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ROI into Personal Selling Effort: An Empirical Analysis

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Abstract

In spite of huge marketing expenditures, management frequently does not have any concrete knowledge of the return obtainable on its sizable investment into personal selling effort. Quantitative as well as qualitative measurements of effectiveness of personal selling effort are no doubt very difficult due to its interaction with numerous forces in the marketplace. The present work is carried out with the aim of studying the impact of personal selling on sales and overall customer satisfaction level relating to two brands (Keo-Karpin and Emami) of two firms by taking into consideration both financial and non-financial aspects of the measurement. The return-on-investment (ROI) is calculated firm-wise of personal selling effort for each brand on the basis of sales and adjusted for respective customer satisfaction index (CSI). Results thus, obtained were compared between the brands to get an idea of the effectiveness of this effort on Sales, CSI, and return-on-investment (ROI). The findings suggest that the personal selling effort has significant positive impact on sales as well as on customer satisfaction level for both the brands.

INTRODUCTION

In today's competitive market place, personal selling is the key to success for many firms. As customers became more demanding as well as more knowledgeable than ever before, it was not uncommon to observe sales department of any organization being put under intense pressure to meet elevated expectations of 'intermediaries' as well as final customers.

As personal selling becomes more crucial with other elements of the marketing mix, to achieve the objectives for many firms, it is important to recognize

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some of the stark realities which challenge the sales executives who are in charge of developing and sustaining competitive sales forces. First, the costs of recruiting, developing, and deploying a professional sales force is at an all-time high. Second, the chronic problem of sales force turnover continues due to low level of organizational loyalty. Finally, there is short supply of qualified applicants from which the sales managers can fill the gap. At the same time a lot of money, time and effort is devoted by executives to train new personnel to fit into the sales jobs.

Personal selling usually offers a relatively quick response that unlike pricing actions may not have only a short-term effect. Personal selling activities can be implemented along with other elements such as advertising, sales promotion and can be adapted to many situations and strategies. Due to increased personal selling expenditures it can result in an increased competitive response that could eliminate any competitive advantage. In addition, personal selling efforts may be improperly conceived or implemented and thus, prove ineffective.

As an element of an organization's marketing communications mix, the relative importance of personal selling effort depends on overall objectives of the firm, the type of industry and environmental conditions of the marketplace. Personal selling might be particularly effective, but it can also be expensive and a salesperson's salary is not the only selling cost. Other add-on costs like a company car, expense account, extra travelling costs, administrative support and share of general overheads often exceed the salary cost of the individual salesperson. Personal selling is typically the most expensive form of communication available to a company when calculated on a straight cost-per contact basis.

As the realities of developing and sustaining a competent sales department are fully realized, it is clear that the costs of sales forces will be carefully analyzed because this component takes a lion's share of the total marketing budget. Cost analysis is complementary to sales analysis in the management of the personal selling effort. While sales analysis focuses on the results achieved, cost analysis looks at the costs incurred in producing those results and whether the results justify the expenditures. Firms may be sometimes investing into procedures of personal selling activities that are intended to increase sales but do not always turn out to be profitable.

To determine whether the returns justify the expenditures into personal selling

effort, it is necessary to gather, classify, compare, and study marketing cost data, which is the essence of marketing cost analysis. Marketing cost analysis can help in identifying opportunities for increasing the effectiveness of marketing expenditures into personal selling effort. Sales are achieved at some cost, and marketing productivity focuses on the sales or profit output as well as customer perceived quality, which represents the hidden side of the marketing mix per unit of marketing effort input. Unfortunately, it is often difficult for a firm to know what the output-input relationships are without detailed consideration of all the relevant factors, along with this personal selling effort.

However, deploying the sales representatives in terms of personal selling effort is not enough. Many brands may have successfully distinguished themselves from other brands with respect to expenses in this effort, but fail to convert these extra costs as a competitive advantage. We identify the relevant factors associated with this effort that make the link between brand sales and its customers' satisfaction index and this personal selling effort. And finally, we tackle the most difficult aspect: the percentage of return-on-investment, in terms of sales, into the personal selling effort.

