Empirical Evidence of TV Advertising Effectiveness

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About the author

Joel Rubinson is Chief Research Officer at The ARF, where he directs the organization's research priorities and initiatives on behalf of more than 400 advertisers, advertising agencies, associations, research firms, and media companies. The ARF is the only organization that brings all members of the industry to the same table for strategic collaboration.

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Joel is also a published author of numerous papers in professional journals and frequent speaker at industry conferences. He has taught the official American Marketing Association advanced tutorial on brand loyalty and lectured at Columbia, NYU, Wharton, Amos Tuck School, and University of Rochester, among others. Joel holds an MBA in statistics and economics from the University of Chicago and a BS from NYU.

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Abstract

In this paper, three hypotheses were examined that, if accepted, would lead us to conclude that TV advertising has declined over time in its effectiveness. Seven different databases, accounting for a total of 388 case histories, were accessed to conduct a form of meta-analysis to address this issue. These databases include results from advertising weight tests, marketing mix modelling, copy testing, return on marketing analysis from quasi-experimental design, and media planning tools. The evidence we studied does not support the acceptance of any of these hypotheses, leading us to conclude that TV appears to be as effective as ever, possibly even increasing in effectiveness, in terms of unit sales lift from incremental GRP advertising pressure. In terms of specific marketing objectives, the evidence suggests that the impact of TV on sales lift appears to operate primarily by generating awareness/brand recognition, suggesting that an effective marketing plan that uses TV should do so in conjunction with multiple forms of marketing in order to impact all parts of the purchase process.

Introduction

Recent reports in trade journals depict a series of factors that would suggest that TV advertising has lost its ability to be effective. The factors that present a supposed prima facie case against TV advertising effectiveness are the following:

1. Ability for viewers to control their viewing of TV commercials via using DVRs for time-shifting viewing and fast forwarding past commercials. As DVR household penetration in 2008 has reached 25 - 30% (Eggerton, 2008; Goetzel, 2008; Steinberg, 2008) and 50% of DVR owners typically fast forward (Morrissey, 2008), this effect would now appear to be significant
2. Reports that over half of consumers do not like TV advertising and would prefer it did not exist (Forrester Research, 2007)
3. Increase in TV commercial clutter. Over the last 50 years, "non-program content" in a 60 minute prime time show has increased from 11 to 18 minutes (Papazian, 2007).
4. Shift in media consumption patterns that have led 50% of TV viewers to multi-task, presumably paying less attention to TV as they are simultaneously on the web, using their phones, reading, etc. (MRI, 2008; Papper, Holmes, Popovich, & Bloxham, 2005).
5. The compelling nature of internet and social media advertising that can serve up contextually relevant advertising as people are shopping for the actual product or service being advertised implying that consumers seek advertising content elsewhere (other than TV).

On the other hand, evidence was published in 2007 by professors Hu, Lodish, and Krieger from IRI Behaviorscan testing using experimental design that the average level of effectiveness of TV advertising, using test vs. control methods, has actually INCREASED. Also, evidence from biometric testing has shown that viewers do, in fact, exhibit emotional response in a state of heightened awareness as they fast forward through commercials (Hsu, 2008).

The purpose of this paper is to factually inform this issue of whether or not the effectiveness of TV advertising has substantially changed over time, and if so, has it decreased, as many presume, or actually increased.

Hypotheses

If TV advertising has lost its effectiveness over time, we would expect to see it manifested in a number of ways:

H1a: **Declining elasticity**. Controlled test marketing and marketing mix modeling will show that the efficiency of generating incremental sales as a percent of the increase in advertising pressure has declined over time

H1b: **Declining elasticity controlling for copy effectiveness**. After controlling for differences in communications effectiveness, as measured by copy testing results, the

efficiency of generating incremental sales as a percent of the increase in advertising pressure has declined over time

H2: **Low relative effectiveness of the TV medium**. In a marketing campaign that uses numerous advertising platforms, the contribution towards marketing objectives that is attributed to the TV advertising component is below the contribution of other media.

Data used for analysis

The author has gained the cooperation of seven organizations who contributed databases that are relevant for testing these hypotheses. The databases are as follows.

1. IRI – a database of Behaviorscan controlled testing and matched market testing[1] results for 125 experiments with corresponding advertising elasticity estimates
2. PM Group – Marketing mix modeling results across 2003-2008; 37 datapoints
3. Dratfield – multi - year trends based on marketing mix modeling; 27 datapoints.
4. ARS® – a database of 112 cases that contain a measure of copy testing, modeling wearout factors, and GRP advertising pressure vs. the sales impact associated with advertising.
5. Marketing Evolution – N=40 delivered campaign level results of 'people impacted per thousand' across media touch points.
6. PointLogic – PointLogic's "Compose" methodology is based on many surveys and uses a proprietary method for analyzing the relative impact of various advertising platforms
7. Millward Brown/Dynamic Logic – a database of 47 cases using quasi-experimental design to observe impact on dependent marketing measures for those who had the opportunity to see brand communication vs. those who did not have the opportunity. Results measured test vs. control.

