

HOW CHANGES IN SCREEN-INS AFFECT READS

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Abstract

Except for weekly publications, further analysis of the 1980 ARF Comparability Study fails to support the theory that, when the through the book method is employed to measure average issue readership, changes in screen-in level caused by changes in interviewing procedure are compensated for by opposite changes in read/screen ratio leaving the read percentages substantially unchanged.

Also contrary to theoretical expectation, for weekly publications, where there was a compensatory change in read/screen ratio following a change in the screen-in rate, the change came principally from those claiming to be more frequent readers rather than from the less frequent readers as the theory would suggest.

Introduction

When I first saw the results of Dan Mallett's analysis of the Simmons and MRI screen and read/screen data I was both reassured and bemused. I was reassured because the result of his across-titles analysis confirmed the conclusions I had presented two years ago in Hong Kong: Of the two components which determine the relative sizes of magazine audience estimates, after controlling for circulation and taking account of differences in publishing frequency, the screen-in levels account for more of the variance between titles than do the read/screen ratios - more so for monthlies than for weeklies. That was the reassuring part.

It was his across-years analysis that was the cause of my bemusement. Although the MRI recent reading data generated basically the same results as I would have expected, with changes in screeners-per-copy resulting in corresponding changes in readers-per-copy, the Simmons through-the-book (TTB) estimates behaved quite differently.

Notwithstanding major year to year changes in screen-in levels the readers-per-copy levels remained essentially unchanged. For example, from '86 to '87 there was a 26% increase in mean screeners-per-copy; and from '90 to '91 there was a 10% loss.

The Simmons changes in screeners-per-copy appeared to have been moderated by compensatory changes in the read/screen ratios, so much so that their screeners-per-copy estimates actually correlated more strongly with changes in the read/screen ratios than they did with the changes in readers-per-copy. It occurred to me, therefore, that further analysis of the data still resident on the 1980 Comparability Study computer tape might throw some light on these perplexing relationships.

Study Design

To refresh the audience's memory, there were three samples of respondents. One sample (TTB-T) was asked to screen 68 titles for through-the-book interviewing. The other two samples (TTB-M) were asked to screen half that number. All magazines screening-in were then subjected to the TTB questioning procedure.

After being taken through-the-book for all magazines screened-in, and regardless of whether they had claimed readership of the issue they were shown, each respondent was shown a frequency of reading card and asked to indicate how many issues of the publication they usually read or look into out of every four that are published. They were given five choices: less than one, one, two, three or four.

These data were never completely tabulated however. It occurred to me, therefore, that an analysis of the frequency composition of the screen-ins and of the read/screen ratios within frequency of reading category might help explain what happens to readership levels when procedural differences cause changes in the screen-in levels as was the case in the Comparability Study.

TTB Theory

In theory, one of the purposes of the screen-in procedure is to capture as many respondents who might have read a particular issue of a given magazine as is feasible. The purpose of the TTB questioning procedure following the screening-in of a particular title is then to eliminate those who did not actually read or look into the test issue. If the screen-in levels are changed as a result of a change in questioning procedure, the changes up or down will presumably be the result of increasing or decreasing the proportion of those screening-in who are less frequent readers. It is presumed further that the regular reader would screen-in under any circumstance.

One would expect, therefore, that a circumstance which produced an increase in screen-in rates, as was the case in the TTB-M sample, would do so by screening-in more infrequent readers who would later be weeded out by the TTB questioning procedure. In other words, these infrequent readers would produce lower read/screen ratios than would their counterparts in the sample with the lower screen-in rate. The net result would be to leave the read levels substantially unchanged. The frequent readers, on the other hand, who would be expected to screen-in under any circumstance, would also be expected to produce the same read/screen ratios regardless of the screening procedure.

The Analysis

After confirming that the 13 year old computer tape was still available, I wrote a letter to the ARF asking that tabulations be made available showing the frequency of reading distribution across all titles, and for each frequency of reading category, the aggregate read/screen ratios.

After some discussion, the ARF agreed to make the tabulations available for presentation at this symposium if adequate funding could be secured. The funds were forthcoming in the form of a generous contribution from Conde Nast.

Let's look first at the screen-ins for the twelve weeklies which were included in the study. As one can see from Table 1, there was a statistically significant 1.9 percentage point or 11% increase in the mean screen-in rate among those respondents to whom the shorter list of magazine logos was presented (TTB-M) compared with those who were screened using the longer list (TTB-T). Except where otherwise indicated all statistical tests (t-tests) were performed using the method of sample replicates and five degrees of freedom.

Table 1: Screen-In Rates and Reading Frequencies

(The Twelve Weeklies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Screen-in Rate	17.8	19.7	+1.9***
Reading Frequency	100.0	100.1	
<1 in 4	17.2	18.2	+1.0*
1 in 4	19.5	21.2	+1.7*
2 in 4	18.0	19.1	+1.1*
3 in 4	9.0	9.0	0.0
4 in 4	28.1	26.7	-1.4
No Ans.	8.2	5.9	-2.3

*P<.10, or <.05 one tailed, for the combined +3.8% point difference

***P<.01

The frequency composition aggregating the data for all twelve weeklies is shown in the bottom part of the table with the total number of screen-ins equaling 100% within the limits of rounding.

