Gifts and Sponsored Trips for Doctors matter more for sales of MNCs?(An Application of Censored Regression)

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Abstract

This study investigates and interrogates the impact of various marketing strategies on the sales of major multinational pharmaceutical companies in Pakistan; include Abbott, GSK and Aventis, while applying the censored regression. Besides interrogating the possible impacts of various marketing strategies which include the Promotional Gifts, Sponsored Trips, Differentiated Strategy, Un Differentiated Strategy, Product Development and Establishing the Brand, on the sales of outlined pharmaceutical MNCs, Objectively this study also focuses on the applications of Scaled OLS model (censored regression) in comparisons with the ordinary least square model. The findings reveal that, all of the outlined strategies do matter to the sales of stated MNCs but promotional gifts and

sponsored trips they really work much than the rest of strategies considered, in long run only for Abbott Pakistan, while the differentiated and un-differentiated strategies for GSK and product development and establishing the brands for Aventis are revealed as the best most options for maximizing sales. Whereas, it is also found that the scaled OLS (censored regression) is the better and robust model in investigating the manifested proposition than the MLR.

1. Introduction

Pharmaceutical industry is considered to be the world's biggest industry and due to new demands form providers, manufactures and payers there have been major changes in these few years in Pharma industry. Similar to other industries, customers demand the same kind of convenience and choice form the Pharma industry as well. Number of pharmaceutical companies has been successful in planting various strategies to target and attract various types of customer, but due to dynamic nature of customers and business trends there are new opportunities and challenges that are to be tackled. There is a complex link between the healthcare and pharmaceutical industry. A physician prescriptions although have a direct impact on the sales of pharma products, but ultimately the patients are the ones who have to pay and bear the cost in terms of both health and money if prescriptions are just revenue oriented (Agarwal, Desai, Holcomb, & Oberoi, 2001).

The main constituent of the marketing strategy that are used for the marketing of the drugs to the physicians are Pharmaceutical representatives (medical representatives), while, the revenues which are generated from the annual productions of the pharmaceutical sector involves an amount of about 15 to 20 % as an expense which are incurred for the sales force and in implementing various sales and marketing strategies on average (Agarwal, Desai, Holcomb, & Oberoi, 2001). The cost of implementing various sales and marketing strategies heavily overburdened due the overwhelming sponsored trips of practioners on the expense of firms operating in the pharma industry. But for quite several times the various firms specifically MNCs enjoy the substantial portion of market share due to such strategy.

This paper is an attempt to gauge the contributions of promotional gifts and sponsored trips to medical doctor as the marketing strategies in enhancing the sales of Pharmaceutical products in comparison with the various other outlined marketing strategies which include differentiated strategy, undifferentiated strategy, product development, and establishing brands.

2. Literature Review

There are four traditional strategic P's (product, price, place and promotion) and three extensions strategic P's (people, process and physical evidence). In strategic marketing the traditional P's are used for Goods and extensions are in Services. To manage these P's marketers use four strategic C's (customer solution, customer cost, convenience and communication). Strategic marketing is a holistic marketing concept where four P's and four C's are integrated. It focuses on customer, core competencies and collaborative network. Strategic marketing is a long term and pre-nurtured plan for contingency process (Blumberg & Perrone, 2001).

Marketing strategy is the best fit of the organizational resources and strategies and the opportunities of growth in the marketplace. Marketing strategy maintains the profitability and strength of the products in the market; it maintains the standard and also shapes the organization. Four P's are the tools for playing the marketing game which results in satisfaction for the customers and thus increases customer loyalty and profitability (Subhash, 2009). Various literature confirm that various marketing strategies are used by the all national and multinational pharmaceutical firms, which include differentiated strategy, undifferentiated strategy, product development, establishing the brands (Baker & Lutz, 2000), along with the promotional gifts, sponsored trips. Subhash (2009) confirms that out of all various