There were 388 distinct cases for this analysis plus the PointLogic data which reflects general patterns of the appropriateness of a medium to convey a given type of message based on large sample surveys.

Analysis Plan

By using a mix of different databases, the analysis is a combination of meta-analysis and triangulation (Cook, 1992; Farley & Lehman, 1986; Denzin, 1978). Meta-analysis is used for integrating analyses from different methods when the dependent variable can be made comparable. In this case, we have taken the IRI, PM, Dratfield, and ARS data, centered their respective method of advertising effectiveness, and trended the index across time periods. The PointLogic, Marketing Evolution, and Dynamic Logic results are important for testing H2 but cannot be transformed into the same common dependent measure that is used for the other four databases. As such, they are employed in a way often referred to in the literature as triangulation.

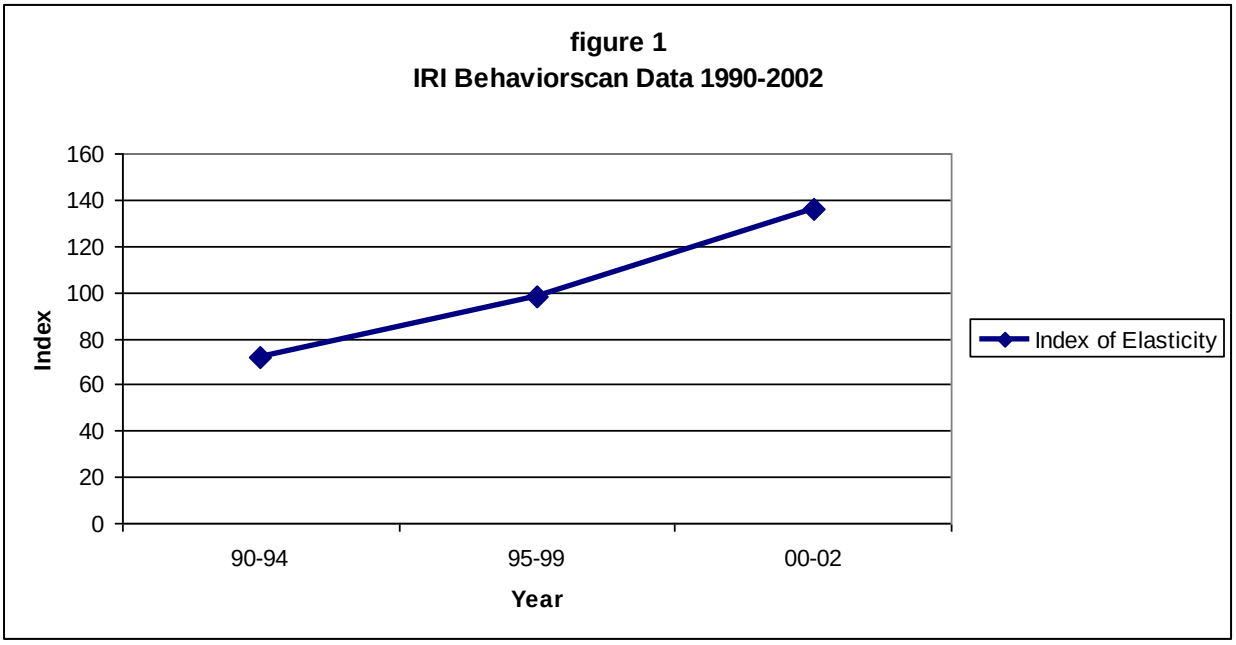
[1] Matched Market Testing evaluates market-wide programs, including increased or decreased advertising of TV, radio, outdoor or print vehicles, new coupon strategy, or the incremental lift of a new line extension or product. IRI applies analysis of covariance (ANCOVA) which identifies and adjusts for non-test related differences across markets, achieving reliable and projectable results

Results

H1A: Declining elasticity hypothesis

IRI Behaviorscan

Using addressable cable technology, Behaviorscan allows marketers to conduct media experiments across well matched sets of consumers. IRI also conducts matched market tests. The IRI data we utilized has a control cell with non-zero advertising weight and a test cell with a substantial increase in weight. This type of test allows us to calculate advertising elasticity in a way that conforms to standard economic formulas (i.e. percent change in sales divided by percent change in advertising weight). We can calculate the resulting lift in sales per unit of advertising in the year of the test (long term effects excluded), average the results across all cases (within type) and then trend these indices of advertising effectiveness. The elasticity values were indexed with an average of 100 and grouped into time period to more easily analyze effects over time.

