

THE IMPACT OF MEASUREMENT TECHNIQUES ON MAGAZINE AUDIENCE LEVELS

Donald G. McGlathery - Petersen Publishing
Wayne P. Eadie - Newsweek Magazine

Syndicated magazine research has seen many changes in the last 3½ decades since the Nielsen Media Service (NMS), the first syndicated service. Syndicated in this sense refers to a service subscribed to by advertisers, advertising agencies and publishers alike as opposed to a study sponsored by one or more publishers. The 1960 NMS measured 12 magazines and used the "through the book" technique with issues stripped to 12 editorial features. The "reading" question was almost identical to the one used by the recently abandoned Simmons survey. Willard Simmons began his SMM (Survey of Media & Markets) in 1962 measuring 22 magazines which NMS soon matched. However, Simmons tied his magazine audience data to product usage information which NMS was unable to match because of a perceived conflict with their Food & Drug Index. This, among other things, caused NMS to be closed down a couple of years later. The other things being the salting of NMS sampling points with free copies of Look magazine, a publisher refusing to pay his bill because the competition's audience had increased, and because at the U.S. Congressional TV rating investigation hearings (1961) it was alleged by a Nielsen field staffer that he and others were obliged to cheat because it was too cumbersome to conduct magazine interviews on 22 magazines along with their other work.

Norton Garfinkle started Brand Rating Index (BRI) about the same time as Simmons began. BRI exploited the tie in of magazine audiences with product usage data and became reasonably successful. BRI used the frequency of reading technique and applied stated probabilities to produce the audience data. BRI also flirted with a "through the book" measurement concurrent with the frequency technique. It was too much for them to swallow and although never published, the costs for conducting both services simultaneously and a field recovery problem became too much for the new owners of BRI and it was shut down in December, 1971.

During the mid-sixties, the data division of Standard Rates and Data was conducting magazine research and selling it on an ad hoc basis. It was not a successful operation but they had conducted some interesting studies.

Many were concerned then as now that using stated probabilities, i.e., someone stating they read 3 out of the last 4 issues meant a probability of reading of exactly .75 was a little presumptuous. Life Magazine purchased the audience tape from SRDS and thoroughly analyzed the data. This resulted in a paper that was printed in the ARF Journal in 1967. Although the design does have some flaws it did reveal some interesting information. Let's examine it briefly and then see if it has any application today.

The study measured 20 magazines using a six month screen and a standard "through-the-book" technique. Up to this point the questionnaire followed the standard procedures but then it changed. Each respondent that answered positively to the first issue reading question was shown a second issue. Finally all respondents answering "yes" to the first average issue reading question were asked a frequency question, how many were read out of four, 0, 1, 2, 3, or 4. From these data, the "through the book" average issue readers can be compared to the next oldest issue readers and these results in turn can be compared to what they believe their usual reading frequency to be.

Estimated Frequency Of Reading	Estimated Audience: Expected Proportion Per Cent
Less Than 1 Out Of 4	0%
1 Out Of 4	0
2 Out Of 4	33
3 Out Of 4	67
4 Out Of 4	100

For example, two-thirds of the people who claimed they read 3 out of 4 should have read the second issue since all of them have already read one issue. Probabilities can be established for each of the frequency levels and the resultant "frequency" repeat audience, compared to the "through-the-book" repeat audiences.

Repeat Audience Analysis

	Editorial Interest Audience	Frequency Audience
	%	%
Weeklies (6)	72	67
Bi-Weeklies (2)	69	68
Monthlies (12)	68	71

Source: SRDS Data Inc.

In both cases the percents represent the second issue audience as a percent of the average issue audience. The editorial interest data are based on a personal interview and the frequency on calculated probabilities. The results showed that weeklies had a 7% lower calculated audience than the repeat "through-the-book" audience, tri-weeklies about the same, and monthlies 4% higher. It is reasonably safe to conclude from these data that in this example using 20 magazines, there are overstatements when a respondent is required to recall behavior patterns over a long span of time and corresponding understatements in a short span. Since the use of stated probabilities to estimate average issue audiences is practiced by J.D. Power, Mendelson, and Intelliquest, an examination of their audiences to determine current audience levels is appropriate.

