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(Bi-Annual)

# **RADHANVALLI**

Vol.: 04	Issue : 07	Month - May - 2020
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**Chief Editor  
Dr. C. M. Thakkar**

**Chief Executive Editor  
Dr. Chirag V. Raval**

**Shri Trikamjibhai Chatwani Arts & J.V. Gokal Trust Commerce College, Radhanpur**

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**Yours sincerely,**

**For Head  
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**EDITORS PROFILE****Chief Editor**

**Dr. C.M.Thakkar** was born on 01<sup>st</sup> June 1966. He graduated in Commerce (B.Com.) in the year 1988 from Gujarat University. Prin. Thakkar did his Post Graduation (M.Com.) from North Gujarat University in 1990 and Ph. D. North Gujarat University in 2004. He had also completed B.Ed. and LL.B. from Hemchandracharya North Gujarat University, Patan.



Prin. Thakkar started his academic career as an Lecturer in Accountancy. After joining the noble profession of teaching, he served this profession in different capacities like Lecturer, Assistant Professor, Professor and Principal at Shri Trikamjibhai Chatwani Arts & J.V. Gokal Trust Commerce College, Radhanpur for 25 years.

He has written two books to his credit. He participated in long term and short term training programs. He also participated and presented research papers in State, National and International level seminar Conferences etc. He has guided numerous candidates for their Master Thesis and has conducted many Seminars/workshops & Training Programs in the state. He has to his credit many publications in various National and International Journals. He also guided Ph.D students and M.Phil students in the Hemchandracharya North Gujarat University, Patan.

Prin. Thakkar was a Chairman of Board of Studies of Accountancy at Hemchandracharya North Gujarat University, Patan. He has been appointed as member of Academic Council Hemchandracharya North Gujarat University, Patan. Looking to his efficiency and capacity to work continuously, he was entrusted with overall responsibility of Principal of college. During this tenure, ACCR has received prestigious accreditation of NAAC with B+ Grade in the year 2013. He was also a member of BUTR, and is a member of Examination Reforms Committee at Hemchandracharya North Gujarat University.

He is a Co-ordinator of Dr. Babasaheb Ambedkar Open university of the Radhanpur Study Center. He was also a President of Vanijay Vartul of Hemchandracharya North Gujarat University (Commerce). He is a member of the Board of Commerce Sankalchand University, Visnagar. He is an invited member of Local Inquiry Committee. He is the role model for the Young Faculty to follow his footprints to contribute meaningfully in enhancing Commerce Education. In short, Prin. Thakkar is a dynamic personality with combination of Academic and Administrative excellence.

**EDITORS PROFILE****Chief Executive Editor**

**Dr. Chirag V. Raval** is M.Com., M.Phil., Ph.D. from Sardar Patel University, Vallabh Vidyanagar. He has 09 years of teaching, administration and research experience. He has been teaching Commerce and Management subjects. Besides above he has been associated as paper setter, moderator and examiner of Commerce and Management subjects.



He possesses many feathers in his crown – Appointed as a member of **College Development Council** from 01/04/2012 to 31/03/2015 in Sardar Patel University, Vallabh Vidyanagar. He has appointed as a member of Board of Studies of Business Studies (Commerce) and Management Faculty at Sardar Patel University, Vallabh Vidyanagar. He was recognized **Ph.D. Guide** in Commerce subject at Sardar Patel University, Vallabh Vidyanagar. He is Life Member of Indian Commerce Association. He has also published various research papers in the various referred journals. He has also participated and presented research papers in several State level, National level and International level seminars and conferences. He has delivered live lecture of Business Organization & Management subject initiated by Higher Education Commissioner, **BISAG** (Bhaskracharya Institute of Space Aeronautics and Geo-Informatics), SANDHAN, Govt. of Gujarat, Gandhinagar. He has delivered lectures at various institutes. He is member, Editorial Board in International Journal AVANSEAZA. He is recognized P.G. teacher in Commerce subject at Hemchandracharya North Gujarat University, Patan. Previously, He was working as Principal (I/c.) at AIMS College of Management & Technology, Bakrol, Anand from June 2009 to January 2016. Presently, He is working as Assistant Professor of Commerce at Shri Trikamjibhai Chatwani Arts & J.V.Gokal Trust Commerce College, Radhanpur from January 2016 onwards.

**EDITORIAL DESK**

I am enormously blissful to present our college Research Journal "RADHANVALLI" : An International Peer Reviewed Multidisciplinary Research Journal (Bi-Annual). The fifth issue is being presented to you with all fresh insightful reflections from learned academicians, researchers and scholars.

The journal aims at disseminating research output and provides crucial information about recent developments in the relevant fields, through high quality research papers on the topics related to multidisciplinary subjects

It is slowly but firmly gaining its momentum. I am very much pleased to present the "RADHANVALLI": An International Peer Reviewed Multidisciplinary Research Journal (Bi-Annual) before the readers, academicians and researchers.

The multidisciplinary journal contains the variety of discussions on topics from Commerce, Accountancy, Management, Gujarati, Sanskrit, English, Sociology, Hindi, Physical Education, Library Science, Education etc. We are trying our best to bring before you the latest and authoritative insights into the facilitating world of multidisciplinary education. I hope that all of you will share yours experience, skills, knowledge and education to move our college forward.

In this issue of the journal, we have put together the 08 research papers, regarding diverse interests in the field of multidisciplinary subjects covering the various topics of a prominent researcher has taken meticulous efforts in illumination useful points about multidisciplinary research. We are proud to have you as part of our team and look forward to your future contributions.

I will repay your kindness with a promise to make your time here enriching, and perhaps even transformative.

With sincere thanks,

**Dr. C.M. Thakkar**  
Chief Editor

**Dr. Chirag V. Raval**  
Chief Executive Editor

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**A Study On Quality Of Work Life in context to Job Satisfaction and Organizational Commitment Among Sales Professionals Employed In Pharmaceutical, Medical And Banking Companies In Anand District**

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**Abstract**

It has been noted a high labour turnover among the young sales personnel in the field of banking and medical / pharmaceutical industry in the town which has guided the researcher to develop a thought of assessing the satisfaction level of the sales personnel's in the town.

Anand is a small town situated between two big cities of Gujarat viz. Ahmedabad and Baroda. The study aimed to explore Sales Personals' views and experience regarding different components of their working lives in Anand.

**Key Words:** Quality of Work Life, Job Satisfaction, Organizational Commitment

**Introduction**

Job satisfaction is defined as all the feeling that individual has about his / her job. Researcher have attempted to identify the various components of job satisfaction, measure the relative importance of each components of job satisfaction and examine what effects these components have on workers' productivity.

Job satisfaction among sales personnel has been identified as a key factor in sales personals' turnover with the empirical literature suggesting that it is related to a number of organizational, professional and personal variables.

Organizational commitment refers to identification with and loyalty to the organization and its goals. Organizational commitment has been found to be positively related to job satisfaction of sales personals.

**Research Methodology**

**Research Question**

What is the relation between the organizational commitment, and the sales personnel's job satisfaction?

**Sample Design**

The study is descriptive in nature. Study was conducted at pharmaceutical and banks of Anand town. The sales personnel's population was diverse including a large representation of sales personnel's from other state of the country. A convenience sampling was used to select 34 participants in total from various medical and banking institutions.

**Sample Size**

A total of 125 systematically drafted questionnaires were presented to the sales personnel's for the response but researcher received only 94 questionnaire, remaining questionnaires contained errors which

were eliminated at the first screening.

### Study Period

This study was conducted during December-2019.

### Sample Collection Procedures

In addition to demographic information, the sales personnel's Job Satisfaction Questionnaire focused on respondents' level of organizational commitment and job satisfaction. All items of organizational commitment and job satisfaction were responded to on a 5-point likert scale.

### Data Analysis

			Frequency	Percentage	
Gender		Male	86	91.4893617	
		Female	8	8.510638298	
		Total	94	100	
Experience		<5 years	51	54.25531915	
		5-10 years	34	36.17021277	
		10-20 years	5	5.319148936	
		20< above	4	4.255319149	
		Total	94	100	
Income		<15000	21	22.34042553	
		15001-30000	62	65.95744681	
		30001-45000	3	3.191489362	
		45000>	8	8.510638298	
		Total	94	100	
Education		HSC	0	0	
		Diploma	12	12.76595745	
		Graduate	68	72.34042553	
		Post Graduate	14	14.89361702	
		Total	94	100	
		In Frequency		In Percentage	
	Pharma / Medical	Banking	Pharma / Medical	Banking	
D. Pharm	12		12.766	0	
B. Pharm	11		11.7021	0	
B. Com	27	30	28.7234	31.9149	
M. Com	2	6	2.12766	6.38298	
MBA & others	1	5	1.06383	5.31915	
Total	53	41	56.383	43.617	

<b>Marital Status</b>	Single	11	11.70212766
	Married	82	87.23404255
	Divorce	1	1.063829787
	Total	94	100
<b>Is Marketing your first choice of career</b>	YES	8	8.510638298
	NO	86	91.4893617
	Total	94	100

From the above given chart it has been found that 51% of the respondents had an experience of less than 5 years followed by experience with 5 to 10 year at 34% and least found at 20 and above years by 4% .

Gender distribution of the sample was 91 and 9 percent respectively for male and Female.

It was found from the study that the 22% of the respondents earned within 15000 income in this profession while 8% of the respondents said that they were paid above 45000.

27% of the respondents studied in the research were holding a degree in commerce and working in the field of Pharmaceutical representative compared to 26 % of the respondents studied science or pharmacology and are in the field of pharma representation.

87 % of respondents in the study were married and 11 % were unmarried and 1 case of divorce was found.

The response study found that only 8 % of the respondents' choose Marketing as their career option while for other 91% marketing was never a first career option.

**Finding****(A) JOB SATISFACTION SCALE**

	Job Satisfaction Scale	FREQUENCY						PERCENTAGE				
		Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied		Highly Dissatisfied	Dissatisfied	Neutral	Satisfied	Highly Satisfied
1	Your job security	12	4	10	42	26		13	4	11	45	28
2	Amount of variety in your job	30	10	8	31	15		32	11	9	33	16
3	Hours of work	25	20	8	26	15		27	21	9	28	16
4	Attention paid to your suggestions	5	10	13	60	6		5	11	14	64	6
5	Management of organization	8	12	30	34	10		9	13	32	36	11
6	Rate of pay	9	19	26	32	8		10	20	28	34	9
7	Amount of responsibility distributed equally	6	15	23	40	10		6	16	24	43	11
8	Your immediate supervisor	9	7	40	30	8		10	7	43	32	9
9	Your fellow worker	16	13	24	30	11		17	14	26	32	12
10	Physical working conditions of work	9	16	40	23	6		10	17	43	24	6

1. 73 % of the respondents were either satisfied or highly satisfied about their job security.
2. 49 % of the respondents felt that their job included a number of variety.
3. More than 44 % of the respondents felt that they were satisfied with the working hours, while 48 % were dissatisfied.
4. 70% of the respondents felt that their suggestion were properly attended by the management, on the contrary 16% disagreed to it.
5. 47% of the respondents agreed for the good management of the organisation.
6. 57 % of the respondents were not satisfied with pay given to them.
7. More than 40% of the respondents agreed that they were satisfied with the supervisor and the fellow worker.
8. Only 30% of the respondents felt satisfied with the physical working condition of work.

**(B) Organizational commitment scale**

Organizational commitment scale		FREQUENCY					PERCENTAGE				
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
11	I am willing to put in a great deal of effort beyond that normally expected in order to help this organization to be successful.	0	3	16	63	12	0	3	17	67	13
12	I talk about this organization to my friends as a great organization to work for	0	0	10	83	1	0	0	11	88	1
13	I feel very little loyalty to this organization.	1	73	8	9	3	1	78	9	10	3
14	I find that my values and this organization's values are very similar	0	0	14	69	11	0	0	15	73	12
15	I really care about the fate of this organization	2	4	37	51	0	2	4	39	54	0
16	To work in this organization is the biggest mistake on my part.	2	73	4	11	4	2	78	4	12	4
17	Too much workload	0	1	6	4	83	0	1	6	4	88
18	Need to meet the time pressures	0	1	1	4	88	0	1	1	4	94
19	I feel burnout many time	0	0	6	4	84	0	0	6	4	89
20	Lack of privacy	83	3	4	1	3	88	3	4	1	3
21	Lack of support of senior staff	0	62	4	21	7	0	66	4	22	7
22	Unnecessary rules and regulations	0	81	4	8	1	0	86	4	9	1
23	In humanely behavior of seniors	9	75	8	1	1	10	80	9	1	1

**Discussion**

Majority of respondents were Male (91%) while Female ratio was found only at 9% and were predominately between 25 and 30 years old, with more than half being married. The majority of respondents had a commerce degree while only 26% held a degree in science. In addition, 92% of respondents expressed that being a sales personnel was not their first choice of career.

