

Volume IX	Issue-I	JAN-JUN 2018
ACUITAS		
The Journal of Management Research		
CONTENTS		
RURAL POSTAL LIFE INSURANCE: ITS BUSINESS PERFORMANCE AND LEVEL OF AWARENESS ACROSS DEMOGRAPHICS		
Dr. B. Angamuthu		Page 06 - 19
HEALTH AND ECONOMIC CONSEQUENCES DUE TO INDISCRIMINATE USE OF CHEMICAL PESTICIDES DURING CAULIFLOWER CULTIVATION		
Dr. Nishant V. Shende		Page 20 - 32
A STUDY ON CUSTOMERS' PREFERENCE & ATTITUDE TOWARDS PATANJALI PRODUCTS WITH SPECIAL REFERENCE TO SILVASSA CITY		
Dr. Rajesh Kumar Pandey		Page 33 - 49
ALUMNI RESEARCH SECTION		
CORPORATE CRIMINAL LIABILITY AND THE REMEDIAL MEASURES		
Adv. HrishikeshChavan		Page 50 - 69
Increasing Operational Efficiency and Effectiveness through Lean Thinking - A case of Mahalaxmi Saras Exhibition 2017		
Dr. Jyotsna G. Golhar		Page 70 - 78
An evaluation of the framework governing Credit Derivatives in India: Case of Credit Default Swaps		
Dr. Pranay Parashar		Page 79 - 90

ACUITAS - The Journal of Management Research
Volume IX Issue-I JAN-JUN 2018

Patron:

Bhadant Arya Nagarjuna Shurei Sasai

President, P.P. Dr. Babasaheb Ambedkar Smarak Samiti, Deeksha Bhoomi, Nagpur

Shri. S.J. Fulzele

Secretary, P.P. Dr. Babasaheb Ambedkar Smarak Samiti, Deeksha Bhoomi, Nagpur

Advisory Board:

Dr. Vilas Chopde, Ex- Vice-Principal, Dr. Ambedkar College, Nagpur

Capt. C. M. Chitale, Professor Emeritus, Faculty of Management, Savitribai Phule Pune University

Dr. V. S. Deshpande, Dean, Faculty of Commerce & Management, RTM Nagpur, University, Nagpur

Editorial Board:

Dr. Sudhir Fulzele, Director, Dr. Ambedkar Institute of Management Studies and Research, Nagpur

Dr. S. G. Metre, Professor, Dr. Ambedkar Institute of Management Studies and Research, Nagpur

Dr. Charles Vincent, Professor, Centrum Catolica, Pontificia Universidad Catalica de Peru, South Africa

Dr. S. S. Kaptan, Head of the Department and Research Centre, Savitribai Phule Pune University

Dr. S. B. Sadar, Head of the Department, Department of Business Management, SGB Amravati University

Dr. D. Y. Chacharkar, Reader, SGB Amravati University

Dr. J. K. Nandi, Associate Dean, IBS, Nagpur

Dr. Anil Pathak, Assistant Professor, MDI, Gurgaon

Mr. Sangeet Gupta, Managing Director, Synapse World Wide, Canberra, Australia

Ms. Sanchita Kumar, GM-HRD, Diffusion Engineering Ltd.

Editorial Committee:

Dr. Nirzar Kulkarni	Executive Editor
Dr. Ruhi Bakhare	Co-Editor
Dr. Vivek Pimplapure	Co-Editor
Dr. Pranay Parashar	Member
Dr. Pallawi Sangode	Member
Prof. Sushant Waghmare	Member
Prof. Pallavi Badre	Member
Prof. Sachin Panchabhai	Member

ACUITAS-The Journal of Management Research is published twice a year in January and July.

©Jun 2018. All Rights Reserved

DISCLAIMER: Acuitas shall not be liable for the present opinion, inadequacy of the information, any mistakes or inaccuracies. The views and opinions presented in the research paper/articles published in ACUITAS are solely attributable to the authors of the respective contributions, if these are contradictory to any particular person or entity. No part of this publication may be reproduced or copied in any form by any means without prior written permission. DAIMSR holds the copyright to all articles contributed to its publications. In case of reprinted articles, DAIMSR holds the copyright for the selection, sequence, introduction material, summaries and other value additions. All efforts are made to ensure that the published information is correct. DAIMSR is not responsible for any errors caused due to oversight or otherwise.

ACUITAS

The Journal of Management Research

Aims and Scope

Acuitas is a latin word which means sharpness of the vision. While meeting its high academic quality standards it carries an eclectic and diverse mix of papers from every field of management. Its objective is to disseminate knowledge of interdisciplinary research and cross-functional issues.

Acuitas - The Journal of Management Research is a bi-annual journal of Dr. Ambedkar Institute of Management Studies and Research, Deekshabhoomi, Nagpur. It is a peer reviewed National journal addressed to management practitioners, researchers and academicians.

Acuitas aims to engage rigorously with practices, concepts and ideas in the field of management, with an emphasis on providing managerial insights. The journal is an, academic endeavour, committed to encouraging research in the management field. The journal provides the forum for the dissemination of new ideas and innovation in every field of management.

From the EDITOR IN CHIEF's Desk.....

It gives me immense pleasure to offer you this issue of Acuitas. The issue has special contributions from the alumni of the institute and also the prize winning papers from our annual international Seminar Acumen 2017.

This issue has in all six papers from researchers across country. Reviewers had a tough job in screening the diverse nature of contributions. The same has prompted us to come out with a theme based issue having preferably a guest editor who is an expert in that domain. We will also be going to our new website and would like to automate submission, review and other communications from the new platform.

The support from the research community is solicited for this endeavor.

See you soon on the new platform with another issue.

Thanks and regards

Warm Regards,

Dr. Sudhir Fulzele

Director, DAIMSR

RURAL POSTAL LIFE INSURANCE: ITS BUSINESS PERFORMANCE AND LEVEL OF AWARENESS ACROSS DEMOGRAPHICS

Dr. B. Angamuthu*

Assistant Professor in Commerce, Kovai Kalaimagal College of Arts and Science, Vellimalaipattinam, Narasipuram (PO), Thondamuthur (via), Coimbatore – 641 109 Tamilnadu, INDIA.

E-mail: muthuanga82@gmail.com

ABSTRACT

Department of Posts (DoPs) play a major role in providing various services in rural India and to the last man in the society because it has over 1.39 lakhs branches in rural villages. Among the various services, DoPs has been involved insurance service to the rural areas since 1995. Over 20 years Rural Postal Life Insurance (RPLI) functions are to deal with human life values in the villages. Insurance service in the rural living plays a pivotal role in the overall development strategy of the country. This is expected to improve quality of life in rural India and to correct the developmental imbalances, aiming in the process, to reach out to most dis advantaged sections of the society. This empirical and analytical study has been concentrate evaluate the business performance of RPLI and assessment of awareness level towards RPLI across various demographics. The business performance of RPLI was measured in terms of three different parameters for the fifteen years study period. In addition, perception towards RPLI in the rural areas has been studied with the valid sample of 165 respondents. This study reported that the business performance of RPLI indicates a normal growth in terms of premium income and the value of sum assured, however, there exists negative growth in terms of policies procured during the study period from 2001-02 to 2015-16. Moreover, this study shows that more than 6/10th of the public in the rural areas are having medium level of awareness towards RPLI. The chi-square test reveals that there exists significant association among the various age groups, educational qualifications, occupational statuses and the proportion of savings of the respondents and their level of awareness towards RPLI.

Keywords: India Post, Financial services, Rural Postal Life Insurance, Public Awareness

I. INTRODUCTION AND EXECUTION OF THE STUDY

1.1 Introduction

133 years ago, in the year 1884 Department of Posts (DoPs) has been started life insurance business in India for the welfare of its own employees. Due to popularity of the Postal Life Insurance (PLI) schemes, its benefits were extended to various Departments of Central and State Governments. Presently, PLI is open for employees of all Central and State Government

Departments, Nationalized Banks, Public Sector Undertakings, Financial Institutions, Local Bodies like Municipalities and Zila Parishads, Educational Institutions aided by the Government, Universities, Autonomous institutions, employees of organizations such as Scheduled Commercial Banks, Credit Co-operative Societies, Deemed Universities and Educational institutes accredited by recognized bodies such as National Assessment and Accreditation Council (NAAC), All India

Council for Technical Education (AICTE), Medical Council of India (MCI)etc. After 110 years of its execution of insurance service, the DoPs has concentrate welfare of the rural lives and to start the Rural Postal Life Insurance (RPLI) scheme in 1995 as a result of the recommendation of the Official Committee for Reforms in the Insurance Sector (Malhotra Committee; 1993). The prime objective of RPLI scheme is to provide insurance cover to the rural public in general with special focus on women and weaker sections of society. RPLI had a greater impact in the rural India because low insurance penetration in rural villages, lack of trust in private insurance players, lack of effective distribution channel and so on.

Rural Postal Life Insurance (RPLI) Schemes – An overview

The RPLI currently provides five different plans to the adult persons viz., Whole Life Assurance (GRAMA SURAKSHA), Convertible Whole Life Assurance (GRAMA SUVIDHA), Endowment Assurance (GRAMA SANTOSH), Anticipated Endowment Assurance (GRAMA SUMANGAL) and 10 Year RPLI (GRAM PRIYA). The minimum value of sum assured is Rs 10,000 and the maximum of Rs 10 lacs in the above said schemes. Moreover, the maximum age at entry is 55 years in Whole Life and Endowment Assurance schemes but 45 years in other schemes. All the schemes have compulsory medical examination. If non-standard medical documents are provided, for those applicants maximum age at entry is 35 years and the maximum limit of sum assured Rs. 25,000. RPLI has been introduced Children Policy (BAL JEEVAN BIMA) with effect from 20th January'2006 and the Scheme is envisaged to provide Insurance cover to the children of existing policy holders. As on March' 2016, RPLI has 149.15 lakh active policies with sum assured of Rs. 817.33 Billion out of which 2.58 lakh policies obtained in the FY 2015-2016 with sum of Rs. 26.69 Billion.

Whole Life Assurance (SURAKSHA): This is a scheme where the assured amount with accrued bonus is payable to the assignee, nominee or the legal heir after death of the insurant. The policy can be converted into an Endowment Assurance Policy after completion of one year and before 57 years of age of the insurant.

Endowment Assurance (GRAMA SANTOSH): Under this scheme, the proponent is given an assurance to the extent of the sum assured and accrued bonus till he/she attains the pre-determined age of maturity. In case of unexpected death of the insurant, the assignee, nominee or the legal heir is paid the full sum assured together with the accrued bonus.

Convertible Whole Life Assurance (GRAMA SUVIDHA): The features of this scheme are more or less same as Endowment assurance. Policy can be converted into Endowment Assurance after five years. Age on the date of conversion must not exceed 55 years. If option for conversion is not exercised within 6 years, the policy will be treated as Whole Life Assurance.

Anticipated Endowment Assurance (GRAMA SUMANGAL): It is a Money Back Policy with maximum sum assured of Rs 10 lacs and most suitable to those who need periodical returns. Survival benefit is paid to the insurant periodically. Two types of policies are available - 15 years term and 20 years term. For the 15 years term policy, the benefits are paid after 6 years (20%), 9 years (20%), 12 years (20%) and 15 years (40% and the accrued bonus). For the 20 years term policy, the benefits are paid after 8 years (20%), 12 years (20%), 16 years (20%) and 20 years (40% and the accrued bonus).

Children Policy (BAL JEEVAN BIMA): The children policy will be in the name of his/her father or mother whereas the primary beneficiary is the child. The main policy holder should not have attained the age of 45 years. At the most 2 children of a family will eligible to take Bal Jeevan Bima policy. If a parent already has a Whole Life or Endowment Policy for a

sum assured that is more than the amount of the Children Policy, then they can add on the Children Policy to their policy. Once the policy is bought, the parent or the primary policyholder is responsible for payment of premiums. Medical examination of the child is not mandatory to take this policy, but the child should be healthy on the day of application for the policy. No premium is required to be paid on the children policy on the death of the main policy holder and full sum assured with the accrued bonus shall be paid to the child after the completion of the term of the children policy. On the death of the child/children, full sum assured with the accrued bonus shall be payable to the main policy holder.

10 Year RPLI (GRAM PRIYA): It is Anticipated Endowment scheme for ten years. Survival benefit is paid to the insurant periodically. For the 10 years term policy, the benefits are paid at the end of 4 years (20%), 7 years (20%) and 15 years (60% with accrued bonus). Proponent is given an assurance to the extent of sum assured with accrued bonus payable till completion of ten years.

Availability of Loan facility

Among the various schemes under RPLI, three plans namely SURAKSHA, GRAMA SANTOSH and GRAMA SUVIDHA has loan facility after completion of four years and also policy may surrendered after completion of three years. However, the policy is not eligible for bonus if surrendered or assigned for loan before completion of 5 years. Proportionate bonus on the reduced sum assured is accrued if the policy is surrendered or assigned for loan.

1.2 Statement of the Problem

Even after seventy years of independence, one - fourth of India's population still lives in poverty. In order to, the GoI has taken various measures of rural development have aimed at economic uplift of the people as well as bringing about a greater social transformation. Some of

them are Rural Health Mission, Bharat Nirman initiatives, National Rural Employment Guarantee Schemes etc are all directed towards elimination of poverty, ignorance, diseases and inequality of opportunities and providing a better and higher quality of life. Even though in the recent past issues have been focused on financial services in particular insurance services to the people who are living in rural India. RPLI is sustainable and inclusive growth of rural living through insurance service for eradication of poverty by increasing better future and also to improve saving habit among them. The positive growth of RPLI does not reflect everyone having insurance policies in the rural villages. So, the RPLI has a significant contribution in socio-economic development of rural areas but its' success depends on the public awareness and their acceptance.

1.3 Objectives of the study

- ❖ To measure the growth of business in RPLI
- ❖ To assess the level of awareness towards RPLI among various groups of the respondents in the rural areas
- ❖ To find out the willingness to invest in RPLI across demographics in the rural areas

1.4 Hypotheses of the Study

Based on the objectives, the following hypotheses were formulated and tested.

- ❖ H₀₁: There is a slow growth of business in RPLI
- ❖ H₀₂: There is no significant association on level of awareness towards RPLI among various groups in the rural areas.
- ❖ H₀₃: There is no significant difference on willingness to invest in RPLI among various groups in the rural areas.

- ❖ H₀₄: There is no relationship between awareness level of the respondents and their willingness to invest in RPLI.

II. REVIEW OF LITERATURE

Raghunadhan (1988) in his study concluded that more number of self employed and agricultural labourers are to be covered under insurance service. Namasivayam et al (2006) examined the socio-economic factors that are responsible for purchase of life insurance policies and the preference of the policyholders towards various types of policies of LIC. From the analysis, the study concluded that factors such as age, educational level and sex of the policyholders are insignificant, but income level, occupation and family size are significant factors. Tanmay Acharya et al (2007) reported that the purchasing decision of the consumer depends on quality, accessibility, company type, recommendations and promptness of service. Vijayalakshmi and Keerthi (2007) identified that the difference between the level of perception and expectation on the various issues relating to the services, problems, infrastructure, staff / employees of the insurance companies through gap analysis. Gobinath (2009) in his article said that 70% of India live in rural areas but have no access; or have negligible access to insurance due to wide geographical disparity and high distribution costs, insurers have been chary of venturing into this territory. Keerthi and Vijayalakshmi (2009) focused on the policyholders' expectations and perceptions of the services provided by private insurance companies and this study reported that the policyholders have experienced low levels of service as against their expectations. Raju and Gurupandi (2009) in their study aimed to find out the attitude towards the services of Life Insurance Company based on the various socio-economic backgrounds of the policyholders. Das (2011) finds that respondents mostly invested in insurance irrespective of their educational qualifications. Moreover, the analysis shows

that the association does not exist towards preferred investment avenue across various educational qualifications and occupations. Salaried class and self-employed people invested mostly in insurance scheme. Sarita (2011), found that the irrespective of educational qualification, job, age, income level investor would like to protect their future by taking an insurance policy. Dhiraj & Nikita (2012) in their study concluded that there exist significant association between the age groups, income level and the awareness towards the rights and duties regarding life insurance. Gautam and Kumar (2012) their findings of the research shows that basic socio demographic and economic variables like age, gender, marital status, level of education, household monthly income, mode of employment, professional inclination and mortgage property ownership, have significant impact on consumers' attitudes towards insurance services in Indian scenario. Kaushal and Kinjal (2012) state that investment in insurance mostly preferred by higher income groups with higher education. Syamala Rao (2012) focused on the service quality offered by LIC and to analyze various problems through the perception of policyholders of LIC. Majority of the customers were satisfied with the LIC policies and its services (Jadal and Raval, 2012). Yadav and Tiwari (2012) revealed that majority of the respondents invest in life insurance for tax benefit, followed by the risk coverage & saving, premium charges, security with high return and insurance services. Moreover, the study shows that customer insurance investment is not associated with their occupational statuses. Thilakam and Ganesan (2012) inferred that nearly 3/4th of the respondents have invested in life insurance policies. children's education is the top most priority of investment by the respondents followed by maintaining family well being, construction of houses, wards marriage, health care, status in society, aspiration to lead a comfortable life, repayment of debts, to meet contingencies and other general purposes

respectively in the rural masses. Palanivel and Chandrakumar (2013) identified that the low and middle income group of investor give preference to invest in insurance and bank deposit.

III. RESEARCH METHODOLOGY

This empirical and analytical research study was used both secondary and primary data. Business performance of RPLI is measured with the help of secondary data for the fifteen years period from 2001-02 to 2015-16. In order to three different parameters namely procurement of new policies of RPLI, premium income and value of sum assured has to be considered. The secondary data towards business performance of RPLI were collected from official reports of India post, Reports from directorate of postal life insurance and the primary data were collected with the help of questionnaire-cum-interview schedule. The questions included in the questionnaire-cum-interview schedule developed by the Researcher. Totally, eleven questions taken into account and it is divided into three parts. The first part consists of seven questions regarding demographic profile which are gender, age group (in years), marital status, educational qualification, occupational status, family income (Rs. Per annum) and proportion of saving per month (Approx.). The second part consist total of fifteen variables and all of them were represented in five point likert scaling technique. The score in the scale stands for '5' highly aware, '4' aware, '3' neither aware nor unaware, '2' not aware and '1' highly not aware to the positively worded items and vice-versa. Third part of the questionnaire consist perception towards willingness to investment RPLI scaled from '5' very much willing to '1' not willing at all. 165 valid responses used for final

study and the responses were collected from Vadivelampalayam, Nathegoundenpudur, Naraseepuram, Kuppanur, Karadimadai, Sennanaur, Mathipalayam, Karunya, Semmadu and Molapalayam Villages in Thondamuthur Block, Coimbatore South Taluk. This study involves evaluating the awareness level of RPLI among the respondents based on their responses given to the selected attributes. Therefore, 1/3rd of the variable is negatively worded and the remaining 2/3rd are positive were mixed in the survey instrument. After that, respondents are placed into three categories of awareness level namely low, medium and high, based on their obtaining total score using the technique of Mean \pm SD. It indicates that the respondents who have taken the score <50.72 have low awareness, >=50.72 to <=73.16 medium awareness and >=73.17 high awareness of RPLI. Purposive sampling method is most suitable for the study. The theoretical inputs of the study were collected from journals, magazines, and various websites. The collected data were analyzed with the help of various statistical applications namely Mean, Standard deviation (SD), Co-efficient of variation (CV), trend analysis, percentage analysis, Chi-Square test (χ^2), t-test and One Way ANOVA.

IV. ANALYSIS AND DISCUSSIONS

4.1 Business Performance of RPLI

The overall growth of the business under RPLI, in terms of number of procured policies, premium income and the value of sum assured during the period from 2001-02 to 2015-16 is given in Table-1.

Table - 1: Growth of Business under RPLI; 2001-02 to 2015-16

Business under RPLI	Minimum	Maximum	Mean	SD	CV (%)	CAGR (%)
---------------------	---------	---------	------	----	--------	----------

Policies procured (No. in Lakhs)	2.58	40.28	14.63	11.34	77.49	-2.51
Premium income (Rs. in Crores)	95	2012	1007	692	68.70	24.4
Sum Assured (Rs. in Crores)	1697	13649	7354	3283	44.64	3.29

Policies procured in RPLI: Table - 1 explains that the growth of policies procured ranges from 2.58 lakhs to 40.28 lakhs with an average of 14.63 lakhs while SD is 11.34 lakhs and its CV is 77.49 per cent. In addition, the CAGR for the period 2001-02 to 2015-16 is -2.51 per cent which indicates a declining trend of business under RPLI in terms of policies procured. The actual number of policies procured under RPLI has significant growth during the period from 2001-02 to 2005-06 and 2009-10. But, there exists insignificant growth during last six years with respect number of policies procured under RPLI. During the study period of fifteen years, it has been observed that for six years the actual growth was above the expected growth and remaining periods the actual growth was below the expected growth (Figure - 1).

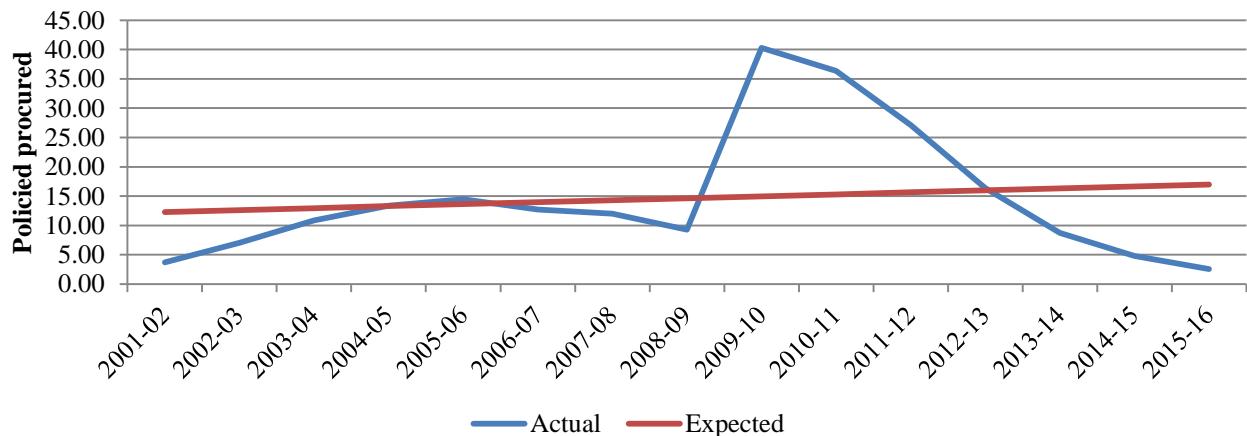
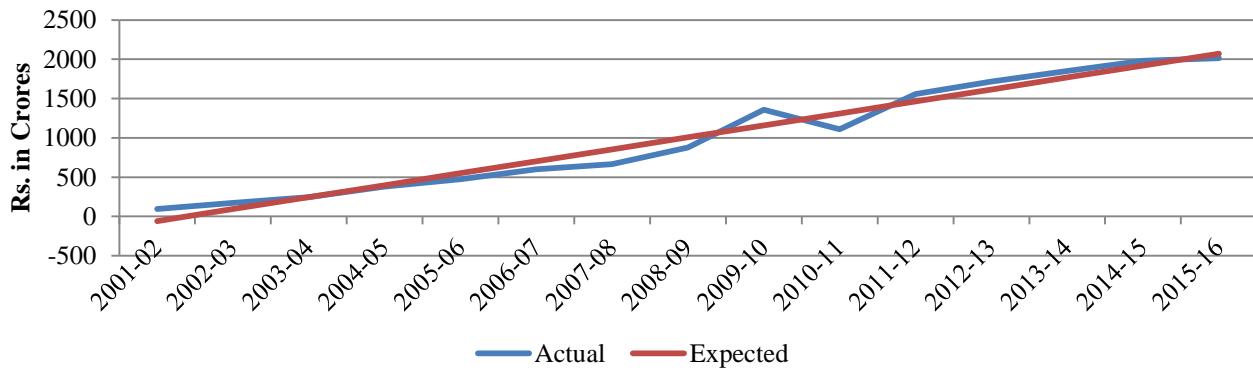
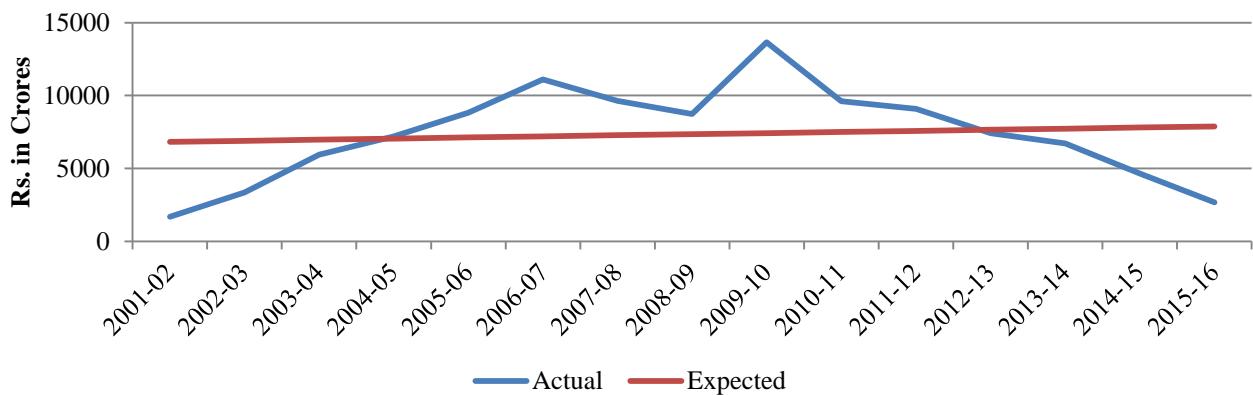
Premium income under RPLI: Table -1 show that the growth of premium income ranges from Rs. 95 Crore to Rs. 2012 Crore with an average of Rs. 1007 Crore while SD is Rs. 692 Crore and its CV is 68.70 per cent. Moreover, the CAGR for the period 2001-02 to 2015-16 is 24.4 per cent which indicates a normal growth of business under RPLI in terms of premium income. There has been significant growth of premium income under RPLI during the study period, however, the actual growth of premium income under

RPLI was lesser than the expected growth from 2004-05 to 2010-11 and 2015-16 (Figure - 2).

Sum Assured under RPLI: Table -1 show that the sum assured in RPLI ranges from Rs. 1697 Crore to Rs. 13649 Crore with an average of Rs. 7354 Crore while SD is Rs. 3283 Crore and its CV is 44.64 per cent. Moreover, the CAGR for the period 2001-02 to 2015-16 is 3.29 per cent which indicates a normal growth of business under RPLI in terms of sum assured. There has been insignificant growth of sum assured under RPLI during last six years, from 2010-11 to 2015-16, however, during the study period of fifteen years, it has been observed that for eight years the actual growth was above the expected growth and remaining periods the actual growth was below the expected growth (Figure - 3).

4.2 Difference on Actual and Expected Growth of Business in RPLI

For visual representation, the growth of the business under RPLI, in terms of number of procured policies, premium income and the value of sum assured during the period from 2001-02 to 2015-16 is given in the Figure -1, 2 and 3.

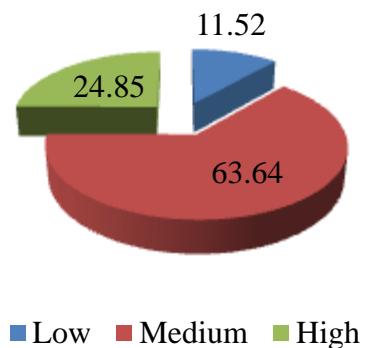
Figure - 1: Policies procured under RPLI (Nos. in Lakhs)**Figure - 2: Premium income under RPLI****Figure - 3: Sum Assured under RPLI**

4.3 Level of Awareness towards RPLI

Distribution of the respondents based on their level of awareness is given in the figure - 4. It shows that 63.64% of the respondents are

having medium awareness, 24.85% of them having medium awareness and the remaining 11.52% having low awareness.

Figure - 4: Awareness level of RPLI (in %)



Source: Field Survey

4.4 Relationship between Demographic factors and Awareness level of RPLI

H₀: There is significant association between demographic factors of the respondents and their awareness level of RPLI.