Since the three studies mentioned are designed to explore specific market segments the control would have to have a similar base. For this demonstration we are using MRI as the control. Since J.D. Power is restricted to contacting new car owners from registration data, the MRI data are restricted to a universe of new car buyers/leasers in the past year. And here are the results for magazine audiences.

	MRI		J.D. Power	
	Covg	Index	Covg	Index
	%		%	
Weeklies (14)	14.0	100	14.4	103
Bi-Weeklies (3)	4.2	100	5.4	129
Tri-Weeklies (2)	8.2	100	14.2	173
Bi-Monthlies (8)	5.7	100	3.0	53
Monthlies (81)	4.3	100	5.5	128

Source: MRI Spring 1994-Adults
J.D. Power 1994

When comparing results for Mendelson, the MRI control group comprised those adults in households with \$60,000+ HHI.

	MRI		Mendelson	
	Covg	Index	Covg	Index
	%		%	
Weeklies(11)	11.5	100	11.4	99
BiWeeklies(5)	3.5	100	4.0	114
Bi-Monthlies(2)	2.4	100	3.7	154
Monthlies(43)	4.9	100	5.7	116

Source : MRI Spring 1993 - Adults
Mendelson 1993

The third comparison is with Intelliquest which concentrates on the home and business computer industry. Since the home market is the primary concern, the MRI universe has been restricted to decision makers who bought a personal computer or computer books or software in the past year which are compared to Intelliquest's home data. The resulting MRI universe is one-third higher than Intelliquest so the comparisons are not direct. In this case the audience levels are all higher than MRI, perhaps due to the more stringent sample qualifications and the inclusion of computer publications not measured by MRI.

	MRI		Intelliquest	
	Covg %	Index	Covg %	Index
Weeklies (10)	11.57	100	12.89	111
Bi-Weeklies (5)	4.69	100	5.54	118
Bi-Monthlies (2)	3.18	100	3.23	102
Monthlies (36)	4.95	100	5.52	112

Source: MRI Spring 1995-Adults
Intelliquest 1995

There does seem to be a pattern, when comparisons are direct, which suggests that compared to recent reading, the frequency technique measures weeklies at about the same level or lower than the control group and monthlies are estimated to be considerably higher than the control. The data for other publishing frequencies vary considerably, but the number of magazines measured is too small and subject to large variances. The following table demonstrates why the previous relationships might be occurring. The MRI data have been tabulated to demonstrate how accurate respondents estimation of reading frequency is with their actual frequency.

Adult Frequency Ratio

Actual Frequency/Stated Frequency

	0	1	2	3	4
Weeklies	10.3	21.6	42.7	63.7	89.9
Bi-Weeklies	9.3	23.1	45.9	65.3	89.8
Tri-Weeklies	16.4	29.9	47.4	79.7	95.1
Monthlies	15.7	27.7	51.8	73.1	91.5
Bi-Monthlies	16.9	32.5	58.1	77.5	92.5

Source: MRI Spring 1995-Adults

By examining the ratio of the distribution of the audience frequency claims and the screen frequency claims there does seem to be a pattern. As the publishing interval becomes greater the reading claims become greater no matter what the frequency levels might be. This is particularly true at the lower frequency levels.

Does this effect turnover rates? Obviously it has to since turnover is based in these absolute frequency estimates. To analyze this in greater detail let's review a work presented at our second research symposium in Montreal in 1981.

At that symposium, Adam Richard and Marty Frankel delivered a paper entitled "A Comparison of Reach and Frequency Estimates: Single Versus Dual Interview Approaches." In this paper, they stated that there were four ways to compute turnover, the two interview SMRB way, the one interview personal probability way developed from the frequency question, the one interview six month screen method and the fourth using personal probabilities from the frequency question to develop both average issue audience and turnover. This approach was deemed to be not viable because of the high audience estimates. What they found was that the turnover resulting from using the screens in conjunction with the first interview audience was relatively close in aggregate to the two interview turnover; .407 to .413 respectively. However, they did find a big difference in monthly versus weekly screen turnovers and judged therefore that this was not a suitable substitute for the two interview turnover. The other conclusions drawn from the study were that **the recent reading turnover estimated from frequency claims and a single interview were dramatically lower than the two interview results and that the estimates of accumulation and duplication extended beyond one issue are wrong if those results are based on only one interview and a frequency question.** An interesting conclusion considering today's environment.