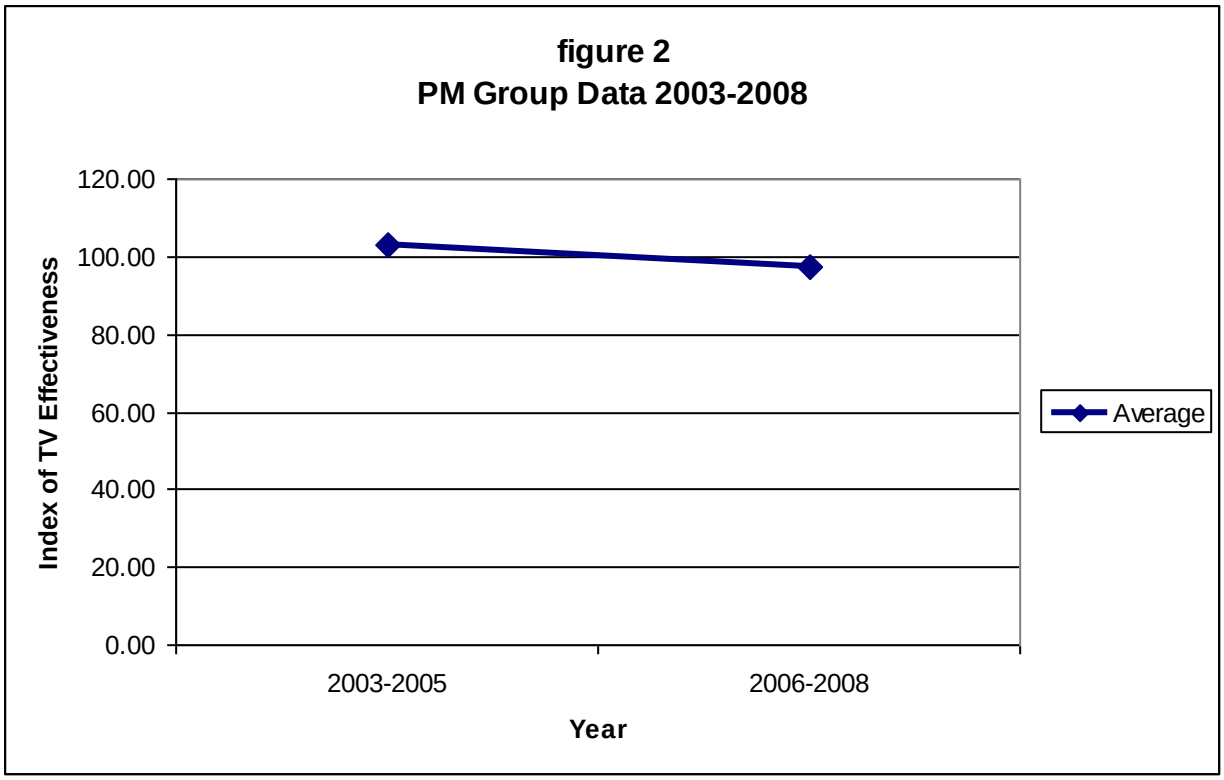


As is shown in figure 1, the sales response to TV advertising appears to be increasing, not decreasing, over time.

Next, we turn to marketing mix modelling data.