Regarding overall job satisfaction, 70% of respondents were satisfied. On the other hand, 40% respondents were satisfied or are very satisfied with their immediate manager and their fellow workers and almost 57% of the sample felt dissatisfied or very dissatisfied with the rate of pay for Sales executives.

Almost 50% of the respondents were not satisfied with the total hours of work and said they had to give in more number of hours, on the contrary 60% of the respondents felt that the amount of responsibility given to them were distributed equally.

73% of the respondents were either satisfied or highly satisfied about their job security. Only 49% of the respondents felt that their job included a number of variety. More than 50% of the respondents felt that they were not satisfied with the working hours, while 48% were dissatisfied. 70% of the respondents felt that their suggestion were properly attended by the management, on the contrary 18% disagreed to it.

**CONCLUSION**

The findings in the study indicate that the sales personals in this study had a poor quality of work life and bitter feeling towards their working lives in Anand. Such bitter feeling regarding job dissatisfaction are the outcomes of the unmatched job with the education and a need to find a living by any source feasible. Such sales personals will definitely find appropriate work environment and won't hesitate to the change the field in the long run. Further research is needed to test the impact of educational level upon job satisfaction.

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## **A Study on Profitability and Liquidity Performance of Selected Automobile Companies of India**

**Dr Sanjay R Thakkar,**  
**Assistant Professor, Anand Institute of Business Studies (AIBS), Anand.**

### **Abstract**

The automobile industry is one of the most important drivers of economic growth of India and one with high participation in global value chains. India became the world's fourth largest automobile market, and the demand for Indian vehicles continues to grow in the domestic and international markets. The automobiles produced in the country uniquely cater to the demands of low- and middle-income groups of population which makes this sector stand out among the other automobile-producing countries.

The Objective of the study is to evaluate and compare the financial performance of selected top 10 automobile companies and to rate their financial performance. The Purpose of the study is to analyze by comparing the risk of different companies, on their SWOT analysis.

**Key Word:** Financial Performance, Automobile Companies, Liquidity, Solvency, Profitability, Turnover etc.

### **1. Introduction:**

ACG Research released the latest version of Indian Automobile Industry Outlook 2019. Now India became the 4th largest automotive market in the world. Indian Automotive Industry contributed 7% in Indian GDP, providing employment of 19mn people, 40% share in Global GDP, and contributed 4.3% share in export.

The Auto industry is expected to reach 125 billion by 2020 and 280 billion by 2025 at a CAGR of 18%. Indian Auto component Industry also plays an important role by contributing 2.3% in Indian GDP, expected to reach its turn over USD 200bn by 2025. The Auto component Industry growth rate is almost 20%.

In the Commercial Vehicle market, India is the second largest bus manufacturer, third largest Truck manufacturer, and largest Tractor manufacturer. The country is producing around 25 million vehicle with 3.5mn exported. Key export markets are Africa, the Middle East, and South East Asia. Electric and Hybrid Vehicle volume is now more than 1mn volume.

### **1. Review of Literature**

**Asma Khan and Jyoti Singhal (2015)** conducted Growth and Profitability Analysis of Selected IT Companies in terms of ratios over a period of five years. The paper inferred that performance of HCL Technologies was satisfactory except in Return on Net Worth and Return on Long Term Funds whereas in case of Tech Mahindra Return on Net Worth and Return on Long Term Funds was satisfactory and Wipro showed an average performance during the study period. Also, there was significant difference between the companies in Operating Profit Ratio and Return on Capital Employed Ratio and there was no significant difference between the companies in Net Profit Ratio, Gross Profit Ratio, and Return on Net worth Ratio.

**A.Meharaj Banu and R. Malini (2014)** conducted a study on overall financial performance of Ashok Leyland Limited at Chennai. The paper involved calculation of various ratios namely, Liquidity ratios, Leverage ratios, Activity ratios and Profitability ratios. It was hence inferred that despite the price drops in various products, the company was able to maintain and grow its market share to make strong margins in market, contributing to the strong financial position of the company. The company was able to balance its higher capital expenditures and working capital requirements with high volume of operations and operating cash flows.

## **2. Statement of Problem**

Performance evaluation is necessary to understand its strength and weakness to know the risk and return and to find out the changes to make for the achieving higher rerun if possible with lower risk. The Aim for the performance evaluation is not to understand how the companies are performing but to enable it to perform in better way.

The objective of Performance Evaluation is to study the historical and present financial data so that company's performance and financial position can be measured and evaluated. Also consider the future risk and potential risk elimination.

## **3. Scope of the Study**

The Present study is concerned with the financial performance of selected top 10 automobile companies of India. Financial performance measures whether the company's strategy and its implementation are effectively contributes to the Profitability, Liquidity, efficiency and Solvency so that the firms can be carried out smoothly ensuring the success, growth and bottom line improvement possible.

## **4. Objectives of the Present Study**

- ❖ To Study the Profile and Growth of Selected Automobile Companies of India.
- ❖ To Analyze the Profitability and Liquidity Performance of Selected automobile companies of India.

## **5. Hypothesis of the Present Study**

- ❖ **Ho#1:** There is no significant difference between Profitability Ratios among the selected automobile companies of India.
- ❖ **Ho#2:** There is no significant difference between Liquidity Ratios among the selected automobile companies of India.

## **6. Data Source of Present Study**

The Present Study entirely based on Secondary data. The data has been compiled from the Annual report of the respective company, journals and articles. The Financial data has been collected from the business standard, moneycontrol.com. & Society of Indian Automobile Manufactures (SIAM).

## **7. Sample Design of Present Study**

As the study is to be carried out by the individual researcher it is not easy to select all the company as a sample for the study. So, the convenient random sampling has been applied. As such the universe of the study is Indian corporate sector. The researcher has selected top 10 automobile manufacturing companies during 2015 to 2019 as mentioned below:

**Top 10 Automobile Manufacturing companies of India**

No.	Name of Company	Turnover (Amount in Crore)
1	Tata Motors Ltd.	123222.91
2	Mahindra & Mahindra Ltd.	37026.37
3	Maruti Suzuki India Ltd.	38140.69
4	Hero MotoCorp Ltd.	19669.29
5	Bajaj Auto Ltd.	17008.05
6	Ashok Leyland Ltd.	11133.04
7	Sundaram Clayton Ltd.	7419.41
8	TVS Motor Company Ltd.	6569.99
9	Eicher Motors Ltd.	5138.64
10	Force Motors Ltd.	1574.05

[Source: <https://business.mapsofindia.com/automobile/top-automobile-companies.html>]

**8. Period of the Study**

The present study is mainly intended to examine the financial performance of selected top 10 automobile manufacturing companies from 2015 to 2019.

**9. Research Methods for Analysis**

The study used “mean, standard Deviation and co-efficient of co-variance. Standard Deviation is used to analyze one-to-one relationship between the selected variables. Co-variance analysis has been used for the purpose of estimating as to which part of the increase the performance had impact, by use of various ratios for studying the corporate financial performance, Operating Performance and Shareholder’s Wealth of the acquiring selected firms in India.

**10. Profitability and Liquidity Variables for the study of Performance of Selected Companies**

Sr No.	Classification of Ratio	Variables	Formula
		1. Gross Profit Ratio	$\frac{\text{Gross Profit}}{\text{Net Sales}}$
		2. Net Profit Ratio	$\frac{\text{Net Profit}}{\text{Net Sales}}$
1.	Profitability Ratios	3. Operating Profit Ratio	$\frac{\text{Operating Profit}}{\text{Net Sales}}$

2. Liquidity Ratio
4. Return on Capital Employed  $\frac{\text{Operating Profit}}{\text{Capital Employed}}$
5. Current Ratio  $\frac{\text{Current Assets}}{\text{Current Liability}}$
6. Quick Ratio  $\frac{\text{Quick Assets}}{\text{Current Liability}}$

**11. Profitability Performance of Selected Automobile Companies of India**

<b>Gross Profit Ratio</b>							
<b>No.</b>	<b>Name of Company</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>Mean</b>
1	Tata Motors Ltd.	2.66	0.35	-3.21	1.44	-10.58	-1.87
2	Mahindra & Mahindra Ltd.	8.91	9.74	6.78	8.68	8.21	8.46
3	Maruti Suzuki India Ltd.	9.27	11.66	11.39	10.53	8.49	10.27
4	Hero MotoCorp Ltd.	12.68	14.65	14.53	14	10.88	13.35
5	Bajaj Auto Ltd.	15.59	17.75	18.9	19.81	17.81	17.97
6	Ashok Leyland Ltd.	8.65	8.97	8.39	9.32	4.49	7.96
7	Sundaram Clayton Ltd.	4.67	-3.64	5.13	5.9	4.69	3.35
8	TVS Motor Company Ltd.	8.52	6.89	4.42	12.88	4.11	7.36
9	Eicher Motors Ltd.	26.56	28.82	28.72	33.72	10.24	25.61
10	Force Motors Ltd.	3.49	4.03	4.9	5.81	2.7	4.19
	<b>Mean</b>	10.10	9.92	10.00	12.21	6.10	9.67
	<b>SD</b>	7.02	9.21	8.95	9.10	7.35	7.82
	<b>CV</b>	69.46	92.87	89.51	74.50	120.34	80.86

(Source: Computed by Researcher from Annual Reports of Selected Companies)

**Analysis:**

Gross profit ratio as a percentage of revenue from operations is computed to have an idea about gross margin. It indicates gross margin on products sold. It also indicates the margin available to cover operating expenses, non-operating expenses, etc.

In the above table Gross Profit Ratio of Tata Motors was -10.58 in the year 2015 which was increase to 2.66 in the year 2019. In Mahindra & Mahindra it was 8.21 in 2015 which was increase to 8.91. In Maruti Suzuki Ltd it was 8.49 in 2015 which was increase to 9.27. In Hero Motocorp Ltd it was 10.88 in the year 2015 which was increase to 12.68 in the year 2019. In the Bajaj Ltd it was 17.81 which was decrease to 15.89. In Ashok Leyland Ltd were 4.49 which was increase to 4.67. In Sundaram Clayton Ltd have 4.69 which was decrease to 4.67. In the case of TVS it was 4.11 in the year 2015 which was increase to 8.52 in the year of 2019. In the Eicher Motors Ltd. It was 10.24 in the year 2015 which was increase to 26.56. In the Force motors the Gross Profit Ratio

was 2.7 which was increase to 3.49 in the year 2019.

Above table Shows that Gross Profit Performance of Tata Motors, Mahindra Ltd., Maruti Suzuki Ltd., Ashok Leyland, TVS, Eicher and Force Motor Ltd. Have increase trend while in case of Baja Auto and Sundarm Clayton have excremental trends.

<b>Net Profit Ratio</b>							
<b>No.</b>	<b>Name of Company</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>Mean</b>
1	Tata Motors Ltd.	2.91	-1.75	-5.48	-0.14	-13.05	-3.50
2	Mahindra & Mahindra Ltd.	8.94	8.94	8.27	7.83	8.52	8.50
3	Maruti Suzuki India Ltd.	8.71	6.68	10.8	9.32	7.42	8.59
4	Hero MotoCorp Ltd.	10.05	11.47	11.84	10.95	8.64	10.59
5	Bajaj Auto Ltd.	15.45	16.16	17.58	17.39	13.01	15.92
6	Ashok Leyland Ltd.	6.82	6.51	6.07	2.05	2.46	4.78
7	Sundaram Clayton Ltd.	6.52	3.34	7.57	1018	5.28	208.14
8	TVS Motor Company Ltd.	3.49	4	4.1	3.45	3.18	3.64
9	Eicher Motors Ltd.	22.48	21.85	23.1	29.71	10.41	21.51
10	Force Motors Ltd.	4.03	4.29	5.86	5.86	4.28	4.86
	<b>Mean</b>	8.94	8.15	8.97	110.44	5.02	28.30
	<b>SD</b>	6.03	6.84	7.73	319.00	7.16	63.56
	<b>CV</b>	67.48	83.99	86.22	288.84	142.72	224.57

(Source: Computed by Researcher from Annual Reports of Selected Companies)

### Analysis:

Generally, net profit refers to profit after tax (PAT). It is a measure of net profit margin in relation to revenue from operations.