Table 2 shows that the calculated value of $\chi^2 \{\Sigma (O - E)^2/E\}$ between gender ($\chi^2=2.315$, df 2, $p>0.05$), marital status ($\chi^2=0.730$, df 5, $p>0.05$), family income ($\chi^2=5.931$, df 4, $p>0.05$) of the respondents and their awareness level of RPLI statistically not significant at five percent level. Hence, null hypothesis is accepted and it is reported that there is no significant association between gender, marital status, family income of the respondents and their awareness level of RPLI. On the other hand, the calculated value of $\chi^2 \{\Sigma (O - E)^2/E\}$ between Age group ($\chi^2=32.775^{**}$, df 4, $p<0.01$), Education ($\chi^2=51.062^{**}$; df = 4; $p<0.01$), Occupation ($\chi^2=33.451^{**}$; df = 8; $p<0.01$), Proportion of saving ($\chi^2=36.939^{**}$; df = 4; $p<0.01$) of the respondents and their awareness level of RPLI statistically significant at one percent level. Therefore, null hypothesis is rejected and it is concluded that there is a significant association towards awareness level of RPLI among various age groups, educational qualifications, occupational status and proportion of saving.

Table - 2: Relationship between Demographic factors and Awareness level of RPLI

Demographic factors / Awareness level		Low	Medium	High	Total	Demographic factors / Awareness level		Low	Medium	High	Total	
Gender	Male	9 (12.33)	42 (57.53)	22 (30.14)	73 (100)	Occupation	Govt. & Private employee	0 (0)	23 (74.19)	8 (25.81)	31 (100)	
	Female	10 (10.87)	63 (68.48)	19 (20.65)	92 (100)		Professional	2 (13.33)	9 (60)	4 (26.67)	15 (100)	
	C.V $\chi^2 = 2.315$; df = 2; T.V = 5.99											
Age group (in years)	Below 25	5 (19.23)	14 (53.85)	7 (26.92)	26 (100)		Private business	3 (9.38)	16 (50)	13 (40.63)	32 (100)	
	26-50	5 (4.17)	85 (70.83)	30 (25)	120 (100)		Agriculturists	7 (9.46)	53 (71.62)	14 (18.92)	74 (100)	
	Above 50	9 (47.37)	6 (31.58)	4 (21.05)	19 (100)		Home maker	7 (53.85)	4 (30.77)	2 (15.38)	13 (100)	
	C.V $\chi^2 = 32.775^{**}$; df = 4; T.V = 13.23											
Marital status	Married	11 (13.41)	50 (60.98)	21 (25.61)	82 (100)	Family income (Rs. Per annum)	Upto 1,00,000	7 (22.58)	18 (58.06)	6 (19.35)	31 (100)	
	Unmarried	8 (9.64)	55 (66.27)	20 (24.10)	83 (100)		1,00,001 - 1,50,000	11 (10.58)	66 (63.46)	27 (25.96)	104 (100)	
	C.V $\chi^2 = 0.730$; df = 5; T.V = 5.99											
	C.V $\chi^2 = 5.931$; df = 4; T.V = 13.23											
Education	No formal education (I - VII)	4 (66.67)	2 (33.33)	0 (0)	6 (100)	% of Saving per month (Approx.)	Upto 10	1 (12.5)	4 (50)	3 (37.5)	8 (100)	
	Upto school level (VIII - XII)	15 (31.25)	23 (47.92)	10 (20.83)	48 (100)		10-20	16 (34.78)	19 (41.3)	11 (23.91)	46 (100)	
	Higher education	0 (0)	80 (72.07)	31 (27.93)	111 (100)		More than 20	2 (1.8)	82 (73.87)	27 (24.32)	111 (100)	
	C.V $\chi^2 = 51.062^{**}$; df = 4; T.V = 13.23											

Source: Field survey

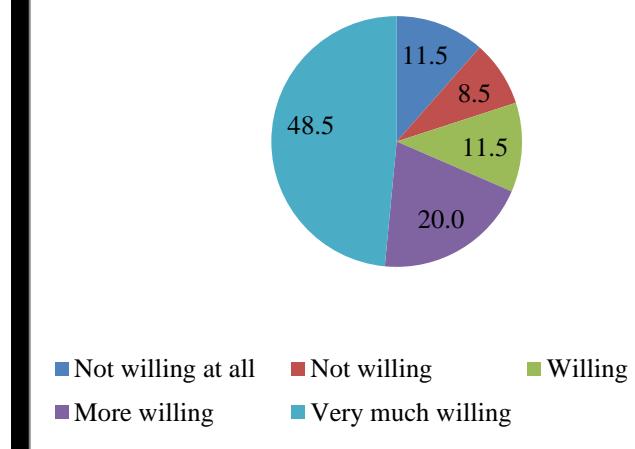
(The values in brackets are percentages)

** Sig. at 1% level; * Sig. at 5% level

4.5 Willingness to invest in RPLI

Distribution of the sample respondents based on their willingness to invest in RPLI is given in the Figure – 5. It shows that nearly half of the respondents have very much willing to invest in RPLI. Moreover, 20 percent of the respondents have more willing and 11.5 percent of them have willing to invest in RPLI. On the other hand, 1/5th of the respondents are not willing to invest in RPLI. This study assumed that the family income, many number of micro saving schemes, private players in the life insurance market, various savings schemes implemented by banks/India post and other investment mediums may affect the respondents' willingness to invest in RPLI.

Figure - 5: Willingness to invest in RPLI (in %)



4.6 Respondents' Willingness to Invest In RPLI across Demographics

H₀: There is no significant difference on willingness to invest in RPLI among various groups of the respondents.

Table - 4: Difference on Respondents' willingness to invest in RPLI

Demographic factor	Character	N	Mean	SD	t/f (df 163/164)	Result
Gender	Male	73	3.8767	1.3939	0.18	Accept H ₀
	Female	92	3.8369	1.4164		
Age group (in years)	Below 25	26	3.7692	1.3655	2.968*	Reject H ₀
	26-50	120	3.9833	1.3901		
	Above 50	19	3.1579	1.3850		
Marital status	Married	82	3.9390	1.3458	0.768	Accept H ₀
	Unmarried	83	3.7711	1.4594		
Educational Qualification	No formal education (I - VII)	6	2.1667	.9832	9.01**	Reject H ₀
	Upto school level (VIII - XII)	48	3.4583	1.4286		
	Higher education	111	4.1171	1.3125		
Occupational status	Govt. & Private employee	31	3.7742	1.5855	0.346	Accept H ₀
	Professional	15	3.9333	1.4376		
	Private business	32	3.8750	1.5187		
	Agriculturists	74	3.9324	1.3276		
	Home maker	13	3.4615	1.1266		
Family income (Rs. per annum)	Upto 1,00,000	31	3.6774	1.4233	1.606	Accept H ₀
	1,00,001 - 1,50,000	104	4.0000	1.2922		
	Above 1,50,000	30	3.5333	1.6965		
% of saving per month (Approx.)	Upto 10	8	4.0000	1.6036	2.925*	Reject H ₀
	10 - 20	46	3.4348	1.4087		
	More than 20	111	4.0180	1.3617		

Source: Field survey

** Sig. at 1% level; * Sig. at 5% level

Table 4 shows that the calculated values of 't/f' between demographic factors like age group ($f/t=2.968^*$; $p<0.05$; $df=164$), educational qualification ($f/t=9.01^{**}$; $p<0.01$; $df=164$), proportion of saving ($f/t=2.925^*$; $p<0.05$; $df=164$) of the respondents and their willingness to invest in RPLI statistically significant. So, the null hypothesis is rejected and it is reported that there exists significant difference on respondents' willingness to invest in RPLI among various age groups, educational qualifications and proportion of saving. On the other hand, the calculated values of 't/f' between demographic factors like gender ($f/t=0.180$; $p>0.05$; $df=163$), marital status ($f/t=0.768$; $p>0.05$; $df=163$), occupational status ($f/t=0.346$; $p>0.05$; $df=164$), family income ($f/t=1.606$; $p>0.05$; $df=164$) of the respondents and their willingness to invest in RPLI statistically not significant at five percent level. Therefore, the null hypothesis is rejected and it is concluded that there is no significant difference on willingness to invest in RPLI among various groups of gender, marital status, occupational statuses and family incomes.

4.7 Relationship between Awareness level and Willingness to Invest in RPLI

This part has evaluated the strength of the association between awareness level of the respondents and their willingness to invest in RPLI with the help of cramer's test. It is similar to Pearson's correlation in that they have specific bounds within which they fall and therefore provide a standard way of speaking about the strength of the association between associated variables. This measure ranges between 0 and 1, with values closer to 1 indicating a stronger association between the variables. Angamuthu (2015) provides guidance on interpreting level of relationship/association:

+0.2 to less than +0.6 = Moderate positive effect and vice-versa

+0.6 to +1.0 = Strong positive effect and vice-versa

Less than +0.2 = Low positive effect and vice-versa

H_0 : There is no relationship between awareness level of the respondents and their willingness to invest in RPLI.

Table - 5: Respondents' Awareness Level and Willingness to Invest in RPLI	
Test Statistics	0.600**
Sig. value	$P_{<0.01}$
Result	Reject H_0
Source: Field survey	*Sig. at 5% & ** Sig. at 1% level

Table - 5 shows that the calculated value between awareness level ($CC=0.600^{**}$; $p<0.1$), of the respondents and their willingness to invest in RPLI has been statistically significant at 1% level. Therefore, null hypothesis is rejected and it is reported that there exists significant positive and strong relationship of these variables. This part ensures the respondents' awareness level is the major factor that improves their willingness to invest in RPLI.

DoPs is best suited to overcome all challenges associated with spreading insurance coverage in rural areas. Now-a-days, RPLI is enabling millions of rural and semi urban people to gain access to life insurance services, thus RPLI playing a critical role in financial inclusion in the country. In the recent period (2010-11 to 2015-16), the actual business performance of RPLI in terms of number of policies procured and the value of sum assured has steadily downward trend, however, the premium income under RPLI has significant growth in the last six years. Further, this study finds that awareness level is mainly influence the

V. CONCLUSION

willingness to invest in RPLI among the respondents. However, majority of the rural lives are partially aware of RPLI and its benefits across various demographics. Age groups, educational qualifications, occupational statuses and proportions of saving are associated with level of awareness towards RPLI. Even though, DoPs has further responsible for creating 100% of awareness in the minds of rural lives. Finally, this study suggests the following

- ❖ DoPs have to put extra efforts in popularizing RPLI services amongst rural people. It should take proper steps to organize more seminars, workshops, and other awareness programs/ camps regarding the RPLI and its benefits.
- ❖ RPLI displays on Mobile van /State Road Transport Corporation Bus Panels
- ❖ RPLI wall paintings in rural areas
- ❖ Non-Government Organizations (NGOs) should engage in public education campaigns to encourage exercise of RPLI service.
- ❖ The medias can be asked to give attractive advertisement regarding RPLI.
- ❖ DoPs may appoint direct agents in rural areas. This not only helps to create awareness of RPLI and also helps to provide employment opportunities for many people.

REFERENCES

1. Angamuthu, B., (2015), "Impact of Customer Relationship Management on Customer Satisfaction and its Role towards Customer Loyalty and Retention Practices in the Hotel Sector ", BVIMSR's -Journal of Management Research, Vol.7(1), 43-52
2. Bhatt, Kaushal, A., & Bhatt, Kinjal., (2012), Effects of Investor Occupation and Education on Choice of Investment: An Empirical Study in India', International Journal of Management , Vol. 29(4)
3. Daniel, W. W. (1990), Applied nonparametric statistics (2nd ed.). Boston: PWS Kent Publishing Company.
4. Das, S.K., (2011), "An Empirical Analysis on Preferred Investment Avenues among Rural and Semi-Urban Households", Journal of Frontline Research in Arts and Science, Vol. 1, pp. 26-36
5. Dhiraj, J., & Nikita, G., (2012), "An Empirical study of the Level of Awareness towards various Rights and Duties among the insured households in Rajasthan, India", Researchers World -Journal of Arts, Science & Commerce, Vol.3(2), pp.40-49
6. Gautam, V., and kumar, M., (2012), "A Study on Attitudes of Indian Consumers Towards Insurance Services", Management Research and Practice, Vol.4(1), pp.51-62
7. Gopinath, K., (2009). Rural and Social Sector Insurance. IRDA Journal, 7(4), 17-19
8. Judal, K.G., & Raval, R.V., (2012), "A study of Customer Satisfaction of Life Insurance Corporation of India with special Reference to Gandhinagar Division", Thematics Journal of Business Management, 1(4), 174-178
9. Keerthi, P., & Vijayalakshmi, R., (2009), "A Study on the Expectations and Perceptions of the Services in Private Life Insurance Companies, SMART Journal of Business Management, Vol. 5, 2009.
10. Namasivayam, N., Ganesan, S., and Rajendran, S., (2006), "Socioeconomic Factors Influencing the Decision in Taking Life Insurance Policies", Insurance Chronicle, The ICFAI University Press, 65-70.
11. Palanivelu, V.R., & Chandrakumar, K., (2013), "A Study on Preferred Investment Avenues among Salaried Peoples with Reference to Namakkal Taluk, Tamil Nadu, India", IBEA International Conference on Business, Economics and Accounting, Vol.3 (11), pp.203-212
12. Raghunadhan, R., (1998), "Population – Insurable and Insured", Yogakshema, February, P. 15.
13. Raju, S., & Gurupandi, M., (2009), "Smart Journals of Business Management Studies", Vol. 5, P. No. 21

14. Reynolds. H. T. (1984). Analysis of nominal data (2nd ed). Beverly Hills, CA: Sage Publications.
15. Sarita agrawal., & Monika Rani., (2011), Attitude towards Insurance Cover, The IUP Journal of Risk and Insurance, Vol.8 (1), pp.62
16. Syamala Rao, G., (2012), "Policyholder's Perceptions on LIC Policies and Services with Reference to Srikakulam District in Andhra Pradesh", International Journal of Management and Social Sciences Research, 1(1), 25-28.
17. Tanmay Acharya., Harshita Mishra., & Venkata Seshaia., (2007), "Customer Preferences in General Insurance Industry in India", The ICFAI Journal of Marketing, Dec' 2007, P. No. 7
18. Thilakam, C., & Ganesan., (2012), "Financial Literacy Among Rural Masses In India", International Conference on Excellence in Business, Sharjah, United Arab Emirates, University of Sharjah, 9-10 May.
19. Vijayalakshmi, R., and Keerthi, P.A., (2007), "A Study on the Service Quality of LIC as expected and perceived by its policy holders", Journal of Contemporary Research in Management, 3(3), 71-76
20. Udinsky, B. F., Osterlind, S. J., & Lynch, S. W. (1981). Evaluation resource handbook. San Diego, CA: Edits Publishers.
21. Welkowitz, J., Ewen, R. B., & Cohen, J. (1991). Introductory statistics for the behavioral sciences (4th ed.). New York: Harcourt Brace Jovanovich Publishers.
22. Yadav, B., & Tiwari, A., (2012), "A Study on Factors Affecting Customers Investment towards Life Insurance Policies", International Journal of Marketing, Financial Services & Management Research, Vol.1(7), July.

WEB REFERENCES:

- <http://www.chennaipost.gov.in/pli.aspx#rplischemes>
- <http://timesofindia.indiatimes.com/city/allahabad/Postal-Life-Insurance-day-celebrated/articleshow/24219876.cms>
- <https://www.bankbazaar.com/life-insurance/rural-postal-life-insurance.html>
- <https://in.finance.yahoo.com/news/postal-life-insurance-life-insurance-053010036.html>
- <https://data.gov.in/catalog/growth-postal-life-insurance-and-rural-postal-life-insurance>
- <https://www.bankbazaar.com/rural-postal-life-insurance/bal-jeevan-bima-plan.html>
- <http://www.examinationtoday.com/role-of-post-offices-in-rural-development/>
- <http://doppli.nic.in/gpriya.htm> and other websites

Health and Economic consequences due to indiscriminate use of Chemical pesticides during Cauliflower cultivation

Dr. Nishant V. Shende*

ABSTRACT

The farmers are under the misconception that higher returns could be obtained through higher doses of plant protection chemical. However this has resulted in pest resistance, pest resurgence and secondary pest outbreak in the region over the past few years. In this regard, the study provides insight into economics of pesticides use. The results of the study would be useful to both policy maker and farmers of the region in understanding the nature and economic consequence of pesticide use. The study pertains to agriculture year 2013-14 and is based on information obtained by 60 randomly selected cauliflower cultivators from Nagpur District. The resource use efficiency analysis clearly indicated that the resources were not optimally used as guided by the economic principles. The MVP/MFC ratios were negative for plant protection chemicals. Thus the withdrawal of these resources would maximize the returns from cauliflower production. The farmers need to be educated and advised about the proper use of these resources particularly plant protection chemicals and fertilizers. Though the pesticide use was high, the farmers in the study area were already using more quantity of pesticide. This is not only uneconomical but also would lead to other ill effects of pesticide use. Therefore there is an urgent need for proper education to the farmers about the balanced use of pesticides. The farmers should be educated to identify the threshold level of pest infestation and take measures only after that instead of blindly following the neighbouring farmers while applying plant protection chemicals. They also need to be advised about the method of applying and identifying the spurious chemicals. Awareness needs to be created on use of personal protective measures among farmers, while handling pesticides. Farmers need to be encouraged to reduce, if not eliminate the use of pesticides, with the introduction of incentives to the farmers to help them shift from synthetic pesticides to bio pesticides and organic farming. Farmers need to be educated about different non-chemical control methods and encouraged to adopt Integrated Pest Management (IPM) practices. Also, there is need of in-depth research on non-chemical management of pests in vegetables wherein pest infestation is relatively high.

Key words: Cauliflower, Pesticides, Cost & Return

INTRODUCTION

The basic objective of most agricultural development programmes is to increase productivity and thereby increase the total agricultural production. The major inputs which have been promoted as a result of these programmes are high response varieties, hybrids, fertilizers and plant protection chemicals. The impact of these inputs is called "Green Revolution".

Pesticides have contributed to both controlling epidemics as well as to the resurgence of pests/diseases. These have substantial influence on the quality of production and preservation of food, fibre and other cash crops by controlling disease vectors and by keeping in check many species of insect, pests, diseases and weeds. The emphasis given to plant protection indicates that there is a substantial loss of production due to pests, weeds and diseases.

Pesticides include such chemicals as insecticide, herbicide, fungicide, acaricides, molliscicides and nematoides, which are used on plants, soil and water to control pest and diseases. The use of pesticides to prevent pre-harvest and post-harvest losses has assumed a greater significance during the last two decades, in an attempt to provide sufficient nutritive food for the ever growing world population. The use of synthetic pesticide in agriculture has increased rapidly during last four decades (2,353 MT to 90,586 MT) and has over showed the traditional method used crop damages due to insects, pests, diseases and weeds. Though pesticide use is said to have contributed significantly to the food security by the way of increase in crop production and reduction of post harvest losses, there is growing concern over the ill-effects of pesticide on human health, environment, natural resources and sustainability of agriculture production. In the classical writings of "silent spring", Carson (1962) warned that pesticides were being used carelessly which cause hazard's for non target organisms and result in technological failure of pest resistance, pest resurgence and emergence of secondary pests. Indiscriminate use of pesticides reduces bio-diversity and aggravates of soil, water and air pollution. However, out of all inputs, pesticides play key role in increasing agriculture production by controlling agriculture pests and diseases. It has been observed that about one third of reliable global output is estimated to be lost due to insect pests, diseases and weeds.

Regarding the consumption of pesticide for different crops, cotton consumed 55 per cent of total pesticides in India while the total area under cotton was only 5 per cent. Similarly in the case of paddy, 17 per cent of the pesticide was consumed, while the total area under paddy was 24 per cent. In the case of fruits and vegetables the usage was 13 per cent of total production and the area was only 3 per cent of the total cultivated area (Dikshit, 2008).

India is the world's largest cauliflower grower and second largest cabbage grower (after China). Cabbage and cauliflower are important in the diets in this country where vegetarianism is widespread. Vegetables consume 14 per cent of all pesticides used in India with over half of the applied materials being relatively mammalian toxic and environmentally persistent organophosphates and 20% organochlorines (Dhaliwal and Singh, 2000). Both chemical groups are significantly toxic to humans and the environment. About 6,000 tonnes of active ingredient of insecticides are used annually for diamondback moth control alone in India (Mohan and Gujar, 2003), and the cost of cabbage and cauliflower protection is greater than \$US 168 million annually. Vegetable crops provide an important source of income for the small and marginal farmers of our country. The increase in population urbanization and the rising incomes have given great impetus to the cultivation of vegetable crops which form an important source of minerals, particularly calcium, magnesium and iron, vitamins like A, B-complex and C and fibers. Vegetables are largely required in the vegetarian diet of our people and the demand for vegetables is increasing (Bose and Som, 1986).

The farmers in the district are under the misconception that higher returns could be obtained through higher doses of plant protection chemical. However this has resulted in pest resistance, pest resurgence and secondary pest outbreak in the region over the past few years. In this regard, the study provides insight into economics of pesticides use. The results of the study would be useful to both policy maker and farmers of the region in understanding the nature and economic consequence of pesticide use.

Keeping in view these aspects of the pesticide use the present study is an attempt to analyse the economic consequences of pesticide use in

cauliflower in Nagpur district of Maharashtra State with the following specific objectives.

Objectives

To estimate cost & returns in cauliflower production with special reference to pesticides use. To Study the frequency and extent of pesticides use in cauliflower. To estimate economic optimum level of pesticides use for profit maximization. To examine pesticide handling practices & safety measures followed by sample farmers.

Limitation of study

The study based on information obtained by 60 randomly selected farmers. Hence, various conclusion drawn and explanation of various problems have been on behaviour of the sampled farmers and availability of data during reference period. The respondents were not in the habit of maintaining records of their income

Table1: Tahsil wise distribution of farmers:

Sr. No.	Name of Tehsil	Name of Villages	Number of Farmers
1	Kalmeshwar	Kalmeshwar	04
		Sawangi	04
		Asti	04
		Selu	04
		Kalambhi	04
2	Katol	Isapur	04
		Chikhali	04
		Medhaki	04
		Saloni	04
		Maina	04
3	Kuhi	Akoli	04
		Kuhi	04
		Shilly	04
		Khalasna	04
		Dadma	04
			Total - 60

The present study is based on the primary data obtained from sample farmers of Nagpur district. The three predominantly growing tahsils were selected viz. Kalmeshwar, Katol &

and expenditure. The entire information was by recollecting past events by the farmers.

MATERIALS AND METHODS

The main objective of any scientific investigation is to draw useful conclusion in light of objective of study. In order to get the meaningful conclusion, it is essential for investigator to adopt appropriate method and procedure, keeping this in view, to explain the methodology adopted, and to fulfill the objective of study. It also deals with source of data, type of data, selection of area, selection of farmers, collection of data, and analytical tools used.

Nature & source of data:

The present study was undertaken in Nagpur district of Vidarbha region. The villages and the number of farmers selected are as follows:

Kuhi. Five villages were selected from each tahsil and four cauliflower growers were randomly chosen from each village for getting the required information on cauliflower

cultivation. Thus the study was based on 60 randomly selected cauliflower growing farmers spread in Nagpur district.

Method of analysis

Tabular analysis: - The data was summarized in the form of appropriate tables. The budgeting technique was used to assess the cost, returns and profits from cauliflower crop cultivation in the study area. The percentage and averages were computed and compared to draw meaningful inferences.

Production Function analysis:

The Cobb-Douglas production function was estimated to study the resource use efficiency and influence of inputs on cauliflower yield.

$$Y = A X_1^{b_1} X_2^{b_2} X_3^{b_3} X_4^{b_4}$$

Where,

Y - Gross Income from cauliflower (Rs/ha)

X_1 - Expenditure on seed (Rs/ha)

X_2 - Expenditure on Fertilizer and manures (Rs./ha)

X_3 - Quantity of pesticides used (Kg/ha)

X_4 - Expenditure on labour (Rs/ha)

A- Constant

b_i - production elasticities

One of the objective of the study was to estimate optimum quantity of pesticide use. Hence, PPC input was measured in physical quantity while other inputs measured in monetary value. The above function was converted into the linear form through logarithmic transformation of all variables and is written as

$$\log Y = \log A + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4$$

The marginal value product for each input were calculated by using following formula

$$\text{Marginal value product of } X_i = b_i (Y/X)$$

Where,

Y = geometric mean of gross income

X_i = geometric mean of i resource

b = production elasticity of i^{th}

The marginal value product was equated the marginal factor cost to determine optimal use of resources. To determine the optimum quantity of pesticide use, under the assumption of profit maximization behaviour, the following relationship was estimated. The marginal Physical product (MPP) of pesticides was equated to the price ratio of the pesticide and cauliflower.

$$\text{MPP} = (d_y/d_x) = P_p/P_y, \text{ i.e. } b_3 (Y/X) = P_p/P_y, X^* = (b_3 \cdot Y \cdot P_y)/P_p$$

Where,

X^* = Optimum quantity of pesticides

b_3 = Production elasticity of pesticides

MPP = Marginal physical product of pesticides

P_p = Unit price of pesticides (Rs/kg)

P_y = Output Price of the cauliflower (Rs/Qtls)

The rate of return from pesticide use in the cauliflower was computed by using formula as suggested by **Nguyen and Tran Thi, 2003**. The rate of return was estimated as the ratio of (Return - Total cost other than pesticides)/ total pesticide cost.

Plant protection chemical expenditure function

The following log linear regression function was used for estimating the plant protection chemical elasticity coefficient.

$$\log Y = \log A + b_1 \log X_1 + b_2 \log X_2 + b_3 \log X_3 + b_4 \log X_4$$

Where;

Y = Expenditure on plant protection chemicals (Rs. /ha.)

X_1 = Total family income (Rs./ha.)

X_2 = Expenditure on fertilizer and manures (Rs./ha)

X_3 = Intensity of pesticide application (no of times/ha)

X_4 = Area under cauliflower (ha.)

RESULTS AND DISCUSSION

Keeping in view the objectives of the study, the data were analysed using suitable techniques. The results obtained from this study have been presented and discuss critically.

A) Profile of Sample Farm:

A total of fifteen (15) villages spread across three Tahsil of Nagpur district of Vidarbha region were surveyed for the study. The demographic characteristics of the sample farm's families are profiled in table 2. Age and education play vital

role in farmer's disposition towards technology and their comprehension and adoption. Age is an important variable with which social status is associated. Hence, it is observed from the table that, only 35.00 percent of the respondents fell under Old age category while 61.67 percent belonged to middle age category and rest three percent to young category. With respect to the literacy rate, it was noticed that majority of farmers were educated in the study area. Literacy level of sample respondents ranged from primary to degree. This is clearly indicated that higher the education level more will be the knowledge and better will be the understanding capacity of new technologies. The educational profile showed that 31 percent farmers had primary school level, followed by 28 percent secondary level, 25 per cent High school level and 11 per cent Diploma/ College level. However, till three percent farmers were illiterate in the sample.

Table No. 2: Family Profile of the sample farm household

Sr. No.	Particular	Frequency (N=60)	Percentage (%)
A	Age groups		
1	Young (<30)	2	03.33
2	Middle(30 - 50)	37	61.67
3	Old (>50)	21	35.00
B	Education status		
1	Illiterate	2	03.33
2	Primary level	19	31.67
3	Secondary level	17	28.33
4	High School level	15	25.00
5	Diploma/College level	07	11.67
C	Family size (member)		
1	Small (<5)	15	25.00
2	Medium(5-10)	42	70.00
3	Large (>10)	03	05.00
D	Average size of Holding		
	Small (0.01 -2.0 ha.)	14	23.33
	Medium (2.01-4.00 ha.)	34	56.67
	Large (Above 4 ha.)	12	20.00

Family size is a major factor in determining the economic well being of the farmers. The family

size distribution showed that 70 and 25 percent had medium family and small size of family

respectively. Whereas on an average 56.67 percent farmers had medium size of holding and 23.33 percent farmers, small size of holding was observed in the sample.

