

# EXPLAINING VARIABILITY IN ISSUE-SPECIFIC MAGAZINE AUDIENCES: AN EXPLORATORY EXAMINATION

**Dr Scott McDonald, Condé Nast Publications**

**Dr Julian Baim, Dr Martin Frankel, Risa Becker, Dr Michal Galin, Francis Mejica, Mediamark Research & Intelligence**

---

In 2007, MRI introduced its Issue-Specific Study, which produced issue-specific audiences for approximately 200 magazine titles. The study, itself, was a response to the industry's request for more immediate, granular data to compete with other media. From the outset, it was readily apparent that the design of the study required large sample sizes and rapid turnaround. It was equally clear that Internet panels and the Internet mode were the only appropriate means to use for this study. Along with some prominent clients, we presented papers on the methodology, statistical approach and utility of this study at the 2007 Vienna Worldwide Readership Symposium. (Baim, et al., 2007; Frankel, et al., 2007; Klein et al., 2007)

One of the basic findings of this study was the substantial variability of magazine audiences from one issue to another. Since these data are being used by agencies and publishers in the planning (and, potentially, the buying) process, we decided to conduct a further analysis of issue-to-issue variability. Our goal was to examine the degree to which the results of the Issue-Specific Study corresponded to other metrics reflecting consumer interest in those issues and, if possible to identify possible causal factors that explain why some issues do extremely well and others fare very poorly. Among the variables analyzed in this study were:

- Total circulation and single-copy circulation
- Magazine website audiences
- Size of individual issues

This paper presents the results of these analyses and is intended to promote further discussion on the topic.

## Background and Hypotheses

MRI's Issue-Specific Study produces individual issue audiences for weekly and monthly publications within six and ten weeks of their on-sales dates, respectively. Since the inception of the study, we have provided audience estimates for over 150 issues of individual weekly magazines and approximately 30 issues of monthly publications.<sup>1</sup> These data suggest that audiences can vary from as little as 28% below an average-issue audience to as much as 40% above an average-issue audience. While these numbers represent the extremes of variability, smaller issue-to-issue audience variability is also common. As a result, we have sought to gain a better understanding of the causes fluctuation in audience measures.

Investigating audience changes is not a new topic at these symposia. Researchers have presented papers discussing the singular relationship between average-issue audience changes and circulation changes. (Baim & Goerlich, 1995; Goerlich, 1993; Johnston, 1993; McDonald & McPheters, 2003; Skrapits & Appel, 1997) Some have contended that the relationship is tenuous; others have identified that relationships are strong when the audience changes are statistically significant. The greater granularity of the Issue-Specific study allowed for an even more extensive analysis of the impact of circulation changes on audience levels. Since publisher circulation statements provided information on the number of single-copy and subscriber copies sold for individual issues, we examined the relationship between circulation and audience changes at the issue-specific level. We further refined our analysis by looking separately at single-copy sales and total circulation. We expected there would be a positive correlation between circulation and audience fluctuation.

Beyond circulation, we speculated about other possible variables that could be related to movement in audience. One other possible explanatory factor was interest in the current issue reflected in the variability of the publication's website audience. While we did not specify the causal direction between website audience and issue audiences, we believed that interest in a particular issue of a magazine was likely to be mirrored by time based spikes or dips in its website audience. Additional reflection suggested that the variation in the size of a particular issue was yet another reason why issue audiences might differ. We theorized that larger issues, which are likely to include more ads and editorial pages, would attract more readers from the potential audience base.

---

<sup>1</sup> MRI also reports on bi-weekly, tri-weekly and bi-monthly magazines.

**Data Analysis and Findings**

Circulation data were available for virtually all magazines (~200) released in MRI’s Issue- Specific study. However, website audience data were published on a monthly basis for a much more limited set (73) of magazines. Consequently, all analyses were limited to this subset and MRI received PIB information, reporting the number of ads in an issue, for only the same set of publications.

Our first step was to generate correlation coefficients between issue-specific indices and total issue-specific circulation for each magazine. The average correlation over 73 magazines was .155, a positive but very modest relationship. The comparable coefficient for issue-specific audiences and single copy sales was somewhat stronger at .175.

In order to identify differential relationships, we conducted the same analysis for subsets of magazines: publication periods, percent out-of-home readers, and reader-per-copy levels. Due to the limited number of magazines in the dataset, only weekly and monthly magazines had sufficient counts for analysis. The correlation coefficients for weekly and monthly magazines, respectively, are shown in Table 1. The table shows that the relationships between circulation and audience are stronger for weeklies than for monthlies. For weeklies, the correlation coefficients are .306 and .207 for single-copy sales and total circulation, respectively. The comparable figures for monthly magazines are .134 and .140.