In the above table Net Profit Ratio of Tata Motors was -13.05 in the year 2015 which was increase to 2.91 in the year 2019. In Mahindra & Mahindra it was 8.52 in 2015 which was increase to 8.94. In Maruti Suzuki Ltd it was 7.42 in 2015 which was increase to 8.71. In Hero Motocorp Ltd it was 8.64 in the year 2015 which was increase to 12.68 in the year 2019. In the Bajaj Ltd it was 13.01 which was increase to 15.45. In Ashok Leyland Ltd were 2.46 which was increase to 6.52. In Sundaram Clayton Ltd have 5.28 which was increase to 6.52. In the case of TVS it was 3.18 in the year 2015 which was increase to 3.49 in the year of 2019. In the Eicher Motors Ltd. It was 10.41 in the year 2015 which was increase to 22.48. In the Force motors the Net Profir Ratio was 4.28 which was decrease to 4.03 in the year 2019.

Above table indicates that Net Profit Performance of all the companies were increase during the year 2015 to 2019 except Force Motor Ltd.

<b>Operating Profit Ratio</b>							
<b>No.</b>	<b>Name of Company</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>Mean</b>
1	Tata Motors Ltd.	7.13	5.62	3.63	6.87	-3.4	3.97
2	Mahindra & Mahindra Ltd.	12.38	12.78	10.24	11.3	10.71	11.48

3	Maruti Suzuki India Ltd.	12.78	15.12	15.21	15.44	13.43	14.40
4	Hero MotoCorp Ltd.	14.65	16.38	16.26	15.54	12.84	15.13
5	Bajaj Auto Ltd.	16.49	19	20.31	21.17	19.04	19.20
6	Ashok Leyland Ltd.	10.79	11.24	10.93	11.9	7.56	10.48
7	Sundaram Clayton Ltd.	9.7	0.8	9.48	9.77	9.14	7.78
8	TVS Motor Company Ltd.	10.71	9.18	6.97	14.99	5.84	9.54
9	Eicher Motors Ltd.	29.63	31.31	30.9	35.67	12.57	28.02
10	Force Motors Ltd.	7.62	7.81	8.72	8.95	6.21	7.86
	<b>Mean</b>	13.19	12.92	13.27	15.16	9.39	12.79
	<b>SD</b>	6.46	8.40	7.86	8.29	5.99	6.88
	<b>CV</b>	49.01	65.00	59.22	54.70	63.76	53.80

(Source: Computed by Researcher from Annual Reports of Selected Companies)

### Analysis:

Operating ratio is computed to express cost of operations excluding financial charges in relation to revenue from operations. It helps to analyze the performance of business and throws light on the operational efficiency of the business.

In the above table Operating Profit Ratio of Tata Motors was -3.40 in the year 2015 which was increase to 7.13 in the year 2019. In Mahindra & Mahindra it was 10.71 in 2015 which was increase to 12.38. In Maruti Suzuki Ltd it was 13.43 in 2015 which was decrease to 12.78. In Hero Motocorp Ltd it was 12.84 in the year 2015 which was increase to 14.65 in the year 2019. In the Bajaj Ltd it was 19.04 which was decrease to 16.49. In Ashok Leyland Ltd were 7.56 which was increase to 10.79. In Sundaram Clayton Ltd have 9.14 which was increase to 9.70. In the case of TVS it was 5.84 in the year 2015 which was increase to 10.71 in the year of 2019. In the Eicher Motors Ltd. It was 12.57 in the year 2015 which was increase to 7.62. In the Force motors the operating Profit Ratio was 9.39 which was decrease to 7.62 in the year 2019.

Above table indicates that operating Profit Performance of all the companies were increase during the year 2015 to 2019 except Bajaj Auto Ltd. & Force Motor Ltd.

Return on Capital Employed							
No.	Name of Company	2019	2018	2017	2016	2015	Mean
1	Tata Motors Ltd.	11.07	4.84	-1.11	5.38	-5.61	2.91
2	Mahindra & Mahindra Ltd.	17.62	17.43	14.66	18.13	18.51	17.27
3	Maruti Suzuki India Ltd.	22.77	27.1	27.22	25.11	21.24	24.69
4	Hero MotoCorp Ltd.	39.03	44.61	46.13	55.34	53.42	47.71
5	Bajaj Auto Ltd.	29.22	30.25	31.11	41.82	41.01	34.68
6	Ashok Leyland Ltd.	30.06	32.59	24.37	25.97	5.7	23.74
7	Sundaram Clayton Ltd.	13.57	2.75	16.51	24.11	16.85	14.76
8	TVS Motor Company Ltd.	15.39	15.41	20.74	62.26	19.85	26.73
9	Eicher Motors Ltd.	33.45	39.88	41.18	68.79	38.93	44.45
10	Force Motors Ltd.	9.54	11.5	12.85	17.09	9.9	12.18

	<b>Mean</b>	22.17	22.64	23.37	34.40	21.98	24.91
	<b>SD</b>	10.26	14.42	13.95	21.40	17.81	14.18
	<b>CV</b>	46.27	63.73	59.69	62.21	81.01	56.91

(Source: Computed by Researcher from Annual Reports of Selected Companies)

#### Analysis:

Return on Capital Employed ratio is performance measure used to evaluate the efficiency of investment. It is one of most commonly used approaches for evaluating the financial consequences of business investments, decisions, or actions.

In the above table ROCE of Tata Motors was -5.61 in the year 2015 which was increase to 11.07 in the year 2019. In Mahindra & Mahindra it was 18.51 in 2015 which was decrease to 17.62. In Maruti Suzuki Ltd it was 21.24 in 2015 which was increase to 22.77. In Hero Motocorp Ltd it was 53.42 in the year 2015 which was decrease to 39.03 in the year 2019. In the Bajaj Ltd it was 41.01 which was decrease to 29.22. In Ashok Leyland Ltd were 5.70 which was increase to 30.06. In Sundaram Clayton Ltd have 16.85 which was decrease to 13.57. In the case of TVS it was 19.85 in the year 2015 which was decrease to 15.39 in the year of 2019. In the Eicher Motors Ltd. It was 38.93 in the year 2015 which was decrease to 33.45. In the Force motors the ROCE Ratio was 9.9 which was decrease to 9.54 in the year 2019.

Above table indicates that operating Profit Performance of all the companies was increase during the year 2015 to 2019 except Bajaj Auto Ltd. & Force Motor Ltd.

#### 12. Liquidity Performance of Selected Automobile Companies of India

<b>Current Ratio (Liquidity Ratio)</b>							
<b>No.</b>	<b>Name of Company</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>Mean</b>
1	Tata Motors Ltd.	0.54	0.57	0.53	0.51	0.42	0.51
2	Mahindra & Mahindra Ltd.	1.08	1.06	1.12	1.1	1.05	1.08
3	Maruti Suzuki India Ltd.	0.56	0.49	0.55	0.7	0.68	0.60
4	Hero MotoCorp Ltd.	1.36	0.85	0.86	0.83	0.94	0.97
5	Bajaj Auto Ltd.	1.14	0.94	1.1	1.27	0.89	1.07
6	Ashok Leyland Ltd.	0.96	0.6	0.86	1.06	0.94	0.88
7	Sundaram Clayton Ltd.	0.71	0.7	0.77	0.9	0.78	0.77
8	TVS Motor Company Ltd.	1.04	0.93	0.69	0.69	0.82	0.83
9	Eicher Motors Ltd.	1.61	0.85	0.47	0.52	0.91	0.87
10	Force Motors Ltd.	1.63	1.65	1.56	1.6	1.7	1.63
	<b>Mean</b>	1.06	0.86	0.85	0.92	0.91	0.92
	<b>SD</b>	0.39	0.33	0.33	0.35	0.33	0.31
	<b>CV</b>	36.8025	38.3799	39.3355	37.6437	35.8429	33.425

(Source: Computed by Researcher from Annual Reports of Selected Companies)

#### Analysis:

The Current Ratio expresses the relationship between Current Assets and Current Liabilities. The current ratio is a favoured financial ratio used to test a company's liquidity (also cite to as its current or working capital situation) by deriving the proportion of current assets available to cover the current liabilities.

In the above table CR of Tata Motors was 0.42 in the year 2015 which was increase to 0.54 in the year 2019. In Mahindra & Mahindra it was 1.05 in 2015 which was increase to 1.08. In Maruti Suzuki Ltd it was 0.68 in 2015 which was decrease to 0.56. In Hero Motocorp Ltd it was 0.94 in the year 2015 which was increase to 1.36 in the year 2019. In the Bajaj Ltd it was 0.89 which was decrease to 1.14. In Ashok Leyland Ltd were 0.94 which was increase to 0.96. In Sundaram Clayton Ltd have 0.78 which was decrease to 0.71. In the case of TVS it was 0.82 in the year 2015 which was increase to 1.04 in the year of 2019. In the Eicher Motors Ltd. It was 0.91 in the year 2015 which was increase to 1.61. In the Force motors the CA Ratio was 1.70 which was decrease to 1.63 in the year 2019.

<b>Quick Ratio</b>							
<b>No.</b>	<b>Name of Company</b>	<b>2019</b>	<b>2018</b>	<b>2017</b>	<b>2016</b>	<b>2015</b>	<b>Mean</b>
1	Tata Motors Ltd.	0.51	0.44	0.42	0.41	0.42	0.44
2	Mahindra & Mahindra Ltd.	0.9	0.92	0.89	0.9	0.84	0.89
3	Maruti Suzuki India Ltd.	0.37	0.31	0.35	0.45	0.41	0.38
4	Hero MotoCorp Ltd.	1.14	0.69	0.72	0.67	0.72	0.79
5	Bajaj Auto Ltd.	0.97	0.77	0.9	1.05	0.72	0.88
6	Ashok Leyland Ltd.	0.7	0.42	0.51	0.78	0.69	0.62
7	Sundaram Clayton Ltd.	0.89	0.79	0.77	0.86	1.08	0.88
8	TVS Motor Company Ltd.	2.12	1.73	0.52	0.51	0.58	1.09
9	Eicher Motors Ltd.	1.54	0.73	0.28	0.28	0.71	0.71
10	Force Motors Ltd.	1.11	0.99	1.37	0.92	1.09	1.10
	<b>Mean</b>	1.03	0.78	0.67	0.68	0.73	0.78
	<b>SD</b>	0.51	0.40	0.33	0.26	0.23	0.24
	<b>CV</b>	49.55	51.40	48.75	37.80	32.05	31.44

(Source: Computed by Researcher from Annual Reports of Selected Companies)

#### **Analysis:**

Quick ratio indicates the organization's ability to meet its short term liabilities with its most liquid assets. The higher the Quick Ratio betters the liquid position of the company.

In the above table QR of Tata Motors was 0.42 in the year 2015 which was increase to 0.51 in the year 2019. In Mahindra & Mahindra it was 0.84 in 2015 which was increase to 0.90. In Maruti Suzuki Ltd it was 0.41 in 2015 which was decrease to 0.37. In Hero Motocorp Ltd it was 0.72 in the year 2015 which was increase to 1.14 in the year 2019. In the Bajaj Ltd it was 0.72 which was increase to 0.97. In Ashok Leyland Ltd it was 0.69 which was increase to 0.70. In Sundaram Clayton Ltd have 1.08 which was decrease to 0.89. In the case of TVS it was 0.58 in the year 2015 which was increase to 2.12 in the year of 2019. In the Eicher Motors Ltd. It was 0.71 in the year

2015 which was increase to 1.54. In the Force motors the QR Ratio was 1.09 which was decrease to 1.11 in the year 2019.

### **Conclusion:**

Ratio Analysis helps to compute the financial statement and comparison of profitability performance and liquidity performance of the selected manufacturing Automobile companies of India. The Study reveals that there is positive strong relationship of liquidity variables of the firm. It evolves that there are some significant changes in the firm to meet their obligations.

The Study shows that Eicher Motors Ltd., Ashok Leyland Ltd. & Tata Motors Ltd. manages their financial resources effectively and efficiently. The Study also concluded that the profitability and liquidity performance of Automobile sector is satisfactory from 2015 to 2019.

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## **Growth of Paint Industries in India**

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### **Abstract**

The paint industry is one of the most important and demanding industries in the world market. It includes manufacturing and marketing of paints, varnishes, stains and different coatings. As per the literature, the Indian paint industry is of INR 50,000 crores turnover. The industry is divided in to two parts, decorative / domestic (like homes, real estate, etc) and Industrial (which includes automobiles, electronic items like refrigerator, washing machine, etc.). Out of these two segments of industry, three – fourth contribution is coming from decorative / domestic whereas one fourth of the business is contributing by industrial paint segment. Among domestic segment Asian Paints is the leading company whereas in industrial segment Kansia Nerolac has captured market in India.