PM Group Data

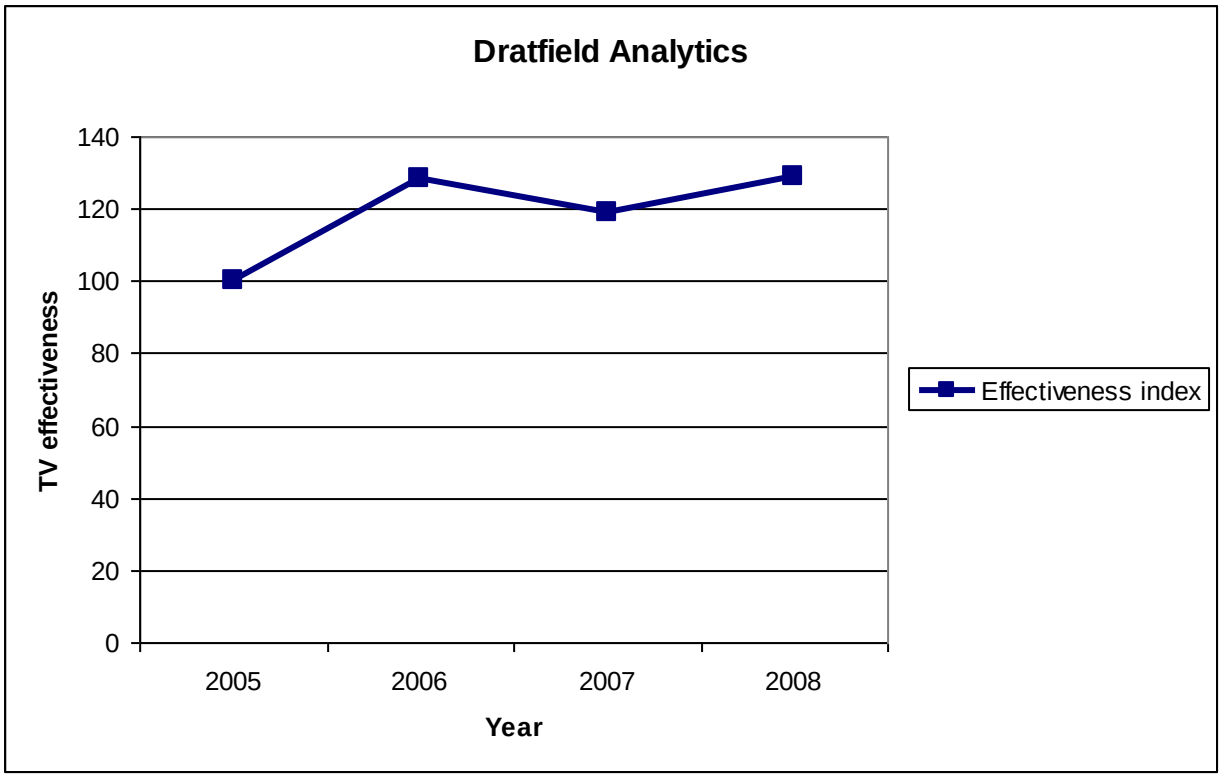
The PM group conducts marketing mix modeling. The data we studied defines advertising effectiveness in terms of sales per unit of advertising pressure. Figure 2 indicates a slight decline in TV effectiveness over time.



Dratfield Analytics

Dratfield conducts marketing mix modeling. The following chart depicts TV effectiveness data from their databases. The definition of TV effectiveness for these purposes reflects the incremental volume per TV support metric (e.g. GRP). To be included, data were from studies that were modeled across multiple years on a similar basis to allow for comparison. Since different clients request different metrics to measure success (dependent variable), an index against the base year (2005) was created. Each year reflects a percent change in TV effectiveness versus the base year.

The results of the Dratfield database reveal increasing TV effectiveness (see figure 3).



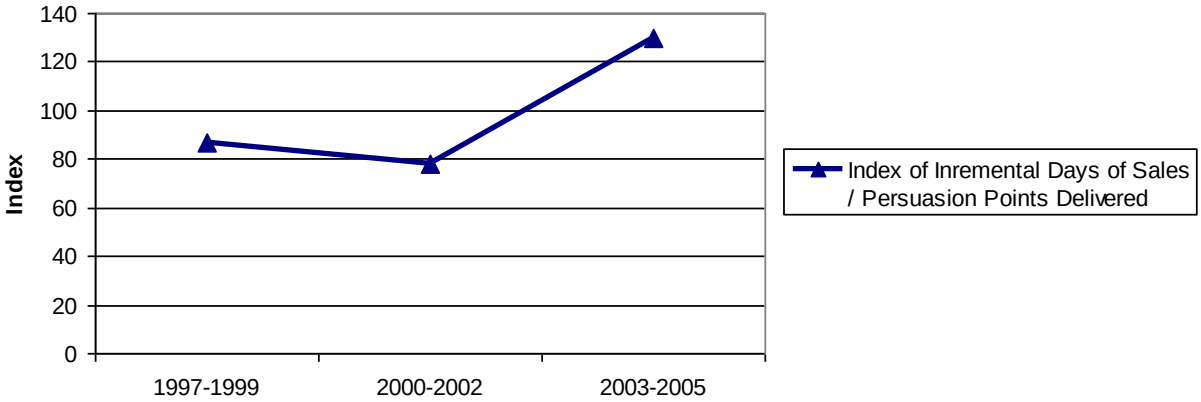
The observation across these three databases is that H1a cannot be accepted. We conclude that TV advertising is not declining in effectiveness over time.