**Table 1: Average of Correlation Coefficients Between Issue-Specific Indices<sup>2</sup> and Issue-Specific Circulation Changes for Weekly and Monthly Publications**

<b>Publication Frequency</b>	<b>Index vs. Single-Copy Circulation</b>	<b>Index vs. Total Circulation</b>
Weekly	.306	.207
Monthly	.134	.140

There are a number of reasons that might explain why correlations are stronger for weekly publications. First, the available data are richer for weekly magazines; we have data for approximately 120 issues per weekly compared to 30 for each monthly magazine. Second, the editorial for weeklies generally reflects more topical stories, which can vary in their appeal to potential readers. Covers about elections, celebrities or world events can have their unique attractions (especially to infrequent readers) that affect the issue’s readership level. (Cover appeal is also best reflected in single-copy sales, which shows the stronger correlation with issue-specific audiences.) Finally, the shorter shelf-lives of weeklies may have an indirect influence of issue-specific audiences by limiting much late, sporadic readership from accumulating.

The more compelling evidence of a relationship between issue-specific circulation and audience for weeklies is the consistent, statistically significant positive correlation between these two variables. For all 13 magazines, correlations are consistently positive vs. total or single-copy circulation. We did not find a similarly consistent pattern for monthlies (see Table 2).

---

<sup>2</sup> Indices for the Issue-Specific study are measures of the relative performance of a specific issue of a magazine against the average issue performance of that same magazine. For example, an index of 110 means that that issue performed 10% better than the average issue.

**Table 2: Correlation Coefficients Between Issue-Specific Indices and Issue-Specific Circulation Changes by Individual Magazine**

MAGAZINE NAME	Index vs. Single-Copy Circulation	Index vs.Total Circulation
<b>Weekly Publications</b>		
Business Week	.279	.218
The Economist	.181	.208
Entertainment Weekly	.347	.257
New York	.330	.391
The New Yorker	.291	.178
Newsweek	.336	.052
People	.242	.224
Soap Opera Digest	.264	.085
Sporting News	.319	.216
Sports Illustrated	.407	.355
Time	.485	.165
TV Guide	.241	.295
US News and World Report	.256	.049
<b>Monthly Publications</b>		
Allure	-.029	.150
Architectural Digest	.006	.023
The Atlantic	.358	.467
Better Homes & Gardens	-.232	-.096
Blender	.271	.167
Bon Appetit	.025	.065
Cooking Light	-.207	.193
Cosmopolitan	-.215	-.130
Elle	.316	.532
Entrepreneur	.378	.199
Esquire	.328	.256
Essence	-.024	-.195
FamilyFun	.207	.277
Food & Wine	.259	.029
Glamour	.100	.270
Golf Digest	.191	.293
Golf Magazine	-.007	-.048
Good Housekeeping	.151	-.021
Gourmet	.196	.154
GQ (Gentleman's Quarterly)	.316	-.036
Health	-.300	-.223
In Style	.116	.234
Kiplinger's Personal Finance	.078	-.063
Ladies' Home Journal	.054	.166
Marie Claire	.179	.381
Martha Stewart Living	.175	.264
Maxim	.076	.115
Men's Health	-.052	.017
Money	.287	.196
Motor Trend	.585	.468
National Geographic	.283	.293

O, The Oprah Magazine	-.300	-.355
Parents	.019	.097
PC World	.255	.254
Penthouse	-.497	-.383
Playboy	.442	.410
Popular Mechanics	.226	-.098
Popular Science	.110	.049
Prevention	.115	.226
Reader's Digest	.181	.127
Real Simple	-.214	.065
Redbook	.262	.028
Scientific American	-.186	.002
Self	.048	.120
Seventeen	.289	.368
Smart Money	.294	.407
Smithsonian	.354	-.134
This Old House	.186	.268
Vanity Fair	.524	.451
Vogue	.290	.345
W	.453	.650
Wired	.226	.033

We conducted additional analyses by separating magazines into high, medium and low readers-per-copy and in-home/out-of-home reading proportions. Readers-per-copy (RPC) estimates and place of reading percentages for individual magazines were taken from the National study. We expected that lower reader-per-copy magazines would show stronger correlations with audience indices because of the lower likelihood of pass-along readers and the associated greater sensitivity to circulation shifts. We posited a similar hypothesis for in-home readership. Tables 3 and 4 show the correlation coefficients, respectively, for these analyses. While differences between categories do not approach statistical significance, they were in the expected direction for RPC categories, but not for in-home categories.

**Table 3: Average Correlation Coefficients Between Issue-Specific Indices and Issue-Specific Circulation Changes, by Readers-Per-Copy Terciles**

RPC	CALCULATION	CORRELATION
HIGH	Index vs. Single Copy Circulation	.157
	Index vs. Total Circulation	.090
MED	Index vs. Single Copy	.137
	Index vs. Total Circ	.150
LOW	Index vs. Single Copy	.227
	Index vs. Total Circ	.224

**Table 4: Average Correlation Coefficients Between Issue-Specific Indices and Issue-Specific Circulation Changes, by Percentage of Out of Home Readership Terciles**

OUT OF HOME %	CALCULATION	CORRELATION
BOTTOM	Index vs. Single Copy Circulation	.135
	Index vs. Total Circulation	.127
MID	Index vs. Single Copy	.156
	Index vs. Total Circ	.159
TOP	Index vs. Single Copy	.230
	Index vs. Total Circ	.175