We can bring the 1981 analysis up to date and use the 1993 SMRB to replicate the analysis conducted in 1981 by Richard and Frankel. Using the same well known recursive formula based on the beta binomial model, the turnover can be computed using the six month screen as a surrogate for a six issue cumulative audience. The same disparities between weeklies and monthlies in the screen approach exist in 1993 as were reported in 1981.

The following data comparing these two periods are based on a unified list of titles. Eight of the 47 titles have ceased publication or are no longer measured. Even after these exclusions, the overall average rating (6.4 vs 5.7) and average turnover (.416 vs .417) are reasonably close to the original data set.

1981 SMRB

47 Titles		39 Titles	
Avg. Rating	Avg. T/O	Avg. Rating	Avg. T/O
5.7%	0.417	6.4%	0.416

When the 1981 data analysis was recalculated on this slightly abbreviated list, the same results occur as were shown in Montreal. As just shown the two interview average rating of 6.4 and turnover of .416 compares to the single interview rating of 6.3 and the turnover .393. However when 1993 data are examined there is one major difference.

1981 SMRB 39 Titles				1993 SMRB 39 Titles			
Two Interview		Single Interview		Two Interview		Single Interview	
Avg. Rating	T/O	Avg. Rating	T/O	Avg. Rating	T/O	Avg. Rating	T/O
6.4%	0.416	6.3%	0.393	6.2%	0.355	6.2%	0.196
Index	100	94		Index	100	55	

The two interview average rating is 6.2, almost the same as in 1981 and the two interview turnover of .355 is somewhat lower than 1981. In 1993, the single interview rating is identical to the two interview, but the turnover computed from the 6 month screen and average issue rating is drastically different, (.196) 55% lower than the two interview turnover. This would mean that the 3 or 4 of 4 readers would have to be substantially higher to accommodate such a low turnover rate.

67 Titles

	Two Interview Turnover	Single Interview Turnover
1985	0.44	0.37
1986	0.45	0.37
1987	0.46	0.48
1988	0.47	0.40
1989	0.46	0.41
1990	0.45	0.39
1991	0.41	0.30
1992	0.40	0.29
1993	0.36	0.21
1994	0.38	0.29

Source: SMRB Adults

Examining a slightly larger list of titles, all those consistently measured, (67 over the past 10 years) shows a similar pattern. Overall, the single interview turnover is lower than the two interview turnover. For the period of 1991 through 1993 the single interview turnover begins to track lower than the previous period while the two issue turnover only declines slightly. Thus the six month screen would no longer appear to be a surrogate for a six month cumulative audience as it has been in the past and as was described at the Montreal Conference.

% Adult Population

	6 Month Screen Levels	6 Month Cume Aud Levels	Avg Issue Audience Levels
1985	9.50	11.5	4.87
1986	9.44	11.8	4.81
1987	11.56	12.5	5.12
1988	10.07	12.3	4.85
1989	10.43	12.5	4.98
1990	9.80	12.0	4.79
1991	8.74	11.5	4.68
1992	8.35	11.0	4.64
1993	7.24	10.2	4.61
1994	8.18	10.4	4.51

Source: SMRB Adults Unwtd Avg 67 Titles

Finally, a trend of 6 month screen levels, cumulative audience levels, and average issue audiences shows a close correlation between 6 month screens and cumes both declining after 1990 and recovering significantly in 1994. At the same time average issue audience levels are relatively flat. This would seem to corroborate the rationale of more regular (3 and 4 time readers) to accommodate a stable audience and lower cume.

Conclusions

- reliance on memory as an absolute value seems to influence audience levels.
- there appears to be a bias favoring monthlies over weeklies when estimating audiences from frequency estimates.
- turnover rates are sensitive to estimates of reading frequency.
- six month screen levels correlate closely with cumulative audience levels while the underlying turnover rates do not.

Caveat emptor would seem to be the operating status as far as some of the areas we have examined are concerned. Audience measurement techniques clearly do appear to have a significant influence on audience levels.

References

Frankel, Martin R., and Adam Richard. "A Comparison of Reach and Frequency Estimates: Single Versus Dual Interview Approaches." International Research Symposium II Montreal: 384-392.