

MODELING MAGAZINE EFFECTIVENESS

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Background

At the 1999 Worldwide Readership Research Symposium in Florence, Italy, the Magazine Publishers of America (MPA) presented the results of the first three initiatives in its advertising effectiveness research series, launched on behalf of the consumer magazine industry in the United States. The presentation included top-line findings from studies that quantified magazines' ability to generate advertising awareness across a variety of product categories (Millward Brown), increase sales for packaged goods advertisers (ACNielsen), and produce a return on advertising investment for pharmaceutical marketers (Perq/HCI).

The following paper presents the top-line findings of the latest MPA initiative designed to measure magazine advertising effectiveness, and how magazine advertising works in a real-world media mix. The effort, in partnership with Media Marketing Assessment (MMA), is a comprehensive analysis that documents the volumetric impact and effectiveness of magazines on incremental sales using the latest marketing mix modeling techniques.

This initiative, combined with the MPA's previous research, provides clear evidence that magazine advertising works - alone and in tandem with other media - and directly addresses the accountability challenge posed by advertisers and their agencies in the U.S.

Methodology

To objectively quantify the impact of magazine advertising on incremental sales, and to measure the effectiveness of magazines in relation to other elements in the marketing mix, MMA analyzed 186 brands across a variety of product categories from its existing client database. The database included marketing mix models developed for individual brands that advertised in magazines over a combined seven-year period, from 1994 through the year 2000.

The brands included in the analysis represent almost \$10 billion in total marketing spending during the period analysed with more than \$3 billion spent on advertising, and more than \$500 million specifically allocated to the magazine medium.

Total Marketing Spending*

Television	2,437,584,000	25.2%
Magazines	520,934,000	5.4
Radio	128,234,000	1.3
Total Media Spending	\$3,086,752,000	31.9%
Trade	5,739,795,000	59.4%
FSI	845,514,000	8.7
Total Non-Media Spending	\$6,585,309,000	68.1%
Total Marketing Spending	\$9,672,051,000	100%

* 186 brands aggregated across all available analyzed years between 1994 and 2000

(Note: Newspaper and Internet advertising were not included in the analysis because the number of observations represented in the MMA database of 186 brands was not substantial enough to warrant inclusion.)

The brand level data remained proprietary. The overall findings are reported, as well as findings at the category level for twelve different product categories, including:

- Apparel
- Beverages
- Candy/Confections
- Cereals/Desserts/Snacks
- Communications
- Condiments
- General Merchandise (misc. items, e.g. pet food, charcoal, etc.)
- Household Cleaners/Detergents
- OTC Drugs
- Refrigerated/Frozen Foods
- Health & Beauty
- Side/Main Dishes

A number of brand characteristics added depth to the analysis, including seasonality, pricing, purchase cycle, category position, brand longevity, considered vs. impulse purchase, and competitive environment. In addition, a number of executional variables were examined, including advertising budget levels, different media mixes, campaign flighting, and demographic targets.

MMA’s Analytical Approach

The goal of each project is to maximize the financial efficiency of each marketing dollar by know the sales affect each dollar has. MMA's marketing mix modeling is based on multiple regression methodology. The response variable, typically equalized brand sales, is modeled as a function of predictor variables representing all significant influencers of sales. Predictor variables include marketing efforts, category trends, competitive activities, and other external factors. These proprietary models utilize commonly accepted statistical approaches to assess the impact of different marketing activities on sales.

MMA's modeling process incorporates an iterative search routine to explore various transformations that are applied to marketing and advertising variables. These transformations are applied to measured variables (GRPs or TRPs) to reflect the nature of advertising's in-market response on sales. Non-advertising variables can also be represented by various transformations, which can lead to thousands of possible model specifications. Each model is then evaluated on the basis of statistical fit, predictive accuracy, and marketing sensibility. The responses, quantified by the final model, lead to the subsequent analysis of marketing contribution, effectiveness, elasticity and cost-efficiency.

Base vs. Incremental Volume

The analysis identified the sales "contribution" of the different elements of the marketing mix (ie. the percent of total sales volume generated that was directly attributable to an individual marketing element). For each brand studied, however, a certain percentage of the contribution to annual sales is determined to be "base" volume, or the volume generated regardless of marketing.

The following presents the average percent contribution to total sales for the brands included in the analysis. On average, base volume represents approximately 75% of total sales, while approximately 25% of sales volume is incremental. The MMA analysis focused on the 25% of incremental sales volume that companies can control by reallocating expenditures in their marketing and media mixes.

Average Percent Contribution to Total Sales Volume

Trade	15.48
Television	5.39
FSI	1.76
Magazines	1.41
Radio	.80
Base	75.11
Total	100%

Calculating "Effectiveness"

Contribution alone does not determine effectiveness. The expenditure made to achieve a given contribution must be taken into consideration. To calculate the effectiveness of the different elements of the marketing mix, MMA overlaid the expenditure data attributable to each individual marketing element during the period.

The media spending inputs used were actual expenditures submitted to MMA by their individual clients, not an industry-wide surrogate like Competitive Media Reporting or Monitor Plus data. As a result, the effectiveness measures developed are a closer representation of an advertiser's actual return on advertising investment.