**Key Words :** Paint Company, Paint Industry, Growth

### **Introduction**

The Indian paint industry is over 100 years old. Its beginning can be traced back to the setting up of a factory by Shalimar Paints in Kolkata in 1902. Before second world-war, the imports stopped, which enforced the opening of manufacturing facilities by local business persons / entrepreneurs. As per the data, in 2019 the Indian paint industry is the second largest in the world. The sector showed significant growth in last 4-5 years. In 2019, the wholesale price index (WPI) of paints was at 112.7, which is highest value in the last five years.<sup>1</sup> During 2019, the trade value of Indian paint industry is over 57 trillion Indian rupees. Though it is the second largest industry in world, the export value of Indian paint industry is around 18 lakh crore INR whereas the import value is approximately 39 lakh crore INR.<sup>2</sup>

### **Market of Paint Industry in India**

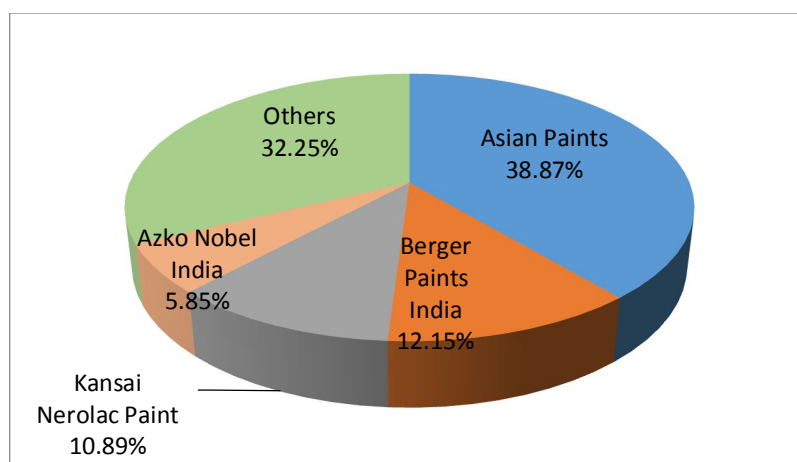
India is largest country with parliamentary democracy and 1.3 billion population. The Indian equity market is fourth biggest market in Asia. The India is third largest economy in world on

Public-Private-Partnership (PPP) model.

The Paint Industry has divided in two categories: Organised & Unorganised. The 35% market been controlled by unorganized market. The rest has been controlled by the organized market. The top players in this market are Asian Paints (30% market share), Kansai Nerolac (20% market share), Berger Paints (19% market share) and ICI (12% market share).<sup>8</sup>

Market share of paint industries in India is given in figure-1. Asian paints is the leading company in 2019 with a market share of about 39 percent. In the organized segment, Asian paints led the decorative market segment, while the industrial segment was led by Kansai Nerolac. In year 2019, the Indian paint industry saw around 12% growth in its output volumes and about 15% growth in terms of its total value. Future growth in the industry is likely to depend on a several factors such as disposable incomes, stability or crude oil prices and growth in the automotive and real estate sectors.<sup>3</sup>

**Figure 1 : Market Share of the paint industries in India in 2019**



As per Wikipedia, the earliest examples of Indian painting are cave paintings going back to 10,000 B.C. The tradition of painting in Indian subcontinent grew and developed over time, resulting in a fully developed and finest style, incorporating the culture and faith of the region and religion. Indian paints always embrace rich color and clear symbolism, using specific iconography to make religious figures clearly recognizable. History of Indian paint has fascinated culture throughout the years. Color has been the major attraction for more than 20,000 years. Two anthropologists conducted a worldwide study of color naming in 1960's.

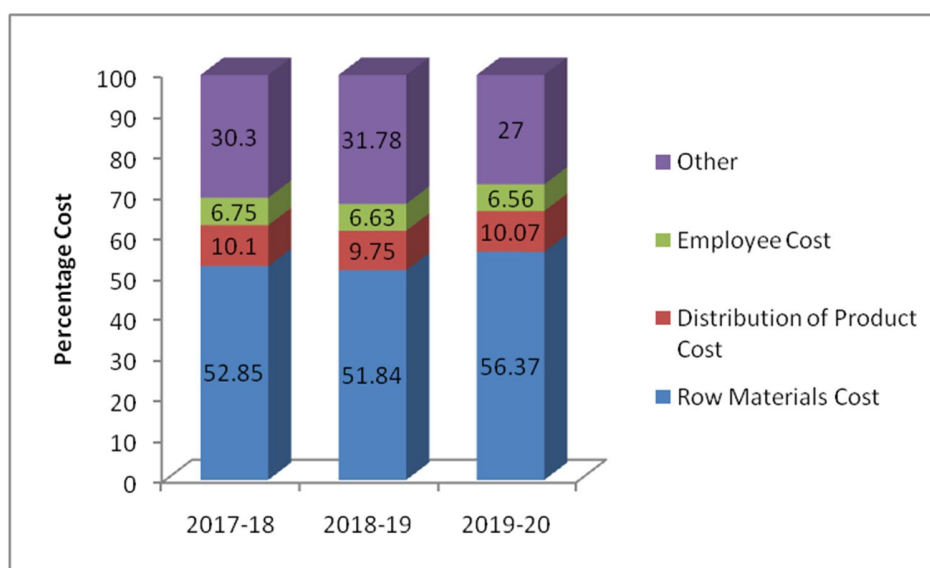
There is a phenomenal growth on the housing sector front with rapid urbanization and availability of easy to secure housing loans which have become the prime drivers of growth in the decorative paint segment, which comprise 70% of the 2 billion dollar Indian paint industry. An average increase of growth of about ten percent in the automobile sector contributes to fifty percent of the revenues in the industrial paints segment. Paints can be classified as Decorative paints and Industrial paints.<sup>4</sup>

### **Contribution of Paint Industries in Indian Economic**

A large number of paint outlet or shops have automated dealer tinting system. Today India has more than 20,000 outlets in operation, probably the highest for any country. Thirty percent to the paint industry revenue in India is accumulated from industrial paints. The size of paint industry in India is around 1000 million litres and is valued at approximately two billion dollar. The industry has growth at a Compounded Annual Growth Rate of 12 to 13 percent.

The Indian paint industry currently valued at around Rs. 50,000 crores is poised to grow at a healthy rate and is expected to reach around Rs. 70,000 crores by 2021-22. There is a strong correlation between the paint industry and GDP growth of the country. It has historically surpassed India's GDP growth by 1.5 to 2 times. Although the implementation of GST regime came in as a challenge initially, the reduction of GST rates from 28% to 18% has come in as a breather for the paint industry.<sup>5</sup>

**Figure 2 : Distribution of Expenditure of the paint industries**



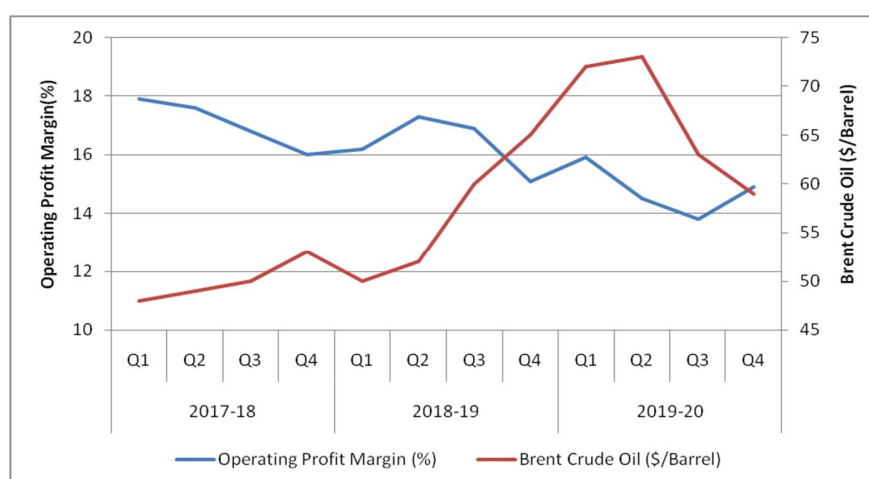
Source : CARE Ratings.com

In India, prior to GST (Goods and Service Tax) i.e. FY 2017, market share of organized sectors was about 65% which was increased to 80% post GST. Top companies are putting more efforts on R&D and enhancing distribution channels. Main areas of expenditure of the industries are “Raw Material”, “Employee” and “Distribution of Product”. All large scale companies have these three areas for application of funds. Below given figure-2 gives better idea about structure of cost of large scale paint companies in India. It shows that out of total expenditure of the paint companies, more than half of the expenditure is for raw material, around 10% for distribution of product and about 7% for employee cost. It can be seen from the figure that in last year average expenditure of the companies is increased for raw materials.

### **Financial Performance of Paint Industries in India**

As it is obvious from figure-2 that the paint companies have more than 50% expenses on raw materials. For paint companies main raw material is crude oil and the price of crude oil keeps changing in world market day to day. Figure-3 gives better idea, how the price of crude oil impact the profitability of paint companies. There is negative correlation between crude oil price and operating profit margin (%) of paint companies. It can be inferred that as crude price increases, the profitability decreases. Increase in crude price has direct impact on profitability and hence overall financial performance of the paint companies. When crude price increases paint companies always increase the price of their products, to maintain their profitability.

**Figure 3 : Influence of Brent crude oil price on Operating Profit Margin(%) of paint companies**

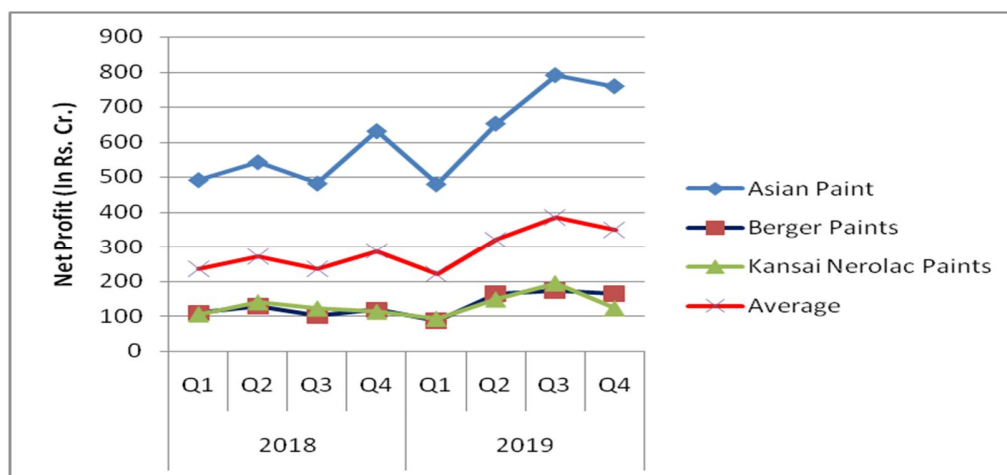


Source : CARE Ratings.com

Quarterly net profit for financial years 2018 & 2019 is presented in figure-4 for top three paint companies of India - Asian Paint, Berger Paints and Kansai Nerolac Paints.<sup>6</sup> Asian paint is stood at the top in ranking with highest net profit throughout all quarters of last two years. On other side Berger paints and Kansai Nerolac paints shows almost same profit except last quarter of financial year 2019. Average line for net profit of all three companies is also drawn in the figure which shows fluctuating trend in last two years. Average net profit is increased in FY2019 as compared to last year.

In Indian paint industry, it is observed that there is excess supply than demand in both Decorative and industrial paint segment. The Demand for paint industry is depend upon the growth of housing, auto, engineering & consumable things. As the Govt has taken intuitive in housing Facilities & infrastructural Facilities to auto industry it is expected the growth of paint industry also. There are ample of opportunities for paint industries due to increased spending capacities of consumer, availability of disposable income and rise of nuclear of Families. The Govt initiative in bringing reforms in GST, infrastructure and power will benefit the paint industry

**Figure 4 : Net Profit of top paint companies in India**

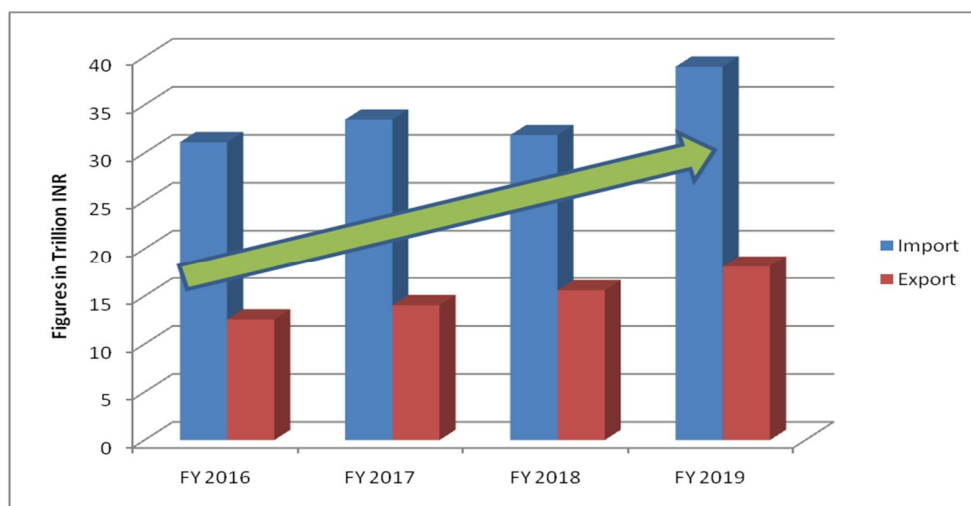


The trade value of India's paint industry was over 57 trillion rupees in fiscal year 2019. The value of exported paint and allied products in the country amounted to approximately about 18 trillion Indian rupees compared to the 39 trillion rupee import value. According to the source, these products come from both the organized and small-scale sector.