PREVIOUS RESEARCH

Our specific focus in this article is the role of personal selling in a competitive environment with respect to sales, customer satisfaction and return-on-investment (ROI). However, our study builds on a long tradition in marketing of estimating personal selling effort response models with time-series and cross-sectional data. We solely depend for the non-financial aspect of the measurement on the studies of relationship between marketing efforts and customer satisfaction in this field. Therefore, our study is based on the two domains of previous studies and all of them are discussed very briefly in order.

Response studies of personal selling effort

Cardozo and Shipp (1987) begin with a review of traditional selling approaches in the context of dynamic sales environment and changing customer requirements. They identified adaptations and changes in the structure and process of firms and consequential effects on the role of sales management, making recommendations to enable sales managers to adapt effectively to the changed environment. Ingram, Schwepker and Hutson (1992), used empirical research

to identify the reasons why sales people fail in their work. Investigating a wide variety of possible factors, the authors identified support of sales staff by their management to be a key factor in preventing failure by individual members of the sales force. Plank and Dempsey (1980) also reviewed traditional theories and models for selling a product or service, noting these are limited to simple persuasion approaches. The authors argued that the industrial buying process is more complex than that allowed for by the approach of more traditional models. Powers (1989) offered a model to evaluate marketing spend versus expected returns among various marketing efforts such as personal selling with respect to sales promotion. Powers provided an enabling model to achieve the more effective integration of marketing communication elements.

Customer satisfaction studies

Churchill and Surprenant (1982) have undertaken a study to investigate the relationships among the determinants of customer satisfaction. They considered two types of products, a durable and a non-durable good. They found that the effects of expectation, disconfirmation, and performance were different for durable as well as non-durable products. Peterson and Wilson (1992) review a large number of studies and they found that the distribution of customer satisfaction responses is highly skewed towards the positive. They found that the highly skewed distribution reduces the likelihood that a significant correlation between satisfaction and other performance variables may be observed.

Anderson and Sullivan (1993) have performed a study to investigate the antecedents and behavioral consequences of satisfaction both analytically and empirically. They have analyzed a database of nationally representative survey of 22,300 customers of a variety of major products and services in Sweden in 1989-1990. Hauser *et al.* (1994) have found that customer satisfaction as a criterion of incentive of salespeople encounters severe implementation problems. Firstly, they are more subjective to manipulation than accounting rule-based measures, such as sales per salesperson. Jones and Sasser (1995) have performed a study to identify the reasons for defection of satisfied customers. They suggested that the impact of an advantage in customer satisfaction would vary dramatically with the competitive nature of the industry. Anderson *et al.* (1997) performed a survey in Sweden to identify the difference between customer satisfaction and quality of products and services as the Swedish Customer Satisfaction Barometer

(SCSB). They found that the average elasticity of ROI with respect to customer satisfaction for goods was 0.25 and for services it was only 0.14.

In the field of marketing, there is lack of studies considering both the financial and non-financial aspects of measurement of effectiveness of each marketing decision variable at firm level. In addition, we are not able to reach those studies that combined both the aspects of the measurement and come to a single indicator for better managerial control over the marketing decision variables.

The key differentiating features of this research from others is that it has moveddown to the firm level to estimate the influence of personal selling effort. Our research examines the influence of personal selling effort on two specific aspects of this relationship (i.e., revenue and customer satisfaction). To this end, our work uses each marketing effort's (rupee value) time-series data at firm level and calibrates marketing efforts response parameters at brand level. This also distinguishes our work from previous research on marketing efforts response that uses conventional panel data or field/laboratory experiment data. Our research is also distinct from others because prior research has largely been limited to the influence of marketing efforts on attitudes or at the most, behavioral aspects, whereas the current study examines the influence of personal selling effort on satisfaction of individual customer of the firm. This study is also distinct from prior research that it combines both the financial and non-financial aspects of the measurement of influence of personal selling efforts and comes down to a single indicator (ROI) to compare the brands.

OBJECTIVES

The following three objectives have been identified with respect to the personal selling effort. The objectives are not mutually exclusive but are interrelated to each other.

1. To study firm-wise, the impact on sales of personal selling effort along with other elements such as advertising, sales promotion, distribution and price of marketing effort acting as independent variables.