H1b: Declining elasticity controlling for copy effectiveness

To test this hypothesis, we turn to the **ARS®** database.[2] ARS asks clients to share the sales lift that is calculated from marketing mix modeling on commercials that are tested via the ARS commercial testing system. **ARS Persuasion®** scores are combined with estimates of wearout (ARS R&D proves that a commercial has a predictable pattern of reduced impact over time) and the GRP weight behind the commercial. This leads to a calculation that ARS refers to as "**Persuasion Points Delivered®**" (**PPD®**). If H1b is true, the relationship between sales impact and PPD® should be changing (decreasing sales impact per PPD) over time. The graph in figure 4 shows the result of this analysis for all cases indicating increasing sales response to PPD.

[2] **ARS®, ARS Persuasion®, Persuasion Points Delivered®, and PPD®** - are registered trademarks of **rsc**.

Figure 4
ARS Persuasion Points Delivered vs. Incremental Sales
(From Marketing Mix Modeling) 1997-2005



The net result of our analysis is that TV effectiveness has not decreased over time, after controlling for persuasion test results, GRPs, and wearout.[3] Therefore, we reject the hypothesis that - after controlling for differences in communications effectiveness, as measured by copy testing results - the efficiency of generating incremental sales as a percent of the increase in advertising pressure has declined over time.

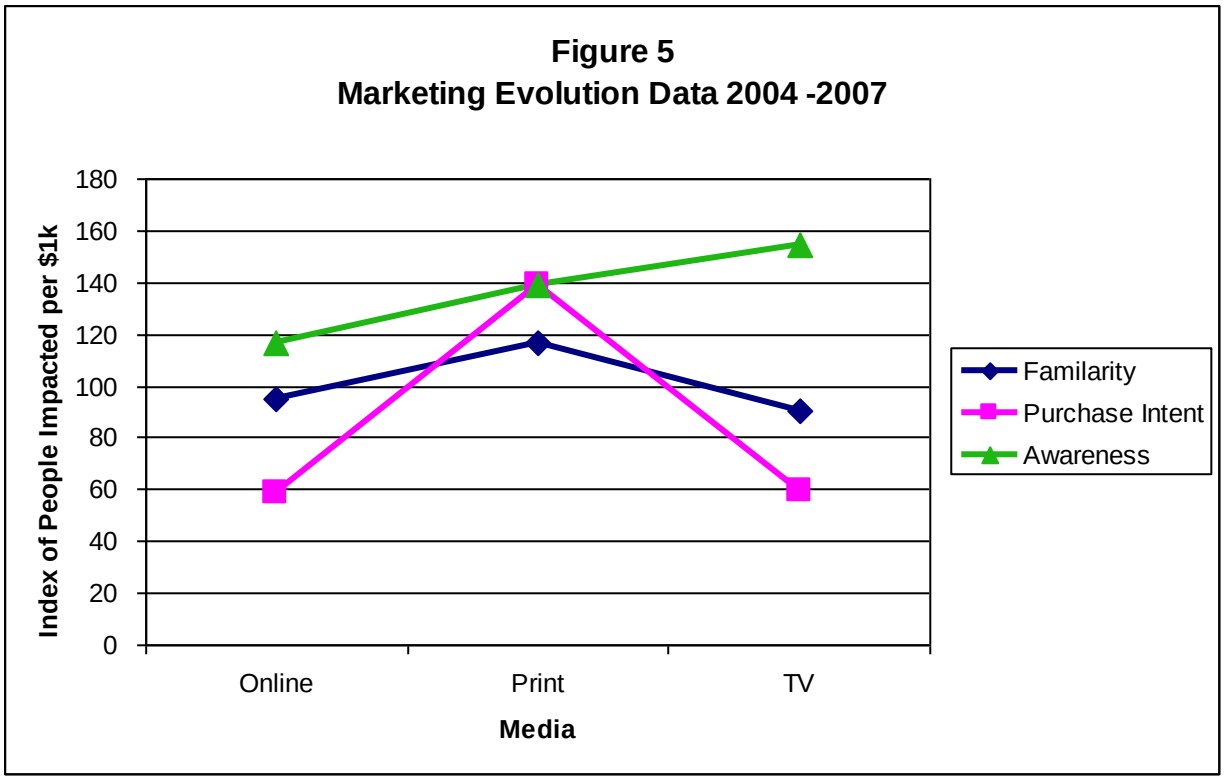
H2: Low relative effectiveness of TV medium

Next we turn our attention to the question of the relative effectiveness of TV vs. other media.

Marketing Evolution

Marketing Evolution uses a proprietary combination of methods for determining the relative contribution to a marketing campaign's lift in the marketing objective from the different parts of the marketing mix. Results across 40 cases are shown in figure 5.

[3] ARS® concluded through separate analyses that the advertising impact per PPD® has remained constant over time. Their regression analysis indicated that the Incremental Days of Category Volume per GRP is more or less constant over time.