As per the paint industry's (IAP's) apex body, the Indian paint market is expected to reach Rs.70,875 crore by 2019-20. As per IAP, the decorative / domestic paint market is with CAGR of

12.7% and the industrial paint market CAGR of 9.5%. Over the next five years the paints and coatings market will register a 4.1% CAGR in terms of revenue, the global market size will reach US\$ 2,18,300 million in 2019. The market is projected to grow from USD 153.94 billion in 2019 to USD 199.88 billion by 2024, at a CAGR of 5.4% during the forecasted period.<sup>7</sup>

**Figure 5 : Import and Export of Indian paint companies**



Import of raw material for paint is significantly increased in financial year 2019 as compared to last three years. In 2016 the import of raw material was about 29 trillion rupees which was increased to 32 trillion rupees in next year and in FY 2018 it was about 30 trillion rupees. In 2019 it was about 38 trillion rupees which shows approximately 25% increase as compared to FY 2016. On other side export of paint is also shows increasing in last four years. Around 20% year on year rate of increase is seen in export. (Figure-5) As far as trade of paint is concern, in India ratio of Import to Export is significantly reduced in last three years which shows good sign for Indian paint industries.

### **Conclusion**

Indian economic fundamentals are robust and continuing amidst uncertainty in global economy. Paint industry has expanded at the rate of 12% in FY19. The growth shall be dependent on a number of factors like disposable income in the hands of public, urbanization, economic development, crude oil price and recovery in the real estate. The future of this industry looks promising but it is highly dependent on stability of crude oil prices and rupee. Profitability of paint companies may exhibit volatility due to volatility in crude oil price. Asian paint is largest company

among decor / domestic paint industry whereas Kansoi Nerolac Paints is topmost among industrial paint industries. Growth of paint industry is satisfactory in India.

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## **A Study on Industrial Policy in India**

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### **ABSTRCT:**

Industrial development is an essential for socio-economic and human development of a country. India, since ancient times, has been famous in the world for its cottage and household Industries. Industrial policy is prime condition for achieve decided goals and results. Industrial policy design for the many purposes like to regulate industrial development, remove lop-sided economic development and achieve balanced economic development, remove regional disparities, promote small scale and cottage industries, define the roles of private, public, co-operative and joint sectors and check the monopolies and concentration of economic power.

### **INDEX TERMS: INDUSTRIAL POLICY, ECONOMIC GROWTH AND DEVELOPMENT**

#### **Introduction:**

Industrialization is an important factor of economic development and growth. Industrial policy mention to the strategies adopted by government for industrial development in the country. The government of India has modified first Industrial policy of India in 1948. The New Industrial Policy was brought to address the changing environment. The prime aim of latest Industrial policy is to globalize the Indian economy and dispense freer play and market forces in domestic economy.

#### **Objectives:**

1. To study different industrial policy and its objectives
2. To find out whether there is any significant difference in industrial policy.

#### **Research Methodology:**

The study is based on data on different industrial policy compiled from secondary sources. The study was based on data available for the policy period 1948-1991 for performance evaluation of industrial policy in an Indian context.

#### **Industrial Policy Resolution- 1948**

The First Industrial policy was announced on April 6, 1948. Industrial Policy Resolution, 1948 (IPR, 1948) was first policy of Independent India. Its prime focal point was that the state must play an active role in the development of Industries with government stressing on the socialistic pattern

of society. This policy remains in strength for eight years.

### **Objectives of IPR, 1948**

- To develop social order where justice and equality of opportunity should be assured to all
- Establish rapid rise in standard of living of people through exploitation of available resource of the country.
- Accelerate production process and meet the needs of growing population
- Create more and more opportunities of employment.

### **Objectives of IPR, 1951**

- The balancing of industrial investment and production according to planned priorities and targets
- The production of small entrepreneurs against the competition from larger industries
- Anticipation of monopoly and attentiveness of ownership industries
- Equilibrium regional development with the view to decrease the disparity level of development of different regions of the country

### **Anticipation of the Act:**

This act laid down two anticipations

- **Restrictive anticipations:**

Under this category, all the measures were designed to curb the unfair practices adopted by industries

- Registration and licensing of industrial undertakings
- Enquiry of listed industries
- Cancellation of registration license
- **Reformative anticipations**
- Direct regulation and control by government
- Control on price, distribution and supply
- Constructive measures

### **Objectives of IPR, 1956**

- Swiftens up the pace of industrialization, especially on heavy industries

- Enlargement of public sector and growth of co-operative sector
- State to take up the responsibility of setting up new industrial set up and development of transport facilities
- Prevent private monopolies and focus on economic process in hands of few number of individual

### **Objectives of IPR, 1970**

- The policy defines a sector called heavy investment sector. It consisted of industries involving investment of more than Rs 5 crore. All such industries were opened for private sector except those reserved for public sector in IPR, 1956.
- Industries involving investment between Rs 1 crore and 5 crore were included in middle sector. Licensing policy was considerably liberalized and simplified for these industries.
- The setting up Industries involving investment of less than Rs 1 crore does not require any license.

### **Objectives of IPR, 1977**

- This policy prime focus on Decentralization
- Highly focus on small scale industries
- This policy created a new unit it's called a " Tiny Unit"
- This policy imposed restrictions on multinational companies

### **Objectives of IPR, 1980**

- To promoting competition in the domestic market, modernization, selective liberalization and technological up gradation
- Due to this policy, the MRTP Act ( Monopolies restrictive trade practices) and FERA Act (Foreign Exchange Regulation Act) were introduced
- The golden objectives was to liberalize industrial sector, increase industrial productivity and competitiveness of the industrial sector
- This policy also increase export based industries, foreign investment and high-technology areas.

### **Objectives of IPR, 1991**

- Connect Indian economy to the global market so that we adopt the ability to pay for imports, and to make us minimum dependent on aid.
- To promote Indian Entrepreneurship, tempo of productivity and employment generation.
- To create indigenous technology through greater investment in research and development and bringing in latest technology to help Indian manufacturing units attain world standards.
- Expansion the competitiveness of industries for the benefit of the common man.
- To amplify support to small scale sector
- To secure the interests of workers
- Self-standing to build on the many sided gains already made.

### **Conclusion:**

What is the central argument of this paper? The first is that industrial policy for economic development has worked in the past, and can work in the future. An important factor of this paper declaration is how one understands industrial policy. It has to be more than top- down targeting surround collaboration with the private sector, and openness to discovery of new chance for transformation and development. In this paper is the importance of the social contract within which any set of industrial policies are formulated and implemented.

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## **AN EFFECTIVENESS OF CONCEPT ATTAINMENT MODEL IN TEACHING OF GUJARATI GRAMMAR OF STD. IX**

**PANDEY GOVIND B., DR. M.K.PATEL**

Researcher wants that students will grow more in Gujarati subject so he has examined the effect of concept attainment model in the given study. From the origin of problem to finding of the problems are included in the whole study. for the given study researcher studies reference material and finding has given with use of research tool and interpretation and analysis of data. More over proper suggestion has given and future research has mentioned.

### **Introduction**

In The Modern Era person who is fulfill with machine running with time in the time to make difference it is necessary that the person has his own skill in some work. The learning process is life time. To learn means find something new, to learn means satisfaction of curiosity, to learn means new discoveries. We can also observe these things in education. Education and Teaching are two sides of a coin.

Gujarati is an important subject at secondary level in which grammar plays major roll. Majority of students face difficulty to learn this component. For that among so many reasons the main reason is students feel difficulty to clarify some concept. With reference to it the researcher decided to teach Gujarati grammar wit use of concept attainment model and will this model be made change in educational achievement of the students or not? He will observe this change through this study.

### **The present Study In Titles**

**“AN EFFECTIVENESS OF CONCEPT ATTAINMENT MODEL IN TEACHING OF GUJARATI GRAMMAR OF STD. IX“**

### **Objectives:**

(1) To construct concept attainment model programmed on selected subject in Gujarati of STD – 9 in which adjective, adverb, verb, tense, noun, gender, vowel-consonant, number, indeclinable, types of meaning are included. (2) To prepare pre – test and post test on selected unit in Gujarati subject of STD-

9. (3) To compare concept attainment model and traditional method with reference to educational achievement on teaching units. (4) To examine the effect of gender and area on educational achievement during study with concept attainment model and traditional method.

### **Population**

The students who are studying in STD – 9 of year 2009 – 10 from Gujarati medium secondary school of Radhanpur taluka in Patan district are selected as population for the given study. Total 160 students are selected for sample from them 80 are from rural and 80 are from urban area students for the given study.

After doing equivalent work on students of STD – 9 from urban and rural area school who are studying in 9 –A and 9–B after that with use of concept attainment model and traditional method teaching is done and samples are selected. Method of the study

Given study depends on experimental method. Experimental method study uses in the given study. In the study effectiveness of testing of concept attainment model with relate to traditional method. This testing is done with reference to Gujarati subject.

Experimental research method is fixed structure, logical and systematic process. In which researcher creates different type of practical design. So in the give study absolute experimental design is taken. In which two equivalent groups are selected for pre test post test design.

### **Variables of the study**

The independent variable was teaching method and the dependent variable was achievement scores of the students on the main criterion test.

### **Collection of Information and Analysis**

Statistical work has been done with ‘t’ test applied with significant level 0.05 testing hypothesis in accepted or not accepted. See Table No. 1

**Table 1: Statistical Data of Gain Scores for Experimental and Control Groups**

Io	Variable	Gender	N	Mean	S.D.	T	Accepted / Not Accepted
o 1	cept Attainment Model	al Boys	20	28.15	6.843	0.53	0.05
	ditional method	an Boys	20	27.05	6.037		
o 2	cept Attainment Model	al Girl	20	29.95	6.58	1.85	0.05
	ditional method		20	26.16	6.06		
o 3	cept Attainment Model	an Boy	20	28.65	5.78	1.06	0.05
	ditional method		20	26.70	5.58		
o 4	cept Attainment Model	an Girl	20	29.05	5.37	0.99	0.05
	ditional method		20	27.30	5.54		
o 5	cept Attainment Model	al Student	40	27.68	7.26	1.70	0.05
	ditional method		40	25.12	6.11		
o 6	cept Attainment Model	an Students	40	27.67	6.77	1.74	0.05
	ditional method		40	25.35	5.77		
o 7	cept Attainment Model	al Boys	20	28.15	6.84	0.98	0.05
	ditional method	an Boys	20	26.70	5.58		
o 8	cept Attainment Model	al girl	20	29.95	6.58	1.35	0.05
	ditional method	an Boy	20	27.30	5.54		
o 9	cept Attainment Model	an Boy	20	28.65	5.78	0.83	0.05
	ditional method	al Boy	20	27.05	6.03		
o 10	cept Attainment Model	an Girl	20	28.50	5.389	1.56	0.05
	ditional method	al girl	20	29.95	6.068		

**Analysis and interpretation of the data Hypothesis 1**

There will no significance difference between the average number of post - test of rural area boys who study with concept attainment model and boys who study with traditional method.

As soon from table 1, the calculated' value 0.53 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of rural area boys who study with concept attainment model and boys who study with traditional method.

### **Hypothesis 2**

There will no significance difference between the average number of post - test of rural area girls who study with concept attainment model and girls who study with traditional method.

As soon from table 1, the calculated' value 1.85 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of rural area girls who study with concept attainment model and girls who study with traditional method.

### **Hypothesis 3**

There will no significance difference between the average number of post - test of urban area boys who study with concept attainment model and boys who study with traditional method.

As soon from table 1, the calculated' value 1.84 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of urban area boys who study with concept attainment model and boys who study with traditional method.

### **Hypothesis 4**

There will no significance difference between the average number of post - test of urban area girls who study with concept attainment model and girls who study with traditional method.

