use this knowledge in their media planning in order to target their campaign to create a maximum effect of money spent.

Sections Regarded as Independent Media

The final goal of measuring sections is to regard each section as an independent medium.

Two main pieces of information are typically used for media planning. The average readership for a random issue (AIR) and questions enabling calculation of accumulated reach.

Measuring the average readership for a section is the smallest problem. It can be established, as shown above, as a percentage of the ordinary readers having read each section or as an ordinary recency calculation (read the section yesterday). These figures can be broken down on a number of sub-target groups depending on other questions asked in the survey.

This information is useful for detailed planning of an overall media plan. By mean of the knowledge of the target group's reading of each section, the media planner can decide in which sections advertisements are to be placed in order to reach the target group in the best possible way seen in relation to the cost. However it is not possible to decide on the number of advertisements in each paper.

On the other hand these information are not sufficient, if it is already on the overall media planning level that information about sections should be included. In order to enable this, it is necessary to know the reading probability for each respondent and each section.

A reading probability is the probability with which a particular respondent will read a random issue of a certain media. A person reading 26 issues of a weekly magazine during a year has a reading probability of 50% or 0,5, since he/she reads 26 out of 52 issues.

Use of Reading Probabilities in General

Calculation of accumulated reach and duplications between several insertions in different media presuppose a knowledge about reading probabilities of each media for each respondent.

The accumulated reach for X insertions in media are calculated based on the formula $1-(1-p(A))^X$, for each respondent and is thereafter summed up for all respondents. In the formula $p(A)$ is the probability of reading media A.

For instance a respondent who has 20 percent probability of reading media A will have 48,4% probability of being exposed at least 1 time (net reach) at 3 insertions in media A. $(1-(1-0.2))^3 = 1-0.8^3 = 1-0.512 = 0.488$.

For most media the reading probability is calculated by means of a frequency question. However, reading probabilities can also be allocated by means of different simulations or by means of panels/diaries.

Below the options and consequences of the various methods are discussed.

Reading Probability for Sections Based on Panels and Diaries

One of the methods which can be used for calculating the reading probability for sections is panel questioning, possibly by means of diaries. In this way an exact number of issues being read during a certain period is illustrated.

This method can only be used for the section being issued every day, whereas it demands a very long panel- /diary period to measure sections which only is issued once a week or more seldom. Another disadvantage of the panel/diary method is that it demands a large sample for measuring even large newspapers.

Reading Probability for Sections Based on Frequency Questions

Another possibility of calculating reading probabilities is to pose frequency questions for each section. This possibility can based on our experiences only be used on the largest, most well-known and frequent sections which have their own titles. This is e.g. the business section of the large national papers. For all other sections, it turned out that there can be an extreme overestimation of reading when frequency questions are used.

When it comes to sporadic sections (sport section on Mondays, going-out guide on Fridays etc.) it is very difficult to answer for the respondents who only have sporadic reading of these sections. The regular readers and non-readers find it considerably easier to answer the question.

One of the main reasons why it is difficult to answer the frequency question is that both the overall reading of the paper, the reading of the paper on specific weekdays and reading of the specific section on the specific weekday have to be recorded by the respondent.

An additional problem is a tendency towards more frequent publishing initiatives, new sections, changes etc. The problem is that the frequency questioning presuppose incorporated habits.

Gallup therefore reached the conclusion that in Denmark it is not possible to calculate the reading probability based on frequency questions for the specific section.

Reading Probability for Sections Based on Simulation

A third method for allocation of reading probabilities is simulation based on other media information. The more detailed information which is available about each respondent, on sociodemographic level as well as reading habits and psychographic level, the more precise his or her probability of reading a random issue of a specific section can be calculated.

The simplest method is to just multiply the respondent's reading probability of the main media (newspaper) with the share who read the selected section. For instance a person who usually has a reading probability of 50% for a newspaper will be allocated the reading probability 40%, in case it is 80% of the readers of the main paper reading the section ($50\% \cdot 0,8 = 40\%$). However, the method is not very precise, as it does not take into consideration the difference between reading of each section from one group of readers to another. It is presupposed that reading of sections are completely randomised.

Another possibility is making the same calculation, but on the actual target group instead of on total level. This method is useful in case the entire target group has the same reading pattern, which is not the case.

A third possibility is for each superior target group to crosstabulate the questions on frequency and on sections and thereby calculate new reading probabilities. See table 3.1. Still this method does not take into consideration that also within the target group there are sub-groups with different reading habits of the section. However, the method is an important step compared to the two methods described above.