2. To investigate firm-wise, the relationship between the overall customer satisfaction level as categorical dependent variable and customers' emotional reactions towards sales representatives with other marketing efforts acting as metric independent variables.

3. To obtain, firm-wise, adjusted return -on- investment (ROI) in personal selling effort giving due adjustment for respective customer satisfaction indices.

EMPIRICAL MODELS

In this study, we consider three models for three different objectives. Each of them has been discussed very briefly:

Model for objective 1:

The mathematical expression (1) we have considered for the objective one (mentioned earlier) is given below. Many empirical studies support this form due to its nature of diminishing returns to scale, at least in the relevant range for decision-making (Freeland and Weinberg, 1977) with regard to response to the marketing variables.

$$Y_t = e^{\beta_0 + u_t} X_{1t}^{\beta_1} X_{2t}^{\beta_2} X_{3t}^{\beta_3} X_{4t}^{\beta_4} X_{5t}^{\beta_5} \qquad (1)$$

Where: Y_t = Volume of sales in period t, X_{1t} = Advertising expenditure in rupees in period t, X_{2t} = Sales force expenditure in rupees in period t, X_{3t} = Sales promotion expenditure in rupees in period t, X_{4t} = Distributors commission paid in rupees in period t, X_{5t} = Price of products in monetary term in period t, and u_t = A random disturbance term.

Model for objective 2:

In this study, the response variable has only two outcomes. So, we considered binary logistic regression equation (2) as an appropriate method for mapping this dichotomous response variable.

$$\ln\left(\frac{p}{1-p}\right) = \lambda_1 Q_1 + \lambda_2 Q_2 + \lambda_3 Q_3 + \lambda_4 Q_4 + \varepsilon \qquad (2)$$

Where, $\frac{p}{1-p}$ = Odd ratio $0 \le p \le 1$, and, Q_1 = Score of customers' emotional reactions on advertisement, Q_2 = Score of customers' emotional reactions on product attributes, Q_3 = Score of customers' emotional reactions

on availability of products, Q_4 = Score of customers' emotional reactions on price of products and A random disturbance term.

Model for objective 3:

In the context of the above two models ROI is computed as:

$$ROI_i = \beta_i * (CS)_i \qquad (3)$$

Where: ROI_i = Return on investment in personal selling effort of ith firm, β_i = Partial regression coefficient for personal selling effort of ith firm, and $(CS)_i$ = Customer satisfaction index of sales force of ith firm.

HYPOTHESES

The following two hypotheses have been tested in this article. The first one is directly related to sales and second one is related to overall customer satisfaction level. The idea is that the personal selling effort not only influences sales but also influences customer's post purchase behavior.

H_1: Personal selling expenditure would influence the sales positively.

That is, in the context of model 1.

H_0: $\beta_2 = 0$ against H_a: $\beta_2 > 0$

H_2: Customers' emotional reactions towards sales representative would have a perceptible effect on overall customer satisfaction level.

That is, in the context of model 2.

H_0: $\lambda_2 = 0$ against H_a: $\lambda_2 > 0$

METHODOLOGY AND DATA

We have designed a questionnaire for this study. It has three parts. The first part contains twelve statements of personal selling effort construct. Each of the statements has the five-point Likert scale ranging from "strongly agree" to "strongly disagree" continuum. The second part consists of one statement regarding customer's overall satisfaction with the brand as a whole. This is on a five-point Likert scale ranging from "completely satisfied" to "not at all satisfied" continuum. Last part of the questionnaire contains demographic profiles of the respondents.

In our study area, there are eleven firms operating with nearly identical products and making the market oligopolistic in nature. Out of eleven firms, we have taken two firms quarterly financial data of the efforts in question for the period of six years (2000-2005). We took a sample of 150 households (power = 0.8) for our primary data regarding customer's satisfaction and their perceptions towards each marketing effort for each firm. On comparing all relevant primary data collection techniques we chose the personal interview method as a way of collecting data from the respondents (housewives).

FINDINGS AND DISCUSSION

In this section, all findings related to personal selling effort as an element of marketing mix have been discussed for both the firms.