After this extensive analysis of the role of circulation in audience shifts, we examined the relationship between magazine website audiences and issue-specific audiences. Unlike circulation, we did not posit a causal sequence because we were uncertain whether heightened interest in a particular issue would precede upward movement in web audiences or vice-versa. It was also possible that interest in both platforms might occur simultaneously. Therefore, we conducted three different sets of correlation analyses, matching issue-specific audiences with previous month, same month and subsequent month website audiences, respectively. Unfortunately, the analysis of weekly magazines was hindered because website ratings are only available on monthly bases, thereby eliminating the possibility of examining week-to-week relationships for weekly magazines. Although there were instances where correlations between monthly website audiences (from the previous, current or next month) and issue-specific audiences were reasonably high (.3 or greater), we found no overall strong correlations between Internet and print variables. (For example, the average correlation across all magazines for contemporaneous website and issue-specific audiences was only .066.) It is still unclear whether the very small website audiences and their associated instability might have impacted the analysis or whether the monthly estimates are not granular enough to identify patterns. Regardless, we did not uncover any significant relationships between web and print audiences.

We conducted a final set of analyses evaluating the relationship between issue size (as measured by number of ads in a particular issue) and issue-specific audiences. We speculated that the larger the particular issue, the more likely that issue would appeal to potential readers. Since we did not have the specific number of pages for magazine issues, we used PIB data about the number of ads in particular issues as a surrogate variable. The average correlation across all magazines was .069, an insignificant finding.

## Discussion

The introduction of issue-specific data has generated substantial interest in the U.S. print advertising community. The industry is involved in deciding how best to use these data for print planning and buying; it is equally curious in understanding the underlying causes of issue-to-issue audience swings. This latter inquiry is important for several reasons. First, it helps agency planners and buyers understand the degree of and reasons for variability in issue-specific audiences. Second, it may inform publishers and editors about best practices to improve or grow their audience. In effect, grasping the swings in audience enables magazine personnel to make the issue-specific data actionable. It also builds confidence in their willingness to replace circulation with audience as the buying currency in the United States.

This paper provides a more detailed analysis of variables that are potentially correlated with issue-to-issue variation than was first explored at the Vienna Worldwide readership Symposium. We have addressed the impact of circulation (single copy and total circulation), website audiences and issue ad size on issue-specific ratings. From these data, it certainly appears that single-copy sales, especially for weekly magazines, are weakly, but significantly, correlated with estimates of issue-specific audience. We surmise that the timeliness required of weekly magazines (and especially the topic of their covers) would likely attract or alienate potential readers. We also found that single-copy sales are a better reflection of issue-specific interest than is subscriber circulation.

Our examination found that relationships between a magazine's monthly website audiences and that publication's issue-specific audiences are quite tenuous. We were also unable to uncover significant relationships between a particular issue's size (measured by the number of ads in the issue) and its corresponding audience. In the former case, we are uncertain whether the website data are granular and substantial enough to tease out a relationship. In addition, publication dates for monthly issues are almost never at the beginning of a month, which means that there is a time disconnect between website and print audience estimates.

Beyond circulation changes and random noise, much of the variation in issue specific audiences remains unexplained. At the same time, we have not exhausted a number of other of variables that might affect the audience of a particular issue. For example, issue-specific publicity levels, celebrity Q scores, cover topic appeal or cover colors could potentially play some role, but we were unable to acquire sufficient data to explore these factors in this paper. Further analysis of the differentiation among concurrent competitive issues is certainly warranted. Even though much work in identifying causal or correlated variables with issue-specific audiences remain, we have established (in another paper) at this symposium that issue-specific data trends significantly with average-issue audiences from MRI's National study. Thus, there remains a need to continue the examination of variability to make the most complete and appropriate use of the Issue-Specific study.

**REFERENCES**

Julian Baim, Bruce Goerlich, "Circulation Changes and Audience Estimates," Worldwide Readership Symposium: Berlin, 1995.

Julian Baim, Martin Frankel, Michal Galin, Joseph Agresti, Kerry Zarnitz, "Measuring Issue Specific Audiences," Worldwide Readership Research Symposium: Vienna, 2007.

Martin Frankel, Julian Baim, Michal Galin, Joseph Agresti, "Issue Specific Estimation – Mathematical and Statistical Issues, Procedures and Models," Worldwide Readership Research Symposium: Vienna, 2007.

Bruce Goerlich, "The Relationship of Changes in Circulation to Changes in Total Audience," Worldwide Readership Symposium: San Francisco, 1993.

Helen Johnston, "Predicting Magazine Audience," Worldwide Readership Symposium: San Francisco, 1993.

Caryn Klein, Lori Jacobs, Alan Rovitzky, Michal Galin, Julian Baim, Marty Frankel, "Issue Specific Audience: Perspectives on Application," Worldwide Readership Research Symposium: Vienna, 2007.

Scott McDonald, Rebecca McPheters, "Audience: The Appropriate Measure of Circulation Quality," Worldwide Readership Research Symposium: Cambridge, 2003.

Mike Skrapits, Valentine Appel, "The Relationship Between Changes in Circulation and Changes in Readership," Worldwide Readership Symposium: Vancouver, 1997.