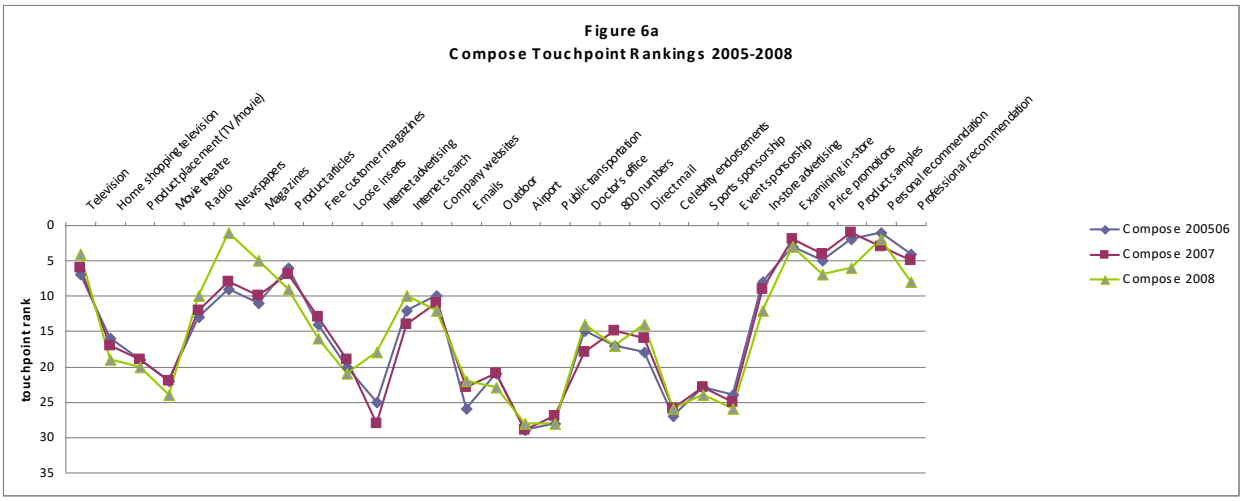


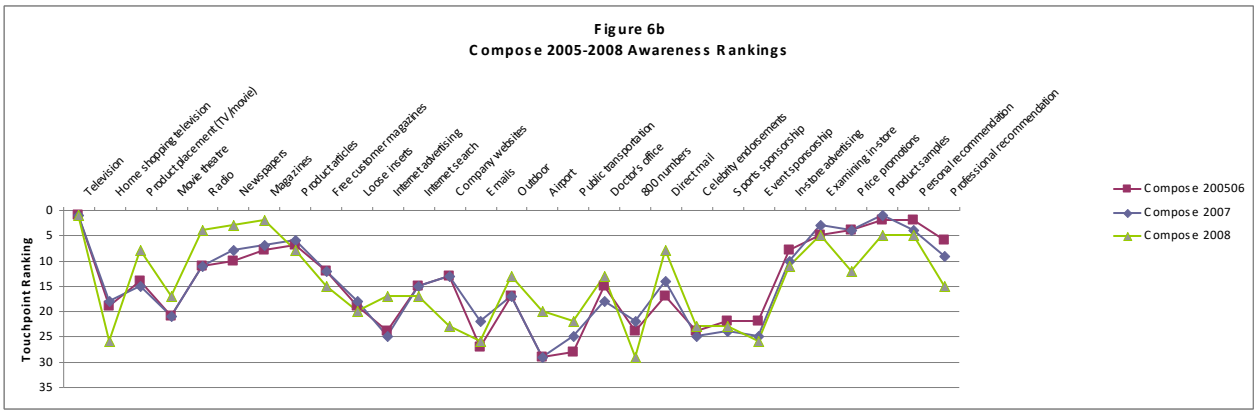
The graph shows that TV is more effective than online and print at generating awareness. TV is also effective at generating familiarity and equally effective as online in generating purchase intent. Interestingly, print appears to be the most effective of the three media platforms at generating familiarity and purchase intent. But relating to H2, we note that TV is not the least effective medium[4].

Point Logic

Point Logic's Compose method uses a proprietary approach to determine the match between a medium and the communications objective the advertiser has. Compose is made up of two survey components: one is large-scale and consumer-based; the other is formed of experts from media-planning agencies. Compose also integrates detailed media consumption- and cost information. Figure 6a shows a synthesized measure of the relative attractiveness of each touchpoint for each of three years.

[4] This analysis was done removing outliers; e.g. extreme points in the dataset which would skew the results unfairly. We used a trimmed mean; removing the 5% most extreme values on either end of the data distribution.