B) Cost and returns from cauliflower cultivation with reference to pesticide use

Table No. 3: Per hectare costs and returns in cauliflower cultivation

Sr. No.	Particulars	Unit	Phy. Unit	Value (Rs)	Percentages to Total Cost
1	Human labour	Man days	84.37	14255.99	25.75
2	Bullock labour	Pair days	5.32	2998.88	05.42
3	Machine labour	Hrs	2.03	1370.05	02.48
4	Seed	Grams	104.87	5306.55	09.59
5	FYM	Tons	2.76	1897.87	03.43
6	Fertilizer				
	a) Urea	Kg	367.13	2093.74	03.78
	b) DAP	Kg	169.72	1186.41	06.86
	c) Complex	Kg	223.01	3796.63	02.14
7	PPCS'				
	Powder / Granules	Kg	2.148	8899.20	16.08
	Liquid	Lit	1.765		
8	Irrigation			131.02	0.24
9	Int. on working capital			629.05	01.14
I	Total variable cost			42565.39	76.90
1	Land revenue & tax			35.89	0.06
2	Depreciation			265.37	0.48
3	Rental value			12113.65	21.88
4	Interest on fixed capital			372.44	0.67
II	Total fixed cost			12787.36	23.10
III	Total Cost			55352.74	100.00
1	Output	Qtls	193.65	142516.70	
2	Gross income			142516.70	
3	Net income			87163.98	
	Total cost of Pesticide			8899.20	
	Rate of Return (Rs.)			04.57	

Note: rate of return to pesticide = (Return – all cost other than pesticides)/ total pesticide cost

It is revealed from the table no.3 that average cost of cultivation in cauliflower worked out to Rs. 55352.74/ha. The net returns per hectare obtained by farmers was 87163.98 Rs./ha. The share of variable cost was 76.90 per cent and that of fixed cost was 23.10 per cent. Labour expense was the major component of variable

The cost incurred and returns realized from cauliflower cultivation were calculated and presented in Table no.3.

cost while rental value of land was major in fixed cost. The pesticide share in total cost was estimated 16.08 per cent. The average yield of cauliflower was 193.65 q/ha.

The cost incurred and returns realized from pesticide use was calculated and presented in the table no.3. It revealed from the table that the

expenditure on pesticides worked out to Rs 8899.20 per hectare. The rate of return from pesticide use was computed by using formula as suggested by the Nguyen and Tran Thi (2003). The result also indicated that the rate of return obtained from pesticides use was Rs. 04.57. Though the rate of return on pesticides was near to five, it should not be based on inferred that the farmers should spent more on PPCs. The decision to spend on PPC must be economic threshold of pest infestation. The farmers need be educated with respect to various issues of pesticides.

C) Resource use efficiency in cauliflower

The Cobb-Douglas production function was estimated to analyse the relationship between resources and productivity of cauliflower using

survey data from sample farmers. The gross realized income expressed in rupees from cauliflower output was taken as dependent variable while expenditure made on seeds (Rs), fertilizers and manures (Rs), labours (Rs) and quantity of pesticide used (lit) were taken as independent variables. The dependent and independent variables in production function were defined on per ha basis. The estimated production functions are presented in Table 4. The inputs included in model explained 72.30 per cent of variation in cauliflower output as revealed by the coefficient of multiple determination (R^2). The summation of production elasticities indicated decreasing returns to scale i.e. for each percent incremental use of all inputs simultaneously farmers would get less than one per cent of output.

Table No. 4: Estimated Cobb-Douglas production function in cauliflower production

(N=60)

Sr. No.	Explanatory Variable	Coefficient
1	Intercept	8.312
2	Expenditure on seed (Rs./ha)	0.431** (0.124)
3	Expenditure on Fertilizers and manures (Rs./ha)	0.137 (0.093)
4	Quantity of Pesticide (Kg/ha)	-0.031* (0.001)
5	Expenditure on Labour (Rs./ha)	0.179* (0.076)
	R^2	0.723
	Returns to Scale	0.716

Note: Figures in parentheses are standard errors, *- denotes significance at 5 %, ** - denotes significance at 1%

The estimated parameters of expenditure on seeds and labour were positively significant at one percent of probability level for selected farmers indicating that every one per cent increase in seed and labour it would result in increase of gross return by 0.431 percent and 0.179 percent respectively. The coefficients of fertilizers is positive for farmers and but shows non significant. The elasticity of coefficient for PPCs is negative indicating negative effect on gross income, where one per cent increase in PPCs application would result

in decrease of gross income by 0.031 per cent. In study area farmer were in the habit of applying more quantity of pesticides to control pest and diseases which has lead to crop loss and pest resistance to pesticides then directly to reduce gross income.

The analysis of production elasticities are indicated the extent of change in output for every per unit increase or decrease in the use of resources. The scope for re-organization of the resources was also indicated by the production

elasticities. However to compute the optimal use of resources, the marginal value products must be compared with their respective marginal factor costs.

D) Marginal value product to marginal factor cost

The production function analysis used to determine the efficiency of resources use was also used for the estimation of marginal value product of the resources. In fact, the Cobb-Douglas function estimated geometric mean level of inputs used to find out the marginal value product. The knowledge of the marginal returns of resources use is useful because it indicates the level of resources and the economical use of resources for the producers by comparing their marginal value product with the marginal factor cost. If this ratio is less than one indicates the excess use of the particular input and vice-versa. Maximum efficiency of resources occurs when the marginal value product to marginal factor cost is unity.

The Cobb-Douglas function estimates and geometric levels of inputs and outputs were used to estimate the marginal value products of the inputs. The knowledge of the marginal value products of resources facilitates comparison of marginal value product with marginal factor cost of the resources to arrive at optimal use of resources.

It was evident from Table 5 that the ratio of marginal value product and marginal factor cost was positive and more than unity for seeds, fertilizer and labour for the farmers indicating that the resources were underutilized and there was scope for maximizing returns by increasing the use of seeds. However, the ratio of marginal value product and marginal factor cost was negative in case of plant protection chemicals (-1.306), reveals that every rupee of an additional income on PPCs will lead to reduction in gross income by a tune of 1.306 per cent. It clearly shows that PPC's are extensively and indiscriminately used resulting negative externalities i.e. decreased in the use of these inputs would enhance the returns. Seed and fertilizer and manures are potentially renewable in nature.

Table No. 5: Ratio of Marginal value product to the marginal factor cost in cauliflower production

Sr. No	Resources	MFC	MVP	MVP / MFC
1	Seed	1	9.564	9.564
2	Fertilizer and manures	1	2.963	2.963
3	Pesticides	1	-1.306	-1.306
4	Labour	1	1.859	1.859

E) Frequency distribution of pesticide use intensity

Farmers used pesticides frequently since pest infestation was relatively high in vegetable crops, particularly in cauliflower. Frequency

distribution of pesticides application by farmers is presented in Table 6. The number of spraying ranged from 5 to 12, with an average of 8 to 9 sprays per farm.

Table No. 6 Distribution of sample farmers according to number of pesticide application

(N=60)

Sr. No.	No. of Application	Frequency	Percentage
1	5	7	11.67
2	6	8	13.33
3	7	11	18.33
4	8	15	25.00
5	9	10	16.67
6	10	5	08.33
7	11	3	05.00
8	12	1	01.67
Average application per farm	8.50		

F) Optimum quantity of pesticide requirement

The optimum quantity of pesticide requirement for cauliflower production was presented in table 7. The optimum quantity of pesticide required for cauliflower was estimated to be 2.93 kg/ha. The requirement of pesticide as estimated through production function. The actual quantity of pesticide use was high in the sample farmers. As such farmers were found to over use pesticides by 0.82 Kg per hectare. In

other words the farmers spent Rs. 1953.65 per ha. extra because of an uneconomical use of pesticides in cauliflower farming. This is because of the risk aversive nature farmers to avoid crop loss due to pest infestation. Therefore, any increase in pesticides higher than the optimal level is really not a rational expenditure. Moreover, in the process of overusing pesticides, environmental problems are inevitably generated.

Table No. 7: Optimum quantity of pesticide requirement in cauliflower cultivation

Particulars	Kg/ha.	Cost (Rs./ ha.)
Optimal Use	2.93	6945.55
Actual used	3.75	8899.20
Saving	0.82	1953.65

G) Expenditure elasticity co-efficient of pesticides use in cauliflower

A log linear regression model was estimated considering the cost of pesticides as dependent variable. Total family income (Rs.), expenditure on fertilizer and manures (Rs.), number of

pesticide applications and area under cauliflower (ha) were taken as independent variable. The independent variables included in model explained 63 per cent of total variation in expenditure on PPCs (Table 8)

Table No. 8: Expenditure elasticity of pesticide use in cauliflower

Sr. No.	Variables	Co-efficient
1	Intercept	2.354
2	Total family income (Rs)	1.164 ** (0.132)

3	Fertilizer and manure (Rs.)	-0.249 (0.014)
4	Number of pesticide application (No.)	0.054 (0.010)
5	Area under cauliflower (ha)	0.156* (0.005)
	R ²	0.63

Note: Figures in parentheses are standard errors, *denotes significance at 5%, ** at 1%

The estimated parameter of total family income and area under cauliflower cultivation were positively significant at one per cent probability level for farmers, indicating that unit increase in total family income and area under cauliflower would result in increase in expenditure on PPCs by Rs. 1.164 and Rs. 0.156 respectively.

H) Safety practices followed by sample farmers

i) Farmers response towards pesticide use

It could be seen that from the table no. 9 about 70 per cent farmers felt that the use of PPC was adequate i.e. sufficient to control the pest. It means that till 30 per cent of the farmers surprisingly opined that the pesticide use in cauliflower was inadequate in the view of inefficient control of pest with existing dose usage.

Table No. 9: Farmers awareness towards pesticide use.

Sr. No.	Particular	No. of Farmers	Percentage
1	Adequacy of pesticide use	42	70.00
2	Aware of recommended dose	06	10.00
3	Look at the labels	17	28.33
4	Aware of importance of colour symbols on PPC containers	03	05.00
5	Aware of toxicity level	16	26.67
6	Aware of prices of all pesticides	18	30.00

Among the sample farmers only 10 percent farmer were aware of the recommended dose of pesticides. This is the reason for farmers using pesticides indiscriminately. Nearly 30 per cent of the sample farmers were observed to look at the labels on the pesticide container. Very few farmers who had education up to secondary, college and above were aware (5 per cent) of colour symbols on PPC container and toxicity level (26.67 per cent). Further only 30 per cent farmers were aware of the prices of all pesticides.

ii) Pesticide handling practices

The pesticide handling practices followed by

sample farmer were presented in Table 10. Most of the farmers (91.67 per cent) applied PPC's along the wind direction. Table also revealed that 08.33 per cent of the farmer did not consider the direction of wind as important. The application of PPC's along the wind direction, reduces farmer's exposure to chemicals. This is the correct method of applying PPCs and reduces the probability of poisonous effect, through inhalation of chemicals. But most of the applicators (71.67 per cent) use protective covering like facemasks. This decreases the probability of exposure to poisoning by contact and health hazards. Particles of PPCs, which

adhered to body and hands of the applicator were washed with soap and mud through

bathing, after spraying; thus reducing the risk of health hazards.

Table No. 10: Pesticide handling practices followed by sample farmers.

Sr. No.	Particular	No. of farmer (N=60)	Percentage
1	Direction of PPC application		
	a) A long with wind	55	91.67
	b) Across the wind	00	00.00
2	c) Do not consider wind direction	05	08.33
	Protective coverings		
	a) No protective covers	17	28.33
	b) Use of hand gloves	00	00.00
	c) use of shoes	00	00.00
3	d) use of face masks/ cover the face	43	71.67
	e) use of plastic/ polythene bags as shoes	00	00.00
4	Hand washing practice		
	a) with soap	55	91.67
	b) with mud / soil	02	03.33
5	c) with soap & mud	03	05.00
	Take bath after spraying	03	05.00
	Pesticide and water mixing practices		
6	a) Use wooden stick	58	96.67
	b) Use sprayer lancer	00	00.00
	c) Pouring water by mug / jar	02	03.33
7	Measurement of pesticides		
	a) Measuring jar	51	85.00
	b) pesticides bottle cap / Matchbox	09	15.00
	c) weighing Balance	00	00.00

Majority of the applicators (96.67 per cent) mixed the chemical by using wooden stick. This was the practice of farmers while few farmers also used pouring water by mug / jar. Nearly 85 per cent of the respondents used measuring jar for measuring pesticide which is correct method. The measuring jar is mostly provided with the packet of pesticide. While 15 per cent of the farmers used pesticide bottle cap or matchbox (if powder) for measuring pesticides

and also in the process of diluting the PPCs with water. The volume of water used by the farmers was rough approximation which often did not yield the required dilution as per recommendation. This might have result in either sub lethal or over dose of chemical. Sub lethal dose would result in uncontrolled population of pest and development of pesticide resistance whereas over dose would result in greater health hazard.

Table No. 11. Sprayers use and maintenance by sample farmers

Sr. No.	Particular	No. of Farmer	Percentage
1	Type of sprayer used		
	a) Knapsack sprayer	56	93.33
	b) Paddle Sprayer (Foot pump)	04	06.67
2	Wash sprayer after use		
	a) Yes	47	78.3
	b) No	13	21.66
3	Disposal of Wash water		
	a) Field	53	88.33
	b) Irrigation channel	07	11.67
4	Disposal of pesticide bottle		
	a) in Field	44	73.33
	b) Sell	08	13.33
	c) Burrying in field	01	01.67
	d) use for other purposes	07	11.67

iii) Use and maintenance of sprayer

Table 11 indicates that two different type of sprayer were used by farmers in the study area. Majority of the respondents used knapsack sprayers. More than 75 per cent farmers were washing their sprayer after use. Moreover those who washed sprayers, disposed the washed

water in to the crop field itself. The contamination of soil with PPCs would lead to a negative effect on soil health since it might affect some of the beneficial micro flora of the soil. The respondents were unaware of negative consequences of PPCs on soil health.

Table No. 12: Attitudinal response of PPC applicators

Sr. No.	Activities	No. of Farmers	Percentage
1	Eat / drunk before spraying	47	78.33
2	Work in the field after spraying	08	03.33
3	Rest after spraying	46	76.67

Table 12 revealed that about 78 per cent of the respondents eat / drunk prior to spraying activity to avoid the possible consumption of pesticide residue due to human negligence in washing the hand after spraying activity. And the other reason was to get the energy for spray. Three per cent of the farmers reported working in field after spraying activity.

Conclusion

The resource use efficiency analysis clearly indicated that the resources were not optimally used as guided by the economic principles. The

MVP/MFC ratios were negative for plant protection chemicals. Thus the withdrawal of these resources would maximize the returns from cauliflower production. The farmers need to be educated and advised about the proper use of these resources particularly plant protection chemicals and fertilizers.

Though the pesticide use was high, the farmers in the study area were already using more quantity of pesticide. This is not only uneconomical but also would lead to other ill effects of pesticide use. Therefore there is an urgent need for proper education to the farmers

about the balanced use of pesticides. The farmers should be educated to identify the threshold level of pest infestation and take measures only after that instead of blindly following the neighbouring farmers while applying plant protection chemicals. They also need to be advised about the method of applying and identifying the spurious chemicals.

Awareness needs to be created on use of personal protective measures among farmers, while handling pesticides. Farmers need to be encouraged to reduce, if not eliminate the use of pesticides, with the introduction of incentives to the farmers to help them shift from synthetic pesticides to bio pesticides and organic farming.

Farmers need to be educated about different non-chemical control methods and encouraged to adopt Integrated Pest Management (IPM) practices. Also, there is need of in-depth research on non-chemical management of pests in vegetables wherein pest infestation is relatively high

REFERENCES

- # Bose, T.K. and Som, M.G., 1986, Vegetable crops in India. Naya prakashan, Calcutta. Pp,32-67.
- # Dikshit, A. K., 2008, Pesticide protecting crops and environment: The Journey has Just Begun, Corp Care, **34** (3): 37-41.
- # Dhaliwal, G.S. and Balwinder Singh (eds). 2000. Pesticides and Environment. Commonwealth Publishers, New Delhi.
- # Mohan, M. and G.T.Gujar, 2003, Local variation in susceptibility of diamond back moth to insecticides and role of detoxification enzymes. J. Crop Protection, **22**: 495-504
- # Nguyen Huu Dung and Tran Thi Thanh Dung, 2003, The economic and health consequences of pesticide use in paddy production In the Mekong, Vietnam, <http://203.116.43.77/publications/research1/ACF124.html>.
- # Shende N. V. and Bagde N. T. 2013 Economic consequences in pesticide used in paddy cultivation. American International journal of Research in Humanities, Art and Social Sciences 12 -314 pp 25-33

A STUDY ON CUSTOMERS' PREFERENCE & ATTITUDE TOWARDS PATANJALI PRODUCTS WITH SPECIAL REFERENCE TO SILVASSA CITY

Dr. Rajesh Kumar Pandey

EMAIL rajeshpandey18@gmail.com

ABSTRACT:

Marketing function of Organisations has evolved over the years especially in consumer goods & FMCG sectors. The consumer's behaviour plays a distinctive role and every time that we witness betterment in the products it is very likely the resultant of massive understanding of Customers' preferences and attitude towards the products. These preferences & attitudes are influenced by the environment. The preference, choice, demand, attitude and actions of consumers are interlinked and they all have impact on purchase decisions of consumers. One of leading players in FMCG & other consumer products in the market today is Patanjali Ayurveda Ltd., posing a tough competition to existing giants like HUL, P&G, Colgate etc. Patanjali products today in the market have created a new wave of demand. Reportedly a Rs. **5000 crore company**, Patanjali has raised its bar and aiming to reach **1 trillion in next 10 years** (www.livemint.com). The organisation is centre of discussion today for both its massive product mix and also the not so appreciating quality check results. Amidst all the odds the Products seems to have made their presence felt.

This study attempts to understand the customers' preference & attitude towards Patanjali products with special reference to Silvassa city. The study has undergone a survey comprising of 180 respondents from Silvassa city and attempted to derive responses pertaining to the preferences of costumers towards Patanjali products. The Data Presentation & Analysis is attempted through Tabulation & Pie charts, Support of statistical tools - SPSS and MS Excel, Reliability Tests (Cronbach's Alpha), Correlations Matrix, Chi-square test, Measures of Central Tendency etc. Consumer related instincts have huge scope for study. The present study encompasses the understanding of customer preferences & attitudes towards specifically Patanjali products & also its possible comparison with other related brands. The inferences recorded, are post analysis of the responses from the respondents specifically from Silvassa city, thus the results hence derived may lead to be indicative in nature for reference only rather exhaustive for execution. This may be the limitation for the study. The study of Consumer preferences & attitude is a literal study of behavioral pattern of consumer leading to their buying decision making. It is a dynamic aspect having the potential to accelerate the businesses.

Key Words: Consumer Behaviour, Patanjali Product, Silvassa city, Consumer Preference & Attitude

INTRODUCTION

Consumers no longer want only a great product - they want to buy products from companies that align with their own character and values.

Muhtar Kent

The Market today is experiencing a literate consumer base & certainly the craze for just a quality product has gone from the Market. Consumers look forward the character of the company and values lived by the products. The Swadeshi movement that helped India to reach closure to freedom has a strong brand appeal today as well. Patanjali products massively bank upon this cultural attribute. Along with the medicinal attributes, the products serve extensive need arena of the consumers. Basket full of products is the base strategy for Patanjali it seems. Right from consumer care products to the home care, you guess it and Patanjali has it. The evolving giant has maximum merits to its name with certain grey areas as well. The Organisation is fielding all the odds in the Market and spreading the business with ever growing quantum.

The enchanting marketing circumstances and intense competition over the globe has augmented the role of brand. Every human is a consumer of different brands at the same time. The choice and usage of a particular brand by the consumer over the time is affected by the quality offered by the brand especially when it comes to brand of FMCG. The consumer preferences & attitude has travelled a longer distance and today the marketers are massively busy in understanding the perceptions of consumer rather just focusing on R&D. If the perceived benefits turned out to be almost same as expected, customer is highly satisfied and that is how the company achieves loyalty of the customer towards the products. This realisation of the perceived benefits is potentially possible by gathering knowledge on Consumers' preference & attitude.

SIGNIFICANCE OF THE STUDY

Strategizing the market moves has a strong influence on the business. Patanjali which initiated with more of medicinal advantage products gradually got the pulse of the market and entered the FMCG & various consumer goods sector as well. The entire initiative was with the base of 'Swadeshi' feeling and even today the owners preach the same. In a quick sensation market potential was analyzed and we have today the multi crore businesses with huge aspiration. One of leading players in FMCG & other consumer products in the market today, Patanjali Ayurveda Ltd., is posing a tough competition to existing giants like HUL, P&G, Colgate etc. Patanjali products today in the market have created a new wave of demand. Reportedly a Rs. **5000 crore company**, Patanjali has raised its bar and aiming to reach **1 trillion in next 10 years** (www.livemint.com). It is well known in the business fraternity that with prosperity & success comes the trouble & dilemma. There have been reports on the substandard products of Patanjali. Now is that because too much of involvement into varied products. The survey shall highlight further. However the mammoth growth of the company, the high aspirations of the owners, huge variety of products, the respective challenges of meeting the standards and the craze observed in the consumer signifies the rationale behind studying the customers' preference & attitude towards Patanjali products.

LITERATURE REVIEW

Literature Review encompasses the critical analysis & review of existing literature pertaining to the theme of the study and supports the evolution of thoughts & recommendatory notions for further study. The research & studies on consumer preference & attitude have been in abundance and the author has selected relevant & effective studies conducted pertaining to the preference & attitude of consumers. The inferences of the

review have been presented as the Consumer Behaviour towards Products and Factors affecting the preferences & attitudes of the consumers.

(a) CONSUMER BEHAVIOUR TOWARDS PRODUCTS:

Consumer Behaviour is the behaviour that consumer display in scanning for purchasing, using, evaluating and disposing of products and services that they expect will satisfy their needs. There are environmental influences to Consumer behaviour like social & personal factors. There are individual determinants to consumer behaviour in the form of Personality, self-concept, motivation & involvement, learning & memory and attitude of consumers. The consumer behaviour has been a dynamic area for study. **Shahir Bhatt & Amola Bhatt (2015)** through their research paper on Consumer Behaviour Towards Packaged Food in Rural Areas: An Empirical Study in Ahmedabad District, Gujarat have attempted to understand different aspects of rural consumer behaviour on buying of packaged food products. The study observes that the factors for selecting packaged food include health, convenience, proximity, mood, price, brand, and sensory appeal. Additionally it is found that 3 factors, namely health, convenience and mood, have significant relationship with age, and four factors, namely health, mood, price and brand, have significant relationship with monthly income. Consumer Behaviour demonstrates largely the willingness to be associated with the brand and the usage pattern. The organisations keep working towards their attractive features in order to attract customers.

(b) FACTORS AFFECTING THE PREFERENCES & ATTITUDES OF THE CONSUMERS:

Consumers are willing to invest in products but what products are lacking is creating required attention. The preferences & attitudes of consumers have been the key areas of concerns for companies. The study in these directions

shall help gather relevant inferences towards acknowledging the attitudes & knowing consumer perceptions. **Rupali Khanna (2015)** has stated through her research paper Customer Perception towards Brand: A Study on 'Patanjali' that there are many significant factors that together make up the buying decision of the product. Customers' perception towards a brand is built largely on the satisfactory value the user receives after paying for the product and the benefits the user looks for. Focusing especially on Patanjali, the author presents the view that Patanjali is enjoying the advantageous position in market through spirituality element involved in its products. Patanjali in order to retain more customers and satisfy to them must fulfill the claims made by the company before any other brand may mushroom up and take away the benefits of marketing through spirituality.

The consumer attitudes & preferences have strong linkage. The attitude towards newness in their approach of purchasing goods makes them vibrant in their preferences. **Preeti Tak and Ashish Pareek (2016)** through their literary work on Consumer Attitude Towards Luxury Brands: An Empirical Study have established their thought on the relationship between consumer's need for uniqueness dimensions, fashion consciousness and consumer's attitude towards luxury brands. The findings suggest that the three dimensions of consumer's need for uniqueness and fashion consciousness are positively related to consumer's attitude towards luxury brands. Thus, consumers like to express their individuality by adopting new fashion brands and styles. This finding has an important marketing implication, as it suggests that marketers could devise a suitable strategy to communicate the uniqueness of their products.

(c) ESTABLISHING FACTORS THAT INFLUENCE PURCHASE OF PATANJALI PRODUCTS AND CATEGORIZING VARIANTS OF PATANJALI PRODUCTS:

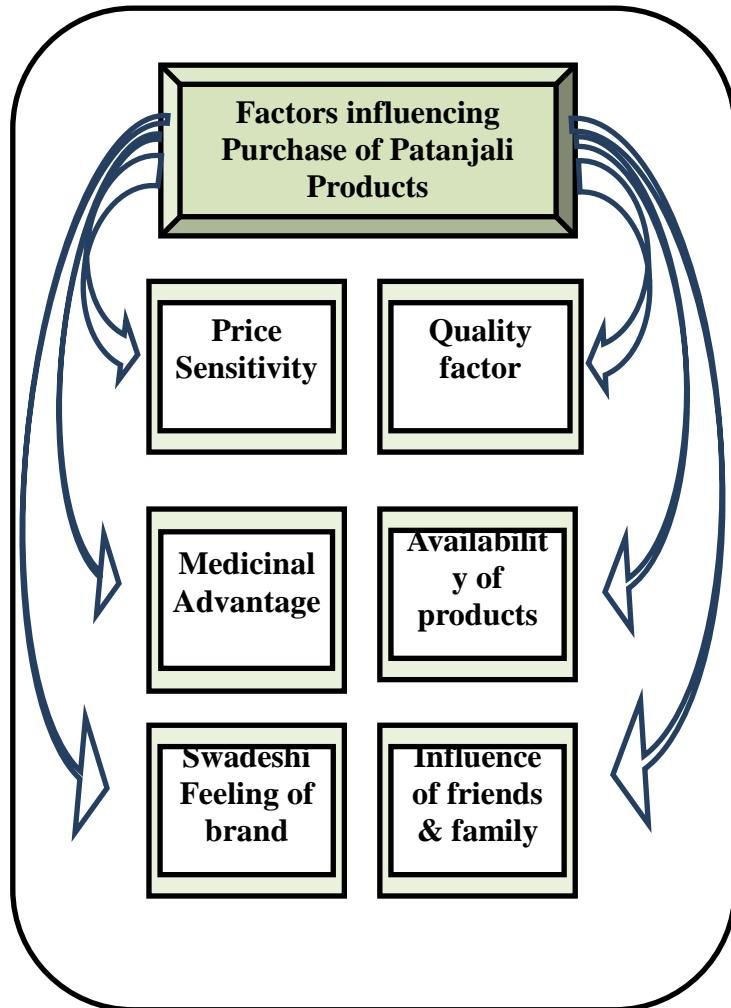


Chart No. 1: Factors influencing purchase of Patanjali Products

Source: Self drawn chart based on inputs from Literature review & understanding on the theme

The literature review leads to the understanding of the factors that influence purchase of Patanjali products in general and also categorizing the variants of Patanjali products. The following factors have strong influence on purchase of Patanjali products: Price Sensitivity, Quality factor, Medicinal Advantage, Availability of products, Swadeshi Feeling of brand and Influence of friends & family.

Also the study has helped to categorize the variants of Patanjali products to seek responses during the survey. The following variants of Patanjali products have been considered for the research: Medicinal Products (Syrup, Juice, Ayurvedic medicines etc.), Eatery products (ready to eat- snacks), Groceries (Rice, Dal,

Spices etc.) and FMCG (Soap, Detergent, Toothpaste, Cosmetics etc.).

AREA OF RESEARCH: Silvassa City -UT of Dadra & Nagar Haveli (D&NH)

There are SEVEN Union Territories in India; one among those is D&NH. Primarily a tribal region, it certainly requires more of public attention. Silvassa is the capital city of D&NH. The city with a metropolitan demography accommodates approx. 2 Lacs population. Since Liberation D&NH which was once a hard core tribal area has made spectacular progress in Socio economic, Education and Culture Sphere. It is one of its kinds Union Territory which enjoys the vicinity of promising & progressing

states i.e., Gujarat & Maharashtra. The Silvassa city is a multilingual Cosmopolitan region with People from every part of the Nation. Every new product that travels the Indian domain shall have a good trial section at Silvassa. Relatively smaller city but due to its demographic arrangement it has scope for study on consumers' preference & attitude.