Table 4.1 - Example of Reading Probabilities Calculated for a Specific Target Group

1	2	3	4
Answer on frequency question	Number of respondents total	Number of respondents reading the section	Reading probability (3/2)
Read all issues	448	309	0,69
Read almost all issues	212	86	0,41
Read 3 out of 4 issues	128	42	0,33
Read half of all issues	89	26	0,29
Read 1 out of 4 issues	111	9	0,08
Read almost no issues	723	33	0,05
Read no issues	7089	0	0,00
Total	8800	505	0,06

Source: Fixed example

We do not feel that any of the three methods mentioned are completely satisfying and we therefore wish to go further and find a better way of calculating reading probabilities.

First step is to investigate which kind of information and segments that correlate to reading of the specific section. This might both be segments having a significant higher or lower reading of the actual section.

A paper by Roger Beeson discusses whether interest in different topics could be used in measuring Newspaper sections. The conclusion was, that interest alone is not enough. We accept that not only interest but also other criteria in combination can be used in simulation of section reading. (Roger Beeson, Managing Director of National Readership Surveys Limited - UK, 'Topic interest questions and the readership of newspaper section'. EMRO Seefeld, Austria, June 1994)

Below is shown an example which include information about two specific sections: "Kulturmagasinet" (Culture magazine) and "Erhverv" (Business section), both from Berlingske Tidende.

Berlingske Tidende is one of three large national morning papers in Denmark. "Kulturmagasinet" is 2nd section and "Erhverv" 3rd section in this paper on all 6 weekdays. "Kulturmagasinet" contains TV and film reviews, articles about art and culture and radio and TV programmes, whereas "Erhverv" is a business section with news from companies, stock exchange, trade etc.

The share of readers of Berlingske Tidende having read "Kulturmagasinet" is totally 76% and 64% for "Erhverv". However, the share vary considerably when analysing various groups of readers. Only groups deviating from the average are shown.

Table 4.2 - Share of Reading by Selected Mediaquestions

Group of readers	% read "Kulturmagasinet"	% read "Erhverv"
Total	76%	64%
Berlingske Tidende is primary newspaper	83%	67%
Read regularly	82%	65%
Read sporadically	65%	63%
Read at home	81%	66%
Read at work	60%	65%
Buy/subscribe	81%	66%
Received/borrowed	61%	59%
Read Berlingske Tidende less than 15 minutes	55%	43%
Read Berlingske Tidende 16-30 minutes	77%	72%
Read Berlingske Tidende 31-60 minutes	90%	73%
Read Berlingske Tidende more than 1 hour	93%	76%
Read Berlingske Tidende in the morning	93%	72%
Read Berlingske Tidende only at lunch	56%	62%
Read Berlingske Tidende in the evening/night	86%	66%

Source: Index Danmark/Gallup - 1st half year 1997

Table 4.3 - Share of Reading by Selected Sociodemographic Questions

Demography groups	% read "Kulturmagasinet"	% read "Erhverv"
Total	76%	64%
Man	70%	79%
Woman	81%	50%
13-29 years	68%	56%
30-59 years	73%	67%
60 years or older	90%	68%
Basic education	72%	44%
Higher education	84%	70%
Worker	70%	67%
Independent	68%	82%
Work hours up to 20 hours	81%	46%
Work hours 20-50 hours	72%	67%
Work hours above 50 hours	62%	82%
Personal income below DKK 200,000	78%	53%
Personal income DKK 200-400,000	72%	68%
Personal income above DKK 400,000	76%	90%

Source: Index Danmark/Gallup - 1st half year 1997

From the two tables above, it appears that the share of reading for some segments are significant different to the average reader, and that the reading profiles of the two sections are significantly different.

Currently Gallup conduct a number of tests based on the respondent's reply to the frequency question for the newspaper as a whole and the probability generated hereby and his or her other answers about the media. Thereby we are able to simulate a reading probability for the section.

In the case above we have for "Kulturmagasinet" combined primary media (2 groups) with reading period (3 groups) and with sex (2 groups). This gives $2 \times 3 \times 2 = 12$ segments altogether. For each of these is calculated how large share reads "Kulturmagasinet". Each respondent's overall reading probability is then multiplied with the probability for the one of the 12 segments the respondent belongs to.

Table 4.4 - Share of Reading for "Kulturmagasinet" by 12 Segments

Segment no.	Primary reader	Reading duration	Sex	Share read (among readers of the newspaper)
1	Yes	Less than 15 minutes	Man	57%
2	Yes	Less than 15 minutes	Woman	62%
3	Yes	16-30 minutes	Man	79%
4	Yes	16-30 minutes	Woman	89%
5	Yes	More than 30 minutes	Man	89%
6	Yes	More than 30 minutes	Woman	97%
7	No	Less than 15 minutes	Man	45%
8	No	Less than 15 minutes	Woman	55%
9	No	16-30 minutes	Man	59%
10	No	16-30 minutes	Woman	79%
11	No	More than 30 minutes	Man	73%
12	No	More than 30 minutes	Woman	88%

Source: Index Danmark/Gallup - 1st half year 1997

Using the table above reading probability can be simulated based on the frequency question.

