



## Research Article

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## Advertising Costs & Sales Benefit Analysis: An Empirical Study with reference to Consumer electronics Industry in India

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**Abstract:** Advertising has become the dominant marketing variable because all competing brands are essentially identical with respect to price, distribution and product attributes. The consumer electronics industry in India presents such a picture. The paper attempts to analyze the advertisement expenditure as a percentage of sales and relationship between advertisement expenditure and sales revenue for the consumer electronic industry.

**Keywords:** Advertising Cost, Sales Benefit, Consumer electronics Industry, Marketing industry, Electronic industry

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## INTRODUCTION

It is a known fact that advertising pressure is only one of the many factors controlling sales levels and its contribution is submerged in the aggregate effect of all of them. Nevertheless, there are situations in which advertising is the dominant marketing variable because all competing brands are essentially identical with respect to price, distribution and product attributes. The Consumer electronic industry in India presents such a picture. In this Industry, the other factors affecting the sales are also similar across brands and the function of advertising is to act as a cure or reminder to purchase. The effort is to build a reputation of quality for the company over the long run. Advertising messages are also designed to make customers aware about a forthcoming discount and other promotional schemes. Keeping in view the strong link between advertising and sales, the immediate sales could indeed become a useful performance measure and the basis for operational objectives.

## LITERATURE REVIEW:

For the past Five decades, researchers have tried to estimate the effects of advertising on brand sales using field data (Leone & Schultz, 1980; Vakratas and Ambler 1996). Most of these studies have focused on many technical issues involved in efficiently capturing the unbiased effects of advertising, given the limitations of field data (Hanssens *et al.*, 1990). Meta Analysis of these studies have shown that the effects of advertising are

significantly greater than zero but vary with market & product characteristics (Assmus *et al.*, 1984, Sethuraman & Tellis 1991), Lambin (1976) found limited empirical support of the view that advertising influences industry sales: in only four products markets out of ten could significant industry advertising effects is observed.

The four industries were all in the early stages of lifecycle. More recent studies based on single source data have also found some significant effects of advertising (Deighton *et al.*, 1994, Kanitkar *et al.*, 1992, Pedric and Zufryden 1991, Tellis 1998, Tellis and Weiss 1995). Estimates of how advertising affects aggregate sales are available from variety of econometric models which estimate parameters of general demand function. One such approach has been called Replication Analysis (Farley *et al.*, 1981) to indicate that various studies are viewed as imperfect replications of one overall unplanned experiment. Partly because of the fragility of advertising effects and the complexity of getting bias free estimates, few studies have addressed the next important issues about advertising effects on sales.

## RESEARCH OBJECTIVE AND METHODOLOGY:

The objective of the present study is to analyse the relationship between advertising expenditure and sales revenue for the consumer electronic industry. For this purpose a sample of Three Indian companies viz. Videocon International, BPL India, Mirc Electronics;

and five foreign multinational companies' viz. Samsung India, Sony India, LG India, National Panasonic India, and Sansui India were selected for analysis. The sales revenue and the advertisement expenditure data for five years (2004-2009) has been collected for each of the sample companies from their annual reports.

### ANALYSIS AND RESULTS:

Advertising Budget is the annual statement which determines the amount of advertisement

expenditure to be incurred on each product/company. Table 1 shows advertisement expenditure as a percentage of sales, over the period of Five years (2004-09) for all the sample companies. the Indian companies spend much less on advertisements as a percentage of their sales compared to the foreign multinational companies. The average expenditure of Indian companies in 2008-09 was 2.26, percent, and compared to 7.60 percent by the foreign companies.

**Table 1: Advertisement expenditure as a percentage of sales in customer electronics firms**

	2004-05	2005-06	2006-07	2007-08	2008-09
BPL	8.11	7.87	7.69	3	1.32
Videocon International	11.45	11.88	5.14	4.26	2.44
Mirc Electronics (Onida)	3.75	5.44	3.61	3.29	3
Samsung	0.58	3.14	3.48	3.27	3.28
Sony India	1.31	1.69	2.09	9.84	7.31
LG India	3.28	6.16	3.12	7.40	5.15
National Panasonic India	3.42	5.50	7.08	14	10.76
Sansui India	11.78	13.66	30	21.11	11.93

**Source:** Computed from Annual reports of the company

The trend shows a continuous decline of advertisement expenditure as a percentage of sales for the two major Indian companies' viz. BPL and Videocon, which holds major market share (approx. 30 percent). There is no major rise in case of Mirc Electronics. The decline and consistency in trend may be attributed to the product life cycle stage of Indian companies. Most of them are passing through the high growth stage towards the maturity stage. Hence much advertisements for these companies is not needed.

In case of the foreign multinationals the trend shows a continuous rise in their advertisement expenditure, as a percentage of sales. The increase in the advertisement expenditure is because of the fact that most of these companies are comparatively new to the Indian market and they want to increase their sales by engaging themselves into heavy advertising in order to establish their brand in the Indian market. The sharp decline in the advertising expenses of all the companies in the period (2008-09) because of the global economic crisis.