The results of regression analysis of Keo-Karpin and Emami are shown in EXHIBIT: I. the predictive equations for sales in terms of volume of Keo-Karpin and Emami also appear here. The estimated regression equations are given below:

Keo-Karpin:

ln Sales = 1.98 + 1.38 ln (Advertising) + 1.4 ln (Sales force) + 0.0512 ln (Promotion) + 1.42 ln (Distribution) - 0.13 ln (Price)

Emami:

ln Sales = 4.3 + 0.375 ln (Advertising) + 1.2 ln (Sales force) + 0.95 ln (Promotion) + 0.235 ln (Distribution) - 0.5 ln (Price)

The variables, that have a positive effect on sales are advertising, sales promotion, personal selling and distribution. In contrast, price is the only variable that has a negative impact on sales. The equations suggest that one per cent of increase/decrease in these variables would per cent increase/decrease the sales volume. The amount of increase/decrease in the sales volume that can be expected depends on the regression coefficient of each variable. The partial correlation coefficients of personal selling effort are also shown in the EXHIBIT: I for both the firms. It is used to identify the individual impact on sales of this independent variable by isolating the effects of other variables from both the variables.

The results in the EXHIBIT: I also indicate that the personal selling effort has more effect on sales in the case of Keo-Karpin brand than that of Emami

brand. The magnitudes of elasticity of this effort are 1.40 (Keo-Karpin brand) and 1.20 (Emami brand) respectively. This indicates that sales volume is highly responsive to the personal selling effort for both the brands.

The results in EXHIBIT: I were also used for the test of hypothesis with respect to the personal selling effort. The hypothesis, H_1 (mentioned earlier) suggests that the personal selling effort would influence the sales positively. The EXHIBIT: I supports this hypothesis. The partial regression coefficients of personal selling effort are positive and significant (1.40, p< .0000 & 1.20, p< .0005) of both the brands. This indicates that expenditures on personal selling effort have significant positive impact on sales for both the firms.

The validation statistics of regression equations for Keo-Karpin Brand and Emami are given in the EXHIBIT: II. This shows that the R-squared values are 0.955 (Keo-Karpin brand) and 0.972 (Emami brand) respectively. This indicates that 95.5 (Keo-Karpin brand) and 97.2 (Emami brand) per cent of the variation in sales volume are explained by these equations. The R-squared values (.955 & .972) also indicate a strong relationship between predictor variables and the sales volume of both the firms in this context. Here, F values are 77.24 (p<0.000) and 198.5 (p<0.000) respectively. This indicates that, with at least .01 per cent significant level, the set of predictors have represented the population for both the firms' satisfactorily. The values of JB are 2.4 and 3.2 respectively. Both the values are less than 5.4 (table value). So, it can be concluded that the error terms are normally distributed for both the equations. Here, D-W (d) values are 1.81(d<2.21) and 2.1(d>1.79) and both the values satisfied the criterion of non-significant of first-order autocorrelation. This indicates that the error terms are not serially correlated.

The predicting equations for individual customer satisfaction level of Keo-Karpin and Emami are shown in EXHIBIT: III. The estimated equations for customer satisfaction are given below:

Keo-Karpin : $\ln (p/1-p) = -14.7 + 1.58\ Q_1 + 2.4Q_2 + 2.3Q_3 + 3.3Q_4$

Emami: $\ln (p/1-p) = -26.6 + 2.9Q_1 + 2.15Q_2 + 1.88Q_3 + 1.7Q_4$

The interpretation of these equations is that all the independent variables have positive effect upon probability. The variables such as customer's emotional reaction toward advertising, customer's emotional reaction toward personal selling,

customer's emotional reaction toward distribution, and customer's emotional reaction toward price of products had positive effects upon the variable of interest in this context.