RESEARCH METHODOLOGY

A study on **customers' preference & attitude** is an Exploratory & Descriptive study conducted with the help of both Primary & Secondary Data. The study experiences both Qualitative & Quantitative Research. The study aims at understanding the essence & significance of Consumer behaviour linked with the preference & attitude of Customers. The study further aims at analyzing the views expressed by the selected sample size of 180 respondents (93 Male and 87 Female) pertaining to their preference & attitude towards Patanjali products. Stratified Random Sampling technique was adopted to select sample from the population residing in the Silvassa city. The respondents were from various strata i.e., Private Service, Government service, Business Person, Professionals, Teachers, Housewife & Students. The Data Presentation & Analysis is attempted through Tabulation & Pie charts, Support of statistical tools - SPSS and MS Excel, Reliability Tests (Cronbach's Alpha), Correlations Matrix, Chi-square test, Measures of Central Tendency etc. The study is indicative in nature with focus on the consumer behaviour element with special reference to consumers' preference & attitude.

OBJECTIVES OF THE STUDY

The author has considered the following objectives for the study:

- ❖ To understand the concept of Consumer behaviour linked with the preference & attitude of Customers.

- ❖ To analyse the preference & attitude of customers' towards Patanjali products with special reference to respondents from Silvassa city.
- ❖ To assess the preference of customers' towards Patanjali products in comparison to related other brands.
- ❖ To establish the major factors influencing the preference & attitude of consumer towards purchase of Patanjali products.

HYPOTHESIS OF THE STUDY

H_{01} - There is no significant relationship between number of products introduced and its impact on quality.

H_{a1} - Higher the number of products introduced by the company will have the product Quality deterioration.

Researcher assumes through this hypothesis that if the mean of the responses is greater than equal to (\geq) 6, then the null gets rejected & alternate hypothesis gets accepted.

H_{02} - There is no significant relationship between the preference of Patanjali products and the place of purchase.

H_{a2} - The Patanjali products are preferred to be purchased from designated Patanjali stores rather other departmental stores / outlets.

Researcher assumes through this hypothesis that if the share of the responses is greater than equal to (\geq) 70% in favour of purchase from Patanjali stores only, then the null gets rejected & alternate hypothesis gets accepted.

H_{03} - There is no significant relationship between Income of consumers and their usage of Patanjali products.

H_{a3} - There is a significant relationship between Income of consumers and their usage of Patanjali products.

H_{04} - There is no significant relationship between Occupation of consumers and their usage of Patanjali products.

H_{a4} - There is a significant relationship between Occupation of consumers and their usage of Patanjali products.

Other Alternate Hypothesis:

H_{a5} - The mean being greater than equal to (\geq) 6 states that the Taste of eatery products of Patanjali is preferred by customers more than its competitor's similar product.

H_{a6} - The mean being greater than equal to (\geq) 6 states that the price of Patanjali products is preferred by customers more than its competitor's similar product's price.

H_{a7} - The mean being greater than equal to (\geq) 6 states that the availability of the Patanjali products is experienced to be better than its competitor's similar product.

H_{a8} - The mean being greater than equal to (\geq) 6 states that the packaging of Patanjali products is preferred by customers more than its competitor's similar product.

H_{a9} - The mean being greater than equal to (\geq) 6 states that the promotion of Patanjali products is better than its competitor's similar product.

H_{a10} - The mean being greater than equal to (\geq) 6 states that the ease of usage of products of Patanjali is better than its competitor's similar product.

H_{a11} - The mean being greater than equal to (\geq) 6 states that the overall quality of the Patanjali products is preferred by customers more than its competitor's similar product.

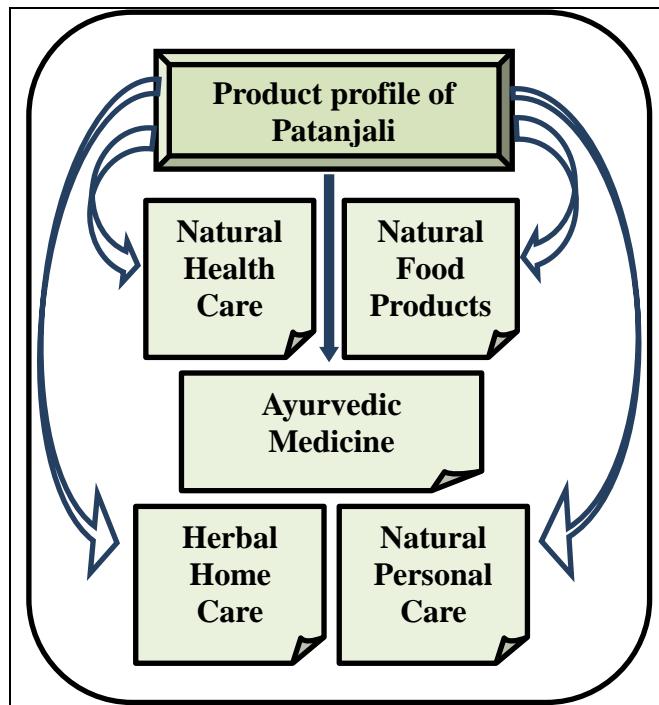
PATANJALI: ORGANISATION & PRODUCT PROFILE

"Prosperity for 100% Charity" - Patanjali Philosophy

Patanjali Ayurved Limited was incorporated in the year 2006 under Companies Act, 1956 with its registered office at New Delhi. Founders Baba Ramdev and Acharya Balkrishna are credited to the massive growth of company. The products are available both at Market Place & market space. Patanjaliayurved.net is the official online Patanjali store of Patanjali Ayurved Limited. The company produces quality Herbomineral preparations. It also has manufacturing units in Nepal under the trademark Nepal Gramudhyog and imports majority of herbs in India from Himalayas of Nepal. Quality has always been the focus and to monitor the same the Divya Yog Mandir Trust and Patanjali Yog Peeth grow many endangered herbs on its farmland. The principles of Good Manufacturing Practices (GMP) are rigorously followed in the plant and Company prides itself on being environment friendly. (www.patanjaliayurved.net)

The Rs 5,000-crore giant that employs 15,000 people has left many established players behind as it targets foreign markets and new regions. (<http://www.hindustantimes.com>). Massive focus on quality, several quality circles and special project teams working on Total Quality Management (TQM) projects, make quality a way of life in Patanjali Ayurved Limited. Future Group which has tied up with Patanjali sells about Rs. 30 crore (US\$4.7 million) worth of Patanjali products every month.

Chart No. 2: Product profile of Patanjali



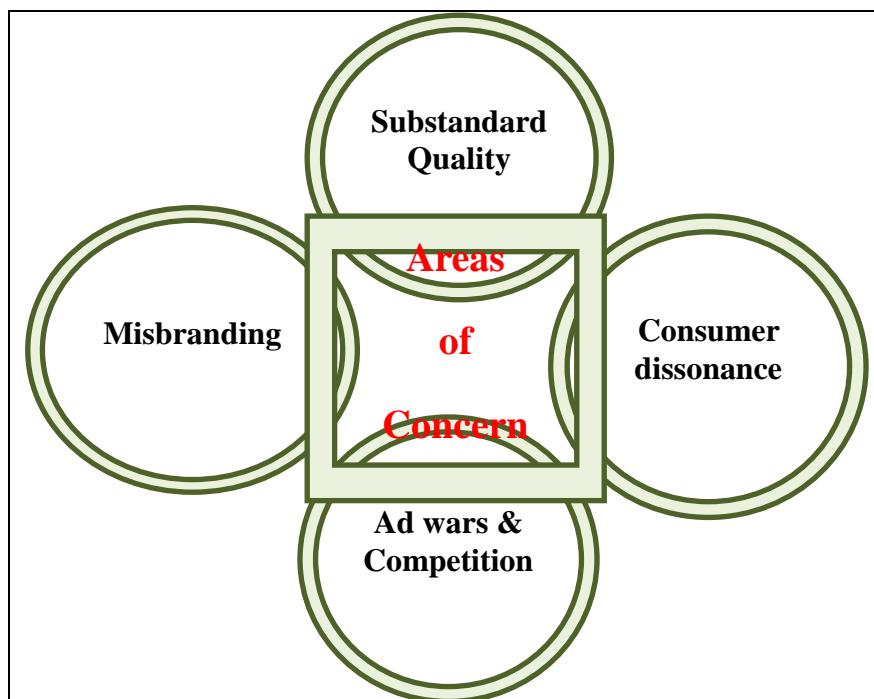
Source: Self drawn chart based on inputs from www.patanjaliayurved.net

PATANJALI: AREAS OF CONCERN

Patanjali has experienced its grey side as well. Not everything has been as promised by the owners. There have been reports of product

failures, especially on quality count. The massive areas of concern over the past few years have been:

Chart No. 3: Areas of concern for Patanjali



Source: Self drawn chart based on inputs from www.hindustantimes.com and www.indianexpress.com

Quoting a specific case where by Haridwar's Ayurveda and Unani Office while replying to a RTI in May 2017, revealed that 40% of the Ayurveda products that included Patanjali products were found to be of substandard quality. Out of the 82 samples collected between 2013 and 2016, 32 failed the quality test. Patanjali's Divya Amla Juice and Shivlingi Beej were among the products that failed to meet the quality standards. (Reported by 'www.hindustantimes.com')

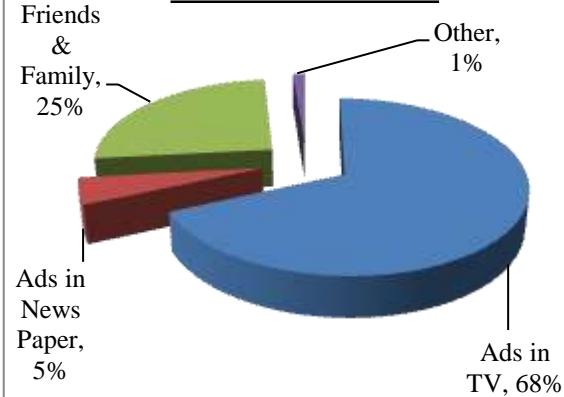
In a separate case as reported by Hindustan times (June 2017) Patanjali had to recall its products from Nepal. Nepal's department of drug administration said six Patanjali medical products had failed microbial tests and found to be substandard during inspections at various outlets and tests on specimens. In Indian context again a setback was experienced by Patanjali when the Canteen Stores Department (CSD), the retailing entity selling consumer goods to the armed forces, suspended the sale of a batch of Patanjali Ayurved's Amla juice in April'17 after it failed to clear a laboratory test. The brand suffered the label of Misbranding. In the year 2016, a local court in Haridwar fined Patanjali Rs 11 lakh for "misbranding and putting up misleading advertisements" of their products. Patanjali has been violating safety norms. It was served notice by the government for violating food safety norms in manufacturing atta noodles a couple of years ago. This followed reports that the atta noodles had failed food safety regulator norms. (Reported by 'www.hindustantimes.com' and 'www.indianexpress.com'). While the company had several announcements stating that the reports aren't correct to entirety however consumer skepticism is very much obvious in such situations. The brand appeal that the Patanjali products are enjoying has covered the issues to a large extent however it was proved one more time that all that glitters may not gold.

The study comprised of understanding perceptions & attitudes of 180 respondents at Silvassa City. Massively the research was pertaining to the usage ratio, current usage pattern, variants of Patanjali products and their respective purchase track, the various influencers to the purchase of Patanjali products and studying the product attributes of Patanjali in comparison to its competitor's products. The presentation of analysis is as following and source of all the data presented is the primary data collected through the survey among 180 respondents at Silvassa city:

Graph -1:
Usage Ratio of Patanjali products



Graph - 2:
Medium of Awareness



Source: Primary Data Collection for the study

DISCUSSION: SURVEY RESULTS

Table No. 1 - Product Variants of Patanjali

	Respondents (Multiple choice)	% on 161 respondents (Per variant % response)
Medicinal Products	68	42%
Eatery products	48	30%
Groceries	18	11%
FMCG	126	78%

Table No. 2 Reasons to Purchase Patanjali Products

	No. of Respondents (Multiple Choice)
Cheaper than competitors (Price)	81
Quality factor	60
Medicinal Advantage	100
Available at leading stores	18
Swadeshi Feeling of brand	86
Influence by Friends & Family	40

Table No. 3 Consumption Status with Patanjali Products

	Respondents	%
Trial status at Present	37	23%
Regular user of Patanjali Products	69	43%
Using & promoting it to others	18	11%
Will keep using but not promote	22	14%
Not using	15	9%
	161	100%

Table No. 4 Parameters of comparison with other company's products

Parameters	Mean Value (on a scale of 10)
Taste of Eatery products	5.68
Price of Products	6.98
Availability of products	7.13
Packaging of Products	6.72
Promotion of products	7.35
Ease of usage of products	7.2
Overall Quality of Products	7.14

Source: Primary Data Collection for the study

Table No. 5 Preference of Respondents towards Variant of Patanjali Products

Strata for the Survey	Preference on Variant of Patanjali Products
Private Service	FMCG

Government Service	FMCG
Business Person	FMCG
Professionals	MEDICINAL
Teacher	FMCG
Housewife	FMCG
Student	FMCG

Source: Primary Data Collection for the study

VALIDITY & RELIABILITY TEST:

The statistics mentioned below is pertaining to the questions based on semantic differential scale, where by the respondents were exposed to questions on their preference for Patanjali products as against the other company products.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.872	.877	7

Source: SPSS working

- ❖ The study encompasses the Validity & Reliability Test to ensure appropriateness of the study. Cronbach's Alpha Test was conducted to gather the results pertaining to Reliability of the Data collected through the survey.
- ❖ The Alpha Cronbach's value of **0.872** indicates that there exists strong relationship (87%) between individual items in the scale and relationship between predictors & dependent variable is considerably high. It means the internal consistency is above the acceptable value of 0.7. The data is reliable & valid.

Inter-Item Correlation Matrix

	Taste of Eatery products	Price of Products	Availability of products	Packaging of Products	Promotion of products	Ease of usage of products	Overall Quality of Products
Taste of Eatery products	1.000	.305	.176	.429	.346	.346	.414
Price of Products		1.000	.511	.593	.451	.513	.618
Availability of products			1.000	.526	.539	.507	.452
Packaging of Products				1.000	.630	.598	.632
Promotion of products					1.000	.711	.646
Ease of usage of products						1.000	.665
Overall Quality of Products							1.000

- ❖ The Research tool intended to establish relationship between the various attributes of products and preference of consumers towards Patanjali products as against the products of other companies.
- ❖ In this context the Correlation between the attributes was assessed & an Inter Item Correlation Matrix was established to gather inferences upon relation between the various attributes. The **Inter Item Correlation Matrix** states that Price of Products, Availability of products, Promotion of products, Packaging of Products, Promotion of products, Ease of usage of products and Overall Quality of Products are strongly correlated and will have strong inclination on preference towards Patanjali products. The Matrix states that all the Items with value more than or closer to 0.5 shall establish a close relationship. Only Taste of eatery products has weak correlation (<0.5) and it may not have a significant influence on preference towards Patanjali products.

HYPOTHESIS TESTING

Core Hypothesis - 1

Ho1 - There is no significant relationship between number of products introduced and its impact on quality.

Ha1 - Higher the number of products introduced by the company will have the product Quality deterioration.

Testing Result:

The mean value of the responses on a scale of 1 to 10, with 10 being higher side of notion to the enquiry on whether the introduction of more number of products shall lead to deterioration of the quality of Patanjali products is **6.02**. Hence the alternate hypothesis gets accepted as the hypothesis was if mean value ≥ 6 , then

Testing Result:

Null hypothesis gets rejected. So the study leads to the understanding that higher the number of products introduced by the company will have the product Quality deterioration.

Core Hypothesis - 2

Ho2 - There is no significant relationship between the preference of Patanjali products and the place of purchase.

Ha2 - The Patanjali products are preferred to be purchased from designated Patanjali stores rather other departmental stores / outlets.

Testing Result:

The study reveals that 91 respondents out of 161 i.e., 57% prefers to purchase Patanjali products from designated Patanjali stores and rest 43% prefer to purchase from the other departmental stores. Although the majority of respondents is inclined towards Patanjali stores yet the study assumptions are not met i.e., the expectation was if the results being $\geq 70\%$ then alternate hypothesis would have been accepted. Hence with lesser ratio of preference of respondents towards Patanjali stores i.e., 57% as against the assumption of 70%, Null hypothesis gets accepted. So the study leads to the implication that there is no significant relationship between the preference of Patanjali products and the place of purchase.

Core Hypothesis - 3

Ho3 - There is no significant relationship between Income of consumers and their usage of Patanjali products.

Ha3 - There is a significant relationship between Income of consumers and their usage of Patanjali products.

Chi-Square Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.426 ^a	3	.935
Likelihood Ratio	.360	3	.948
Linear-by-Linear Association	.032	1	.858
N of Valid Cases	140		

a. 3 cells (37.5%) have expected count less than 5. The minimum expected count is .56.

The study was intended to test the relationship between the Income of consumers and their usage of Patanjali products. The respondents were divided into four categories on the basis of Income i.e., upto 1 lac income, 1 lac to 5 lacs, 5 lacs to 10 lacs and 10 lacs & more income. The hypothesis was tested through Chi square test and result being Asymp. Sig. 0.935 lead to acceptance of Null hypothesis i.e., there is no

significant relationship between Income of consumers and their usage of Patanjali products.

Core Hypothesis - 4

Ho4 - There is no significant relationship between Occupation of consumers and their usage of Patanjali products.

Ha4 - There is a significant relationship between Occupation of consumers and their usage of Patanjali products.

Testing Result:

Chi-Square Test	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	6.030 ^a	6	.420
Likelihood Ratio	7.754	6	.257
Linear-by-Linear Association	2.902	1	.088
N of Valid Cases	181		

a. 6 cells (42.9%) have expected count less than 5. The minimum expected count is .84.

The study was intended to test the relationship between the Occupation of consumers and their usage of Patanjali products. The respondents were divided into various strata i.e., Private Service, Government service, Business Person, Professionals, Teachers, Housewife & Students.

The hypothesis was tested through Chi square test and result being Asymp. Sig. 0.420 lead to acceptance of Null hypothesis i.e., there is no significant relationship between Occupation of consumers and their usage of Patanjali products.

Testing of other Alternate Hypothesis:

One-Sample Test (Test Value = 6)						
Alternate Hypothesis	t	df	Sig.	Mean Difference	Testing results for Ha	
Taste of eatery products of Patanjali is preferred by customers more than its competitor's similar product	-1.767	159	.039	-.325	Accepted	
Price of Patanjali products is preferred by customers more than its competitor's similar product's price	6.447	160	.000	.981	Accepted	
Availability of the Patanjali products is experienced to be better than its competitor's	7.273	160	.000	1.130	Accepted	

similar product					
Packaging of Patanjali products is preferred by customers more than its competitor's similar product	4.613	160	.000	.720	Accepted
Promotion of Patanjali products is better than its competitor's similar product	7.525	160	.000	1.348	Accepted
Ease of usage of products of Patanjali is better than its competitor's similar product	8.001	160	.000	1.205	Accepted
The overall quality of the Patanjali products is preferred by customers more than its competitor's similar product	7.823	160	.000	1.143	Accepted

Source: SPSS Workings

Significance Level is 0.05

FINDINGS OF THE STUDY

The survey was institutionalized with the aim of gathering inferences pertaining to the perceptions & attitude of the consumers towards Patanjali products. The following findings were recorded post analysis:

- ❖ The study had the primary inquisitiveness to gather understanding on usage ratio of Patanjali products. It was recorded that 89% of the respondents had used the Patanjali products and out of these 161 respondents who used the products, a huge majority of 70% were using the products presently. Among those who didn't use Patanjali products maximum responded that either they didn't prefer the products or competitors products were better.

- ❖ The respondents for the survey were from various strata i.e., Private Service, Government service, Business Person, Professionals, Teachers, Housewife & Students. The results state that in the Students & Housewife strata approx 80% were using Patanjali products while in case of Private Service approx. 90% were using Patanjali products. The Government service & Business Person category data revealed 100% respondents were using Patanjali products. The hypothesis testing in this regard through Chi Square test lead to understanding that there is no significant relationship between Occupation of consumers and their usage of Patanjali products.

- ❖ The study encompasses another hypothesis testing pertaining to relationship between Income of the respondents and their usage of Patanjali products. The testing results lead to understanding that there is no significant relationship between Income of consumers and their usage of Patanjali products.

- ❖ The Patanjali products are being promoted with larger scale and the survey results indicates that massively the awareness is being spread by advertisements on Television i.e., 68% of the respondents got to know about the Patanjali products through TV and 25% respondents had their friends & family recommending the Patanjali products.

- ❖ The study reflected the various variants of Patanjali products and their respective purchase ratio. It was recorded that 78% of the respondents bought the FMCG products of Patanjali followed by their choice of medicinal products. Amidst the strata selected for the study Professionals preferred more of Medicinal products and all others i.e., Private Service, Government service, Business Person, Teachers, Housewife & Students preferred FMCG products of Patanjali.

- ❖ The inquisitiveness towards the skeptical thought that higher the number of products introduced by the company will have the product Quality deterioration proved to be acceptable notion post hypothesis testing as the respondents had the belief that quality

may suffer with introduction of more products in the market.

❖ The study was also inclined towards gathering the reasons to purchase the Patanjali products. Medicinal advantage turned out to be primary reason as 62% of respondents i.e., 100 out of 161 respondents suggested the same; followed by the further reasons like Swadeshi Feeling of brand & the products price being cheaper than competitor's price.

❖ The study intended to gather the consumption status of the consumers pertaining to Patanjali products. A good 43% are regular user of Patanjali Products while 23% are on trial mode.

❖ The study aimed at recording the inference pertaining to place of purchase of Patanjali products. Around 57% respondents preferred designated Patanjali outlets for purchase of Patanjali Products while the rest 43% had the preference of other departmental stores / local outlets. The ratio being almost equal and on the grounds of hypothesis testing, the study leads to the notion that there is no significant relationship between the preference of Patanjali products and the place of purchase.

❖ One of the objectives for the study was to compare the product attributes of Patanjali as against competitor's products. The assumption for the study was that if the responses are greater than equal to mean value 6 then the preferences of the respondents are in favour of Patanjali products. The one sample Test signifies that the respondents prefer Patanjali products as against other company's products on all attributes i.e., Taste of Eatery products, Price of Products, Packaging of Products Availability of products, Promotion of products, Ease of usage of products and Overall Quality of Products.

RECOMMENDARY NOTION

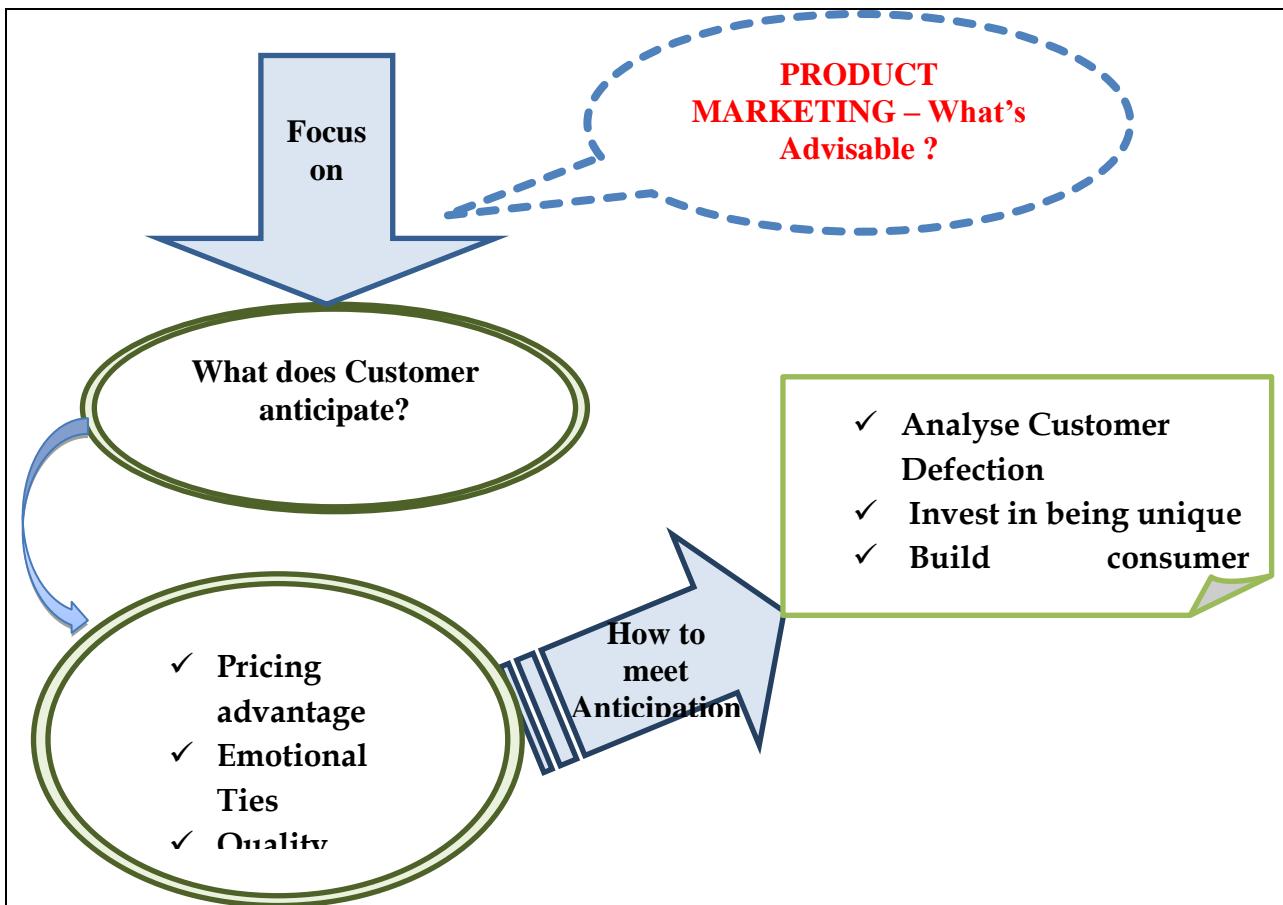
The current study was an effort to study the customers' preference & attitude with special reference to Patanjali products. This study may have aimed to define the preference & attitude of customers in common parlance and there may not be scope of suggestions to respective company referred for study. However the general observations lead to a recommendary notion pertaining to Product Marketing in Indian context, the same is depicted below:

CONCLUSION

The study on customers' preferences and attitude towards Patanjali products is an attempt to signify the influencers towards purchase behaviour. The study has highlighted various product variants of Patanjali and their respective usage ratio. The data facts derived from the study brightens the thought that Patanjali is gearing up quite strongly in the market. Although there are skepticism towards the higher number of products introduced by the company & respective quality deterioration yet the strength of the company is its brand appeal. Founders - Baba Ramdev and Acharya Balkrishna with their intent to grow the science of Ayurveda are committed towards multifold development of the company in the upcoming years. This study massively concludes that the usage ratio of Patanjali products is very impressive and their FMCG products are a big success in the market. The consumers are largely getting influenced by the medicinal attributes of the products and gradually are developing the regular usage of the Patanjali products. The consumers are open to purchase the Patanjali products, be it from designated Patanjali stores or any other departmental stores / outlets. The study further concludes that as against the competitor's products, Patanjali products are gathering better preferences on all counts be it the Taste of Eatery products, Price of Products, Packaging of Products Availability of

products, Promotion of products, Ease of usage of products or the overall Quality of Products. Patanjali is spreading its wings and flying high. The results from the study

Chart No. 4: Recommendatory Notion - Product Marketing: What's advisable?



Source: Self developed model as part of recommendations for the study

FUTURE SCOPE OF THE STUDY

The present study on customers' preference & attitude towards Patanjali products with special reference to the Silvassa city was primarily aimed at ascertaining the preferential aspects of customers with respect to Patanjali products, their usage ratio and in comparison to other similar brands their preference to Patanjali products pertaining to attributes of products. The conclusion was based on the learning through conceptual study & primary data analysis. This study is the part of the Social Science Research, hence there shall be a further scope for the study to progress and derive improvised results. The current study has the future scope of work pertaining to execution and implementation of ascertained facts and

indicate that Patanjali products have developed as a very promising avenue for the consumers to rely upon.

serve as literature for further study. As part of the future scope, the present pattern of the study can be implemented on a broader scale i.e., State or National level to derive results on a larger scale. The existing study has the potential to derive indicative results and is part of independent research. The similar content can be implemented for the research by the Organisations in the field similar products manufacturing. The assessment of customers' preference & attitude through their usage ratio, brand appeal as against the other brands, stratifying further the sample while establishing major user profile & replicating the current study on broader perspective in terms of geographical coverage may form the scope of future research in this regard.