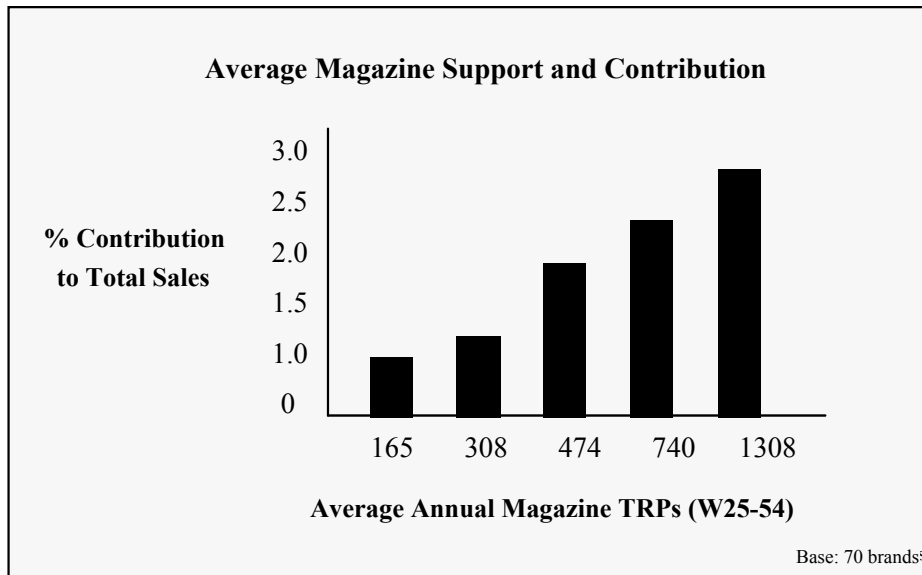
$$\text{Effectiveness} = (\% \text{ Contribution/Spending}) \times 1,000,000$$

Preliminary Findings

While a comprehensive analysis of the database created by MMA is still underway, a number of preliminary findings have emerged that demonstrate the efficacy of magazine advertising in relation to the other elements of the marketing and media mix. A more detailed review of the findings will be presented at the Worldwide Research Readership Symposium in Venice, Italy.

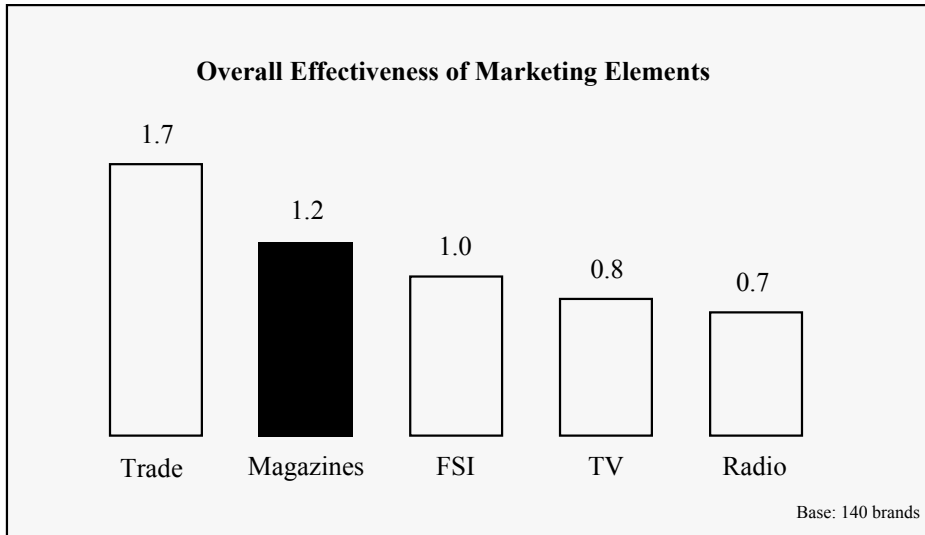
I. The Impact of Increased Magazine Weight on Contribution

By analyzing 70 brands in the database with a common target (women, age 25 to 54), MMA measured the impact of increasing magazine TRPs on magazines' overall contribution to total sales for those brands. On average, brands whose magazine weight was the highest - in excess of 1,300 TRPs annually - generated the highest magazine contribution to total sales volume. This initial finding clearly demonstrates that, on average, increased advertising weight in magazines produces an increase in incremental sales volume attributable to magazine advertising.



II. Overall Effectiveness by Marketing Element

To determine the overall effectiveness of the individual elements of the marketing and media mix, MMA calculated the percent contribution of those elements, and then divided by the actual spending allocated to marketing and media drivers. The analysis found that, behind trade, magazines were the most effective element in the overall marketing mix for the brands measured. Among media mix elements, magazines were 50% more effective than television and 71% more effective than radio.