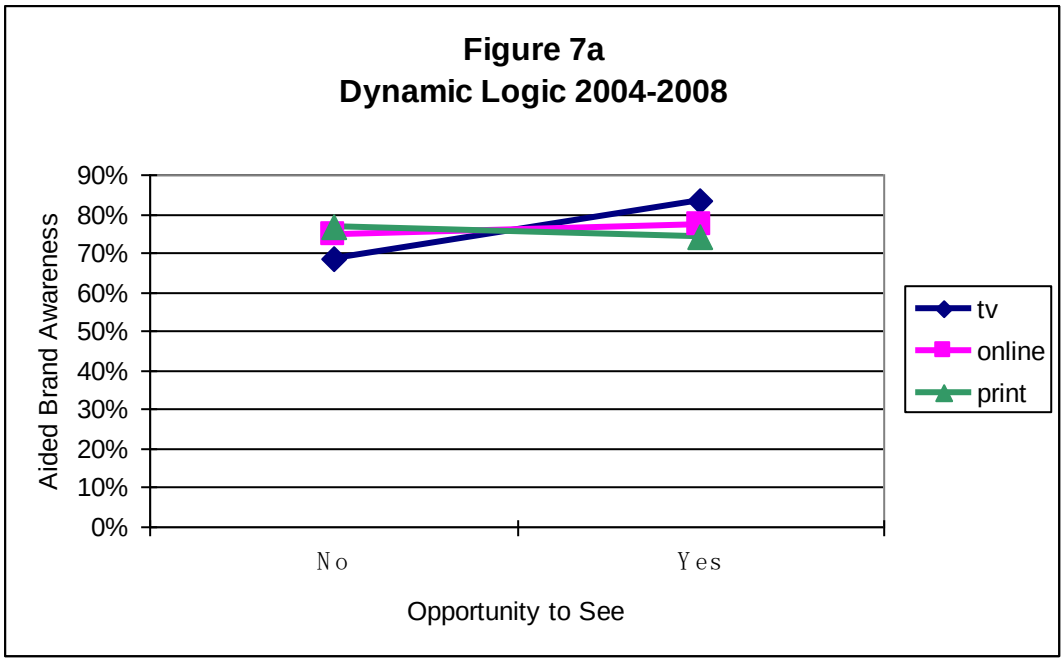


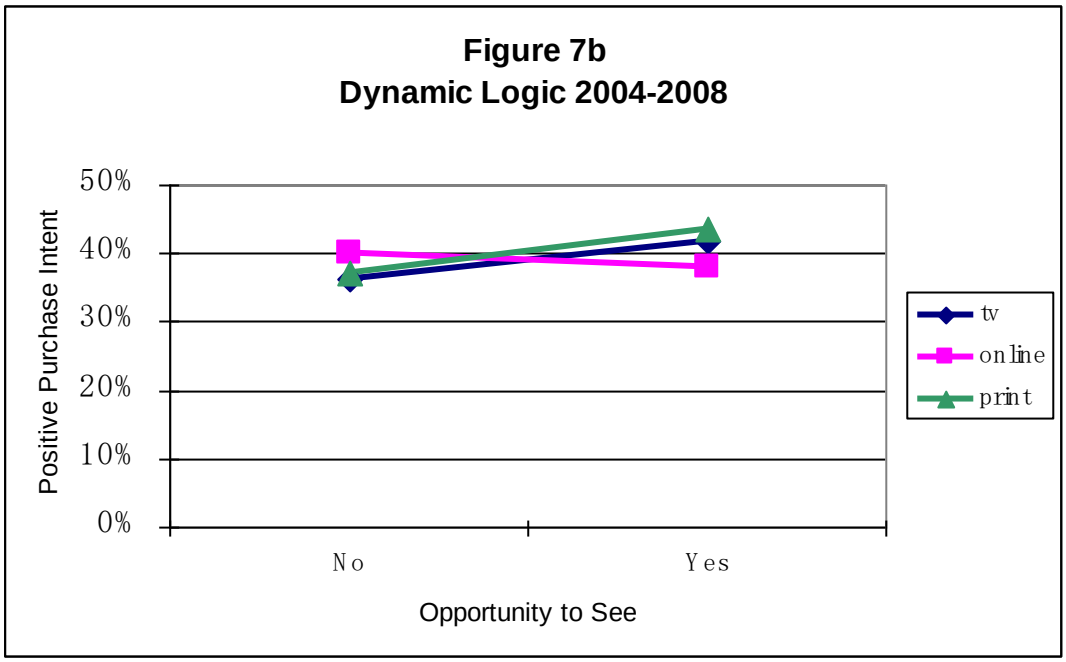


We note that TV's effectiveness has actually improved somewhat across these three years, moving in ranking from 7th to 4th. Figure 7b shows that TV ranks highest as an appropriate medium for generating awareness.