REFERENCES:

Loudon David L. & Della Bitta Albert J. (2013). Consumer Behaviour - Concepts & Applications, McGraw Hill Education (India) Pvt. Limited, 4th Edition, Pg. 481, 537,538

Tak, Preeti & Pareek, Ashish. (2016). Consumer Attitude Towards Luxury Brands: An Empirical Study, The IUP Journal of Brand Management, Vol XIII No.01, Pg no. 07-14

Bhatt Shahir & Bhatt, Amola. (2015). Consumer Behaviour Towards Packaged Food in Rural Areas: An Empirical Study in Ahmedabad District, Gujarat, The IUP Journal of Marketing Management, Vol XIV No.01, Pg no.07-17

Pandey, Rajesh K. & Bhalerao, Anjali (2017). Consumer Behaviour: Literature Review, IJETSR, Volume 4, Issue 8, Pg. No. 04 - 05

Khanna, Rupali (2015). Customer Perception towards Brand: A Study on 'Patanjali', GJMBR (Global Journals Inc.,USA), Volume 15, Issue 9, Pg. No. 02 - 06

WEB REFERENCES:

www.livemint.com, accessed on 10th Aug 2017

<http://www.dnh.nic.in> , accessed on 25th Aug 2017

<https://www.patanjaliayurved.net/> accessed on 25th Aug 2017

<http://www.hindustantimes.com/india-news/baba-ramdev-s-patanjali-products-fail-uttarakhand-quality-test/story-bXo4XySEajw7ZDby4GISML.html>, accessed on 27th Aug 2017

<http://indianexpress.com/article/business/companies/armed-forces-stores-suspend-sale-of-patanjalis-amla-juice/>, accessed on 27th Aug 2017

https://en.wikipedia.org/wiki/Patanjali_Ayurved, accessed on 28th Aug 2017

https://www.brainyquote.com/quotes/quotes/m/muhtarkent674783.html?src=t_consumers, accessed on 30th Aug 2017

CORPORATE CRIMINAL LIABILITY AND THE REMEDIAL MEASURES

1. INTRODUCTION

Corporations are manifestation of a clan, an association, a group, a community or a union comprising of human beings. Though the corporations are regarded as artificial person or legal person, they are governed and controlled by natural persons, i.e. human beings. It is obvious that actions that corporations take are result of movements made by the individuals, who by virtue of being humans have applied their minds during such movements. Unlike machines who are programmed, individuals are prone to commit mistakes.

Errors in machines occur because of defective programming. We usually refer to such occurrences as programming errors. A different concept is that of "virus". Virus is a piece of code which is capable of copying itself and typically has a detrimental effect, such as corrupting the system or destroying data. This attribute is possible only if there is a intent or purpose of effecting corruption of a system or destruction of a system with an objective of wrongfully gaining. Therefore, usually when we speak of virus, unlike a normal programming error we give it a colour of purposeful wrong committed by someone. And we usually refer to such someone as "hacker".

In corporations, we have employees at lower, middle and top level management who are humans. Likewise we have human directors who run the board of the corporation. In both the cases, mistakes may happen as human brain is involved. Pertinently, an individual is also capable of conducting himself in a manner where he creates a typically detrimental effect, or he may corrupt system with an object of wrongfully gaining. Usually, such incidents are referred to as a "scam". What viruses do to a computer, a scam does to a corporation. Both are possible by human intervention that are backed by a *mala fide* intent. This usually leads

to a corporate crime. These human interveners are either employees or directors of a corporation, and what they do are actually the actions of the corporation to which they belong. Therefore, corporations also become the part of the crime even if an individual has committed it.

It is relatively simpler to assess the guilt of a natural person for his actions have a direct relation to the role in the crime that is attributed to him. On the other hand, a corporation consists of group of individuals performing different roles at different positions and at different point of time. Therefore, to find out who is criminally liable for the acts of the corporation becomes more relative to multiple factors.

Lord Denning, who is an authority on law has opined on corporations and their attributes. Possibly, his explanation best defines a company from the perspective of understanding it as a juristic person. The words of Lord Denning in the case of H.L.Bolton (Engg.) Co. Ltd. Vs. T.J.Graham & Sons¹ are as follows:-

"A company may in many ways be likened to a human body. They have a brain and a nerve centre which controls what they do. They also have hands which hold the tools and act in accordance with directions from the centre. Some of the people in the company are mere servants and agents who are nothing more than hands to do the work and cannot be said to represent the mind or will. Others are directors and managers who represent the directing mind and will of the company, and control what they do. The state of mind of these managers is the state of mind of the company and is treated by the law as such. So you will find that in cases where the law requires personal fault as a condition of liability in tort, the fault of the manager will be the personal fault of the company. That is made clear in Lord Haldane's speech in Lennard's Carrying Co. Ltd. Vs. Asiatic Petroleum Co. Ltd. (AC at pp. 713, 714). So

also in the criminal law, in cases where the law requires a guilty mind as a condition of a criminal offence, the guilty mind of the directors or the managers will render the company themselves guilty."

Liability of a director or a manager for acts of the corporation has been fundamentally based on the principles of vicarious liability. In order to appreciate the concept of corporate criminal liability, it will be only proper to get introduced to the principle of vicarious liability.

2. VICARIOUS LIABILITY

Vicarious liability is a form of a strict, secondary liability that arises under the Common Law doctrine of agency, "respondent superior", the responsibility of the superior for the acts of their subordinate or, in a broader sense, the responsibility of any third party that had the "right, ability or duty to control" the activities of a violator. It can be distinguished from contributory liability, which is another form of secondary liability, rooted in the tort theory of enterprise liability, requiring knowledge of the act and its consequence. Unlike contributory infringement, knowledge is not an element of vicarious liability. The law has developed the view that some relationships by their nature requires the person who engages others to accept responsibility for the wrongdoing of those others.

2.1 Vicarious Liability in Tort (a civil wrong)

In English law, a corporation can only act through its employees and agents so it is necessary to decide in which circumstances the law of agency or vicarious liability will apply to hold the corporation liable in tort for the frauds of its directors or senior officers. If liability for a particular tort requires a state of mind, then to be liable, the director or senior officer must have that state of mind and it must be attributed to the company.

So if a director or officer is expressly authorised to make representations to a particular class on behalf of the company, and fraudulently makes a similar representation to a third party not of that class causing loss to such third party, the company will be liable even though the particular representation was an improper way of doing what he was authorised to do. The extent of authority is a question of fact and is significantly more than the fact of an employment which gave the employee the opportunity to carry out the fraud.

2.2 Vicarious Liability in a Criminal Wrong

The general rule in the criminal law is that liability of someone cannot be bestowed upon someone else. But, when it comes to corporate crimes then there is existence of vicarious liability. This reflects from the general principle that a crime is composed of both an *actus reus* (the Latin tag for "guilty act") and a *mens rea* (the Latin tag for "guilty mind") and that a person should only be convicted if he or she is directly responsible for causing both elements to occur at the same time. Thus, the practice of holding one person liable for the actions of another is the exception and not the rule in criminal law.

3. MENS REA

The two phrases referred above "actus reus" and "mens rea" are of important to understand the paradigm of criminal liability. These phrases actually are part of the core progressions in English Law principle said to be coined by Sir Edward Coke who was an English barrister, judge and, later, opposition politician, who is considered to be the greatest jurist of the Elizabethan and Jacobean eras. The principle that is said to have been propounded by Sir Edward Coke is "*actus non facit reum nisi mens sit rea*", which is actually is Latin and when translated to English means "an act does not make a person guilty unless (their) mind is also guilty."

Mens Rea in the Indian Penal Code, 1860 sets out the definition of offences, the general conditions of liability, the conditions of exemptions from liability and punishments for the respective offences. Legislature in India has indicated the requirement of evil intent or *mens rea* as an essence of offences defined in the code. Guilt in respect to almost all offences defined under the Indian Penal Code is fastened either on the ground of intention, knowledge or reason to believe. Almost all the offences under the India Penal Code are qualified by one or other words such as 'wrongful gain or loss', 'dishonesty', 'fraudulently', 'reason to believe', 'criminal knowledge or intention', 'intentional cooperation', 'voluntarily', 'malignantly', 'wantonly', 'maliciously'. All these words indicate the requirement of guilty mental condition at the time of commission of the offence. Thus, every offence defined under the Indian Penal Code directly imports the idea of criminal intent or mens rea in some form or other. For the purpose of understanding, let's take an example of an offence defined in the Indian Penal Code. Considering the subject of this paper, it will only be apt to consider a white collar offence in Indian Penal Code where a corporation can be involved as an offender. Therefore, let's see how is the offence of "cheating" defined under the Indian Penal Code under section 415.

"415. Cheating. – Whoever, by deceiving any person, fraudulently or dishonestly induces the person so deceived to deliver any property to any person, or to consent that any person shall retain any property, or intentionally induces the person so deceived to do or omit to do anything which he would not do or omit if he were not so deceived, and which act or omission causes or is likely to cause damage or harm to that person in body, mind, reputation or property, is said to "cheat".

Explanation. – A dishonest concealment of facts is a deception within the meaning of this section."

[Emphasis Supplied]

In the above definition, the underlined ingredients are the essentials for the existence of *mens rea*. Pertinently, when a corporation is supposed to have committed an offence of cheating, it necessarily has to be because of the human beings that are part of the system of the corporation. The courts in India had occasions to decide on this issue of whether a corporation is capable of committing an offence or not. In this regard, a very important judgement of the Hon'ble Supreme Court requires a special mention.

4. IRIDIUM INDIA TELECOM LTD. V/S MOTOROLA INCORPORATED & ORS.²

The company Iridium India Telecom Ltd. filed a private complaint against the Motorola Incorporated & Others before the Magistrates Court in Pune. The complaint pertained to allegations of cheating under Section 420 read with Section 120B of the Indian Penal Code. This case is a classic example to understand how a corporation is identified as distinguished from human. The life cycle of a corporation is also well understood in this case. A corporation unlike a human being can merge into another corporation as well as split itself into two separate corporations. It is when these mergers and acquisitions take place, the challenge of pointing out liabilities arises. In the instant case the judgement of the apex court in fact describes the life cycle of both Iridium and Motorola. The said facts as understood from the judgement are as follow:

Motorola Inc. (which was the respondent before the apex court and accused before the trial court), Iridium LLC and Iridium Inc. were a part of one group of corporations created through mergers and takeovers. Motorola Inc. was the founder promoter of a corporation known as Iridium LLC incorporated in the State of Delaware, U.S.A; Iridium LLC was incorporated

2 [AIR 2011 SC 20]

on 19th July, 1996 as a wholly owned subsidiary of Motorola Inc.

Iridium System was represented as being the world's first commercial system designed to provide global digital hand held telephone data, facsimile, paging, geo-location services similar to today's cellular phone. Iridium System was conceived by Motorola Inc. in the year 1987 and it was intended to be a wireless communication system.

It was contended in this case that Iridium Inc. was an instrumentality of Motorola Inc., the corporate veil from behind which Motorola Inc. operated. This fact of Iridium Inc. being an instrumentality of Motorola Inc. has been described in such a manner that depicts existence of human brain and its intervention in the corporate structure. The corporation Motorola Inc. conceived, orchestrated, directed and controlled Iridium and was at all material times Iridium's dominant shareholder, supplier, financier, controller of its board, as well as the developer of Iridium's business model and the creator of the Iridium system, which was Motorola Inc.'s proprietary space based Satellite Communication system. Motorola Inc. also designed, developed, sold, maintained and operated the hardware and software of the Iridium System/Project. It was further alleged in the complaint that Motorola Inc. initially held the entire equity in Iridium. Although the equity of Motorola Inc. was subsequently diluted by sale to various investors and shareholders. From the inception Motorola Inc. exercised effective control over the Board of Directors of Iridium.

It was further mentioned in the Complaint that in August 1992, a Private Placement Memorandum (PPM) was floated through merchant bankers, Goldman Sachs (who acted as placement agents) with the intention of attracting investments from large and successful companies' worldwide. Copies of PPM were distributed to and received by several prominent Indian companies, both in the public and private sector. The object of the said PPM

was to obtain funds/ investments to finance the "Iridium system". The next equity offering was made under the PPM in 1995 wherein the original representations and/or warranties and/or assurances were substantially watered down and for the first time references were made to the fact that the system may not successfully operate.

According to Iridium Inc. the aforesaid representations were made to individual institutions and entities handling public money so as to induce them to believe that Iridium was a company worth participating and investing in by purchasing shares and operating a gateway. Relying upon the representations Iridium India Telecom Ltd. as well as the banks and institutions, in good faith, collectively invested a sum of US \$70 million for purchasing equity of Iridium Inc. as well as spent a sum of about Rs.150 crores in setting up a gateway at Deghi in Pune.

The Iridium India Telecom Ltd. then alleged in the complaint that the representations made by Motorola Inc. proved to be false, dishonest, fraudulent and deceitful. It was discovered that Iridium System was a complete failure and all the material representations made, as aforesaid, were totally false, dishonest, fraudulent and deceitful, to the knowledge of Motorola Inc.

According to Iridium India Telecom Ltd., the entire exercise of the Motorola besides generating money for itself was to experiment with others' money and at others' risk (including the Iridium India Telecom Ltd.). The Iridium System and Iridium was therefore used as a research and development tool in order to facilitate and assist the Motorola Inc. to develop its expertise in building satellite systems so that the said expertise could be marketed by it to others.

Iridium India Telecom Ltd., therefore, addressed a notice dated 12th April, 2001, Motorola Inc. calling upon them to make payment of a sum of US \$ 250 million, being the

loss suffered. The Motorola Inc. by its reply dated 2nd June, 2001 repudiated his liability and instead made a claim of US \$ 6,977,989 upon the Iridium India Telecom Ltd.

On the basis of the aforesaid allegations, the Iridium India Telecom Ltd. filed a complaint before the Judicial Magistrate, First Class, Khadki Court, Pune charging that Motorola Inc. are guilty of the offence of criminal conspiracy for cheating Iridium India Telecom Ltd. and for the offence of cheating committed pursuant to the conspiracy. Upon consideration of the complaint and upon hearing the counsel for the Iridium India Telecom Ltd., by an order dated 6th November, 2001 the Judicial Magistrate Ist Class, Khadki Court, Pune issued process against the Motorola Inc. and its officials for offences under section 420 read with Section 120 IPC. The order passed by the Learned Magistrate read as follows: -

*"Read Complaint and verification. Perused documents. Heard the advocate Nimbalkar for the complainant. It reveals that complainant is a company of which the shares are held by public financial institutions, nationalized banks and public insurance companies i.e. IDDI, ICICI, SBI, UTI, GIC, LIC etc. The investments made by complainant company was raised out of public savings and funds of above noted public institutions. Therefore, it reveals that this case involves issues regarding public money. It is settled principle that at the stage of issuance of process *prima facie* case is to be considered. After giving anxious though to the averments in the complaint and the documents produced on record, it reveals that *prima facie* case is made out to issue process. Hence, issue process against Accused No.1 to 7 for the offence under Section 420 r/w 120B of IPC."*

The facts of this case demonstrate how a corporation can be split into two or how a corporation can give birth to another corporation and conduct a prototype or a hypothetical business which may appear on face of it to be real. What becomes important is the morality behind such splits or births of

corporations. In consonance with the moral fibre of these corporations attribution of the criminal liability will be determined.

In this case, Motorola Inc. challenged the order by the Magistrate before the High Court at Bombay. The High Court at Bombay took a view in favour of Motorola Inc. and set aside the order passed by the Learned Magistrate above. One of the question before the High Court was whether a company being a juridical person is capable of having the requisite *mens rea* to commit the offence of cheating and therefore, whether a company can be prosecuted for the offence under section 420 read with section 120-B of the Indian Penal Code. The High Court answered this question in affirmative.

Some of the relevant observations of the Hon'ble High Court are reproduced as under: -

".....it is the general principle of Criminal Law that a crime is not committed unless the person committing it has the mens rea viz. guilty mind. The maxim "actus non facit reum, nisi mens sit rea" means that the intent and act must both concur to constitute the crime."

"..... although a person who is victim of deception can be a company, the perpetrator of deception cannot be a corporate body like a company or association. It can only be a natural person who is capable of having mens rea to commit the offence. Consequently, the word "whoever" occurring at the beginning of sections 415 and 120-B cannot include in its sweep juridical person like a company."

These observations are pertinent for the purposes of understanding the attributes and nature of a corporation as conceived by the Hon'ble High Court. The factor of *mens rea* is the determinant factor for any crime and whether a corporation by virtue of juristic person can have *mens rea*. In turn, who will be liable for the acts of the juristic person if it cannot have *mens rea*. The observations of Bombay High Court completely put a corporation on a separate footing incapable of committing any crime. Therefore, an extended understanding of these

observations could safely mean corporation person could not be understood to have any criminal liability.

The law laid down by the Bombay High Court soon became history when the matter was challenged by the complainants, i.e. Iridium India Telecom Ltd. and the Hon'ble Supreme Court took a different view on the subject. The Apex Court while hearing the appeal analysed this aspect of whether a corporation can commit criminal offence being a juristic person. The main observation of the Apex Court in this regard is as follows:

"From the above it becomes evident that a corporation is virtually in the same position as any individual and may be convicted of common law as well as statutory offences including those requiring mens rea. The criminal liability of a corporation would arise when an offence is committed in relation to the business of the corporation by a person or body of persons in control of its affairs. In such circumstances, it would be necessary to ascertain that the degree and control of the person or body of persons is so intense that a corporation may be said to think and act through the person or the body of persons. The position of law on this issue in Canada is almost the same. Mens rea is attributed to corporations on the principle of 'alter ego' of the company."

The Apex Court while deciding this appeal also referred to Lord Denning's opinion on corporation which is already reproduced in the initial paragraphs of this paper. The Apex Court also relied its earlier judgement of Standard Chartered Bank Vs. Directorate of Enforcement which is separately dealt in the next paragraph.

5. STANDARD CHARTERED BANK V/S. DIRECTORATE OF ENFORCEMENT³

This judgement is also discusses a very interesting point about corporation and its criminal liability. It has also considered whether

a juristic person is capable of committing crime and whether it can be subjected to imprisonment. The Supreme Court has considered different views on the subject and it has observed as under:-

"There is no dispute that a company is liable to be prosecuted and punished for criminal offences. Although there are earlier authorities to the effect that corporations cannot commit a crime, the generally accepted modern rule is that except for such crimes as a corporation is held incapable of committing by reason of the fact that they involve personal malicious intent, a corporation may be subject to indictment or other criminal process, although the criminal act is committed through its agents."

Thus, in the judgement of Standard Chartered Bank, the Apex Court has made certain distinction in the crimes that a corporation can and cannot commit. But, it has clearly held that criminal act can be committed through an agent and thus it can be safely inferred that corporation is capable of committing crime. An interesting doubt that was cleared in the case of Standard Chartered bank was that of custodial sentence. A contention used to be raised by the corporates that it being a juristic person, it cannot be subjected to custodial sentences. On this aspect, the Apex Court made following observations:-

"In the case of Penal Code offences, for example under Section 420 of the Indian Penal Code, for cheating and dishonestly inducing delivery of property, the punishment prescribed is imprisonment of either description for a term which may extend to seven years and shall also be liable to fine; and for the offence under Section 417, that is, simple cheating, the punishment prescribed is imprisonment of either description for a term which may extend to one year or with fine or with both. If the appellants' plea is accepted then for the offence under Section 417 IPC, which is an offence of minor nature, a company could be prosecuted and punished with fine whereas for the offence under Section 420, which is an aggravated form of cheating by which the victim is dishonestly induced to deliver 39 Supra property, the company

cannot be prosecuted as there is a mandatory sentence of imprisonment."

"So also there are several other offences in the Indian Penal Code which describe offences of serious nature whereunder a corporate body also may be found guilty, and the punishment prescribed is mandatory custodial sentence. There are a series of other offences under various statutes where the accused are also liable to be punished with custodial sentence and fine.

30. As the company cannot be sentenced to imprisonment, the court has to resort to punishment of imposition of fine which is also a prescribed punishment. As per the scheme of various enactments and also the Indian Penal Code, mandatory custodial sentence is prescribed for graver offences. If the appellants' plea is accepted, no company or corporate bodies could be prosecuted for the graver offences whereas they could be prosecuted for minor offences as the sentence prescribed therein is custodial sentence or fine.

31. As the company cannot be sentenced to imprisonment, the court cannot impose that punishment, but when imprisonment and fine is the prescribed punishment the court can impose the punishment of fine which could be enforced against the company. Such a discretion is to be read into the section so far as the juristic person is concerned. Of course, the court cannot exercise the same discretion as regards a natural person. Then the court would not be passing the sentence in accordance with law. As regards company, the court can always impose a sentence of fine and the sentence of imprisonment can be ignored as it is impossible to be carried out in respect of a company. This appears to be the intention of the legislature and we find no difficulty in construing the statute in such a way. We do not think that there is a blanket immunity for any company from any prosecution for serious offences merely because the prosecution would ultimately entail a sentence of mandatory imprisonment. The corporate bodies, such as a firm or company undertake a series of activities that affect the life, liberty and property of the citizens. Large-scale financial irregularities are done by various corporations. The corporate vehicle now occupies

such a large portion of the industrial, commercial and sociological sectors that amenability of the corporation to a criminal law is essential to have a peaceful society with stable economy. We hold that there is no immunity to the companies from prosecution merely because the prosecution is in respect of offences for which the punishment prescribed is mandatory imprisonment (sic and fine). We overrule the views expressed by the majority in Velliappa Textiles¹ on this point and answer the reference accordingly. Various other contentions have been urged in all appeals, including this appeal, they be posted for hearing before an appropriate Bench."

Thus, even the argument of custodial sentencing could not be used as a defence to stop prosecution of a corporation. Imposition of fine/penalty is always an option provided in law. Furthermore, it is also logical that the crimes that can be attributed to corporates would necessarily be white collar crimes involving monetary aspects. A corporation cannot be prosecuted for murder where necessarily imprisonment or death penalty could be the only possible sentence. Even the scheme of Indian Penal Code is such that the offences relating to bodily injuries, the offences relating to properties, the offences relating to monetary transactions, etc. are defined under separate chapters. Thus, the olden legislation has always had a fundamentally strong base for statutes.

The judgements of the Apex Court in Iridium and Standard Chartered are the settled law now. From there two judgement and a very articulate observation of Lord Denning, the degree of control of the person or body of persons is so high that a corporation may be said to 'think' and 'act' through the person or the body of persons. In other words, the criminal intent of the company or corporate body's 'alter ego' (i.e., the person or group of persons that guide the business of the company) is imputed to the corporation.

6. CORPORATE CRIMINAL LIABILITY UNDER SPECIAL STATUTES

Like the Indian Penal Code, there are many other special statutes under which the corporations are criminally liable and can be prosecuted. The most common of these statutes creating litigations has been the Negotiable Instruments Act, 1881. This statute was specifically enacted to enable trustworthy businesses and to ensure commitments made by corporations in dealings are honoured with. Being related to the business transactions the Negotiable Instruments Act, 1881 has seen a lot of litigation. As a result of voluminous litigation, this law has been subject for interpretation on numerous occasion. Especially, the section 141 of the Negotiable Instruments Act, 1881 has been the backbone of the concept of the vicarious liability. In other words, it can be said that the principle of vicarious liability has been neatly given colour of a statute in form of section 141 of the Negotiable Instruments Act, 1881.

The section 141 of the Negotiable Instruments Act, 1881 is as follows:

"Section 141: Offences by companies

(1) If the person committing an offence under section 138 is a company, every person who, at the time the offence was committed, was in charge of, and was responsible to the company for the conduct of the business of the company, as well as the company, shall be deemed to be guilty of the offence and shall be liable to be proceeded against and punished accordingly:

PROVIDED that nothing contained in this subsection shall render any person liable to punishment if he proves that the offence was committed without his knowledge, or that he had exercised all due diligence to prevent the commission of such offence.

(2) Notwithstanding anything contained in subsection (1), where any offence under this Act, has been committed by a company and it is proved that the offence has been committed with the consent or connivance of, or is attributable to, any neglect on

the part of, any director, manager, secretary or other officer of the company, such director, manager, secretary or other officer shall also be deemed to be guilty of that offence and shall be liable to be proceeded against and punished accordingly.

Explanation: For the purpose of this section

(a) "company" means any body corporate and includes a firm or other association of individuals; and

(b) "director", in relating to a firm, means a partner in the firm."

On plain reading of the above section, the fact that the principle of vicarious liability applies to a corporation is apparent. The wrongful acts of the corporates make the directors, managers, secretaries or other officers liable and guilty. What becomes the paramount consideration is the role that a director, a manager, a secretary or a officer has played in the activities of the corporation that led to the doing of the wrongful act.

To understand the principle of vicarious liability as clothed in the aforesaid section 141 of the Negotiable Instruments Act, 1881, a reference to the case of Aneeta Hada vs. M/s Godfather Travels & Tours Pvt. Ltd. (decided by the Hon'ble Supreme Court) will be of great help.

6.1 ANEETA HADA V/S. M/S GODFATHER TRAVELS & TOURS PVT. LTD.⁴

This case is of importance because it settled a pertinent question before the courts that whether a director, a manager, a secretary or a officer can be accused without making the corporation (for which such a director, a manager, a secretary or a officer is working) an accused person. There was a difference of opinion between courts, where one view was that the corporation need not be made accused if a director, a manager, a secretary or a officer has been made accused, whereas, the other view was that unless the corporation is made an

accused, a director, a manager, a secretary or a officer cannot be made an accused for they have been arrayed because of the vicarious liability principle. If the principal (corporation) is not accused, then how could it agent (a director, a manager, a secretary or a officer) be questioned for his actions which are supposedly for and on behalf of the principal.

In this case, Aneeta Hada, an authorised signatory of International Travels Limited, a company registered under the Companies Act, 1956, issued a cheque dated 17th January, 2011 for a sum of Rs.5,10,000/- in favour of M/s. Godfather Travels & Tours Private Limited, which was dishonoured as a consequence of which M/s. Godfather Travels & Tours Private Limited initiated criminal action by filing a complaint before the concerned Judicial Magistrate under Section 138 of the Negotiable Instruments Act. In the complaint petition, the Company, i.e. International Travels Limited (of which Ms. Aneeta Hada was an authorised representative) was not arrayed as an accused. However, the Magistrate took cognizance of the offence against the accused Ms. Aneeta Hada.

While deciding the issue, the Supreme Court has again taken recourse to the unambiguous and finest expressions of Lord Denning on corporation which is already quoted in the foregoing chapters/paragraphs. Apart from this, the Supreme Court also relied on English Judgements and also quoted the Halsbury's Law of England as under:

"19. In Halsbury's Laws of England, Volume 11(1), in paragraph 35, it has been laid down that in general, a corporation is in the same position in relation to criminal liability as a natural person and may be convicted of common law and statutory offences including those requiring mens rea."

The Hon'ble Supreme Court also cited the above discussed Indian Judgements of Iridium vs. Motorola and the judgement of Standard Chartered Bank while deciding the case of Aneeta Hada. In view of the English and Indian

judgements, the Hon'ble Supreme Court observed as under:-

"25. We have referred to the aforesaid authorities to highlight that the company can have criminal liability and further, if a group of persons that guide the business of the companies have the criminal intent, that would be imputed to the body corporate. In this backdrop, Section 141 of the Act has to be understood. The said provision clearly stipulates that when a person which is a company commits an offence, then certain categories of persons in charge as well as the company would be deemed to be liable for the offences under Section 138. Thus, the statutory intendment is absolutely plain.

26. As is perceptible, the provision makes the functionaries and the companies to be liable and that is by deeming fiction. A deeming fiction has its own signification.

32. From the aforesaid pronouncements, the principle that can be culled out is that it is the bounden duty of the court to ascertain for what purpose the legal fiction has been created. It is also the duty of the court to imagine the fiction with all real consequences and instances unless prohibited from doing so. That apart, the use of the term 'deemed' has to be read in its context and further the fullest logical purpose and import are to be understood. It is because in modern legislation, the term 'deemed' has been used for manifold purposes. The object of the legislature has to be kept in mind.

33. The word 'deemed' used in Section 141 of the Act applies to the company and the persons responsible for the acts of the company. It crystallizes the corporate criminal liability and vicarious liability of a person who is in charge of the company."