As soon from table 1, the calculated' value 0.99 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there Is no significance difference between the average number of post - test of urban area girls who study with concept attainment model and girls who study with traditional method.

### **Hypothesis 5**

There will no significance difference between the average number of post - test of rural area students who study with concept attainment model and students who study with traditional method.

As soon from table 1, the calculated' value 1.70 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of rural area students who study with concept attainment model and students who study with traditional method.

#### **Hypothesis 6**

There will no significance difference between the average number of post - test of urban area students who study with concept attainment model and students who study with traditional method.

As soon from table 1, the calculated' value 1.74 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of urban area students who study with concept attainment model and students who study with traditional method.

#### **Hypothesis 7**

There will no significance difference between the average number of post - test of rural area boys who study with concept attainment model and urban area boys who study with traditional method.

As soon from table 1, the calculated' value 0.98 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of rural area boys who study with concept attainment model and urban area boys who study with traditional method.

#### **Hypothesis 8**

There will no significance difference between the average number of post - test of rural area girls who study with concept attainment model and urban area girls who study with traditional method.

As soon from table 1, the calculated' value 1.35 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of rural area girls who study with concept attainment model and urban area girls who study with traditional method.

#### **Hypothesis 9**

There will no significance difference between the average number of post - test of urban area boys who study with concept attainment model and rural area boys who study with traditional method.

As soon from table 1, the calculated' value 0.83 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of urban area boys who study with concept attainment model and rural area boys who study with traditional method.

### **Hypothesis 10**

There will no significance difference between the average number of post - test of urban area girls who study with concept attainment model and rural area girls who study with traditional method.

As soon from table 1, the calculated' value 1.56 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significance difference between the average number of post - test of urban area girls who study with concept attainment model and rural area girls who study with traditional method.

### **Findings of the research :**

The findings of the research with reference to hypothesis are given below.

(1) There is no effect was seen of concept attainment model on rural area boys for teaching Gujarati grammar. (2) There is no effect was seen of concept attainment model on rural area girls for teaching Gujarati grammar. (3) There is no effect was seen of concept attainment model on urban area boys for teaching Gujarati grammar. (4) There is no effect was seen of concept attainment model on urban area girls for teaching Gujarati grammar. (5) There is no comparable effect is seen between the rural area students who are studying with concept attainment model and narration method. (6) There is no comparable effect is seen between the urban area students who are studying with concept attainment model and narration method. (7) There is no comparable effect of both the method on rural area bys and urban are boys. (8) There is no comparable effect of both the method on rural area girls and urban are girls. (9) There is no comparable effect is seen the concept attainment model on urban area student and both the method on rural area student urban area students. (10) There is no comparable effect is seen the concept attainment model on urban area student and both the method on rural area girls urban area girls.

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## **Construction and Effectiveness of Linear Programmed and Work Cards for the Selected Units of Grammar in Sanskrit Subject of Standard IX**

**Rajendra M Jadav Dr.M.K.Patel**

To Increase concentration of students in tough subjects like Sanskrit, to make enlightened atmosphere in classroom, to clear the subject Matter, Linear Programmed And Work Cards is a very useful for teacher. To improve the Quality of science education the present study is useful. So, academic achievement of the students by teaching through Linear Programmed and Work Cards.

### **INTRODUCTION**

There is a change in education in the present time. Today's demand is to get Education. The scope of education is increase. With the increase of scope of education the numbers of intake of the students also increased so there are so many schools are established. Comes newly we take the group education in the classroom. What ever does the teacher do in the classroom the result output is not proper. More over each student has different factors of interest, hobbies, aptitudes and personality so that is why there be a big different in the educational achievement of the students.

Researchers as been working as a Sanskrit subject teacher for last four year. Present unit like 'Compound', 'Case', and 'Participle' are very thought to understand of the students so that is why Researchers has selected work cards method and liner programmed to make clear the units to take over the work for research of the literature of work card.

### **THE PRESENT STUDY IN TITLES**

Construction and Effectiveness of Linear Programmed and Work Cards for the Selected Units of Grammar in Sanskrit Subject of Standard IX.

### **OBJECTIVE OF RESEARCH**

(1) To Construct the Linear Programmed For the Selected Units 'Compound', 'Case', and 'Participle' of Grammar in Sanskrit Subject of Standard-9. (2) To Construct the Work Cards For the Selected Units 'Compound', 'Case', and 'Participle' of Grammar in Sanskrit Subject of Standard-9. (3) To construct the teacher made test For the Selected Units of Grammar in Sanskrit Subject of Standard-9. (4) To compare and effectiveness of the Linear Programmed, Work Cards and Lecture method of Achievement with the Selected Units of Grammar in Sanskrit Subject of Standard-9.

### **POPULATION**

In the present research of scope area the Researcher who had selected the scope area for the study was

the students studying in Standard-9 Gujarati Medium Secondary schools of Patan District of radhanpur urban and varahi rural of 2010-11 whom the present research becomes cope area.

### **METHOD OF RESEARCH**

The method employed for present study is Experimental- Method. In the present study, The Non randomized three groups, pre test - post test Design has been follow table-1.

### **TOOL FOR DATA COLLECTION**

In The present Study, Construction and Effectiveness of Linear Programmed and Work Cards for the Selected Units of Grammar in Sanskrit Subject of Standard-9.

- 1 Pre-test
- 2 Post-tests

### **DATA ANALYSIS**

In the present study the effect of linear programmed , work card and lecture method have been examine in This three two group were Experimental group and one group was controlled group. In which Experimental- 1 was taught by linear programmed, Experimental- 2 was taught by work card and controlled group was taught by lecture method. The and of the Experiment has been conducted on two selected secondary school by cine the simple teachers made test was given to the students to measure all this three teaching method of Sanskrit.

According to the objective of study the collected data was also use for this. The same analysis approach was used for the information collected by four Experiments.

**Table-1**  
**Significance of Differences in Achievement Scores of First Experiment among Three Groups**

ANOVA				
	Sumof Squares	Df	Mean Square	F
Between Groups	268.233	2	134.12	6.91
Within Groups	1105.95	57	19.40	
Total	1374.1833	59		
Multiple Comparison				

Method	N	Mean	Critical Ratio
Linear Progra- mmed	20	31.05	A/B = 0.35
Work Card	20	30.70	

**Table-2**  
**Significance of Differences in Achievement Scores of First Experiment among Three Groups**

ANOVA				
	Sum of Squares	Df	Mean Square	F
Between Groups	196.844	2	98.422	4.61
Within Groups	897.066	42	21.358	
Total	1093.911	44		
Multiple Comparison				
Method	N	Mean	Critical Ratio	
Linear Programmed	15	29.73	A/B = 0.20	
Work Card	15	29.53		

**Table-3**  
**Significance of Differences in Achievement Scores of First Experiment among Three**

**Groups**

ANOVA				
	Sum of Squares	Df	Mean Square	F
Between Groups	309.70	2	154.85	6.53
Within Groups	1352.70	57	23073	
Total	1662.40	59		
Multiple Comparison				
Method	N	Mean	Critical Ratio	
Linear Programmed	20	29.95	A/B = 0.50	
Work Card	20	30.45		

**Table-4**  
**Significance of Differences in Achievement Scores of First Experiment among Three Groups**

ANOVA				
	Sum of Squares	Df	Mean Square	F
Between Groups	280.7451	2	140.3725	4.53
Within Groups	1488.2353	57	3100.49	

Total	1768.9804	59		
<b>Multiple Comparison</b>				
<b>Method</b>	<b>N</b>	<b>Mean</b>	<b>Critical Ratio</b>	
Linear Programmed	17	29.82	A/B = 0.29	
Work Card	17	30.11		

**ANALYSIS AND INTERPRETATION OF THE DATA**

**Ho<sub>1</sub>** There will be significant difference in the mean scores of Sanskrit achievement of the urban boys taught through Linear Programmed and Work Cards For the Selected Units of Grimmer in Sanskrit Subject of Standard-9.

As soon from table 1, the calculated' value 6.91 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significant difference in the mean scores of Sanskrit achievement of the urban boys taught through Linear Programmed and Work Cards For the Selected Units of Grimmer in Sanskrit Subject of Standard-9.

**Ho<sub>2</sub>** There will be significant difference in the mean scores of Sanskrit achievement of the urban girls taught through Linear Programmed and Work Cards for the Selected Units of Grammar in Sanskrit Subject of Standard-9.

As soon from table 1, the calculated' value 4.61 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significant difference in the mean scores of Sanskrit achievement of the urban girls taught through Linear Programmed and Work Cards For the Selected Units of Grammar in Sanskrit Subject of Standard-9.

**Ho<sub>3</sub>** There will be significant difference in the mean scores of Sanskrit achievement of the rural boys Linear Programmed and Work Cards For the Selected Units of Grammar in Sanskrit Subject of Standard-9.

As soon from table 1, the calculated' value 6.53 is grater then the table value at 0.05 level of significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significant difference in the mean scores of Sanskrit achievement of the rural boys Linear Programmed and Work Cards For the Selected Units of Grammar in Sanskrit Subject of Standard-9.

**Ho<sub>4</sub>** There will be significant difference in the mean scores of Sanskrit achievement of the urban girls taught through Linear Programmed and Work Cards For the Selected Units of Grimmer in Sanskrit Subject of Standard-9.

As soon from table 1, the calculated' value 4.53 is grater then the table value at 0.05 level of

significance difference. Hence, the formulated hypothesis is rejected; therefore it is concluded that there is no significant difference in the mean scores of Sanskrit achievement of the urban girls taught through Linear Programmed and Work Cards For the Selected Units of Grimmer in Sanskrit Subject of Standard-9.

## **RESULTS OF THE STUDY**

The results are presented here regarding the four experiments conducted in the study.

- ☀ The achievement of Sanskrit Grammar of urban boys who were taught by liner programmed and work cards Material was equally effective.
- ☀ The achievement of Sanskrit Grammar of urban girls who were taught by liner programmed and work cards Material was equally effective.
- ☀ The achievement of Sanskrit Grammar of rural boys who were taught by liner programmed and work cards Material was equally effective.
- ☀ The achievement of Sanskrit Grammar of rural girls who were taught by liner programmed and work cards Material was equally effective.

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## વૈદિક યુગમાં પર્યાવરણ સંરક્ષણ માટેના વિવિધ સંદર્ભ

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હેમ.ઉત્તર ગુજરાત યુનિવર્સિટી પાટણ

વેદ માત્ર ભારતનો જ નહીં પરંતુ સંપૂર્ણ વિશ્વનો પ્રાચીનતમ ગ્રંથ છે. બધા જ વેદો સંસ્કૃતમાં લખાયા છે. એટલા માટે વિચારવાનું એ છે વેદોમાં પર્યાવરણની ચર્ચા છે કે નહીં જો વેદોમાં પર્યાવરણની ચર્ચા છે તો નિશ્ચિતરૂપથી કહી શકાય કે આપણા પૂર્વજ પર્યાવરણ સંરક્ષણ માટે પ્રયત્નશીલ હતા. તેઓ પર્યાવરણના મહત્ત્વને પુર્ણતઃ જાણતા હતાં.

આધુનિક વૈજ્ઞાનિક દૃષ્ટિકોણથી જોઈએ તો પ્રકૃતિને જ પર્યાવરણ નામથી ઓળખવામાં આવે છે. પ્રકર્ષ કૃતિ:પ્રકૃતિ રિતિ : અર્થાત્ ઇશ્વરનું સંવાત્કૃષ્ટ પ્રયત્ન તેનો અભિપ્રાય હતો. પ્રકૃતિ અને પુરુષ પરસ્પર સમાનતા હતી અને એકબીજાનો પરસ્પર સંબંધ રહેલો છે. પુરુષને જીવ કે બ્રહ્મ માનવામાં આવે છે. તો પ્રકૃતિ પણ તેના સાર રૂપ બ્રહ્મ જ છે. જોઈએ તો પંચમહાભૂત પૃથ્વી, જલ, અગ્નિ, આકાશ, વાયુને બ્રહ્મ માનવામાં આવે છે. તો તેમની રક્ષા અનિવાર્ય છે. તો વાયુ એ પર્યાવરણનું પ્રથમ કારક છે. વાયુ કોને કહે છે? તેનું શું મહત્ત્વ છે? વાયુ પ્રાણ છે માટે જ તેને પ્રાણવાયુ એવા નામથી ઓળખવામાં આવે છે. સમસ્ત ચરાચર પ્રાણીઓનું જીવન વાયુ છે. ઇશ્વર ઉત્પત્તિનું ક્ષણ વાયુ છે.