The relative importance of the independent variables can be assessed by multiplying each coefficient by the standard error of the corresponding variable. The resultant values will reflect relative importance of the independent variables. The results in the EXHIBIT: III indicate that the personal selling effort has the greatest effect on overall customer satisfaction level among all the variables in the case of Keo-Karpin. Whereas, this effort has a modest effect on overall customer satisfaction level among all the variables in the case of Emami. The results in the EXHIBIT: III show that the personal selling effort of Keo-Karpin has greater impact on overall customer satisfaction level than that of Emami. The personal selling activities that have been undertaken by Keo-Karpin are 1.5 times more effective than that of Emami on overall customer satisfaction level. The results in EXHIBIT: III were also used for testing the hypothesis regarding personal selling effort of both the firms. The hypothesis, H_2 suggests that customers' emotional reactions towards sales representatives would have a perceptible effect on overall customer satisfaction level. The results in EXHIBIT: III support this hypothesis. The coefficients of personal selling construct are positive and significant (1.58, $p < .004$ & 2.94, $p < .007$). Thus, customer's attitude towards personal selling effort has positive contribution to elevate the overall satisfaction level for both the firms.

The results of EXHIBIT: IV indicate that 2log- likelihood values are 119.7 ($p > .29$) & 54.8($p > 1$). So, model for both the firms are not significantly different from the optimum one. G values are 112.8 ($p < .000$) & 38.9 ($p < .000$). This indicates that all the variables in both the models represent the respective population significantly in this context. Hosmer and Lemeshow (HL) values are 13.46($p > .09$) & 9.5($p > .30$). This indicates that there is no significant difference between expected and observed probabilities of the dependent variable for both the brands.

The Customer Satisfaction Indices of personal selling effort are given in the EXHIBIT: V. The results indicate that Customer Satisfaction Indices (CSI) of this effort are 0.76 (Keo-Karpin brand) and 0.64 (Emami brand) respectively. It means that the attributes of personal selling effort have satisfied the customer of

each firm at the level of 76 per cent and 64 per cent respectively. It reveals that the customers' are more satisfied with personal selling effort in the case of Keo-Karpin than that of Emami brand. Therefore, the customer's attitude toward the attributes of personal selling effort is positively inclined for both the firms.

The results of return-on-investment (ROI) in personal selling effort are shown in the EXHIBIT: VI. The results reveal that the return-on-investment (ROI) into personal selling effort are 106.4% (Keo-Karpin) and 76.8% (Emani) respectively. It tells that the return-on-investment (ROI) into this effort of Keo-Karpin is more than that of Emami.

CONCLUSION AND MANAGERIAL IMPLICATIONS

It is concluded from the results that the expenditures in personal selling effort with other marketing efforts appeared to be very significantly correlated with sales for both the firms (Keo-Karpin & Emami). These results resemble the findings of other studies in this field with respect to the personal selling effort.

The objectives of personal selling effort might be to increase sales and at the same time the purchasers would develop favorable attitude towards the firm. The results in this work reveal that the customers' perceptions towards this effort were significantly correlated to the overall customer satisfaction level for both the firms. These findings confirmed the underlying rationale regarding personal selling effort, undertaken by both the firms.

Further, the management of Keo-Karpin used personal selling effort in a more efficient way than that of Emami. They obtained much more return from the investment in this effort by investing the same amount as did the management of Emami. The management of both the firms should undertake an extensive face-to-face interview with each salesman (detail-man) to identify the relevant factors to them. After that a factor analysis will be performed to reduce the factors to a manageable number. Then, the management of both the firms should review their current strategies regarding this effort. After that redeploy resource from less important factor to highly important ones and plan accordingly.

Finally, it can be concluded that the effectiveness of personal selling effort varies from firm to firm in the same industry. Personal selling activities should not be performed individually, because a perfect marketing mix strategy is necessary to get the maximum benefits from any effort undertaken by the firms. The optimal

mix of marketing effort is unique to each firm and depends on the cost-benefits continuum and the characteristics of the market as well as the brand's position in its life cycle. Still, this study provides a sense of the importance of personal selling effort for most of the firms.

LIMITATIONS

This work considered only the short-term effect of investment in personal selling effort. It is assumed that the volume of sales is a function of the level of investments in different marketing variables in that period only. In this study, we summed up all the expenses incurred in different elements of personal selling effort. So, this study could not identify the impact of different elements of personal selling effort. In addition, the return-on-investment (ROI) is calculated with respect to revenue but not on the basis of contribution margin of this effort. In addition, the needs and tastes of customers, the stage of the product in its life cycle and the action of competitors has not been considered in this work.