strategies, the promotional gifts and sponsored trips are found enormously fruitful in shooting the sales of pharma products in Pakistan. Aaker, Batra, andMyers (1992) also confirm, customer psyche as an important player in enhancing sales for health related products specifically, Aaker, Batra, and Myers (1992) further stressed that consumers of health related products if they are the medical doctors always react to the incentives which are offered in terms of promotional gifts to them and they actually make up their minds and decide when they are in a stage between getting a stimulus and reacting according to it. Marketers make an effort to identify the group of physicians that are expected to recommend a particular drug. Traditionally, it was done through taking into account the total prescriptions (TRx) and new prescriptions (NRx) written by every physician each week. The commercial traders then gather this data and depending on the pattern of prescription writing by the physicians, they are "deciled" in ten groups. Those physicians who fall in higher deciles are contacted more vigorously and the gifts and tours kinds of incentives are offered to them only (Scherer, Harhoff, & Kukies, 2000). Bagozzi (1988) has presented an updated theory of perception that the consumers show their interest where they are coordinated and interacted. Rust (1997) confirms that the input and output of business should be equal to the input and output of buyers interest towards that business. Buyers indeed are important for making sales for the item, and hence they are supposed to be satisfied. Fornell (2002) stated that the overall sales portion in a business is based upon a strong relationship with customers, which makes the way for organizations to formulate its various marketing strategies. Besides offering gifts to consumers (medical doctors) the pharmaceutical companies of both nationals and multinationals nature also mix and match the blend of modern and traditional strategies such as Corner and Hinton (2002) found undifferentiated strategy to enhance the sales in relations to the mass market for pharmaceutical products. Maynard (1995) found product development to modify or update organization's existing brand or adding a new product in the existing product line and to approach the sales target. On the other hand Gurău (2005) convinced that establishing the brand plays a pivot role in generating lucrative business in pharama. Fjermestad & Romano (2004) ranked Innovative strategy the best most strategy in achieving the target sales among multinational pharmaceutical firms.

3. Research Method

3.1 Descriptions of Data and Sampling Method
To investigate the application of censored regression when various marketing strategies effects the sales of pharmaceutical industry, non parametric data of various proxies of marketing strategies which include Promotional Gifts, Sponsored Trips, Differentiated Strategy, Un Differentiated Strategy, Product Development, Establishing The Brand, have been collected through using the unrestricted non-probability sampling. 300 responses for the outlined proxies/ constructs from the various product and marketing managers of all major multinational pharmaceutical firms (i.e. Abbott, GSK, and Aventis) have been interrogated to conclude the findings.

3.2 Econometrical Methodology
As mentioned already that the censored regression has been employed to investigate and confirm the impact and effect of outlined various marketing strategies on the sales of pharmaceutical industry. The log-likelihood for the censored regression model can be explained as:

$$\ln L = \sum_{y_i > 0} -\frac{1}{2}\left[\log(2\pi) + \ln \sigma^2 + \frac{(y_i - x_i'\beta)^2}{\sigma^2}\right] + \sum_{y_i = 0} \ln\left[1 - \Phi\left(\frac{x_i'\beta}{\sigma}\right)\right]$$

The log likelihood is a nonstandard type, since it is a mixture of discrete and continuous distributions. But Amemiya (1973) confirmed that, despite the complications, proceeding in the usual fashion to maximize log L would generate an estimator with all the familiar desirable properties attained by MLEs. The log-likelihood function is rationally involved when the data is censorable, but Olsen's (1978) re-parameterization fairly explains the simplifications of censored regression. When, $\gamma = \beta/\sigma$ and $\theta = 1/\sigma$, the log-likelihood is

$$\ln L = \sum_{y_i > 0} -\frac{1}{2}\left[\ln(2\pi) + \ln\theta^2 + (\theta y_i - x_i'\gamma)^2\right] + \sum_{y_i = 0} ln\left[1 - \Phi(x_i'\gamma)\right]$$

4. Findings and Results

There are several constructs which effect and explain the increase in sales of pharmaceutical MNCs. This study is an attempt to interrogate and confirm the effects of various outlined marketing strategies on the sales of MNCs of pharmaceutical industry, when censored regression is used the gauge the propositions. As revealed in table 1, that Scaled OLS model (Censored regression/ Tobit model) is a better and robust model in comparisons of Multiple linear regression (OLS) in explaining the effects of various outlined marketing strategies on MNCs sales, include the sales of Abbott, GSK and Aventis, as the for all outlined MNCs the Adj. R squared and their respective F statistics for scaled OLS/ tobit model are found huskier than the OLS/ MLR.