Examination of this portion of the table reveals the tendency for the higher screen-in rate to be accompanied by an increase in the percent of screen-ins claiming to read fewer than three out of four issues. Although none of the three positive differences are statistically significant when taken by themselves, when added together the resultant difference of 3.8 percentage points for those reading two in four or less is significant at the five percent point using a one-tailed test since the direction of the difference was correctly predicted in advance. This increase in the percent of screen-ins claiming to be infrequent readers is totally consistent with the theory described earlier.

Let's turn now to the read/screen ratios. For ease of reference on the first line of Table 2, the screen-in rates have been repeated from Table 1. Also note that the difference column is expressed as percent changes rather than as percentage point changes as they were in Table 1. The second row displays the aggregate read/screen ratio which almost perfectly compensates for the increase in the screen-in rate: an 11% increase in screen-ins compensated for by an 11% loss in the read/screen ratio, and virtually identical read percentages: 7.8 vs 7.7. This is a perfect example of how the issue-specific TTB questioning procedure is supposed to compensate for untoward changes in screen-in levels caused by procedural changes in the questioning procedure.

Table 2: Screen-In Rates and Read/Screen Ratios

(The Twelve Weeklies)

	TTB-T (Long) %	TTB-M (Short) %	Pct. Diff. +/- %
Screen-in Rate	17.8	19.7	+11***
R/S Ratio	43.6	39.0	-11**
Read percentage	7.8	7.7	-1

**P<.05			
***P<.01			

There is a surprise in store, however. The theory specifies that the increased number of low frequency screen-ins should result in a lowering of the read/screen ratios for this group, while the read/screen ratios for the high frequency group will remain substantially unchanged.

But as one can see from Table 3 this is not what happened. Looking up and down the TTB-T and TTB-M columns the read/screen ratios did increase as the claimed frequency of reading increased as expected. But contrary to expectation, looking at the difference column there was a drop in read/screen ratio across all claimed frequency categories.

Table 3: Read/Screen Ratios by Reading Frequency

(The Twelve Weeklies)

Reading Frequency	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
<1 in 4	13.5	10.8	-2.7**
1 in 4	23.9	22.8	-1.1
2 in 4	38.7	31.8	-6.9*
3 in 4	55.5	47.5	-8.0**
4 in 4	87.5	81.4	-6.1*

*P<.10			
**P<.05			

Totally contrary to theoretical expectations, the drops in read/ screen ratios, which came about as a result of the change in procedure, were greatest among those claiming to be more frequent readers rather than the reverse.

As one can see, there appears to be a natural break between those claiming to read one issue or less and those claiming to read two or more. From table 4 one can see that those claiming to read two or more issues generated a difference in read/screen ratio of -7.8 percentage points while those claiming to read one or fewer issues generated a difference of -1.7 percentage points. A statistical test of the significance of this 6.1 percentage point net difference produced a t-ratio of 5.10, which based on five degrees of freedom could have occurred by chance less than five times in a thousand.

Table 4: Read/Screen Ratios by Two Frequency Groups

(The Twelve Weeklies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Reading Frequency			
One or less	19.0	17.3	-1.7
Two or more	66.4	58.6	-7.8****
		Net difference	-6.1****

****P<.005			

From Table 5 one can see that the pattern of response for the two triweeklies - FAMILY CIRCLE and WOMAN'S DAY - was quite different from that of the weeklies. Although the TTB-M screen-in rate was 4.9% points higher than for the TTB-T sample, an increase of 21%, the distribution of reading frequencies was essentially unchanged.

Table 5: Screen-In Rates and Reading Frequencies

(The Two Triweeklies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Screen-in Rate	22.8	27.7	+4.9**
Reading Frequency	<u>99.8</u>	<u>100.1</u>	
<1 in 4	10.1	12.2	+2.1
1 in 4	19.0	19.1	+0.1
2 in 4	20.1	18.9	-1.2
3 in 4	11.0	13.0	+2.0
4 in 4	34.3	32.1	-2.2
No Ans.	5.3	4.8	-0.5

**P<.05			

In addition, from Table 6 one can see that the increased screen-in rate was not compensated for by a reduction in the read/screen ratio which actually showed a slight, but not statistically significant, increase of 4%.

Table 6: Screen-In Rates and Read/Screen Ratios

(The Two Triweeklies)

	TTB-T (Long) %	TTB-M (Short) %	Pct. Diff. +/- %
Screen-In Rate	22.8	27.7	+21**
R/S Ratio	47.3	49.2	+ 4
Read Percentage	10.8	13.6	+26**

**P<.05			

When the changes in read/screen ratio are examined in Table 7 by claimed reading frequency no consistent pattern emerges, and the one significant (P<.10) difference which was observed was a counter theoretical increase of 18.4 percentage points among those claiming to read three out of four issues.