Millward Brown/Dynamic Logic results

Dynamic Logic uses a quasi-experimental design to create test and control groups and determine the impact a medium has on a particular metric that reflects a marketing objective. By comparing the slopes of the lines we can infer which medium is most effective for each marketing objective.





Figures 7a and 7b show that those with an opportunity to see a particular TV commercial were impacted in terms of brand awareness and purchase intent. In particular, TV appears to be relatively most effective at generating awareness which is a consistent result to those from Point Logic and Marketing Evolution.

Synthesizing the results of Marketing Evolution, Point Logic, and Dynamic Logic we cannot accept H2. It appears that TV can be effective as an advertising medium compared to print, online, and the broad array of touchpoints researched by Point Logic, particularly when it comes to generating awareness.

Conclusions

In this paper, three hypotheses were examined that, if accepted, would lead us to conclude that TV advertising has declined in its effectiveness. The evidence does not support the acceptance of any of these hypotheses, leading us to conclude that TV appears to be as effectiveness as ever, possibly even increasing in effectiveness, in terms of unit sales lift from incremental GRP advertising pressure. Note that the dollar cost of these GRPs was not part of the analysis so our analysis is confined to the question of whether or not TV advertising can produce increases in sales, not whether TV advertising is ROI positive. In terms of marketing objectives, the evidence suggests that the impact of TV on sales lift appears to operate primarily by generating awareness.

Discussion

It should be noted that these results are shaped by marketers' choices of products/services for which they decided to make TV a significant portion of the marketing mix. It is conceivable that TV's effectiveness is stable or increasing because marketers are getting better at deciding when to use TV in light of a growing number of media options that are available. Marketers might also be getting better at creating ads that work, although that is pure speculation, as it was not investigated via the data we had available. Still, it is meaningful that we conclude that TV continues to be a very effective part of the media mix in terms of sales and other chosen marketing objectives.

Based on triangulating our findings, it appears that TV is effective at generating sales, in particular, by generating awareness. If so, this would suggest that awareness alone, even potentially in the absence of specific message communication, can lead to sales effects. There is supported in the literature for this hypothesis as awareness based on TV commercial exposure is likely to lead to priming effects, subconscious emotional connections, and awareness or recognition (Marci, 2006). Regarding "recognition" this has been proven to be used by people as a decision heuristic in the absence of detailed knowledge when shopping…either to frame out a consideration set of alternatives or actually to make a specific choice if only one alternative is recognized (Rubinson, 2005). Of course, awareness is also a variable in new product forecasting and purchase funnel models, used basically as a precondition of purchase (Pettit, 2008).

Although this paper reports on 388 case histories across seven different databases, there would be many thousands of case histories if all potential sources for this paper had cooperated by sharing their data. Hopefully, subsequent updates of this paper will include additional databases. Also, it should be noted that a smaller percentage of US viewers used DVRs during the latter time periods in these datasets than have DVRs today so time shifting and fast forwarding might be more prevalent than is reflected in this paper. However, there is evidence that advertising can have an impact even if viewers are using DVRs (from recent research using biometric approaches which

reported that viewers absorb stimuli and can be aroused even when fast-forwarding, see Hsu, 2008). Combined with the work of Heath (2000), who contends that information processing occurs even under conditions of low attention, we can make a credible counter-argument that sales effects would not be impacted proportionately as timeshifted viewing becomes more prevalent.

Perhaps the most important question going forward is the role that TV should play in the marketing mix relative to other media. It is important to realize that this paper represents what is known about TV effectiveness via a series of a few snapshots but technology will continue to change the experience that a media consumer has with a given medium and the interplay among media. As the nature of a medium changes, it also affects how people use that medium and how they incorporate it into their shopping and pre-shopping strategies.

As such, TV effectiveness and the optimal way of using that medium will continue to evolve. For example, TV will certainly become more interactive and targetable, perhaps moving to a real time ad serving model. When TV becomes interactive, with high levels of content on demand, is it not possible that TV will acquire some of the same attraction to shoppers (and therefore advertisers) that special interest magazines offer as a source of indispensable information for their shopping process? Also, media are getting more connected and synergistic as media multitasking is becoming more and more prevalent. TV advertising is already known to generate search. That would seem to represent media working synergistically to push and pull people through stages of the purchase funnel.

As media continue to change, we must form hypotheses but then be vigilant in our desire to acquire data that rigorously tests these hypotheses so we can continue to improve marketing efficiency and effectiveness.

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