ISSN (Online) 2456 -1304

International Journal of Science, Engineering and Management (IJSEM)

Vol 9, Issue 1, January 2022

Applications of Sales Analysis for Salesforce Control in Pharmaceutical Industry of India

Dr Nazim Farid

Assistant Professor, Department of Management and commerce, Mohammad Ali Jauhar University, Uttar Pradesh, India
nazim_786farid@yahoo.co.in

Abstract— In this study an effort has been made to study the control of sales force through sales analysis. Sales analysis is a source of important information to the manager, if used properly and with a full sale marketing and cost analysis; its usefulness can be further increased. In a study conducted at all major hospitals in Delhi, It was found that there is significant relationship between size of organization and sales analysis and significant relationship exists between monthly income and sales analysis.

Index Terms— sales force control, sales analysis, sales analysis by territories and sales analysis by sales volume

I. INTRODUCTION

Control is one of the basic functions of management and controlling the efforts of sales force is primary responsibility of every sales manager. A highly efficient and effective sales force will make a sales manager successful. Not only this but all great companies were created by a vibrant, hardworking and efficient and effective sales force. All this proves the importance of controlling the Sales force. There are many ways of controlling the efforts of sales force like giving them a territory to function and quota (popularly known as targets) for achievement. Sales analysis is one such method.

Sales Analysis in the simplest term means analysis or studying the breakdown of sales. But such a data is not of much use until it is used with other variables and used properly and systematically and scientifically. Simply studying the sales and profits is not of much use for example the fact that sales increased by 5% where as profits declined by 3% is not going to be of any use until sales analysis is properly carried out. Here in this situation sales analysis provides additional information and can uncover reasons for imperfect match between sales efforts and profits.

Sales analysis can be carried out in many ways or in other words there are different bases for carrying out sales analysis. Sales analysis by product line or products, Sales analysis by customer groups, sales analysis by territories etc. Besides telling you facts about profits and volumes sales analysis helps in uncovering deep hidden trends or information and can provide reasons for why do we have such a sales figure or profit for a particular company. Let us briefly study the different types of sales analysis.

(a) Sales Analysis by sales volume: In this type of sales analysis the total sales volume in every sales territory is studied to depict a picture of how company is doing in the market.

(b)Sales analysis by products: In this type of sales analysis sales of all the products are studied for knowing which items are selling like hot cakes and which items are not performing well. This type of sales analysis is also helpful in knowing the figure of the profits.

(c) Sales analysis by sales territories: In this type of sales analysis sales of products in each territory assigned is studied and conclusions are made regarding territories.

A Sales Analysis may not reveal true picture of sales and profits but help in uncovering deep underlying trends and their causes. If sales analysis is used with a full scale marketing profitability analysis than many facts and their causes can be made known. A full scale cost and sales study along with marketing profitability is bound to be more costly and time consuming.

From above I conclude that carrying out sales Analysis is better than no sales analysis and if used properly with a full scale marketing and profitability analysis it can be even be more useful to both the organization and the salesperson.

II. THE INDIAN PHARMACEUTICAL INDUSTRY

The Indian pharmaceutical industry is ranked very high among India's science based industry. India is largest provider of generics drugs globally. Wide variety of drugs, formulations, orals and injectibles and other types of medicines are made in India. The Indian pharmaceutical industry is third largest in volume and 14th largest in value terms. The domestic market is estimated at US $ 42 Billion in 2021 and US $ 65 Billion by 2024. United States is the largest market for exports. India exports drugs to various European countries, Canada, Japan and many African nations.

The Indian pharmaceutical industry is highly organised. The Indian pharmaceutical industry is growing at an annual growth rate of 14% -17% from the last few years.. There are about 3000 drug companies with 10500 manufacturing units. Most of the units are located in the regions of Maharashtra and Gujarat. There is severe price competition with governmental control. About 250 of the largest companies control 70% of the Indian market. There are many reasons for the growth of pharmaceutical industry in India. Availability of cheap labour and highly skilled and trained technical workforce, along with favourable policies of government for

ISSN (Online) 2456 -1304

International Journal of Science, Engineering and Management (IJSEM)

Vol 9, Issue 1, January 2022

exports and indigenous production. Cost effective chemical synthesis along with patent protection has given a new look to the Indian pharmaceutical industry

Indian pharmaceutical Industry is a popular source of antiretroviral drugs used for combating AIDS. Biopharmaceuticals and contract Manufacturing along with drug trial has emerged as a latest opportunity for Indian pharmaceutical industry. The ratio of promotional expenditures to sales is highest for this industry. Lot of opportunities exists for Indian pharmaceutical industry in the field of contract manufacturing and Biopharmaceuticals. However some issues and problems are also there

III. LITERATURE REVIEW

Vasilev,J and Stoycheva. K (2017) found out that sales analysis can be carried out using rectangle method. The information need of sales manager concerning the offering of new products to existing clients may be solved by applying the rectangle method.[1]

Yee, M. M. Found out (2018) that by using the sales data in city mart supermarket Myanmar year 2015 and 2017 , it is shown that the best cluster is occurred in clustering process with in yearly data and attributes values[2]

Cowan (1935) found out that sales analysis varies with regional consumption.