A simple test of hypothesis has been performed to check the significance of the relationship between advertisement expenditure and sales revenue by using correlation and regression analysis. The involved testing:

The null hypothesis i.e. there is no significant relationship between the advertisement expense and sales revenue,  $H_0: p = 0$

The alternative hypothesis i.e. there exists significant relationship between the advertisement expense and sales revenue  $H_1: p \neq 0$

To test the significance of this relationship, the test Statistic t, has been computed using:

$$t = r \sqrt{\frac{n - 2}{1 - r^2}}$$

The test has been done at  $\alpha = 0.5$  with  $n-2=3$  degrees of freedom, the critical value of t, obtained from the table is 2.5333. If the computed value of t is less than 2.353, we accept the null hypothesis, and vice versa.

To determine the impact of advertising expenditure on the sales revenue, the following regression model has also been hypothesized:

$$Y = ax + bx + e$$

**Where:**

Y = Sales revenue per year

X = amount of money spent on advertisement per year

a = a parameter that represents the mean value of the dependent variable (Y), when the value of independent variable (X) is zero.

b = a model parameter that represent the slope that measures the change in the value of independent variable (x) associated with one unit increase in the value of independent variable.

e = an error that describes the effect of (Y) on all factors other than the value of (X).

Results of Correlation and regression analysis for the five years period (2004-09) are presented in Table-2. Only two companies – BPL and Videocon had shown negative correlation which shows that there is a tendency of small advertisement expense (x) to be associated with a large sales revenue (Y). This inference may be the reason of declining advertisement expense in

these companies, over the past five years (2005-10). The rest of the companies have shown a positive trend in correlation, the greatest being shown by Sony India and

LG, which shows a tendency of high advertisement budget being associated with high sales revenue.

	$\gamma$	Correlation Trend	T = (at $\alpha = 0.05$ )	Null Hypothesis	a	b	e
BPL	-0.445	Negative	0.86	Accepted	2149.23	-5.66	340.69
Videocon International	-0.717	Negative	1.79	Accepted	2116.81	-5.98	405.83
Mirc Electronics (Onida)	0.66	Positive	1.52	Accepted	208.15	15.04	153.83
Samsung	0.16	Positive	3.09	Rejected	136.37	3.4	37.27
Sony India	0.87	Positive	3.16	Rejected	397.72	2.56	109.51
LG India	0.87	Positive	3.06	Rejected	170	5.17	41.35
National Panasonic India	0.81	Positive	2.45	Accepted	94.23	1.65	19.34
Sansui India	0.31	Positive	0.32	Accepted	-30.37	5.08	94.16

**Source:** Computed from the Data of the Annual Reports of the companies.

The test of significance (t) reveals that in the case of BPL, Videocon, Mirc Electronics and Sansui India, null hypothesis cannot be rejected, it means that there is no systematic relationship between x and y, but if the same value of  $\gamma$  has been obtained from large sample (eg: N=30), then a possible conclusion could be a systematic association between variables.

In case of regression analysis, the parameter 'a' estimate reflects the mean value of sales revenue if no advertising expenditure is carried out. It may be noted that companies shows a greater positive correlation X and Y, have a greater tendency to show decline in their mean value of sales revenue, if no advertisement is carried out. The mean sales revenue of Sansui India has shown a negative trend in the absence of advertising expense. The parameter b indicates that if advertising expenditure is changed by 1 unit, the sales revenue will change by 6 units. Mirc Electronics has the maximum value of b, which means that there is greater tendency of change in Sales revenue if the advertisement budget was changed by one unit. This trend is followed by LG India, Sansui India, Samsung and Sony India, in that order. Interestingly, BPL and Videocon have shown negative value of b, which may be interpreted as a decline in the sales revenue, if advertising budget is increased. The error term 'e' is central to the regression analysis model. The smaller the value of error term 'e' the better will be the fit between advertising expenditure (x) and the tendency value (a). From the table, it is seen that (e) is the lowest in case of Samsung India and highest for Videocon international showing a greater tendency of error in Videocon, followed by BPL, Mirc Electronics and Sony India.

## CONCLUSION:

The study shows that during 2004 to 2009 there is a 22 percent decline in the advertising expenses of the

Indian Consumer electronic durable companies in contrast to the Japanese companies that have shown the marked hike of 300 percent in their advertisement expenses. This trend not only portrays the eagerness of Japanese companies to build their brand image and position strongly in the mind of Indian consumers, but also shows the aggressiveness of their marketing operations in India which are bound to increase in near future. The result of correlation & regression analysis also upholds the present conclusion.

The future research could aim to answer the questions relating to time lag between the advertisement and the behavior (purchase by the consumer). For the behavior to be an appropriate measure, the time lag should be short. Another implication for the future research may be the task to determine when the short term effect of advertisement is meaningful enough to include in the analysis in a campaign that has primarily a long run objective. In making such a judgment a careful distinction should be made between incremental short term sales that are borrowed from the future and short term sales increases that really represent immediate incremental profits. Finally, a more comprehensive overall model of advertising effectiveness would be helpful in generating theoretical predictions about the impact on the advertisement effectiveness under specific market conditions. Such a model also would help to promote a more explicit and comprehensive basis for developing a similar hypothesis.

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