Therefore, the emphasis was on the separate and individual identity of the corporation and in the circumstances, how a corporation is deemed to be responsible for the acts committed by its agents. The Hon'ble Supreme Court, in view of the analysis of various English and Indian Judgements, arrived at a conclusion that for maintaining the prosecution under Negotiable Instruments Act, arraigning of a company as an accused is imperative. The

Hon'ble Supreme Court emphasised that the other categories of offenders can only be brought in the dragnet on the touchstone of vicarious liability as the same has been stipulated in the provision itself.

The section 141 has been influential in many other special enactments. The enactments like the Drugs and Cosmetics Act, Securities and Exchange Board of India, etc. In all these enactments, sections have been used *pari materia* section 141 of the Negotiable Instruments Act, 1881. In one of the prosecutions under the Drugs and Cosmetics Act, 1940, the author of this paper had occasion to appear before the Hon'ble Bombay High Court where the issue of vicarious liability was dealt with and section 34 of the Drugs and Cosmetics Act, 1940 which is *pari materia* section 141 of the Negotiable Instruments Act was interpreted. The said case is of **M/s Madras Pharmaceuticals & Ors. vs. State of Maharashtra & Anr.⁵** In this case, a complaint came to be filed against M/s Madras Pharmaceuticals amongst other accused for manufacturing sub-standard quality of drugs. Some of the accused sought quashing of proceedings praying that there was no role attributable to them. The complaint filed against M/s Madras Pharmaceuticals was silent on the roles attributable to the accused. In the circumstances, the proceedings against M/s Madras Pharmaceuticals amongst other accused came to be quashed.

Thus, the corporate criminal liability is very much part of the criminal procedures adopted in India. The special enactments like the Negotiable Instruments Act, Drugs and Cosmetics Act, Securities and Exchange Board of India Act, etc. unequivocally provide for the corporate criminal liabilities as well as the vicarious liabilities. A list of some of the enactments, which provide for the offences by company and the vicarious liabilities of the officers of the companies, with their respective sections is hereunder:

The below list is not exhaustive. But it depicts the fact that the corporate liability and the vicarious liability there under is recognized in most of the business fields. The above list reflects that pharmaceutical sector, finance sector, environmental sector, banking sector, etc. recognize the responsibility of the corporates. All these sectors do have laws for criminal prosecution under their respective subjects. While it will not be practical possible to analyse criminal liability under each and every sector, an attempt is made to provide for real illustrations of corporate criminal liability in some of the fields.

Acts	Sections
Negotiable Instruments Act, 1881	141
Drugs and Cosmetics Act, 1940	34
Securities and Exchange Board of India Act, 1992	27
Environment Protection Act, 1986	16
Water (Prevention and Control of Pollution) Act, 1974	47
Payment of Bonus Act, 1965	29
Banking Regulations Act, 1949	46

7. CERTAIN EVENTS DEPICTING CORPORATE CRIMINAL LIABILITY IN INDIA

A discussion on vicarious corporate criminal liability will not be complete without a reference to some significant events which have

contributed to development of legal thoughts on the subject.

7.1 The Bhopal Gas Case

This is one of the most tragic case known not only in India but also all over the world. On 3rd December, 1984, poisonous gas leaked from the factory run by the Union Carbide Corporation (now known as Dow Chemicals). The scale of leakage was such that it affected the entire population surrounding the factory. It killed 3787 people and also caused injuries of permanent nature to thousands of people. The main criminal liability case was prosecuted in the Magistrate's Court at Bhopal amongst other civil and criminal cases having been filed in United States of America as well. The Court convicted the Union Carbide - India Chairman Keshub Mahindra and seven others for the tragic incident and had awarded a maximum imprisonment of two years. The words in the judgement⁶ are reproduced hereunder: -

"218- Therefore, the accused persons namely under section 304-A read with Section 35 IPC (1) Sri Keshub Mahindra, (2) Sri Vijay Prabhaker Gokhle, (3) Sri Kishore Kamdaar,(4) Sri J.Mukund (5) Sri S.P.Choudhary, (6) Sri KV Shetty (7) Sri SI Qureshi, holding guilty for the offence punishable under sections 304A/35 of Indian Penal Code,1860 for an imprisonment of 2 years and fine of Rs.100,000.00 each, and under section 336 Indian Penal Code,1860 an imprisonment of 3 months and fine of Rs. 250.00 each, and under section 337/35 Indian Penal Code,1860 an imprisonment of 6 months and fine of Rs. 500.00 each, under section 338/35 Indian Penal Code,1860 an imprisonment of 1 years and fine of Rs. 1000.00 each, In default of fine each of the accused person shall undergo 6 months of imprisonment in addition. All the sentences shall run concurrently.

219 - Union Carbide Corporation Bhopal is not a human being therefore, can not be punished with a jail sentence . Therefore, the law laid down by hon'ble the Apex Court in the case of "Standard Chartered

6 From the judgement passed by the Learned Magistrate

Bank v. Directorate of Enforcement" - AIR 2005 SC 2622, is appropriate to be followed It is observed by the hon'ble Apex Court that there is no immunity to the companies from prosecution merely because the prosecution is in respect of offences for which the punishment prescribed is mandatory imprisonment. As the company cannot be sentenced to imprisonment, the Court cannot impose that punishment, but when imprisonment and fine is the prescribed punishment the Court can impose the punishment of fine which could be enforced against the company. Such a discretion is to be read into the Section viz., S. 56 of Foreign Exchange Regulation Act (1973) (FERA) and Ss. 276-C and 278-B of Income-tax Act (1961) so far as the juristic person is concerned. Of course, the Court cannot exercise the same discretion as regards a natural person.

220- As regards company, the Court can always impose a sentence of fine and the sentence of imprisonment can be ignored as it is impossible to be carried out in respect of a company. This appears to be the intention of the Legislature. It cannot be said that, there is a blanket immunity for any company from any prosecution for serious offences merely because the prosecution would ultimately entail a sentence of mandatory imprisonment. The corporate bodies, such as a firm or company undertake series of activities that affect the life, liberty and property of the citizens. Large scale financial irregularities are done by various corporations. The corporate vehicle now occupies such a large portion of the industrial, commercial and sociological sectors that amenability of the corporation to a criminal law is essential to have a peaceful society with stable economy. The Hon'ble court Overruled the views observed in the cases of Assistant Commissioner, Assessment, Bangalore v. Velliappa Textiles Ltd., AIR 2004 SC 86 : 2003 AIR SCW 5647 : 2004 Cri LJ 1221 : 2003 Tax LR 1054 : 2003 AIR - Kant HCR 2878, Therefore, the company Union Carbide Of India Limited shall be liable to pay a fine under section 304-A of IPC Rs.5,00,000.00 under section 336 Indian Penal Code,1860 a fine of Rs. 250.00, and under section 337/35 Indian Penal Code,1860 a fine of Rs.500.00 , under section 338/35 Indian Penal Code,1860 a fine of Rs. 1000.00 each. Bail and bonds of the accused persons are cancelled. "

The Learned Magistrate in the above judgement has relied upon the judge of Standard Chartered Bank (Supra) and decided upon the punishment to be awarded to the corporate, i.e. a juristic person. As on today, the said judgement has been challenged in appeal before the Sessions Court at Bhopal and the same is still pending disposal.

7.2 The Sahara Case

The Sahara Case is one of the celebrated shares and debentures related scam involving its Chief Mr. Subrata Roy that took place in India. It is essential to briefly understand the facts and events of this case which travelled through different forums and that exposed the whole Sahara Group and its Chief to criminal liability.

In November 2010 Securities and Exchange Board of India barred Sahara India Pariwar chief Subrata Roy and two of its companies – Sahara India Real Estate Corp (SIREC) and Sahara Housing Investment Corp (SHIC) - from raising money from the public as they had raised several thousand crores through optionally fully convertible debentures (OFCDs) that SEBI deemed illegal. In December 2010, Sahara appealed in the Allahabad High Court, which ordered SEBI not to take any action until a court order is passed. In January 2011 - Delhi High Court issued a warrant against Sahara India Pariwar chairman Subrata Roy and four other officials of the group on a complaint that it deceived investors in a proposed housing project of Rs. 25,000 crore. In February 2011 Delhi High Court stayed proceedings against Sahara India Pariwar chairman Subrata Roy and four other officials of the group on a complaint that it deceived investors in a proposed housing project.

Subsequently, the Hon'ble Supreme Court of India asked Sahara India Real Estate (SIREC) to furnish the format of the application for its optionally fully convertible debenture (OFCD) scheme and a list of accredited agents that raised money on the company's behalf. During

this time SEBI ordered Sahara firms to immediately refund the money collected through its sale of OFCDs. In October, 2011 Securities Appellate Tribunal (SAT), set up by the Supreme Court, ordered two unlisted Sahara group companies to refund within six weeks about Rs. 17,656.53 crore with 15% interest, which it had raised through OFCDs and in November 2011 Sahara India Pariwar moved the Supreme Court against SAT's order and the Supreme Court stayed the SAT order, and asked the two companies to refund Rs. 17,400 crores to their investors and asked the details and liabilities of the companies.

The trouble for Sahara started when in January 2012 - Supreme Court gave three weeks time to the Sahara management to choose between options to return investments made by public in its OFCD scheme. Sahara was directed to either give sufficient bank guarantee or attach properties worth the amount raised through OFCDs. Ultimately, in August 2012 Supreme Court directed Sahara India Real Estate Corporation Ltd. (SIRECL) and the Sahara Housing Investment Corporation Ltd. (SHICL) to refund over Rs. 24,400 crore to its investors. On 26 February 2014, the Supreme Court of India ordered the arrest of Subrata Roy for failing to appear in court in connection with the Rs. 24,000 crore deposits his company failed to refund to its investors as per a Supreme Court order, after a legal dispute with the Indian market regulator SEBI (Securities and Exchange Board of India). He was eventually arrested on 28 February 2014 by Uttar Pradesh police on a Supreme Court warrant. In a statement after the arrest, his lawyer said Subrata's 92-year-old mother was in poor health and needed her eldest son by her side, and hence he failed to appear at the court. He was granted interim bail by the Supreme Court on 26 March 2014 on the condition that he would deposit Rs 10,000 crore with SEBI. Subrata was eventually taken into judicial custody and sent to Tihar jail, along with two other Sahara directors, on 4 March 2014 for failing to deposit Rs 10,000 crore with

SEBI. In Tihar jail, Subrata unsuccessfully tried to sell some of his hotel properties to raise Rs 10,000 crore for his bail bond. He remained in Tihar jail for more than two years, and was released on parole in May 2016 to attend the last rites of his deceased mother. The Supreme Court bench of Justice Radhakrishnan and Justice Khehar ruled in favour of SEBI and ordered the two Sahara companies to return to its OFCD investors the full outstanding amount, along with 15 percent interest.

The Supreme Court judgement was subjected to review and the Supreme Court passed another judgement on 6th May, 2014. The observations of the Hon'ble Supreme Court in **Subrata Roy Sahara v. Union of India⁷** are relevant for purpose of understanding the extent of liability and how conduct of a corporate machinery can lead to failure are as under:

"37. It is also important for us to record that the positive position adopted by the SEBI before this Court, during the disposal of Civil Appeal Nos. 9813 and 9833 of 2011 was, that neither SIRECL nor SHICL ever provided details of its investors to the SEBI (FTM) or to the SAT. The two companies had, contested the proceedings initiated against them, only on technical grounds. We may record, that we were told, that even before the SAT, no details were furnished. As against the above, the position adopted by the SIRECL before us, during the course of the appellate proceedings was, that SIRECL had furnished a compact disc to the SEBI (FTM), along with its operating key. The compact disc, according to learned counsel, had complete investor related data, pertaining to SIRECL. Whilst it was acknowledged by the SEBI before this Court, that a compact disc (allegedly containing details about the investors) was furnished by SIRECL, yet it was emphatically pointed out, that its operating key was withheld. This was another deliberate manoeuvre adopted, to withhold investor related information from the SEBI(FTM). Resultantly, no details whatsoever were ever disclosed by SIRECL either before the SEBI (FTM) or the SAT.

38. The position adopted by SHICL was even worse. It is necessary to place on record the fact, that the SHICL, one of the two concerned companies, never ever disclosed the names and other connected details of its investors to the SEBI. We made a repeated poser, during open hearing (in the present writ petition), about SHICL having never furnished its investor details. The above position was confirmed by learned counsel representing the SEBI. Unfortunately, Mr. S. Ganesh, learned Senior Counsel for the petitioner, on the last day of hearing, ventured to contest the above position. He handed over to us two volumes of papers running into 260 pages under the title – Note on information provided by SHICL to the SEBI). We required him to invite our attention to documents indicating disclosure of the above information. His subterfuge stood exposed, when no material depicting disclosure of names and other connected details by SHICL to the SEBI emerged from the two volumes of papers, handed over to us. What is essential to record is, that till date SHICL has never ever supplied investor related details to the SEBI. A fact about which there is now no ambiguity (specially after, learned counsel, filed the aforementioned two volumes of papers). Does it lie in the mouth of learned counsel to assert, that unjustified conclusions have been recorded, in the impugned order dated 4.3.2014 against the two companies without any basis? We are fully satisfied, that the factual position depicted hereinabove, fully justifies our mentioning in the impugned order (dated 4.3.2014), that the contemnors had maintained an unreasonable stand throughout the proceedings before the SEBI, SAT, High Court, and even before this Court.

39. According to the assertions made by SIRECL, it had collected an amount of Rs.19,400,86,64,200 through its open ended schemes between 25.4.2008 and 13.4.2011. Its collections, after taking into consideration redemptions, statedly stood at Rs.17,565,53,22,500 as on 31.8.2011. The above collection was allegedly made from 2,21,07,271 investors. It is not possible for us to narrate similar figures in respect of the amount collected by SHICL, or for that matter, the number of investors, because the records depicting the above details have never been disclosed by SHICL. The figures mentioned in

the order dated 31.8.2012, are therefore, the figures provided by SIRECL and SHICL. All those figures are unauthenticated. In sum and substance, nothing was known. All assertions made by the two companies were subject to verification. The above factual position indicates the basis and the rationale, of the directions issued by this Court on 31.8.2012. We had simply required the two companies, to deposit the admitted investor funds. We had directed disbursement, only on verification. The factual position depicted above also inter alia depicts, that the petitioner – Mr. Subrata Roy Sahara as promoter, and Mr. Ashok Roy Choudhary and Mr. Ravi Shankar Dubey, as directors, were always treated as actively involved in the matter, and therefore, various orders (including restraint orders) were passed, wherein they were expressly named. Since they shouldered the overall responsibility of the affairs of the two companies, it was fully justified for this Court, to require them to comply with the orders passed by this Court on 31.8.2012 and 5.12.2012.

IV. Efforts made by this Court, to cajole the contemnors, including the petitioner – Mr. Subrata Roy Sahara, for compliance of the orders of this Court, dated 31.8.2012 and 5.12.2012

40. During the course of hearing of the instant writ petition, we were given to understand, that all counsel representing the petitioner were taken by surprise when we passed the order dated 4.3.2014 (extracted at the beginning of this order). It was submitted, that a person of the eminence of the petitioner, could not be suddenly sent to jail without notice. It was asserted, that the petitioner had entered appearance to assist this Court, and to explain his position, but no opportunity was granted to him. Some of the learned counsel representing the petitioner accordingly described the impugned order dated 4.3.2014 as a "draconian order". Because, according to them, the said impugned order, had violated the petitioner's rights under Article 21 of the Constitution of India. And also because, it was issued without affording the petitioner an opportunity of showing cause.

41. The bona fides of the above submission, are difficult to fathom. It seems to us, that rather than the petitioner tendering his explanation to this

Court, for not complying with the orders passed by it, the petitioner's counsel were posing a question to this Court to explain to them, the legitimacy of the procedure adopted by the Court. In our understanding, learned counsel who represented the petitioner, were surely insincere to the cause of justice, when they drummed their assertions, without blinking an eye; since they were aware, that the factual position was otherwise. For learned counsel for the petitioner, to advance such submissions, to state the least, was unimaginable. Both Mr. Ram Jethmalani and Dr. Rajeev Dhawan, were lead counsel representing the contemnors in the contempt proceedings. They surely ought to have known better, because they had appeared in the contempt proceedings, in the defence of the contemnors. It is not for a Court, to tender any explanation to any litigant, or to his counsel. Accordingly, it should never be considered as obligatory, on the part of this Court, to tender any such explanation. Undoubtedly, it is open to a party to seek review, of an order passed by this Court, under Article 137 of the Constitution of India. Or to file a curative petition, after a review petition had been rejected, as laid down by this Court in Rupa Ashok Hurra's case (*supra*), if it is felt that a serious mistake had been committed. Just for this case, in order to depict the position in its correct perspective, we shall narrate in the succeeding paragraphs, the long rope which was extended to the petitioner (as also, to the other contemnors) to comply with the directions issued by this Court (on 31.8.2012 and 5.12.2012), before the order dated 4.3.2014 was passed."

The aforesaid observations point out at the corporates' integrity. Even during the litigation the conduct of the corporation is very strange. As is evident from the observations of the Apex Court that Sahara group had furnished a compact disc to the Securities and Exchanges Board of India (hereafter referred to as "SEBI" for brevity) (FTM), along with its operating key. The compact disc had complete investor related data. Whilst it was acknowledged by the SEBI before the Court, that a compact disc (allegedly containing details about the investors) was furnished by SIRECL, yet it was emphatically pointed out, that its operating key was

withheld. The Supreme Court considered this as a deliberate manoeuvre adopted to withhold investor related information from the SEBI. Such conducts on part of corporations are unwelcome and the Courts are bound to have a strict view towards such conduct.

7.3 The Satyam Computers Case

The Satyam Computer Case is related to the accounting fraud which was confessed by its head. On 7 January 2009, the chairman of Satyam, Byrraju Ramalinga Raju, resigned, confessing that he had manipulated the accounts of Rs 14,162 crore in several forms. The global corporate community was said to have been shocked and scandalised by this event.

In February 2009, CBI took over the case and filed three partial charge sheets (dated 7 April 2009, 24 November 2009, and 7 January 2010), over the course of the year. The accused in this case were charged by the Additional Chief Metropolitan Magistrate, Special Sessions Court, Hyderabad for sections 120B, 201, 406, 409, 419, 416, 467, 468, 471, 477-A of the Indian Penal Code.

The points to be considered before the Learned Magistrate in this case were whether the accused created a rosy picture before the investors by inflating the balance sheets, faking invoices, showing non-existent cash, deposits, etc. By doing such acts in turn whether the accused deceived the investors to purchase shares of their company.

The Learned Magistrate gave a judgement of 971 pages on 9th April, 2015 convicting Byrraju Ramalinga Raju was convicted with 10 other members. In the said judgement the Learned Magistrate has elaborated in detail the ingredients of each of the aforementioned offences. The judgement also discusses various judgement of the apex court on the subject.

As an offshoot of the scam of Satyam SEBI also initiated action against the auditors of Satyam Computers, i.e. Price Waterhouse Cooper. Price Waterhouse Cooper affiliates served as

independent auditors of Satyam Computer Services when the report of scandal in the account books of Satyam Computer Services broke. The Indian arm of PwC was fined \$6 million by the SEC (US Securities and Exchange Commission) for not following the code of conduct and auditing standards in the performance of its duties related to the auditing of the accounts of Satyam Computer Services. In 2018, SEBI (Securities and Exchange Board of India) barred Price Waterhouse from auditing any listed company in India for 2 years, saying that the firm was complicit with the main perpetrators of the Satyam fraud and did not comply with auditing standards. SEBI also ordered dislodgement of over Rs 13 crore wrongful gains from the firm and 2 partners.

8. REMEDIAL MEASURES IN CORPORATE CRIMINAL LIABILITY

The intent of this paper apart from understanding the concept of criminal liability amongst the corporates is also to know what are the remedial measures that can be adopted in crisis. To make it more organized, remedial measures can be divided into two parts. One is curative and another is preventive.

8.1 Curative Measures

Usually, curative measures would be available within the statutes itself. Needless to mention that every case will have its own set of facts, and based upon the facts will depend the application of the provisions of respective statutes. Curative measures will be applicable when i) the innocence is more prominent; and/ or ii) there is a loop hole that discharges accused from liability; and/ or iii) there is an element of doubt over role of the accused in crime; and/ or iv) the prosecution itself is maliciously initiated; and/ or v) the prosecution is created under a mistake, misconception or misunderstanding.

The curative measures can be divided into interim cure and permanent cure.

Interim Curative Measures:

The interim measures primarily include bail and anticipatory bails. The Code of Criminal Procedure, 1973 provides for post arrest and pre-arrest bails. Usually pre-arrest bails are referred to as anticipatory bails. Pre-arrest bails are only available for offences that are non-bailable. A situation may arise where registration of some criminal complaint is in the pipeline or actually a complaint has been registered and the accused is apprehended before arrest. In such cases of apprehension over arrest, the anticipatory bail option can be availed. Section 438 of the Code of Criminal Procedure provides for pre-arrest bail. Thus, a director, a manager, a secretary or a officer of a corporation who apprehends that he may be taken into custody for investigation, he/she may obtain an anticipatory bail by satisfying the court that his/her custody is not required. Even subsequent to arrest, bail can be applied for in the Court. A good and proper advise from a lawyer can bring one out of the jail temporarily till the proceedings end.

Permanent Curative Measures:

Discharge

The Code of Criminal Procedure recognizes the right of an accused to seek discharge from the proceedings if there is no sufficient material to proceed against it. There are four sections which relate to discharge under the Code of Criminal Procedure.

Section 227 is for discharge in cases which are triable before the Sessions Court.

"227. Discharge.-

If, upon consideration of the record of the case and the documents submitted therewith, and after hearing the submissions of the accused and the prosecution in this behalf, the Judge considers that there is not sufficient ground for proceeding against the accused, he shall discharge the accused and record his reasons for so doing."

Then, there is section 239, which is *pari materia* section 227 but applicable to warrant cases before the Magistrate Court.

"239. When accused shall be discharged.-

If, upon considering the police report and the documents sent with it under section 173 and making such examination, if any, of the accused as the Magistrate thinks necessary and after giving the prosecution and the accused an opportunity of being heard, the Magistrate considers the charge against the accused to be groundless, he shall discharge the accused, and record his reasons for so doing."

Then section 245 is applicable in those proceedings which are not based on police report and in which prosecution evidence is there on record.

"245. When accused shall be discharged.-

(1) *If, upon taking all the evidence referred to in section 244, the Magistrate considers, for reasons to be recorded, that no case against the accused has been made out which, if unrebutted, would warrant his conviction, the Magistrate shall discharge him.*

(2) *Nothing in this section shall be deemed to prevent a Magistrate from discharging the accused at any previous stage of the case if, for reasons to be recorded by such Magistrate, he considers the charge to be groundless."*

Thus, the intent of the legislation is that if there is no material against the accused then no purpose will be achieved in making someone go through the pain of litigation and also it will burden the judicial system. The grounds on which a discharge can be sought from a criminal prosecution would depend largely on facts and material that has been adduced before the court.

Quashing of proceedings

This option is available only if *prima facie* itself no case can be made out against the accused. This power is vested only in the hands of High Courts.

"482. Saving of inherent powers of High Court.-

Nothing in this Code shall be deemed to limit or affect the inherent powers of the High Court to make such orders as may be necessary to give effect to any order under this Code, or to prevent abuse of the process of any Court or otherwise to secure the ends of justice."

As is apparent from the reading of this section, the High Courts can prevent the abuse of process of law. In the circumstances, the accused can approach the High Court seeking quashing of a private complaint as well as a First Information Report. Here, the degree to establishing ground for stopping of proceedings is even greater than discharge. Because unlike in case of a discharge, in this case the accused approaches the court at a very initial stage of prosecution.

Undergoing trial

This is the only remainder where one does not have any option. Though even during this, it is very important to handle the proceedings in appropriate manner. Understanding what is lead in the evidence and what should be examined as a defence is very important.

A point comes when one has to analyse the probability of acquittal vis-a-vis probability of conviction based on the evidence. In such circumstances, it becomes essential to understand what effect the end result would bring on the business, image, standing in market, etc. of a corporation. For instance, if acquittal appears to be distant dream, then accordingly, one has to place arguments in such manner that minimum punishment would be attracted. In other words, one has to opt for a damage control mechanism.

8.2 Preventive measures

Compliances

This is very important wing of every corporation. Whether be it financial compliance in form of returns, payment of taxes or be it labour law compliance in form of payment of provident fund, gratuity, compensation, etc. If the corporation is meticulous about the

compliances, exposure to liabilities will automatically be taken care of.

Training

Constantly monitoring your workforce is essential for the progress of any corporation. For this purpose imparting of proper training is important. But usually the training is limited to technical aspects of the job which the employee is undergoing. There are other aspects which needs to be inculcated in the training programmes of employees. It will not be out of place to mention that assistance of a lawyer in training programmes can reap huge benefits. Ultimately, a litigating lawyer knows that exactly is expected from the courts and what evidence a court looks into. A good lawyer can in fact train a corporation from avoiding unnecessary exposure to criminal liabilities.

Communication Training

Corporate communications have lot of influence on the overall working on the business. Over the period of years even the mode of communication has changed. Handwritten to typed, paper to paper less, the world of communication has probably undergone fastest revolution. But this revolution has also caused more susceptibility when it comes to reaching the truth. Earlier, communications in corporations, be it inter-corporate, intra-corporate or corporate to government used to be only through paper. E-mails or WhatsApp were not even in consideration. Therefore, only few people in an organisation were positioned to communicate. Every communication used to go through standard channel. Now, with the innovation of e-mail, almost all the people working in the corporation are provided with an e-mail ID, which is also in name of the corporation. This leads to decentralized control in certain decision making. Sometimes, it may happen that an important decision that may otherwise require ratification of wise men may go unnoticed, thanks to the instant messaging available through e-mails. A commitment which

ordinarily ought not to have been made suddenly appears to be made because of an e-mail. Therefore, appropriate use of words in emails, same things communicated in a safer manner can lead to much less exposure to liabilities.

An illustration:

Dear Mr. Ravi,

We accept your request. I will run it through Mr. Nilesh. Everything seems to be in order.

Thanks.

Harshal

If you read the above short mail, the sender communicates the acceptance of request and then talks about running it through Mr. Nilesh. This shows a casual way of communication. Same thing can be communicated in following manner.

Dear Mr. Ravi,

Your request is positively looked by us. Mr. Nilesh would also have a look at it before we convey our acceptance.

Regards,

Harshal

In the second illustration, same thing is communicated in much more safe manner and establishes equal confidence in the addressee. Usually, in urge of not letting the deal to go down, a human being has natural tendency to give assurances. There is no harm in giving assurances, but such assurances should be either full proofed or communicated smartly as done in second version.

Mistakes in communication usually occur in sales and marketing departments where people are under pressure of target. Such pressures lead to over commitment. At the point of commitment the person does not think of his ability to fulfil the promise. Such mistakes then attract liabilities towards offences like cheating or criminal breach of trust.

Negotiation Training

An extension of communication training is negotiation training. By and large same principles as illustrated under the head of communication would apply to negotiations. Often, salesperson do end up committing unnecessary and irrelevant ideas during negotiations. Again the reason is by and large sales pressure or sometimes even an ego to outperform counterparts.

Decisions and Business Ethics

The Sahara case (*supra*) is another example of bad ethics practices where the investor information came to be withheld from the Courts. It is elementary to understand that withholding of information from the Court, especially its existence with the litigant is known, amounts to suppression. The courts in India vehemently recognize the old principle of *Suppressio veri, suggestio falsi* meaning. Suppression of the truth is (equivalent to) the suggestion of what is false. Every corporation has to be determined to assist the legal process in its right spirit.

The kind of policies a corporation keeps and also follows defines the nature of corporation as a whole. It is obvious that if a corporation follows ethics, it will be less exposed to criminality. Though, pertinently ethics is a very relative term. Furthermore, changes in generations and way of thinking has also brought changes in the moral principles and values in corporations. Again the defining factor to adhere to those set of ethics which are in synchronization with the laws of land would be necessary.

It is essential that the staff and even the top management of corporation are constantly apprised of the existing laws of land. It is very important that they are trained in a manner that they will follow a checklist before making any decision. Enthusiasm and urge of reaching top can drive a man into making hasty decisions without thinking about moral implications that

an organisation can suffer from. Therefore, many organisations before making any decision ratify the same from its legal department. Some small modifications and changes in the decision making process can avoid exposure to the criminality.

For all practical purposes one must also understand that a time may come where a decision has to be made in spite of knowing that there exists a legal hurdle. In such scenario the element of risk vis-a-vis the chances of negative impact of such decisions have to be weighed.