Russell (1950) showed that how to carry out sales analysis using six primary sources of Information.[4]

IV. RESEARCH METHODOLOGY

The Sample size for this study is 500 Medical Representatives. The universe for the study is Medical representatives working in the Delhi. The primary data was collected by a survey questionnaire Hypotheses have been tested using t test and ANOVA.

a. DATA ANALYSIS

Hypotheses: The various hypotheses are as follows.

H01: There is no significant relationship between gender of medical representatives and Sales analysis.

Table 1

	Levenes test for equality of variance		T test for equality of means						
	F	Sig	t	df	Sig(2 tailed)	Mean difference	Standard error difference	95% confidence interval of the difference Lower	upper
ATF Equal variance assumed	.001	.970	1.901	498	.058	7.940E-02	4.117E-02	-2.67E-03	.1615
ATF Equal variance not assumed			1.918	402.206	.056	7.940E-02	4.141E-02	-2.00E-03	.1608

The above table is about checking the relationship between gender and sales analysis. With the help of t test, it is found that there is no significant relationship between gender and sales analysis as the significant value is .058 which is greater than .05(95% confidence interval). Hence the null hypothesis is accepted and alternate Hypothesis is rejected.

H02: There is no significant relationship between nature of organization and sales analysis.

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Table 2

	Levenes test for equality of variance		T test for equality of means						
	F	Sig	T	df	Sig(2 tailed)	Mean difference	Standard error difference	95% confidence interval of the difference Lower	upper
ATF Equal variance assumed	.068	.794	1.378	498	.169	5.738E-02	4.163E-02	-2.44E-02	.1392
ATF Equal variance not assumed			1.369	396.615	.172	5.738E-02	4.191E-02	-2.50E-02	.139

The above table is about checking the relationship between nature of organisation and sales analysis. With the help of t test we conclude that there is no significant relationship between nature of organisation and sales analysis as significant value is 0.169 which is greater than .05(95% confidence interval. The null hypothesis is accepted and corresponding alternate hypothesis is rejected.

H03: There is no significant relationship between size of organization and sales analysis.

Table 3

	Sum of squares	df	Means square	F	Sig
Between groups	.139	2	6.936E-02	34.8	.03
With in groups	102.300	496	.206		
Total	102.438	498			

The above table is about checking the relationship between size of organization and sales analysis. With the help of one way ANOVA we conclude that there is significant relationship between size of organization and sales analysis as significant value is .03 which is less than .05 (95% confidence interval). Hence the null Hypothesis is rejected and alternate hypothesis is accepted.

H04: There is no significant relationship between age and sales analysis.

Table 4

	Sum of squares	df	Means Square	F	Sig
Between Groups	.139	2	6.936E-02	.336	.715
Within group	102.300	496	.206		
Total	102.438	498			

The above table is about checking the relationship between age and sales analysis. With the help of one way ANOVA it is concluded that there is no significant relationship between age and sales analysis as significant value is .715 which is greater than .05 (95% confidence interval). Hence the null hypothesis is accepted and corresponding hypothesis is rejected.

H05: There is no significant relationship between experience and sales analysis.

Table 5

	Sum of squares	df	Means Square	F	Sig
Between Groups	.880	2	.440	2.153	.117
Within group	101.581	497	.204		
Total	102.461	499			

The above table is about checking the relationship between experience and sales analysis. With the help of ANOVA, I conclude that there is no significant relationship between experience and sales analysis as significant value is .117 which is greater than .05 (95% confidence interval). Hence the null Hypothesis is accepted and alternate hypothesis is rejected.

H06: There is no significant relationship between monthly income and sales analysis.

Table 6

	Sum of squares	df	Means Square	F	Sig
Between Groups	2.871	2	1.435	7.164	.001
Within group	99.590	497	.200		
Total	102.461	499			

The above table is about checking the relationship between monthly income and sales analysis. With the help of one way ANOVA I conclude that there is significant relationship between monthly income and sales analysis as the significant value is .001 which is less than .05 (95% confidence interval). Hence the null hypothesis is rejected and alternate hypothesis is accepted.

ISSN (Online) 2456 -1304

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H07: There is no significant relationship between degree of medical representatives and sales analysis.

Table 7

	Levenes test for equality of variance		T test for equality of means						
	F	Sig	t	df	Sig (2 tailed)	Mean difference	Standard error difference	95% confidence interval of the difference Lower	upper
ATF Equal variance assumed	1.835	.176	-.359	498	.719	1.530E-02	4.258E-02	-9.90E-02	6.836E-02
Equal variance not assumed			-.352	331.909	.725	-1.530E-02	4.353E-02	-1.009	7.033E-02

The above table is about checking the relationship between degree of medical representatives and sales analysis. With the help of t test it is concluded that there is no significant relationship between degree and sales analysis as significant value is .719 which is greater than .05 (95% confidence interval). Hence the null hypothesis is accepted and corresponding alternate is rejected.

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