In table 1 the findings of Tobit model also show that the marketing strategies which include promotional gifts and sponsored trips are the most effective contributors in enhancing the sales of Abbott Pakistan then the all rest of the strategies Abbott deploys (as beta= 132.23 at t= 13.54 for predictor= promotional gifts; beta= 32.07 at t= 3.96 for predictor= sponsored trips).

Table 1: Censored Regression (Tobit) Estimates of Sales Equation in comparison of OLS Estimates.

	ABBOTT		GSK		AVENTIS	
PREDICTORS	**Scaled OLS (Tobit) Coefficients**	**OLS Beta**	**Scaled OLS (Tobit) Coefficients**	**OLS Beta**	**Scaled OLS (Tobit) Coefficients**	**OLS Beta**
	1123.54	235	984.03	217	876.05	-46.87
Constant	(24.99)	(0.99)	(9.68)	(0.63)	(8.08)	(-4.01)
Promotional Gifts	132.23	17.02	123.45	111.11	56.12	34.43
	(13.54)	(3.91)	(11.14)	(6.06)	(3.97)	(1.50)
Sponsored Trips	32.07	20.78	22.59	17.29	29.66	4.99
	(3.96)	(2.88)	(4.73)	(0.82)	(4.01)	(0.90)
Differentiated Strategy	45.65	21.23	86.39	7.98	79.03	0.09
	(6.66)	(4.73)	(10.07)	(2.19)	(9.65)	(2.94)
Undifferentiated Strategy	15.48	1.17	21.83	1.24	17.23	0.41
	(3.87)	(0.92)	(5.31)	(2.05)	(6.43)	(1.72)
Product Development	117.23	0.08	76.76	5.22	156.82	43.00
	(15.25)	(1.32)	(3.88)	(1.55)	(16.77)	(1.78)
Establishing The Brand	7.08	4.00	14.09	0.03	31.13	15.70
	(5.67)	(0.95)	(7.11)	(1.61)	(4.09)	(2.03)
Adj. R Squared	0.79	0.11	0.83	0.51	0.69	0.49
F- Statistics	2354.02	12.07	1019.99	342.03	596.98	222.72
Sample size	1000		1000		1000	

While, both the differentiated and un-differentiated strategies are more effective players in increasing the sales of GSK (as beta= 86.39 at t= 10.07 for predictor= differentiated strategy; beta= 21.83 at t= 5.31 for predictor= un-differentiated strategy) and for Aventis the product development and establishing new brands are the better tools and strategic options in maximizing the sales (as beta= 156.82 at t= 16.77 for predictor= product development; beta= 31.13 at t= 4.09 for predictor= establishing new

brands). It is also note able in the findings that the players which are so to speak as the most effective contributors for increasing the sales of theses outlined MNCs, as revealed by Tobit model are found have the long term associations with the revenue generations for these MNCs.

5. Discussion and Conclusion

In pharmaceutical industry the end users are not the ultimate buyers as consumer is not in the direct contact with the salesman. Here doctors or medical practitioners act as a customer and decide what medicine should be consumed in what quantity and for how long that medicine should be continued. Indeed, there are various factors which influence consumers'/ customers' behaviors. And out of various factors firms also formulate and deploy their tested strategies to win the market share and to maximize sales. This paper is an attempt to enumerate some of those strategies as outlined and their affect and impact in explaining and contributing the MNCs sales in Pakistan. Categorically it was found that different MNC has the different key factors and deployed strategies while going for to compete in market with competitors. Results revealed that the all outlined MNCs though working in the same cultural environment and surrounded by the same psychographic constraints but they all have non-identical strategies to get the identical goals. It has also been concluded that censored regression/ Tobit model is found as a comparative robust model in gauging the propositions.

6. Policy Implications

This paper is a point to ponder for the marketers of all non performing local and MNCs of pharmaceutical industry to revisit to their deployed strategies. The firms similar to Abbott should confirm Abbott's strategies (as revealed in this paper) in their marketing ventures to maximize the sales. Similarly the firms similar to GSK and Aventis should opt those strategic options which are found successful for these two MNCs while trying to enhance their sales. This paper is also a point to ponder for Abbott that this MNC never endeavored to deploy other strategic options in their marketing ventures except of deploying second rate options which include promotional gifts and sponsored trips for medical doctors/ physicians in order to win their medical prescriptions for patients.

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