There are management techniques which can be used for decision making keeping in mind the legal issues involved in it. Decision Tree Analysis and Games Theory are most common known techniques on which decisions can be arrived at. A wholistic and minimum error procedure to reach a decision does minimize exposure to any corporate liability.

Recruitment criteria

Corporation is ultimately group of individuals and therefore its performance, its personality, its nature, its position will be result of how the group of individuals perform. It becomes imperative that recruitment should have right filters.

Apart from creating inter-corporate problems, employment issues lead to intra-corporate problems as well. Misuse of some of the statutes have become common with the downturn in the moral fibre of society. Whether it be sexual harassment at workplace issues or issues relating to atrocities corporations have to equip themselves with exposure to such incidences as well. A robust background verification of candidates is always helpful.

Auditing

The example of Satyam Computers case is best example of auditing failure and also importance of understanding auditing. The company inflated its balance sheet with wrongful intentions and what followed was a disaster in

case of Satyam Computers. They deceived the shareholders and thereby attracted them to buy the shares of their company. They even went to the extent of even forging invoices and like documents.

Pertinently all this scam happened under the nose of world famous auditors Price Waterhouse Cooper. As illustrated in the foregoing paragraphs, even the auditors had to pay price for this scam. Therefore, a good auditing can not only prevent external interferences in the management of the company, but also restrict wrongdoers within the company. The whole concept of auditing revolves around self analysis and ensuring an error free practice of management.

9. CONCLUSION

This paper is an attempt to introduce the concept of criminal liability of the corporations to the students of management with an intent to help them understand the intricacies of corporate litigations that takes place on the battlefield of law. Initially, when one enters corporate world at entry level, one may not understand the gravity of responsibility of actions of corporations. But as a person escalates on the ladder, he/she is bound to face various challenges and hence should be aware of the basic liabilities to which a corporation can be exposed.

The paper also attempts to demonstrate the law that has been propounded over the period of years with respect to the concept of corporate liability and vicarious liability. For this, the judgements of the Hon'ble Supreme Court are discussed for better understanding of the subject and clarification on doubts of interpretation.

The paper also attempts to broadly address to the remedial measures available with a corporation. Thus, readers may find benefit in knowing the rights and responsibilities of corporations in case of criminal prosecution under the statutes.

Having bachelor's degree in Law and a master's degree in Business Administration, is a lawyer practicing in the city of Mumbai, India. A native of Nagpur, Mr. Chavan started his career initially with a Pune based private start up company as a manager where he primarily looked after the correspondence, documents and importantly negotiations for the company. After working with the company for a short period, Mr. Chavan decided to enter into the domain of litigation. After knocking the doors of various famous firms to seek entry into the field, he finally began his career with a prestigious and traditional law firm - BachubhaiMunim& Co., which was primarily into civil, commercial and corporate litigation. At BachubhaiMunim& Co. he got opportunity to work with a well known figure in the legal fraternity of Mumbai, late Shri AtulMunim, who was the then senior partner of the firm. While at BachubhaiMunim& Co. Mr. Chavan also worked with Mr. Jai Munim, partner of BachubhaiMunim& Co., under whom he learnt the must have skill sets of a lawyer. This experience, early in his career gave him the much needed exposure to litigation and especially civil, commercial and corporate litigation laws. Even after his association with BachubhaiMunim& Co., he continued to appear in civil courts and handled several arbitration related petitions and suits. He also garnered the additional experience of appearing before the Securities and Exchange Board of India, Recovery Tribunals, etc.

Subsequent to his stint at the law firm, he joined chamber of eminent criminal lawyer Mr. Subodh Desai. Under the guidance of his senior, he started appearing in the various Criminal Courts based in Mumbai handled cases at all stages in criminal procedure, viz., from remands, bail applications, trials to revisions, appeals, writ petitions etc. Apart from the offences under the Indian Penal Code, he also appears in matters of prosecution under the special enactments like the Maharashtra Protection of Interest of Depositors Act (MPID), the Maharashtra Ownership of Flats Act (MOFA), the Negotiable Instruments Act, and the Drugs and Cosmetics Act.

After getting handful experience both with the firm and also with his senior, Mr. Chavan started his own law practice. He continues to represent his clients before various courts and has diversified into various fields of law. Though he has been handling litigation on all the subjects, his special area of practice has been criminal law. Apart from litigation, Mr. Chavan is also skilled in drafting various business related agreements his clients.

Apart from the work at Court, he has been also providing consultations for criminal and civil litigations. Pre-litigation advise has always been an special area of interest for him wherein the overall strategy is devised based upon a holistic approach which attempts to answer pertinent questions, such as what kind of litigation to initiate, against whom to initiate, and whether to initiate or not. His consulting work includes a comprehensive study of the complete case life cycle. It is an analysis of the case at hand and includes deliberating upon all the possible options available. This means maintaining a rational foresight in mind along with the best interests of the client, before executing any action.

He has an added advantage of having done Masters in Business Administration and also having a brief experience in management. He has constantly endeavored to use this management experience for the benefit of the litigation process. The use of some of the management techniques like the decision tree analysis or the theory of games for the purposes of devising strategies has been his forte.

Increasing Operational Efficiency and Effectiveness through Lean Thinking**-A case of Mahalaxmi Saras Exhibition 2017**

Dr. Jyotsna G. Golhar

Assistant Professor

SASMIRA's Institute of Management Studies & Research

Contact Details: 7738305284

Email 1: jyotsnagolhar@simsr.edu.in

Email 2: jyotsna.golhar@yahoo.com

Abstract

In a competitive environment Lean Thinking is most important as it helps to DRDA and Government of Maharashtra to take a structured, analytical, and rigorous approach in evaluating the efficiency and effectiveness of operational practices at Mahalaxmi Saras Project. This approach is divided into three key steps assess whether the function or service needs to be performed, develop conceptual i.e. "ideal plan" and evaluate issues that are the most likely to yield significant results.

The paper suggests that application of lean thinking can be beneficial approach towards increasing operational efficiency and effectiveness of Mahalaxmi Saras Exhibition 2017 walk-ins through social media.

Keywords: Lean, Lean Thinking, Operational Efficiency

JEL Classification: M10, M11, L83

Words: 116

Introduction

Lean is defined as "a systematic approach to identifying and eliminating waste (non-value added activities) through continuous improvement by flowing the product at the pull of the customer in pursuit of perfection." (Green Suppliers Network, 2009) and "maximizing customer value while minimizing waste." (Lean Enterprise Institute, 2008).

Lean expands on the idea of working both efficiently and effectively to best use resources while meeting stakeholder expectations. The stakeholders in case of Mahalaxmi Saras Exhibition are the self help groups, the customers, the allied agencies involved in organising exhibition and importantly the involvement of in-charge state ministry. Lean uses additional analysis to reach the optimum balance between effectiveness – providing the service or product that the recipient wants when he or she wants or needs it – and efficiency – providing this service or product with the optimal use of resources, including time, money, and people.

Lean may be a useful approach to process improvement where individuals (George, 2003, p. 12):

- ❖ *Chase information to complete a task*

-It highlights the need of preplanning of event, collection and assimilating the information through consistent meetings of allied groups involved in the Saras project. The details (name, members, product type and category) of SHGs participating from each district within the state and outside the state.

- ❖ *Deal with multiple decision loops*

-decision making is a response to the gap between objectives set for the system and a perceived insufficient attainment of those goals. Regular meetings will resolve the criteria of multiple decision loops and multiple communication channels and will set the accountability.

- ❖ Focus on 'expediting' reports, purchases, or similar outcomes

-Sourcing of material, inventory needs for securing the quality and timely delivery of goods and components. In case of Saras the material required will be the registration forms of SHGs, the identity cards, the information manual containing all details of in charge for different departments responsible.

- ❖ Do work in batches, collecting a certain amount of work before starting the task
- ❖ Find work is lost between organizational units

The goal of Lean is to have a steady, even flow of work in the unit or for the individual while also providing what the recipients want in a timely manner. To do this it is necessary to:

- Determine the value of the product or service to the recipient(s), who may be:
 - a customer, the immediate recipient
 - the stakeholder, a person who has an interest in the product or service
 - students, parents or others from outside the organization
 - faculty or staff working within the organization who are 'downstream' receiving the product or service of another internal unit
- Identify resource use and activities that do not
 - contribute to the value of the product or service

The desired outcome of Lean is to standardize and streamline the process so that more time can be spent on more complex or unique services, products, or components.

The lean approach as a process according to the application of the tools for its realization and literature review depicts it clearly.

Literature Review

Table A: Literature review

Author(s)	Major Findings
Taho Yang Yiyo Kag (2014)	suggested and implement lean production system for fishing net manufacturing, use the various lean tools and Simulation method and make to order (MTO) process are apply for the regular shipment. And also use the VSM tool and produce future state map and increase service level and reduce lead time, also says that gives the guide line for the implement the value stream mapping. How to implement VSM and which factor to be consider, and after says that lean manufacturing are apply in any manufacturing industry successfully and reduce cost by elimination of waste.
Santosh Kumar et, al.(2014) a	apply the lean tool by method time measurement and line balance efficiency and reduce the cycle time in a truck body assembly line and improve efficiency in that product line. Also says that lean manufacturing is a business philosophy that continuously improves the process involve in manufacturing
K. Venkataraman (2014)	says that various organizations are implement lean manufacturing in recent year for reducing and eliminate waste. In this article use the value stream mapping for reducing cycle time of crank shaft
P. Arunagiri et, al. (2014)	identification of high impact lean tool in automobile industry using weighted average method and they study about 91 industry and using 30 or more lean tools used get a result by weighted average method to maximum useful tools in automobile industry, first one is 5s lean tool are preferred to elimination waste
Ratneshwar Singh et,al.(2013)	TPM implementation in machine shop and reduce break down time and improve performance efficiency. TPM depend on various pillar, like 5s, jishu-hozen, planned maintenance, quality maintenance, kaizen office, and safety, health & environment are apply one by one and improve the quality of product with over all equipment effectiveness
Boppana v. Chaudhary et, al. (2012),	implement the lean manufacturing in a pharmaceutical company, in this paper take a case study of the product line is creams and ointment
Jennies Angelis et, al.(2012)	Lean is a globally competitive standard for product assembly of discreet parts. Successful Lean application is conditioned by an evolutionary problem-solving ability of the rank and file. This is in itself contingent on employee involvement in improvement programs and the implementation of appropriate practices

Rachna Shah et.al. 2007	Lean manufacturing is an integrated socio technical system whose main objective is to eliminate waste by concurrently reducing and minimizing supplier, customer, and internal variability
Dominik T. Matt [28, p. 614]	This paper presents the application of Lean Management methods in the hospitality sector and discusses the question about their suitability and the possible potential for optimization.

About Mahalaxmi Saras Exhibition

- **SARAS:**

A Major initiative was taken by the Ministry of Rural Development in the direction of promoting rural products and building capacities of 'Swarozgaris' (Self Help Groups) during 1999-2000 when it participated in India International Trade Fair (IITF), 1999 under the banner of SARAS. It was organized, for the first time, with a view to give exposure to rural artisans/entrepreneurs/ officials dealing with SGSY to a major international event in the country to develop markets for products manufactured by beneficiaries of programmes of the Ministry; and, to create awareness amongst urban consumers of Delhi and surrounding areas about rural products. SARAS was promoted as an umbrella brand for promoting all the rural products.

- **MAHALAXMI SARAS EXHIBITION:**

An initiative of the Government of Maharashtra to provide a marketing platform to rural entrepreneurs and artisans, Mahalaxmi Saras is an annual exhibition-cum-sale of handicrafts, handlooms and food products. In its 14th year now, Mahalaxmi Saras 2017 will be held from the 11th of January 2017 to the 23rd of January 2017 at Bandra, Mumbai. Over the years, Mahalaxmi Saras has carved a niche for itself as a platform for interaction and exchange of innovative ideas, developing skills and spreading knowledge about indigenous and traditional products for artisans from different parts of the country. One of the biggest rural exhibitions held in the country, Mahalaxmi

Saras has introduced nearly 5000 Self Help Groups to the urban consumers in the last decade. In addition to Self Help Groups (SHGs) from Maharashtra, SHGs from various states of India participate in this annual extravaganza. Last year, 27 states apart from Maharashtra participated in the exhibition which saw sales of over Rs. 8 crores. With about 20,000 people visiting Mahalaxmi Saras daily, this rural exhibition is a melting pot of different cultures and cuisines. Visit us at Mahalaxmi Saras 2017 for this unique experience.

Problem Statement

The completeness of effort to make the referred 'Saras' project effective must involve social media. The much talked about 'Saras' project however is found to be neglecting this important link and thus leaving a set of questions - why or why not? The problem here is to identify the reasons of not recognizing and tapping the opportunities available for Lean thinking to increase efficiency and effectiveness of walk-ins (*Walk-in is a person, such as a customer or a job applicant, who enters someplace without an appointment.*)

Research Questions

The researcher is attempting to find out answers to the following series of questions:

1. What is the objective and age group targeted by the project?
2. Who among the respondents are using social media?

3. What are the positives and negatives of using social media?
4. What efforts can be carried from state government side to promote social marketing tools for making "Saras" project more effective?

Objectives of the Study

The study is primarily aimed at identifying the use of social media in reinforcing the walk-ins in the exhibition. Along with this the secondary objective relates to knowing the pattern, nature and frequency of usage of social media sites amongst the target groups. Capturing the perceptions and attitudes of the targeted respondents by the use of different social media communication mediums.

Hypotheses

For the attainment of objectives and answers to research questions, following hypotheses are put forward:

Ho1: Frequency of using of social media is independent of age, qualification and location of respondents.

Ho2: Respondents do not perceive Social Media as a "marketing tool" for exhibitions

Ho3: There is no significant difference between the purpose for which social media sites are used.

Ho4: Respondents do not prefer any particular site amongst the selected social media sites.

Research Methodology

Usefulness of the study

This study aims at a better understanding on application of social media for enhanced reach and effect for Mahalaxmi Saras Exhibition.

The Universe

The universe in this study is the population from cities like Mumbai, Navi Mumbai, Thane, Pune, Nashik, Sangli and few from other cities.

Research Instrument/Sources of Data

As the study is based on primary source of data, thus instrument used to conduct the research is Structured Questionnaire

Sample Size

Targeted 100, actual 93 with success rate 93%

Data Analysis and Interpretation

The Statistical Package for Social Science (SPSS) version 20.0 is used for the statistical analysis.

Reliability Analysis

The reliability test is conducted to indicate the stability and consistency of an instrument which is measuring a concept to a level that the observed score has minimal error. Based on Sakaran (2005), the consistency reliability coefficients (Cronbach's alpha) considered above the level of 0.6 is acceptable for the purpose of analysis. In table below alpha score of all variables of using social media.

Table (i)

Reliability Statistics	
Cronbach's Alpha	N of Items
0.625	22

Table shows the reliability coefficients of the instrument used for studying the use of social media in reinforcing the walk-ins in exhibitions. As can be seen from the above table, the

instrument used for survey is reliable and given the high value of cronbach's alphas (0.625), which allows for further data analysis.

Hypotheses Testing

Ho1: Frequency of using of social media is independent of age, qualification and location of
Profile of Respondents

Table (ii)

AGE_GROUP		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	25- 30 years	12	12.9	12.9	41.9
	31- 35 years	27	29.0	29.0	29.0
	36- 40 years	34	36.6	36.6	78.5
	More than 40 years	20	21.5	21.5	100.0
	Total	93	100.0	100.0	

Interpretation: "Percent" and "Valid percent" columns are identical because there are no missing values for the variable (Age Group) region. 36.6% of respondents i.e. maximum respondents fall in the 36- 40 years age group.

Table (iii)

QUALIFICATION		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under_Graduation	21	22.6	22.6	22.6
	Graduation	24	25.8	25.8	48.4
	Post_Graduation	31	33.3	33.3	81.7
	Doctorate	7	7.5	7.5	89.2
	Other	10	10.8	10.8	100.0
	Total	93	100.0	100.0	

Interpretation: "Percent" and "Valid percent" columns are identical because there are no missing values for the variable (Qualification) region. 33.3% of respondents i.e. maximum are post graduate.

Table (iv)

LOCATION		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Mumbai	34	36.6	36.6	36.6
	Thane	26	28.0	28.0	64.5
	Nashik	8	8.6	8.6	73.1
	Navi Mumbai	12	12.9	12.9	86.0
	Pune	4	4.3	4.3	90.3
	Sangli	8	8.6	8.6	98.9
	Others	1	1.1	1.1	100.0
	Total	93	100.0	100.0	

Interpretation: "Percent" and "Valid percent" columns are identical because there are no missing values for the variable (Location) region. 36.6% of respondents i.e. maximum are from Mumbai followed by 28% from Thane.

Table (v)

FREQUENCY_USING_SOCIAL MEDIA		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Daily	78	83.9	83.9	83.9
	Weekly	10	10.8	10.8	94.6
	Monthly	3	3.2	3.2	97.8
	Semi-Annual	2	2.2	2.2	100.0
	Total	93	100.0	100.0	

Interpretation: "Percent" and "Valid percent" columns are identical because there are no missing values for the variable (Frequency_using_Social Media) region. 83.9% of respondents daily use social media while a few i.e. 10.8% use weekly while in rare cases it is observed monthly or semi annual.

Ho2: Respondents do not perceive Social Media as a “marketing tool” for exhibitions

It can be depicted that the Hypotheses stands accepted as the data highlights that the

Marketing Tool variable has lowest frequency as 6 which indicates that Respondents do not perceive Social Media as a “marketing tool” for exhibitions

Table (vi)

Social media “marketing tool”		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Hobby	55	59.1	59.1	59.1
	Career Related	22	23.7	23.7	82.8
	Marketing Tool	6	6.5	6.5	89.2
	Second Income	10	10.8	10.8	100.0
	Total	93	100.0	100.0	

Interpretation: "Percent" and "Valid percent" columns are identical because there are no missing values for the variable (Social Media) region. 59.1% of respondents because it is their hobby and 23.7% use social media for career related topics as many respondents were from young age group.

Ho3: There is no significant difference between the purpose for which social media sites are used.

Test Statistics							
To_commu nicate_with _friends	For_Enterta inment	To_share_p hotos_or_v ideos	To_find_ou t_info_Heal th_Housing _etc	To_express _my_ideas	To_kill_Ti me	Use_Social Media_Oth er	
Chi-Square	18.075 ^a	67.108 ^a	18.075 ^a	3.108 ^a	13.172 ^a	.871 ^a	74.075 ^a
df	1	1	1	1	1	1	1
Asymp. Sig.	.000	.000	.000	.078	.000	.351	.000
Status	Rejected	Rejected	Rejected	Accepted	Rejected	Accepted	Rejected

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 46.5.

Interpretation: This test (Chi-Square) shows that there is significant difference between the different reasons used for Social Media. Therefore, H_01 gets rejected in favour of alternate hypothesis for the reasons of using social media for finding information regarding health care, housing etc and killing time.

This hypothesis is tested using Chi-Square test and it depicts that there is significant difference between the different purposes for which people use Social Media. Therefore, H_03 gets rejected in favour of alternate hypothesis for the reasons of

using social media for finding information regarding health care, housing etc and killing time.

Ho4: Respondents do not prefer any particular site amongst the selected social media sites.

Descriptive Statistics					
	N	Mean	Std. Deviation	Minimum	Maximum
Effectiveness_ uniindia.com	93	3.41	1.287	1	5
Effectiveness_Facebook	93	4.30	.704	2	5
Effectiveness_Twitter	93	3.55	1.147	1	5
Effectiveness_Flickr	93	4.17	.503	2	5
Effectiveness_GooglePlus	93	3.66	1.058	2	5
Effectiveness_eventshigh	93	4.30	.704	2	5
Effectiveness_allevents.in	93	3.55	1.147	1	5
Effectiveness_Instagram	93	4.12	.568	2	5
Effectiveness_saleraja	93	3.56	1.433	1	5
Effectiveness_ExoticGringo	93	3.46	1.773	1	5
Effectiveness_forevernews	93	3.15	1.763	1	5

Test Statistics											
	Effectiveness_uniindia.com	Effectiveness_Facebook	Effectiveness_Twitter	Effectiveness_Flickr	Effectiveness_GooglePlus	Effectiveness_eventshigh	Effectiveness_allevents.in	Effectiveness_Instagram	Effectiveness_saleraja	Effectiveness_ExoticGringo	Effectiveness_forevernews
Chi-Square	47.16 ^{1a}	56.032 ^b	41.677 ^a	135.17 ^{2b}	43.473 ^b	56.032 ^b	41.677 ^a	108.075 ^b	29.634 ^a	76.839 ^a	16.290 ^b
df	4	3	4	3	3	3	4	3	4	4	3
Asymp. Sig.	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.001

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 18.6.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 23.3.

The selected Media sites were uniindia.com, Facebook, Twitter, Flickr, Google+, Instagram, eventshigh, allevents.in, saleraja.com, Exotic Gringo etc. The respondents were asked to rate

the effectiveness of these selected sites on likert scale. This hypothesis is tested using Chi-Square test and it is depicted that Respondents do not prefer any particular site but they have their

own unique inclination towards specific function of each site and thus this becoming an opportunity or it can be said that the presence on these social media sites for promoting events can increase effectiveness of walk-ins to exhibitions.

Concluding Remarks

Social media adoption behaviours significantly influence the operational performance of Mahalaxmi Saras exhibition. Micro-blog marketing is more important in developing regions than developed regions. An increasing number of users on social media, such as micro-blogs and Twitter, to promote their popularity and improve their operational performance. This study takes the perspective of social media adoption in promoting Mahalaxmi Saras exhibition by looking into the influence of social media adoption behaviours on operational performance. There may be sufficient conventional tools in-house to support collaboration but the tools do not engage the dynamic nature of social media effectively. Therefore Lean thinking strategy should be adopted as a conceptual tool to promote social media as marketing tool.

Whether or not social media is here to stay, the presence of more than 1.5 billion users on social networking sites cannot be ignored. So the only choice that the organizations and IT solution providers have is to follow this trend to improve business productivity, operational efficiency, and profitability.

References

- Innovation Insight Series Number 23
<http://www.psu.edu/president/pia/innovation/>
- Taho Yanga, Yiyo Kuob, Chao-Ton Suc, Chia-Lin Houa. Journal of Manufacturing Systems 34 (2015) 66-73
- S. santosh kumar, M. pradeep kumar. Procedia Materials Science 5 (2014) 1853 – 1862 international conference on advance materials and engineering AMME 2014
- K. Venkataramana, Vijaya Ramnath, V.Muthu Kumar, C.Elanchezhiand Procedia Materials Science 6 (2014) 1187 – 11963rd International Conference on Materials Processing and Characterisation (ICMPC 2014)
- P. Arunagiri and A.Gnanavelbabu(2014) 12th GLOBAL CONGRESS ON MANUFACTURING AND MANAGEMENT, GCMM 2014.
- Ranteshwar Singh, Ashish M Gohil, Dhaval B Shah, Sanjay Desai Procedia Engineering 51 (2013) 592 – 599 1877-7058 © 2013 The Authors. Published by Elsevier Ltd.
- Boppana V. Chowdary, Damian George, Trinidad and Tobago. Journal of Manufacturing Technology Management Vol. 23 No. 1, 2012 pp. 56-75q Emerald Group Publishing Limited 1741- 038X DOI 10.1108/17410381211196285.
- Jannis Angelis, Bruno Fernandes. International Journal of Lean Six Sigma Vol. 3 No. 1, 2012 pp. 74-84 q Emerald Group Publishing Limited 2040-4166 DOI 10.1108/20401461211223740
- Rachna Shah, Peter T. Ward. Journal of Operations Management 25 (2007) 785–805

Weblinks:

- <http://www.mahalaxmisaras.com/>
- http://rural.nic.in/sites/downloads/right-information-act/DRDA_RTI.pdf, 26th February, 2017.
- <http://www.umed.in/English/frmMahalaxmi-Saras.aspx>, 26th February, 2017.
- <http://rural.nic.in/netrural/rural/index.aspx>, 23rd February, 2017.
- <https://twitter.com/mahalaxmisaras?lang=en>
- <https://www.youtube.com/watch?v=vigkRZAVWtU>
- <https://www.facebook.com/Mahalaxmi-Saras-2017-1540283929632111/>

An evaluation of the framework governing Credit Derivatives in India: Case of Credit Default Swaps

Dr. Pranay Parashar

Dr. Ambedkar Institute of Management Studies and Research

parashar.pranay@gmail.com

ABSTRACT:

The Indian Banking sector had to recently deal with massive provisioning requirements against NPAs and other doubtful debts. This was basically due to a non-vibrant corporate bond market. Most of the Indian corporates are either incapable or do not prefer to raise funds through the corporate bond market due to high costs associated with raising debt or non-familiarity with the process of raising debt or other issues like credit rating.

Credit Derivatives might just be the answer to these troubles affecting the banking sector. RBI has come up with guidelines and so the framework is in place. This study aims to evaluate the framework within the specific context of the Indian banks and debt markets.

In terms of regulations and infrastructure, it is found that they are appropriate. As with any new thing, it is important to tread cautiously and the RBI is rightly doing so. But a lot needs to be done. Regarding the infrastructure, it is important for the bond markets to become active. Hence the CDS is presently allowed on corporate bonds only, the markets for the same is however not vibrant enough.

KEY WORDS: Credit Derivatives, Credit Default Swaps, Corporate Bond Markets

INTRODUCTION TO CREDIT DERIVATIVES IN INDIA

Initiatives in India: "The RBI first issued draft guidelines back in May 2007. However, it suspended releasing a set of final principles on account of the role of credit derivatives in the global financial crisis. The central bank considered it appropriate to proceed with caution reflecting the lessons learned from the financial crisis," wrote RBI governor Duvvuri Subbarao in October 2009.

October 2011: RBI comes up with the guidelines for Credit Default Swaps on Corporate Bonds

November 2011: First CDS trade takes place between IDBI and ICICI Bank.

May 2013: NSE comes up with an online trading platform for corporate bonds.

Challenges in the development of Credit Derivatives Market:

Need for Standardization: The regulations by the Bank for International Settlements (BIS), in 2002, sought to attach a risk weightage commensurate with the credit ratings, giving in to long standing demands of industry insiders. This forced banks to buy protection against lower rated loans, to ensure that they fulfil the 8% adequacy norm. It was also proposed to provide significant capital relief to the protection buyer and capital charge to the seller.

The Credit Derivatives definitions by International Swaps and Derivatives

Association (ISDA) in 1999 have also looked at tackling some of these issues. The growth in the size of the market post 1999 lends credibility to the voices for standardization as a means to achieve transparency and market liquidity.

Need for Structured Products: Securitization is fast gaining acceptance in the Indian markets. Given the coupling with credit derivatives that exists in some securitization deals, the growth of securitization could possibly signal the entry of the related product. Such a product would look to transfer the credit risk from the bank to the Special Purpose Vehicle (SPV) by way of a credit derivative.

Consolidation in the Banking Industry: One of the major reasons for the success of Credit derivatives in the European markets is the extent of corporate loans. Additionally, a few large banks typically control most of the corporate debt. Therefore, finding a counter party for a credit swap is not too difficult. However, in India, the banking sector is fragmented, with the top 10 players commanding only 45% of the market.

However, there is a definite trend towards consolidation emerging in Indian banking industry. The ICICI and ICICI bank merger, HDFC Bank taking over already merged Centurion Bank of Punjab are steps in this direction. This trend could fuel the growth of the credit derivative market. However the biggest move could be the consolidation of the State Bank group.

LITERATURE REVIEW

Many research papers and working papers were available which were relevant to the topic. The international journals had a good number of papers which were based on different economies, mostly developed. This section deals

with the relevant works, their objectives, methodologies and most importantly their findings. The following papers help in building the conceptual framework of credit derivatives.

A Primer on Credit Derivatives by Stephen P. D'Arcy and Xinyan Zhao

Enterprise Risk Management Symposium, 2009

Conclusion: Manage for risks, not for regulation. Although banks were able to reduce or eliminate capital allocated to debt hedged with credit default swaps under applicable regulations, the banks still faced counterparty risk in the event the seller of the CDS could not perform. Risk does not disappear just because regulations do not recognize it.

Credit Derivatives: An Overview by David Mengle

Federal Reserve Bank of Atlanta in its journal Economic Review, 2007, Q4

Conclusion: Given the degree of standardization of CDS, dealers are apparently able to trade balanced books without significant residual risks that need to be laid off on exchanges. Further, dealers might not find price discovery information for a small number of selected reference entities to be particularly useful. Still, if credit futures attract significant liquidity, dealers might seek to incorporate the price information into their risk management activities.