ઋગ્વેદના નાસદિય સૂક્તમાં કહેવાયું છે કે

નાસદાસીન્નો સદાસીતદાની, નાસીદ્રજો નો વ્યોમા પરોયત્ ।

યો અસ્યાધ્યક્ષઃ ચરમે વ્યોમ ન્તસો અઙગવેદ યદિ વાન ભેદ॥

ઋગ્વેદ સૌથી પ્રાચીન વેદ છે. અહીં અનેક સ્થળે પર્યાવરણનું વર્ણન છે. “આસીદવાત સ્વધ્ય તદેકમ્” આ મંત્રમાં પંચમહાભૂત સૃષ્ટિનું કારણ છે એ વાત વર્ણવામાં આવી છે. આજે સંસારના દેરક બુદ્ધિમાન વ્યક્તિ અધિકને અધિક વૃક્ષની આવશ્યકતા મહેસુસ કરી રહ્યા છે. આ ધારણા આધુનિક નહીં વેદકાલીન ઋષિઓના સમયથી ધારણા રહી છે. માટે જ તે લોકો વૃક્ષોને વારંવાર નમન કરે છે.

નમોવૃક્ષેભ્યઃ (યજુર્વેદ), ઔષધેન પતયે નમઃ યજુર્વેદ -

અરવયાણાં પતયેઃ નમઃ (યજુર્વેદ)

નમો વન્યાયઃ ચ (યજુર્વેદ)

સંસારની દરેક વસ્તુ માં ચેતનાનો સાક્ષાત્કાર કરવાળા મનીષી ભારતીયો પ્રકૃતિ પ્રત્યે ઘણા ઉદાર

હતા. વૈદિક સાહિત્યના અનુશીલનથી જાણવા મળે છે કે પ્રકૃતિ સાથે આપણો સંબંધમાત્ર બ્રાહ્મ જ નહીં પરંતુ આંતરીક પણ હતાં.

અત્યારે પર્યાવરણ મહત્ત્વ જોતા આપણી સરકાર “વિશ્વ પર્યાવરણ દિવસ”ની ઉજવણી કરી રહી છે. લગભગ બધાજ વિદ્યાલયોમાં વૃક્ષારોપણ કાર્યક્રમો યોજાય છે. કરોડો રૂપિયાનો ખર્ચો સરકાર ઉઠાવે છે પણ જો પહેલેથી જ વેદકાલિન ઋષિઓના વચનને અનુસરત તો પર્યાવરણની વિકટ સમસ્યા ન ઉદભવત..

મધુમાન્નો વનસ્પતિ: -૦૧ ઋગ્વેદ)૧૦(૦૮-

માધ્વીર્ન: સન્ત્વોષધી યજુર્વેદ ૧૩૨૭-

સુમિત્રાયા: ન આપ: ઔષધય: સન્તું (૩૬ યજુર્વેદ)

ઔષધય: શાલ્ત વનસ્પતય: શાન્તિ:

આ રીતે ભારતીય સંસ્કૃતિમાં ઔષધિને વૃક્ષારોપણને ખુબજ મહત્ત્વમાપવામાં આવ્યું છે.

વનસ્પતિ વન આપ્યાધ્યં -૧૦ ઋગ્વેદ)૧૦૧(૧૧-

પુનશ્ચ પૌયૌષધી હિંસી /૬ યજુર્વેદ)૧૨(

અહીંના મંત્રમાં વૃક્ષારોપણ કરવું વનસ્પતિને નુકશાન ન પહોંચાડવાની વાત છે.

વૃક્ષોને કાપવા એ હિંસા માનવમાં આવે છે. વૈદિકયુગમાં દરેક સ્થળે યજ્ઞો થતા હતાં. યજ્ઞમાં દરેક સ્થળે હોમ કરવામાં આવતું હતું. યજ્ઞથી નિકળેલો ધૂમાડો પર્યાવરણને શુદ્ધ કરે છે. પર્યાવરણમાં જીવજંતુઓ દ્વારા મળ્મૂત્ર અનેક પ્રકારે પ્રદૂષણ ઉત્પન્ન થાય છે જળ પ્રદૂષણવાયુ પ્રદૂષણ વગેરે યજ્ઞના ધૂમાડાની રાખ અનેક રોગોમાં લાભકારક માનવમાં આવી છે.

યક્ષ ધુમસ્ય સંપર્કાત્ દિશો ભાન્તિ ગતજ્વરા:

ધૃતાહિવન: દીદિવ: પ્રતિષ્મ (ઋગ્વેદ)

પૌરાણિક યુગમાં વૃક્ષો પૂજનીય માનવમાં આવ્યા એ સમયે પૂજા એટલે માત્ર ભગવાન પુજા જ નહીં પરંતુ પુજાના માધ્યમ દ્વારા પર્યાવરણ શુદ્ધિ અને રોગોનો નાશ મૂળ કારણ પ્રતિત થાય છે.

આદ્રૌ સર્વવૃક્ષમયં પૂર્વ વિશ્વમજાયત।

એતે વૃક્ષા મહાશ્રેષ્ઠા સર્વ દેવાંશ સંભવ: (સ્કન્દપુરાણ)

ય પુમાન્ રોપયત્ વૃક્ષાન્ છાયા પુષ્પ કલોપમાન્

સર્વ સ્તવોપયોગાય સ યાતિ પરમાં ગતિમ્

સમગ્ર ભારતવર્ષમાં બધાજ ધર્માનુઆચીનાં ઘરોમાં સ્ત્રિઓ વૃક્ષોની પુજા કરતી હતી સ્કન્દ પુરાણના છઠ્ઠા અધ્યાયમાં વૃક્ષારોપણ પ્રસંગમાં નીચેના વૃક્ષોની પુજા અનિવાર્ય માનવમાં આવી છે.

અશ્વત્થં રોપયેદ યસ્તું પૃથિવ્યાં પ્રયતોનર:

તસ્ય પાપ સહસ્રાણિ વિલયં યાન્તિ તત્ક્ષણાત્ ॥

(સ્કન્દ - ૬/૨૪૭/૩૮૧)

अयं बिल्वतः श्रेष्ठ पवित्रा पाय नाशनः  
तस्य मुले स्थिता देवी गिरीजा नात्र संशयः

(સ્કન્દ - ૬/૨૫૧/૧૪)

મહાકવી કાલીદાસની કૃતિઓમાં રઘુવંશ મહાકાવ્યમાં દ્વિતીય સર્ગમાં રાજા દિલીપ ગૌ સેવાનું વર્ણન કરતા જોવાય છે. ગાય કેવળ દૂધ આપવા વાળી જ નહીં વિશેષ રૂપથી પૂજ્ય માનવમાં આવે છે. ગાયનું માત્ર દૂધ જ નહીં પરંતુ મબ્મૂત્ર વગેરેમાં અસીમ શક્તિ રહેલી છે. પોતાના પ્રાણ આપીને પણ રાજા દિલીપે ગૌ સેવા કરી હતી. ગાયના દૂધથી સંતાન ઉત્પત્તિની શક્તિ રહેલી છે. જંગલમાં એક દેવદાઝ વૃક્ષ છે તેનું પાર્વતી પુત્રની જેમ પાલન કરે છે. પાર્વતીના ગયા બાદ તે વૃક્ષની રક્ષા માટે ભગવાન શિવ દ્વારા એક સિંહ નિયુક્ત થયો હતો. જ્યારે નન્દની દ્વારા દેવદાઝ વૃક્ષની ત્વચા ને ક્ષતિ પહોંચાડી ત્યારે ક્રોધિત સિંહ નન્દનીને મારવા તૈયાર થયો ત્યારે દિલીપ આ રીતે સિંહને કહે છે.

अमुं पुरः पश्यसि देवदारुं पुत्रीकृतोसौ वृषभध्वजेन।

यो ऐमकुम्भस्तन निसृतानां स्कन्दमातुंपयसां ररक्षः॥ :

(રઘુવંશ ૨/૩૬)

પર્યાવરણ રક્ષામાં નદીનું મહત્ત્વ ભારતમાં દરેક સ્થળે જોવા મળે છે. હિંદુઓ માટે નદીને માતાનું બિરુદ પ્રાપ્ત થયું છે દરેક પ્રાર્થનાઓના પ્રારંભમાં નદીનું મહત્ત્વ આલેખવામાં આવે છે. સ્નાન વખતે પણ પ્રત્યેક નદીનું સ્મરણ કરવામાં આવે છે.

गंगे च यमुने चैव गोदावरी सरस्वती

नर्मदे सिंधु कावेरी जलेस्मिन् सन्निधिं कुरु।

વેદોમાં સ્પષ્ટ કહેવામાં આવ્યું છે નદીઓ કિનારે જ્ઞાનિઓ જ્ઞાન પ્રાપ્ત કરતા હતાં.

उपगह्वरे गिरीनां संगमे च नदिनां।

धियो विप्रोजायते॥

મહાભારતના શાંતિપર્વમાં વ્યાસ સ્પષ્ટ કહે છે કે પર્યાવરણ સંરક્ષણની દૃષ્ટિએ તળાવવૃક્ષો નદીઓ જળાશયોનું શુદ્ધિકરણ વગેરે પુણ્યદાયી કાર્યો માનવમાં આવ્યા છે.

तस्यात्रङ्गं कुर्वीत आरामाश्चैव रोपयेत् ।(શાન્તિપર્વ, ૫૮, ૩૨)

પ્રાયઃ વિવાહ કાળમાં વર-વધૂ ને આર્શીવાદ આપવા પુરોહિતો દ્વારા સુમંગલી પાઠ કરવામાં આવતો હતો. તેમાં વિવિધ આકારના પર્વતો નદીઓ વગેરેનું સ્મરણ કરવામાં આવતું હતું. દિર્ઘાયું માટે પ્રાર્થના થતી.

सा चन्द्रभागा वरुणात्वसी नदी

कर्तुन्तु वः पुर्ण मनोरथं सदा॥

પવર્ત, પહાડોનું નિર્માણ ઇશ્વર દ્વારા પર્યાવરણ સંરક્ષણ માટે કરવામાં આવ્યું છે. પહાડ પ્રકૃતિની બહુમૂલ્ય સંપત્તિ છે પર્વત પર ગાઢ જંગલો આવેલ્લોય છે. જે પર્યાવરણ શુદ્ધિ માટેના મુખ્ય સાધન માનવામાં આવે છે પ્રાચીનકાળમાં કવી અને નાટ્યકાર પોતાના કાવ્યોમાં પર્વતોનું વર્ણન વિસ્તારપૂર્વક કર્યું છે. આ સંદર્ભ મહાનકવી કાલિદાસ રચિત કુમારસંભવમ્ કાવ્યમાં મંગલાચરણમાં

અસ્યત્તરસ્યાં દિશિ દેવતાત્મા હિમાલયાનામ નગાધિરાજ।

યુર્વાઽપરૌ તોયનિધિવગાહ્ય સ્થિતઃ પૃથ્વામિવમાનદણ્ડ॥ (કુમારસંભવમ્ ૧-૧)

હિમાલય પર દેવતાઓનો નિવાસ છે. વેવાધિ દેવ ભગવાન શિવનો નિવાસ હિમાલય ઔષધિઓનો ભંડાર છે. પૃથ્વી પર હિમાલય સ્વર્ગ સમાન છે. રોગી અહીં આવીને રોગ મુક્ત થઈ જાય છે. કુષ્ઠ રોગી ખૂબ જ જડપથી અહીં સ્વસ્થ થઈ જાય છે. માટે જ કહેવામાં આવ્યું છે કે

યં સર્વશૈલોઽપિ પરિકલ્પ્ય વત્સં મેરૌસ્થિત દોર્ગ્ધરે દોહદક્ષે।

ભાસ્યન્તિ રત્નાનિ મહૌષધિશ્ચ પૃથ્વીપદિષ્ટાં દુદુહુઃ ધરિત્રીમ્ ॥

(કુમારસંભવમ્ - ૧-૨)

ભારતના સંપૂર્ણ ભુભાગ, પર્યાવરણ, હિમાલય પર્વતમાળા ઉપકારક છે. માટે જ કાલિદાસ કહે છે.

તિર્યગુર્ધ્વમધસ્તાચ્ચ વ્યાપકો મહિમા હરેઃ।

ત્રિત્યક્રમોધતસ્યાસત્તિસ તુ સ્વાભાવિકસ્તવ॥

ઋગ્વેદમાં એક વર્ણન પ્રાપ્ત થાય છે. જેમાં વૃક્ષને પરં હિતકારી અને પ્રદુષણ નિવારક માનવામાં આવ્યા છે. દ્રુકમાં તેને કાપણના જોઈએ.