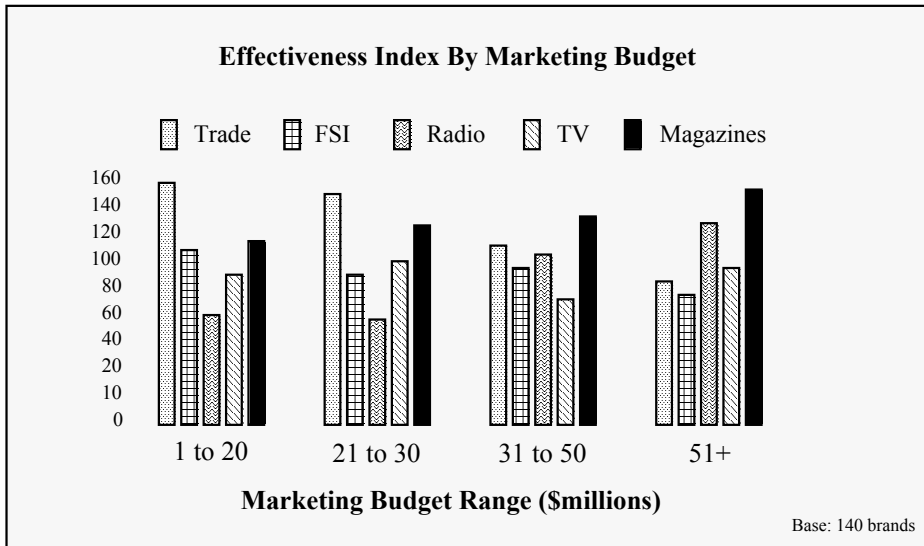


III. The Impact of Advertising Budgets on Marketing Mix Effectiveness

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To determine the impact of advertising budget levels on effectiveness, MMA grouped the measured brands into four different budget ranges and then calculated a marketing effectiveness index based on the average effectiveness for the brands represented within each range.

- For all four budget ranges measured, magazines were more effective than television or radio.
- The overall effectiveness of magazine advertising was the highest for those brands with a total marketing budget of \$51 million or more.
- Magazines were more effective than any other element in the marketing mix for those brands spending \$31 million or more.



IV. The Impact of Flighting on Magazine and Television Effectiveness

MMA also quantified the synergy of magazine and television advertising working together. By analyzing the weekly flighting of magazines and television at the individual brand level, based on weekly TRP data provided by their clients, MMA created three terciles representing three distinct approaches to advertising flighting:

- Periods where there was no weekly overlap between a brand's magazine and television advertising, based on the statistical correlation between media weight in magazines and television. (average correlation = -.13)
- Periods where there was minimal weekly overlap between a brand's magazine and television advertising, based on the statistical correlation between media weight in magazines and television. (average correlation = .13)
- Periods where there was substantial weekly overlap between a brand's magazine and television advertising, based on the statistical correlation between media weight in magazines and television. (average correlation = .40)

The analysis revealed that the two media working in tandem had a synergistic effect, and that the overall effectiveness of both magazines and television was the highest when there was substantial overlap in weekly advertising flighting. In addition, magazines were more effective than television regardless of weekly flighting execution.

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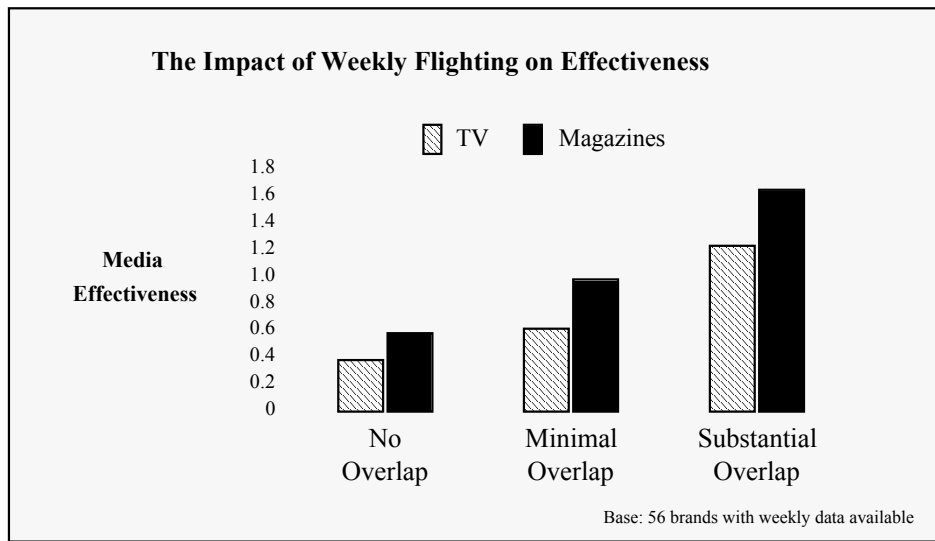
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Summary

Additional analyses of the MMA database will provide ongoing insight into the effectiveness of magazine advertising at generating incremental sales for a host of marketing and executional variables, as well as detailed findings for each of the twelve categories measured. To date, the preliminary findings demonstrate that magazine advertising is effective at generating incremental sales, and that magazines play a synergistic role in combination with the other elements of the overall marketing and media mixes.

For the most recent findings of "Modeling Magazine Effectiveness", and for the results of other research initiatives in the MPA's advertising effectiveness series, visit the MPA's Web site at www.magazine.org.

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