Developing Multiple Layers of Financial Intermediation: The Complementary Roles of Corporate Bond Markets and Banks by Suresh Sundaresan

BIS Paper No. 26, Proceedings of a BIS/PBC seminar held in Kunming, China, November 2005

Conclusion: This paper's focus has been on the need to make structural reforms in the areas of bankruptcy codes, legal contract enforcement, corporate governance and investor protection. It has also examined issues relating to improving the development of corporate bond markets, with particular emphasis on the importance of transparency and efficient price discovery.

Corporate Bond Market Microstructure and Transparency - The US Experience by Amy K Edwards

BIS Paper No. 26, Proceedings of a BIS/PBC seminar held in Kunming, China, November 2005

Conclusion: The recent increases in transparency in the US corporate bond market have provided many lessons that can aid regulators in other countries. Without dictating a specific market structure, regulators recently promoted post-trade transparency in the market, which resulted in lower transaction costs for both retail and institutional investors. In fact, Edwards et al (2005) assert that US investors would have saved over USD 1 billion in 2003 if transparency had been fully implemented sooner. Aside from the benefit to investors of lower transaction costs, the NASD has been able to create automated surveillance from the TRACE data that has streamlined the regulatory enforcement by the NASD and the SEC and should result in better investor protection.

Development of Japan's Credit Markets by Hibiki Ichie

BIS Paper No. 26, Proceedings of a BIS/PBC seminar held in Kunming, China, November 2005

Conclusion: This paper can be summarised by the following three points.

a) First, although bank loans have dominated the Japanese credit market, the corporate bond market, along with the secondary syndicated loan market and securitisation of credit receivables and equipment leases, has played an important role since the financial crisis. The infrastructure of the credit market is reasonably well developed, and is expected to support the Japanese economy during the next credit down-cycle.

b) Second, investment opportunities in Japan's credit market are limited. The Samurai bond market is enabling Japanese investors to invest in Asian companies, and cross-border syndicated loans may play a greater role in

future.

c) Finally, deregulation, such as the abolition of bond issue standards, was a prerequisite for the development of the credit market.

Credit Derivatives and Structured Credit: The Nascent Markets of Asia and The Pacific by Eli M Remolona and Ilhyock Shim

Published in BIS Quarterly Review, June 2008

Conclusion: Credit risk market innovations such as single-name CDS contracts, traded CDS indices and CDOs have made significant inroads in Asia and the Pacific. Single-name CDS referring to almost a thousand Asia-Pacific entities now trade in the market. There are actively traded CDS indices, separately covering names in Asia (excluding Japan), Japan and Australia. Synthetic CDO deals have been put together with names from within the region, albeit in combination with names from elsewhere. In 2006, a surge of bond issuance in the region provided a major boost to the use of these innovations. This growth, however, has been interrupted by the recent global financial turmoil, which has caused spreads to widen sharply even for Asian names and reduced investors' interest in structured credit. Nonetheless, active trading in CDS indices has continued and the markets in the region are likely to resume their growth once global conditions settle down. These markets have been confined to international investors, and greater issuance of local currency debt by lower-rated borrowers in the region would induce more active participation by domestic investors.

Development of Asia-Pacific Corporate Bond and Securitization Markets by Ilhyock Shim

Conference proceeding-Weathering Financial Crises: Bond markets in Asia and the Pacific by BIS, 2011

Conclusion: The researcher concluded the paper by finding that certain securitization subsectors have held up better than others. The fall in the issuance volume of asset-backed securities (ABSs) in Asia and the Pacific has been relatively mild. Residential mortgage-backed

securities (RMBSs) continue to remain an important market in the region, albeit at a smaller scale than before the crisis. RMBS issuance in Australia remains below pre-financial crisis levels due partly to the more cautious participation of off-shore investors.

Has Financial Development Made The World Riskier? By Dr. Raghuram G. Rajan

Published as a Working Paper for National Bureau of Economic Research, Working Paper 11728, November 2005

Conclusion: Technological change, market liberalization, and institutional change have combined to expand access to credit and risk sharing opportunities. While many of these changes are most pronounced in the United States, they are making their way to other countries. Furthermore, to the extent that both goods and financial markets are increasingly interlinked across the world, no country will be immune from the consequences of these changes.

The researcher believes that the changes have, in general, expanded opportunities significantly and have, even on net, made the world tremendously better off. But opportunities can be used for good and for bad. This is why it is so critically important to get incentives right. Given the possibility of perverse incentives coming together in some states, a risk management approach to financial regulation will be important to attempt to stave off such states through the judicious operation of monetary policy and through macro-prudential measures

As is evident from the literature review, there isn't much study available on the CDS framework in India. The proposed research work is an attempt to fill the gap in the available literature on the topic concerning India.

PROBLEM STATEMENT

The banking industry is struggling to comply with the BASEL III norms. Nevertheless, the

Indian banking industry, under the able leadership of RBI, seems poised for growth. It is time, we start taking risks in Debt. Hopefully, the markets will grow as they did when derivatives in equities were introduced.

At this juncture, it becomes necessary to identify the bottlenecks in the existing framework for Credit Default Swaps market in India. Also an effort needs to be made in the direction of learning from the international experiences and finally the customization of the product and strategy for Indian participants.

With all the above points in mind the researcher has conducted a study with the specific title - An evaluation of the framework governing Credit Derivatives in India: Case of Credit Default Swaps.

RESEARCH OBJECTIVES

1. To study the existing framework within which Credit Derivatives operate in India.
2. To study the existing framework of Credit Derivatives in countries where Credit Derivatives are popular and growing.
3. To identify the bottlenecks in the existing framework (Technology, Deal Size, Awareness, Availability of Human intelligence, Relative Costs).

RESEARCH HYPOTHESES

H₀₁: There is no significant difference between the risk managed by credit derivatives and risk managed by other instruments.

H₀₂: A significant number of respondents perceive that the existing framework within which Credit Derivatives operate in India is appropriate.

H₀₃: Credit Derivatives are useful for transactions involving large sums of money.

H₀₄: A significant number of respondents perceive that the considerable number of Commercial Banks,

NBFCs and PDs allowed to buy and sell protection without having the underlying will cause the CDS market for corporate bonds to grow as a speculative market.

RESEARCH DESIGN

This being an exploratory study to begin with, the research methodology adopted was 'Concept Development' followed by 'Problem Definition', then 'Objective Setting', subsequently 'Defining the Hypothesis', then 'Selection of Information', then 'Data Collection', then 'Statistical Processing' of the data, then "Data Interpretation and finally 'Conclusion' of the study.

Data Collection and Sources of Data

While conducting this Research the sources for the collection of data were as follows:

Primary data: Data which is collected at first hand, either by the researcher or by someone else especially for the purpose of the study is known as Primary Data. Sources of primary data are Interview method and E Questionnaire in this case.

E - Questionnaire is the latest technique used for primary data collection. This has been possible due to the internet technology development. As mentioned, Credit Derivatives is yet to be popularized in India. It therefore implies that the researcher will have to study the developed markets where Credit Derivatives are popular and traded. Practically it is very difficult to visit these places personally and conduct interviews. E - Questionnaires prove very handy in these circumstances.

The data is to be collected through primary source of data with the use of questionnaire. The survey will be conducted over the sample size of 500 respondents.

Secondary data: Data which exists and is used earlier for some other purpose is known as secondary data in the hands of the marketing researcher.

Secondary Data constitutes use of documentary sources such as magazines, books, Internet sources, Technical papers, Company websites, journals, manuals, newspapers etc.

Sampling Frame

Respondents working with Banks and Financial Institutions: 210

Debt Fund managers from Abroad - Mutual Fund Managers, Hedge Fund Managers, Income Fund Managers working with Insurance Companies: 42

Academicians in India and Abroad: 204

Method of Data Collection:

As mentioned above, the sample frame comprises of respondents from different categories. One segment of respondents is based abroad. Also, the Credit Derivatives market in particular and Debt Market in general is not highly developed in India. Therefore to get a high number of respondents who have a fair idea of credit derivatives is a very remote possibility. Thus the sampling technique would essentially be convenient sampling.

The data will be collected from E-Surveys which will also be used for designing the researcher's individual questionnaire.

QUESTIONNAIRE DESIGN:

The sampling frame was basically divided into two sets and then subsequently into three sub-sets. The two broad sets were Academicians and Industry Practitioners. Academicians in India and Abroad were clubbed together to form a sub-set. The Industry Practitioners in India and Abroad comprised two different sub-sets.

A pilot study was conducted for testing the interpretation and required up-gradations if any. At the end of the pilot study the questionnaire was suitably upgraded as per the suggestions of the industry practitioners and academicians.

The final questionnaire was then converted into an e-questionnaire and was then circulated through the internet.

The questionnaire was then standardized using Cronbach's alpha. Cronbach's alpha is a useful statistic for investigating the internal consistency of a questionnaire. The results of which are mentioned a little later in this chapter.

Method of Data Analysis

SPSS was used along with statistical tools such as Correlation, Mean and Standard Deviation

for the analysis of tabulated data. A 5% level of significance was considered as acceptable for establishing the strength of the hypothesis – whether it holds or not.

Data Analysis and Interpretation

After the collection of data, the data was coded and tabulated. Subsequently the data was verified and validated before representation. Then descriptive statistical inferences were drawn based on which observations and findings were recorded and conclusions formed.

DATA FROM RESPONDENTS

Chart 1.1 Respondents' Statistics

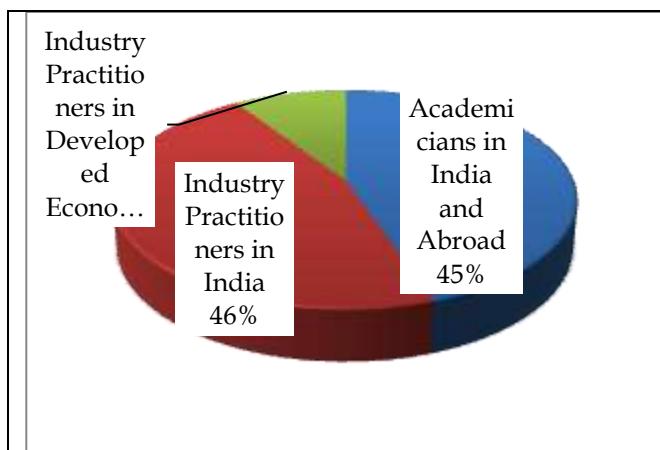


Table 1.1 Respondents' Statistics

Respondent Category	Sample Size
Academicians in India and Abroad	204
Industry Practitioners in India	210
Industry Practitioners in Developed Economies	42

In all 456 respondents' feedback was taken for analysis. The break-up is as shown above.

RELIABILITY TESTING

Table 1.2 Reliability Testing for All Respondents

Case Processing Summary		
	N	%
Cases	Valid	456
	Excluded ^a	0
	Total	456

a. List-wise deletion based on all variables in the procedure.

Reliability Statistics		
Cronbach's Alpha	N of Items	
.748	17	

It is slightly on the lower side. But the same can be taken as a result of high level of ignorance and familiarity among the respondents. A careful investigation will suggest that the reliability coefficient for practitioners is satisfactory but the overall reliability coefficient is lower because of lower degree of agreement among the academicians from India and abroad.

Table 1.3 Reliability Testing for Respondents (ex academicians)

Case Processing Summary		
	N	%
Cases	Valid	252
	Excluded ^a	0
	Total	252

a. List-wise deletion based on all variables in the procedure.

Reliability Statistics		
Cronbach's Alpha	N of Items	
.748	17	

DATA ANALYSIS

Question Statement: There is no significant difference between the risk managed by credit derivatives and risk managed by other instruments. (Like Credit Guarantee)

Table 1.4

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
2	2	3

Comment: Industry practitioners in developed nations are divided about their views on risk managed by credit derivatives and other products like credit guarantee. But the academicians and the industry practitioners are in agreement and they feel that there is significant difference between the risk managed by credit derivatives and credit guarantees. In a nut-shell, these are two different products with different efficacies.

Question Statement: A vibrant Debt Market is a necessary pre-requisite for a thriving Credit Derivative Market.

Table 1.5

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
4	5	5

Comment: The statement can be related to the chicken or egg analogy. In India, the market for corporate bonds is trifling. The RBI has been taking several steps to develop the same. It can be said that the way stock markets have grown after the introduction of stock and index derivatives; the story can be repeated with the corporate bond markets. But the same is also true for the credit derivatives market. It can survive only if there is a vibrant debt market. All respondents agree.

Question Statement: Credit Default Swaps in Corporate Bonds is a good start for the development of Credit Derivatives Market in India.

Table 1.6

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
3	5	4

Comment: The industry practitioners in India and abroad are quite certain that the introduction of the credit derivative market is a good start for the development of the credit derivative market. But the academia is not in a position to comment on the same, they are divided.

Question Statement: A lot needs to be done in terms of regulation and infrastructure for the growth of Credit Derivative market.

Table 1.7

Academicians	Industry	Industry
--------------	----------	----------

in India and Abroad	Practitioners in India	Practitioners Abroad
4	5	5

Comment: All the respondents have a high degree of agreement about the level of infrastructure required for the growth of credit derivatives market in India. They say that a lot needs to be done to develop it.

Question Statement: The existing framework within which Credit Derivatives operate in India is appropriate.

Table 1.8

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
2	3	2

Comment: The respondents in totality disagree to the statement. The industry practitioners in India are divided in their responses. The industry practitioners in developed nations and the academia have clear disagreement and feel that the existing framework within which credit derivatives operate in India is not appropriate.

Question Statement: Allowing "Users" to buy protection only if they hold the underlying corporate bond is a very limiting regulation on the part of RBI for the growth of CDS.

Table 1.9

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
5	3	3

Comment: The academicians are in agreement but the industry practitioners in India and abroad are divided in their opinion. An obvious conclusion is that the RBI does not want speculative activity to take place in this market and it has allowed Credit Default Swaps in corporate bonds simply to help the corporate bond market to grow. In the absence of

speculative activity on the buying side, it is difficult to say whether the credit derivative market will grow or face limitations.

Question Statement: It is O.K. to allow "Market Makers" to buy and sell cover through Credit Default Swaps without having exposure to the underlying security.

Table 1.10

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
5	4	3

Comment: The sell-side of the market has been kept open for all participants. The industry practitioners in India and the academicians agree that it is O.K. to allow "Market Makers" to buy and sell cover through Credit Default Swaps without having exposure to the underlying security. The industry practitioners abroad are however divided in their opinions. Probably because keeping the sell side open but limiting the buy side can still be a restriction for the growth of credit derivatives market.

Question Statement: Credit Derivatives are useful only for transactions involving large sums of money.

Table 1.11

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
2	3	4

Comment: There has been a single trade in the credit derivatives market till date (31st March 2013) ever since the RBI allowed Credit Default Swaps to be traded in corporate bonds. It might thus be that there isn't much awareness about the utility of credit derivatives for transactions of varying amounts. The academicians in India and abroad disagree whereas the industry practitioners in India are divided in their

responses to the statement – "*Credit Derivatives are useful only for transactions involving large sums of money*". The industry practitioners in developed nations agree to the statement.

Question Statement: With the considerable number of Commercial Banks, NBFCs, and PDs, allowed to buy and sell protection without having the underlying; the markets for CDS in Corporate Bonds are poised to flourish on its own as a speculative market.

Table 1.12

Academicians in India and Abroad	Industry Practitioners in India	Industry Practitioners Abroad
3	4	4

Comment: The industry practitioners in India and abroad agree that the permission (*to buy and sell protection without having the underlying*) given to Commercial Banks, NBFCs and PDs is good enough for the credit derivative market to grow as a speculative market. This response could be an outcome of the fact that the bond markets otherwise also have these participants as the major players. However the academicians are divided.

HYPOTHESIS TESTING USING T-TEST

H_{01} : *There is no significant difference between the risk managed by credit derivatives and risk managed by other instruments.*

Question Statements:

There is no significant difference between the risk managed by credit derivatives and risk managed by other instruments.

Table 1.13 T-Test results for H_{01}

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
H_{01}	456	2.0614	1.33448	.06249
One-Sample Test				

	Test Value = 3					
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
H ₀₁	32.986	455	.000	2.06140	1.9386	2.1842

Comment: The hypothesis here is $\mu = 3$ with a 95% level of confidence. The sig value is .000, which is below .05. Thus, the null hypothesis has to be rejected. The mean value is 2.0614, which suggests that the respondents disagree that there is no significant difference between risk managed by other instruments and risk managed by credit derivatives. In other words the respondents have said that there is substantial difference between the risk managed by other instruments and risk managed by credit derivatives.

H₀₂: *A significant number of respondents perceive that the existing framework within which Credit Derivatives operate in India is appropriate.*

Question Statements:

- # A vibrant Debt Market is a necessary prerequisite for a thriving Credit Derivative Market.
- # Credit Default Swaps in Corporate Bonds is a good start for the development of Credit Derivatives Market in India.
- # A lot needs to be done in terms of regulation and infrastructure for the growth of Credit Derivative market.
- # The existing framework within which Credit Derivatives operate in India is appropriate.
- # Allowing "Users" to buy protection only if they hold the underlying corporate bond is a very limiting regulation on the part of RBI for the growth of CDS.
- # It is O.K. to allow "Market Makers" to buy and sell cover through Credit Default Swaps without having exposure to the underlying security.

Table 1.14 T-Test results for H₀₂

One-Sample Statistics					
	N	Mean	Std. Deviation	Std. Error Mean	
H ₀₂	456	3.8801	.28345	.01327	
One-Sample Test					
	Test Value = 3				
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference
H ₀₂	66.304	455	.000	.88012	.8540 .9062

Comment: The hypothesis here is $\mu = 3$ with a 95% level of confidence. The sig value is .000, which is below .05. Thus, the null hypothesis has to be rejected. The mean value is 3.8801, which suggests that the respondents agree that the existing framework within which credit derivatives operate in India is appropriate.

H₀₃: *Credit Derivatives are useful for transactions involving large sums of money.*

Question Statements:

- # Credit Derivatives are useful only for transactions involving large sums of money.

Table 1.15 T-Test results for H₀₃

One-Sample Statistics					
	N	Mean	Std. Deviation	Std. Error Mean	
H ₀₃	456	2.7193	1.05671	.04949	
One-Sample Test					
	Test Value = 3				
	t	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference

				Lower	Upper
Hos	-5.672	455	.000	-.28070	-.3779 -.1835

Comment: The hypothesis here is $\mu = 3$ with a 95% level of confidence. The sig value is .000, which is below .05. Thus, the null hypothesis has to be rejected. The mean value is 2.7193, which suggests that the group of respondents disagree to the statement that credit derivatives are useful for transactions involving large sums of money.

H₀₄: *A significant number of respondents perceive that the considerable number of Commercial Banks, NBFCs and PDs allowed to buy and sell protection without having the underlying will cause the CDS market for corporate bonds to grow as a speculative market.*

Question Statement:

With the considerable number of Commercial Banks, NBFCs, and PDs, allowed to buy and sell protection without having the underlying; the markets for CDS in Corporate Bonds are poised to flourish on its own as a speculative market.

Table 1.16 T-Test results for H₀₄

One-Sample Statistics							
	N	Mean	Std. Deviation	Std. Error Mean			
H ₀₄	456	3.1754	1.24209	.05817			
One-Sample Test							
	Test Value = 3						
t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference			
				Lower	Upper		
H ₀₄	3.016	455	.003	.17544	.0611 .2897		

Comment: The hypothesis here is $\mu = 3$ with a 95% level of confidence. The sig value is .003, which is below .05. Thus, the null hypothesis has to be rejected. The mean value is 3.1754, which suggests that the respondents are divided in their responses. They are not too sure whether the markets would grow as a speculative market or not.

FINDINGS

Framework for Credit Derivatives in India:

A framework for credit derivatives market implies - a vibrant bond market, a facilitating set of regulations and a conducive infrastructure. Statistically, it is found that the existing framework is not appropriate. The corporate bond markets are cold and there is hardly any activity. As sighted by Mangal Goswami and Sunil Sharma in their working paper for IMF - "The Development of Local Debt Markets in Asia" in June 2011.

In terms of regulations and infrastructure, it is found that they are appropriate. As with any new thing, it is important to tread cautiously and the RBI is rightly doing so. But a lot needs to be done. Regarding the infrastructure, it is important for the bond markets to become active. Hence the CDS is presently allowed on corporate bonds only, the markets for the same is however not vibrant enough.

Identifying Bottlenecks in the existing framework:

"Historically, derivatives markets have been introduced well after the development of the market for the underlying securities. Once derivatives become available, dealers and bond holders can hedge their exposures much more easily and efficiently." wrote Ilhyock Shim and Haibin Zhu in their paper titled "The impact of CDS trading on the Bond Market: Evidence from Asia". The case with Indian bond markets is that the market itself is not ready. There is hardly any trading in the corporate bond market. Rather there are hardly any corporate bond issues.

The other issue based on observation is the availability of human intelligence. To identify respondents who knew about credit derivatives was very difficult. While some of the respondents clearly admitted to having limited or no knowledge; most declined to respond to the questionnaire saying there is hardly any activity in the credit derivative market.

As far as Indian markets are concerned, it is perceived that the banks shall be active players in the CDS market as buyers and sellers of protection. However, the largest bank – SBI, is not an active player in the CDS market. It can be expected that once SBI becomes active the other PSUs can follow suit.

CONCLUSION

The RBI had first come up with the draft guidelines on credit default swaps (CDS) in May 2007. But it stopped further action and waited for the sub-prime crisis to unfold. It was only in November 2011 that it came up with the final guidelines. A look at the guidelines assures that RBI has done the homework and credit derivatives shall not be misused. It has come up with CDS to help the corporate bond markets to pick up.

Corporates in India have been historically dependent on bank finance. This is so because the high cost of bond issuance and lack of familiarity with the processes and risks involved makes them stay away from the bond markets. A correction in this trend is highly anticipated. The budget announcements of 2018 have lowered the rating requirement for corporate papers to be able to raise funds in the corporate bond market.

SUGGESTIONS:

1. There is a need for training. FIMMDA has already taken the initiative and has conducted a workshop on valuation of CDS. But there is a long way to go. Additionally, there could be an exam which makes market participants eligible to trade in credit derivatives. At present, the tool is made available but its know-how is missing.

2. The Debt Market is dominated by Government Bonds – either G. Sec. or PSU Bonds. PSUs when disinvested will be at par with other corporates. And then their bonds will be equal to those of other corporates'.

LIMITATIONS

- # The research was conducted with the corporate bond market as the backdrop. This was so because CDS in India are allowed on corporate bonds only and credit risk is prominent in the corporate bond markets. Sovereign bonds do not have credit risk and credit derivatives. Thus, they have been kept beyond the purview of this research.

- # The tool for data collection was e-questionnaire. It was thus not possible for the researcher to evaluate/observe the respondents. This factor might pose its own limitations. But a test of reliability – Cronbach's Alpha was deployed. The findings and conclusions were accordingly attuned.

- # This study deals with Credit Derivatives in India. But there has not been much activity in this market. It is thus that most conclusions are drawn based on the given state of the Indian CDS market. Here it is worth noting that the underlying bond markets are characteristically different from that of developed economies.

- # Data depends on the degree of agreement of respondents, which may not yield concrete results as views of respondents may change over a period of time.

- # The testing of hypothesis is at 5% level of significance thus leaving only 95% confidence in findings and interpretations.

A LOOK FORWARD

A research like this leaves many unanswered questions for further research. The area for future research could be enlisted as below:

- # Credit Derivative is basically an over the counter (OTC) product. The United States have come up with the Dodd Frank Act in order to regulate this side of the financial markets a little better. For

- this they propose that all trades go through a Central Counterparty (CCP). Presently, RBI has given preventive guidelines to control the contagion effect. But in future as the market activity picks up, it might be interesting to study the possibility of a CCP in India as well.
- # As mentioned before, pricing of credit risk is critical for the credit derivative market. At present, RBI and FIMMDA have advised to use the pricing model given by ISDA. It should be important to test the suitability of the model in the Indian context.

REFERENCES

Conference Proceedings:

1. D'arcy, S. P. McNichols, J. and Zhao, X. (2009) 'A Primer on Credit Derivatives' Enterprise Risk Management Symposium Sheraton Chicago Hotel & Towers, Chicago, IL 29th April - 1st May
2. Mengle, D. (2007) 'Credit Derivatives - An Overview' 2007 Financial Markets Conference: Credit Derivatives: Where's the risk? Federal Reserve Bank of Atlanta, Atlanta 14-16 May
3. Gyntelberg, J. Ma, G. and Remolona, E. (2005) 'Developing Corporate Bond Markets in Asia' Developing Corporate Bond Markets in Asia Kunming, China, 17-18 November
4. Sundaresan, S. (2005) 'Developing Multiple Layers of Financial Intermediation: The Complementary Roles of Corporate Bond Markets and Banks' Developing Corporate Bond Markets in Asia Kunming, China, 17-18 November
5. Edwards, A. K. (2005) 'Corporate Bond Market Microstructure and Transparency - The US Experience' Developing Corporate Bond Markets in Asia Kunming, China, 17-18 November
6. Ichie, H. (2005) 'Development of Japan's Credit Markets' Developing Corporate Bond Markets in Asia Kunming, China, 17-18 November
7. Shim, I. (2011) 'Development of Asia - Pacific Corporate Bond and Securitization Markets' Weathering Financial Crises: Bond Markets in Asia and the Pacific Yokohama, Japan, 21-22 November

Journals:

8. Giesecke, K. (2011) 'An Overview of Credit Derivatives' Jahresbericht der Deutschen Mathematiker-Vereinigung Vol. 111, No. 2, pp. 57-93

9. Allen, F. And Carletti, E. (2006) 'Credit Risk Transfer and Contagion' Journal of Monetary Economics Vol. 53, No. 1, pp. 89-111

10. Ashcraft, A. B. and Santos, J. A. C. (2009) 'Has the CDS Market lowered the cost of Corporate Debt?' Journal of Monetary Economics Vol. 56, No. 4, pp. 514-523

E-Journals:

11. Remolona, E. M. and Shim, I. (2008) 'Credit Derivatives and Structured Credit: The Nascent Markets of Asia and The Pacific' BIS Quarterly Review

http://www.bis.org/repoofficepubl/arpresearch_dev_2008_06.01.pdf

12. Rajan, R. G. (2005) 'Has Financial Development Made the World Riskier?' National Bureau of Economic Research NBER Working Papers No. 11728

<http://www.nber.org/papers/w11728.pdf>

13. Goswami, M and Sharma, S. (2011) 'The Development of Local Debt Markets in Asia' International Monetary Fund IMF Working Paper No. 11/132

<http://www.imf.org/external/pubs/ft/wp/2011/wp11132.pdf>

14. Duffie, D. (2012) 'Market Making Under the Proposed Volcker Rule' Rock Centre for Corporate Governance Working Paper No. 106

http://www.gsb.stanford.edu/news/packages/PDF/Volcker_duffie_011712.pdf

Electronic Newspaper Articles:

15. Rajadhyaksha, N (2011) 'Credit derivatives make their debut in India' Live Mint 8th December 2011

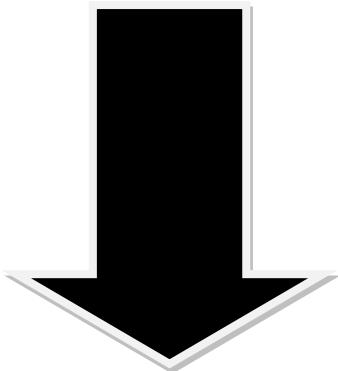
<http://www.livemint.com/Opinion/x9r4LO9A7NzcLLRcSqj66N/Views--Credit-derivatives-make-their-debut-in-India.html>

16. Dhillon, H. (2011) 'India credit derivatives market prepares for lift-off' Asia Risk 20th October 2011

<http://www.risk.net/asia-risk/feature/2118889/india-credit-derivatives-market-prepares-lift>

17. Sundharam, R. (2004) 'Credit derivatives rock to Indian beat offs' Economic Times 19th July 2004

http://articles.economictimes.indiatimes.com/2004-07-19/news/27409810_1_credit-derivatives-credit-risk-complex-financial-instruments



THIS PAGE IS INTENTIONALLY LEFT BLANK.