A woman regarding Berlingske Tidende her primary newspaper who read more than ½ hour yesterday (group 6), and who usually reads half of the issues of Berlingske Tidende (reading probability of 50%) has a reading probability of "Kulturmagasinet" of 48,5% ($50\% \cdot 0,97$).

A man who does not regard Berlingske Tidende his primary newspaper who read less than 15 minutes (group 7) and who usually reads half the issues of Berlingske Tidende (reading probability of 50%) has a reading probability of "Kulturmagasinet" of 22,5% ($50\% \cdot 0,45$).

In case calculation had been performed on total level the reading probability would have been 38% ($50\% \cdot 0,76$) for both women and men whereas reading probabilities would have been 40,5% ($50\% \cdot 0,81$) and 35% ($50\% \cdot 0,70$) respectively in case the target groups women and men had been calculated separately.

As to "Erhverv" we have combined reading duration (2 groups) with personal income (3 groups) and with sex (2 groups). This gives $2 \cdot 3 \cdot 2 = 12$ segments altogether. For each of these the share of reading "Erhverv" has been calculated. Each respondent's overall reading probability is then multiplied with the probability of the one of the 12 segments the respondent belongs to.

Table 4.5 - Share of Reading for "Erhverv" by 12 Segments

Segment no.	Reading duration	Sex	Personal income	Share read (among readers of the newspaper)
1	Less than 20 minutes	Man	Low	49%
2	Less than 20 minutes	Man	Middle	63%
3	Less than 20 minutes	Man	High	89%
4	Less than 20 minutes	Woman	Low	33%
5	Less than 20 minutes	Woman	Middle	74%
6	Less than 20 minutes	Woman	High	84%
7	More than 20 minutes	Man	Low	84%
8	More than 20 minutes	Man	Middle	88%
9	More than 20 minutes	Man	High	93%
10	More than 20 minutes	Woman	Low	55%
11	More than 20 minutes	Woman	Middle	69%
12	More than 20 minutes	Woman	High	80%

Source: Index Danmark/Gallup - 1st half year 1997

Comparing segment 1 and 3 above we find that both segments are men with a reading duration below 20 minutes. This implies that their section reading should be the same, but by adding the personal income a considerable differentiation as to reading of "Erhverv" is obtained. For segment 1 with the low income only 49% have read the section, whereas 89% of segment 3 with the high income has read the section. This leads to considerable differences in calculating reading probabilities for these 2 segments.

Above we have demonstrated that it is possible to make simulations based on other information, both media related and demographic, giving more precise reading probability for use in media planning. As indicated above it is not necessarily the same information/variables that have to be included in the algorithm for different papers and for different sections in the same paper.

Considering which segments to use it is especially the number of interview and each variable's discriminating ability which have to be taken into account. Thus it is not relevant to include a variable even though it is very discriminating. If it appears that some of the cells in the matrices become so small that the results are subject to great uncertainty. Further it is not relevant to include 2 variables with such a high correlation that the only effect of using both of them is that the number of cells increase. It should be considered that for each extra variable with 2 answers the number of cells is doubled. If working with 4 variables with 3 answers each the final number will be $3*3*3*3 = 81$ cells.

The advantage of the simulation method is that it is not necessary to collect section information as single-source with NRS, as long as the discriminative demographic and media variables are included in both surveys. Taken into consideration the large amount of information normally needed in NRS interview as well as in section readership this is a major advantage.

The method is especially well-suited for the sections with a strong profile where an actual choice between reading and non-reading takes place. As to the news sections there is usually not big differences in reading distributed on other variables since lack of reading most often is mere coincidence.

The examples shown relate to sections published on all weekdays. For sections which are published only one or a few days a week there might be a systematic error in multiplying reading probability for the main media. This is owing to the fact that there is no knowledge of whether the respondents who say they read one issue a week, always choose the issue from the same weekday or whether it varies from week to week. Of course, this results in some uncertainty which have to be considered, but the conclusion must still be that even in this case the simulation method improves the overall reading probabilities because the alternative is to use the overall probability which has at least the same bias when it comes to reading on individual weekdays.

How to Proceed

This paper has demonstrated that Audience Issue Readership consists of several separate audiences and profiles that relate to different sections of newspapers. Further methodological considerations and solutions to practical measurements have been discussed. The next step is integration of the findings in media planning procedures. Currently this work is carried out on test level investigating which variables discriminate section reading most effectively. When these variables are defined they will be integrated in the NRS and in the continuous survey which measures section reading. Based on the findings reading probabilities will be calculated covering all sections published 6 days a week and some sections published at least once a week. The final product will be an operational database enabling media planners to analyse combinations of sections and produce schedules based on accumulated readership figures.