FURTHER RESEARCH

It is highly desirable to assess the impact of personal selling effort on sales by considering long-term effect of this effort. In addition, the researcher can see the impact of different elements of personal selling effort on adjusted sales to identify the relative contribution of them. The authors think that the calculation of return-on-investment (ROI) into this effort may be suitably performed by the discounted-cash-flow (DCF) method.

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APPENDIX

EXHIBIT I: Response of Sales to Personal Selling Effort (Reference Model 1)

The Regression Equation (Keo-Karpin):

$$\ln Y = 1.98 + 1.38 \ln X1 + 1.40 \ln X2 + 0.0512 \ln X3 + 1.412 \ln X4 - 0.13 \ln X5$$

Brands	Predictor	B	SE B	95% CI B		t	p	@Partialr^2
Keo-Karpin	Personal Selling	1.40	.181	1.04	1.762	7.72*	<.0000	0.894
Emami	Personal Selling	1.20	.338	.524	1.876	3.55**	.0005	0.764

The Regression Equation (Emami):

$$\ln Y = 4.3 + 0.375 \ln X1 + 1.201 \ln X2 + 0.95 \ln X3 + 0.235 \ln X4 - 0.50 \ln X5$$

*Significant at .001 per cent level (one-tail) or better. **significant at 1 per cent level (one-tail) or better

X1- Advertising Expenditure, X2- Sales Force Expenditure, X3-Sales Promotion Expenditure,

X4- Distributors Commission, X5-Price of Products, Y- Sales of Product

Each coefficient below represents in a unit free from the partial effect of marketing efforts on sales, in both the cases abstracting from the influence of other variables.

EXHIBIT II:

Validation Statistics of Regression Equations (Reference Model 1)

Brands	R^2	F	p	J-B	D-W
Keo-Karpin	0.95	77.24*	<.000	2.4	1.81
Emami	0.97	198.50*	<.000	3.2	2.10

*Significant at the .001 per cent level., J-B= Jarque-Bera Statistics,

D-W= Durbin- Watson Value of autocorrelation

EXHIBIT III:

Regression coefficients for Personal Selling Effort to overall satisfaction level (Reference Model 2)

The Logistic Regression Equation (Keo-Karpin):

$$\ln (p/1-p) = -14.7 + 1.580Q_1+2.40Q_2+2.30Q_3+3.30Q_4$$

The Logistic Regression Equation (Emami):

$$\ln (p/1-p) = -26.60+ 2.90Q_1+2.15Q_2+1.88Q_3+1.70Q_4$$

*Significant at 0.5 per cent level (one tail) or better. ** relative importance

Brands	Predictor	Coefficients	Std. Error	z	p	Odds Ratio (p/1-p)	**Rank
Keo-Karpin	Personal Selling	2.40	.85	2.82*	.0025	11.00	2.01(1)
Emami	Personal Selling	2.15	0.75	2.71*	.0035	8.60	1.61(2)

with respect to other efforts.

Q1- Customer's Emotional Reaction toward Advertising, Q2- Customer's Emotional Reaction toward Product.

Q3- Customer's Emotional Reaction toward Distribution, Q_2- Customer's Emotional Reaction toward Price.

EXHIBIT IV:

Validation Statistics of Logistic Regression Equations (Reference Model 2)

Brands	-2LL (125)	p	G (4)	p	HL (8)	p
Keo-Karpin	119.7****	0.29	112.8*	.00	13.46****	.09
Emami	54.8	1.00	38.9	.00	9.50	.30

*Significant at .001 per cent level. ****not significant at 5 per cent level

( )- degrees of freedom

EXHIBIT V :

Customers' Satisfaction Index (CSI) of Personal Selling Effort (Firm-wise)

Brands	Valid cases	Effort	CSI
Keo-Karpin	130	Personal selling	.76
Emami	130	Personal selling	.64

EXHIBIT VI :

Return-on-Investment (ROI) in Personal Selling Effort (Firm-wise)

Brand	Effort	Coefficients	CSI	ROI (%)
Keo-Karpin	Personal selling	1.40	.760	106.4
Emani	Personal selling	1.2	.64	76.8