Table 7: Read/Screen Ratios by Reading Frequency

(The Two Triweeklies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Reading Frequency			
<1 in 4	19.3	14.9	- 4.4
1 in 4	20.6	24.4	+ 3.8
2 in 4	38.0	39.0	+ 1.0
3 in 4	43.6	62.0	+18.4*
4 in 4	84.5	85.2	+ 0.7

*P<.10			

(Parenthetically, it should be noted that, because of sample size limitations and because there were only two triweeklies, for some of the sample replicates there were no respondents claiming to read less than one out of four or two out of four issues. For these two reading frequency groups, the t-tests were performed using three and four degrees of freedom respectively.)

For the monthly magazines, as can be seen from Table 8, again there was a significant increase in screen-in rates when the number of titles was reduced from 68 to 34 (TTB-T vs TTB-M), but there was no material change in the percent of screen-ins claiming to be more or less frequent readers.

Table 8: Screen-In Rates and Reading Frequencies

(The 53 Monthlies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Screen-in Rate	8.5	9.8	1.3***
Reading Frequency	<u>100.1</u>	<u>100.2</u>	
<1 in 4	15.2	16.1	+0.9
1 in 4	19.8	22.3	+2.3
2 in 4	18.8	17.8	-1.0
3 in 4	10.3	9.3	-1.0
4 in 4	28.7	29.2	+0.5
No Ans.	7.3	5.5	+1.8

***P<.01

From Table 9 it can be seen that the 15% increase in screen-in rate for the monthlies was partially compensated for by a 4% (non-significant) drop in read/screen ratio, resulting in an 11% increase in the read percentage and significant at the .10 level.

Table 9: Screen-In Rates and Read/Screen Ratios

(The 53 Monthlies)

	TTB-T (Long) %	TTB-M (Short) %	Pct. Diff. +/- %
Screen-in Rate	8.5	9.8	+15***
R/S Ratio	43.5	41.7	- 4
Read Percentage	3.7	4.1	+11*

*P<.10
***P<.01

From Table 10 it can be seen that the drops in read/screen ratios occurred among those in all frequency of reading categories and there was no other discernible pattern.

Table 10: Read/Screen Ratios by Reading Frequency

(The 53 Monthlies)

	TTB-T (Long) %	TTB-M (Short) %	Diff. +/- %
Reading Frequency			
<1 in 4	15.6	12.3	-3.3
1 in 4	23.2	21.8	-1.4
2 in 4	36.4	32.6	-3.8
3 in 4	53.9	53.0	-0.9
4 in 4	83.8	82.6	-1.2

Discussion

This analysis confirms that the TTB procedure is more important to the determination of audience size for weeklies than it is for publications with longer publishing intervals. But why should this be? There is no clue in the data and I can think of only two possible reasons.

The first possible reason is issue aging. The TTB procedure as employed by Simmons uses weekly issues which are about five weeks old. The monthlies are about eleven weeks old.

One possibility might be the fact that for monthly magazines more time could have expired between the last reading occasion and the day of the interview. For this reason, recognition, or non-recognition of the average monthly issue may be less accurate than it is for the average weekly issue. If that were the case it could explain why the screen-in levels are more important to the determination of monthly magazine readership than they are for weeklies. However, since recognition memory is relatively impervious to the passage of time it is not likely that differential aging is the answer.

The second possible reason might be that 26 weekly issues are published in a six-month period compared with six issues for monthlies. A respondent claiming to have read a monthly title in the past six months has a greater probability of having read a particular issue than has a respondent screening-in for a weekly title. This being the case, issue recognition has to be more important to the determination of the average issue audience as the number of issues published in a six-month period increases. What is surprising, however, is the fact that those most influenced by changes in procedure were not the infrequent readers theory would lead one to expect.

For weeklies, it was actually the more frequent readers whose read/screen ratios were most likely to change in compensation for a change in screen-in rate. For the triweeklies and monthlies there is little or no change in read/screen ratio following the change in screen-in level and when examined as a function of claimed reading frequency, there was no discernible pattern.

The relationship between changes in screen-in level and changes in TTB read/screen ratios appears to be more complicated than current theory would indicate. Furthermore, I recognize that I have done nothing to uncomplicate it today.

The discrepancy between the Mallett findings based on the Simmons data and my own, based upon the 1980 ARF Comparability Study data, is even more perplexing now than before I started this analysis. Accordingly, further investigation of how changes in screens affect reads in relation to claimed frequency of reading may well be justified.

Beginning with their 1993 study Simmons began collecting frequency of reading data for all publications screening-in, and MRI and Nielsen Home Scan have always done so. It might be useful, therefore, to expand the investigation to include all three services. If so, in order to maintain objectivity, the undertaking might be supervised by one or another trade association such as the Magazine Publishers of America or the Advertising Research Foundation.