મ કામમ્બીરમુદ્ વૃહો વનસ્પતિમ્ શસ્તીર્વિહિનીનશઃ।

એજ રીતે ઋગ્વેદની એક ઋચામાં વર્ણન પ્રાપ્ત થાય છે કે જળમાં ઉગવા વાળા વૃક્ષોવન તથા વૃક્ષોથી આચ્છાદિત પર્વત પ્રદુષણ દૂર કરે છે.

આપઃ ઔષધીસત નોઽવન્તું, ધૌર્વના ગિરયો વૃષ કેશાઃ

યજુર્વેદમાં વૃક્ષોને દુષ્પ્રભાવનું સમન કરવાવાળા કહ્યા છે.

વનસ્પતિ શમીતારમ્ ।

વનસ્પતિ શમિતા।

વનસ્પતિઓમાં ઉત્પન્ન જીવાણુંઓ ને નષ્ટ કરવા માટે તથા વૃક્ષો અને વનસ્પતિઓની વૃદ્ધિ માટે યજ્ઞમાં હવી આપવાના સંકેત છે.

દેવો વનસ્પતિર્જુષતાં હવિર્હોતર્યજ

વેદોમાં જડ શાખા વનસ્પતિ ફળો, ઔષધિ બધાને સ્વસ્થ રાખવા સ્વાહાપૂર્વક પ્રાર્થના કરવામાં આવી છે.

મુલેભ્યઃ સ્વાહા। શારવાભ્ય સ્વાહા।

વનસ્પતિભ્યઃ સ્વાહા। કલેભ્ય સ્વાહાઃ॥

મેઘ વનસ્પતિ દ્વારા ઉત્પન્ન થઈ શકે છે. એવો સંકેત પણ પ્રાપ્ત થાય છે.

આદિરસિ વાનસ્પત્યઃ। )યજુર્વેદ ૨/૨૮)

અર્થાત્ મેઘ વનસ્પતિના નિમિત્તથી ઉત્પન્ન થાય. આથી જ યજ્ઞોમાં વનસ્પતિ હેમીને વૃષ્ટિ લાઈ શકાય છે. જે બાબત આજે વિજ્ઞાન પણ સ્વીકારે છે.

માનવશરીરને તંદુરસ્ત રાખવા હાલની વિવિધ ચિકિત્સા પદ્ધતિઓ પ્રચલિત છે. તેમાં જળ ચિકિત્સાના પણ સ્પષ્ટ નિર્દેશ છે.

સર્વ વ્યાપક જળના ભયનિવારક, પીડાનાશક અને શરીરના રોગથી મુક્તિ અપાવનાર ઔષધિ તરીકે વારંવાર વર્ણનો મળે છે.

વૈશ્વાનરો યાસ્વગ્નિઃ પ્રવિષ્ઠસ્તા આપો દેવીરિહ મામવન્તુ। )ઋ. ૭/૪૯/૮)

શુદ્ધ જળ વહેતું રહે એવી કામના અથર્વવેદમાં કરવામાં આવી છે.

શુદ્ધાઃ ન આપસ્તન્વે ક્ષરન્તુ। )અથર્વવેદ ૨૨/૨/૩૦)

જળસ્ત્રોતો ને દુષિત ન કરવાની અપિલ યજુર્વેદમાં કરવામાં આવેલ છે.

માપો મૌષધીઃ હિંસી। )યજુર્વેદ ૬/૨૨)

જળ સંપત્તિ નષ્ટ થાય તે માટે મનુસ્મૃતિમાં આકરા દંડની જોગવાઈ છે.

તડાગભેદકં હન્યાદપ્સુ શુદ્ધવધેન યા।

યદાપિ પ્રતિસંસ્કર્યાદાપ્યસ્તુતમસાહસમ્ ॥

જો કોઈ વ્યક્તિ તળાવ નષ્ટ કરે તો તેને પ્રાણહત્યાનો દંડ આપવો જોઈએ અને જો તે તેનું પુનઃ નિર્માણ કરે તો તેને ઉત્તમ સાહસનો પુરસ્કાર આપવો જોઈએ.

સ્થાવર જાતિમાં ગણના પામનાર વૃક્ષોમાં જીવ છે. એ આધુનિક વિજ્ઞાને સ્વીકાર્યું છે. તે વાતથી સુવિશાત્ આપણા વૈદિક ઋષિઓએ વર્ષો પહેલા જ કહ્યું હતું.

મહતો વૃક્ષસ્ય યો મુલેઽમ્યાહન્યાજ્જીવન્ સ્વવેધો।

મધ્યેઽમ્યાહન્યાજ્જીવન્સ્રે ગ્રેઽમ્યાહન્યાજ્જીવન્સ્વવેતસ ણ્ ॥

“જો કોઈ માનવ વૃક્ષનાં મૂળમાં પ્રહાર કરે તો રસ વહે છે. પરંતુ વૃક્ષ જીવીત રહે છે. મધ્યમાં પ્રહાર કરે ત્યારે પણ રસ વહે છે. પરંતુ વૃક્ષ જીવત રહે છે. ઉપર પ્રહાર કરે ત્યારે પણ રસ વહે છે. પણ વૃક્ષ જીવીત રહે છે. વૃક્ષમાં જીવન શક્તિ પ્રચુર માત્રામાં રહેલી છે. એટલે તે પૃથ્વીવાસી રસપાન કરતા તાજગીભર્યો રહે છે.

વનસ્પતિના સંરક્ષણ માટે વિવિધ ઉપાયો પ્રાચીન સમયથી અજમાવતા રહ્યા છે. આધુનિક

વિજ્ઞાન પ્રમાણે કૃષિ ક્ષેત્રે અનેક સંશોધનો થતા રહે છે. પ્રાચીન કાળથી જ આપણા પૂર્વજોએ આ માટે કુદરતી ઘટકો અને કુદરતી પ્રક્રિયાનો ઉપયોગ કરીને જ વનસ્પતિને રક્ષવાના ઉપાયો અજમાવ્યા છે. માટે જ યજ્ઞો કરવાનું સુચવ્યું છે.

ઓષધયશ્વ મે આરણાશ્વ મે યજ્ઞેન કલ્પન્તામ્ ।

(મારાં અરણ્યાં અને ઔષધિઓ યજ્ઞ દ્વારા વૃદ્ધિ પામો)

આપણા પ્રાચીન પુરાણોમાં પણ વન અને વન્યજીવ સંરક્ષણ વિષયક અનેક પ્રયાસોના સંકેત છે.

દશકૂપ સમા વાવી, દશવાપી સમોહદઃ ।

દશહ્રદઃ સમઃ પુત્રોઃ દશ પુત્ર સમો દ્રુમઃ ।

(મત્સ્યપુરાણ ૧૫૪/૫૯૨)

અર્થાત્ મત્સ્યપુરાણમાં વૃક્ષોનીમહત્તા દર્શાવતા કહેવામાં આવ્યું છે કે દશ કુવા બરાબર એક વાવ, દસ વાવ બરાબર એક તળાવ, દસ તળાવ બરાબર એક પુત્ર દસ પુત્ર સમાન એક વૃક્ષ હોય છે.

આમ પુરાણોમાં વૃક્ષોને પુત્રની સંજ્ઞા આપવામાં આવી પુત્રની જેમ પાલન પોષણ કરવાની વાત થઈ છે.

વર્તમાન સમયમાં પ્રત્યેક ક્ષેત્રમાં પર્યાવરણ અવયવો સબન્ધિત વધી રહેલા પ્રદૂષણના કારણે ઉભી થવા વળી સમસ્યાઓના નિરાકરણ માટે આજે માનવીનું પરમ કર્તવ્ય બની જાય છે કે ભૌતિકવાદી લાલસાથી દુર રહે અને પ્રાકૃતિક સાધનોના ઉચિત ઉપયોગ કરે, વૃક્ષોનું વાવેતર વધુને વધુ કરે નદીઓને પ્રદૂષિત થતી બચાવે, વાયુને શુદ્ધ રાખવા વાહનો કારખાનાનો યોગ્ય ઉકેલ લાવે, યજ્ઞ કરે જેથી પ્રદૂષણમાં નિયંત્રણ લાવવામાં મદદ મળે.

આજે જરૂરી છે કે માનવી વૈદિક કાલીન સાત્વિકભાવનું અનુસરણ કરે જેનાથી સામાજિક અને પ્રાકૃતિક વાતાવરણ પર પ્રાકૃતિક વાતાવરણ પર પ્રાકૃતિક પ્રભાવ પાડવા વાળા પ્રદૂષણથી બચી શકાય. પર્યાવરણ આપણા જીવનનું અભિન્ન અંગ છે માટે માનવની પર્યાવરણ પ્રતિ સજાગ ચેતના અતિ આવશ્યક છે.

ટુંકમાં આપણે કહી શકીએ કે વેદોમાં ઉલ્લેખિત પર્યાવરણ સ્વરૂપ અને સંરક્ષણ સ્વસ્થ અને વિકસિત જીવનનો મૂળ મંત્ર છે અને વર્તમાનમાં તે દૃશ્યમાન છે.

**સંદર્ભગ્રંથ ::**

૧. ઋગ્વેદ સંહિતા, દયાનંદ સંસ્થાન
૨. અથર્વવેદ સંહિતા, દયાનંદ સંસ્થાન

૩. યજુર્વેદ સંહિતા દયાનંદ સંસ્થાન
૪. અથર્વ વેદ સંહિતા દયાનંદ સંસ્થાન
૫. યજુર્વેદ ભાષ્ય દયાનંદ સંસ્થાન
૬. કાલિદાસ ગ્રંથાવલી શ્રી રામપ્રતાપ .અનુ -ત્રિપાઠી
૭. અભિજ્ઞાનશાકુન્તલમ્ બાબુ રામ ત્રિપાઠી .ડૉ -
૮. કઠોપનિષદ
૯. કુમારસંભવમ્
૧૦. સ્કન્દપુરાણ
૧૧. રઘુવંશમ્
૧૨. મહાભારતમ્

વાંસદા તાલુકાની ઉચ્ચતર માધ્યમિક શાળાઓના અનુસૂચિત જાતિના વિદ્યાર્થીઓના કેટલાક ચલોના સંદર્ભમાં અનુકૂળનનનો અભ્યાસ.

**A STUDY OF THE LEVEL OF HIGHER SECONDARY SCHOOLS SCHEDULED TRIBLE STUDENTS WITH CONTEXT OF CERTAIN VARIABLES.**

ડો.એ.બી. આસોડીયા  
આસી.પ્રોફેસર  
શ્રીમતી જે.ડી ઠક્કર બી.એડ કોલેજ રાધનપુર

**પ્રસ્તાવના**

આજે ઝડપથી બદલાતા સમાજમાં પ્રત્યેક ક્ષણ નવા પરિવર્તનો લઈને આવે છે. જીવનમાં સુખ સગવડતા અને જેટલાં સાધનો વધ્યાં છે તેટલીજ સમસ્યાઓ પણ ઉભી થઈ છે. બધુંજ હોવા છતાં માનવી એક પ્રકારની માનસિક સંઘર્ષ અને મનોભારમાં જીવતો હોય તેવું લાગે છે. તે ઘણી વાર પોતાની જાત સાથે, વાતાવરણ સાથે, અન્ય વ્યક્તિઓ સાથે સમાયોજન સાધી શકતો નથી એટલે કે નઅનુકૂળનના પ્રશ્નો ઉભા થયા છે. જેવ્યક્તિના વિકાસમાં તેની પ્રગતિ અવરોધક બને છે.

**સમસ્યાવિધાન**

પ્રસ્તુત અભ્યાસનું સમસ્યા વિધાન નીચે મુજબ છે.

વાંસદા તાલુકાની ઉચ્ચતર માધ્યમિક શાળાઓના અનુસૂચિત જાતિના વિદ્યાર્થીઓના કેટલાક ચલોના સંદર્ભમાં અનુકૂળનનનો અભ્યાસ.

**A STUDY OF THE LEVEL OF HIGHER SECONDARY SCHOOLS SCHEDULED TRIBLE STUDENTS WITH CONTEXT OF CERTAIN VARIABLES.**

**હેતુઓ**

સંશોધનના હેતુઓ નક્કી કરવા ખૂબ જરૂરી છે. હેતુ વિહીન સંશોધનએ સુકાન વિનાના નાવ જેવું છે. પ્રસ્તુત સંશોધનના હેતુઓ નીચે પ્રમાણે છે.

ધોરણ – ૧૧ ના વિદ્યાર્થીઓના અનુકૂળનની જાતીયતાના સંદર્ભમાં અભ્યાસ કરવો.

ધોરણ – ૧૧ ના વિદ્યાર્થીઓના અનુકૂળનના વિસ્તારના સંદર્ભમાં અભ્યાસ કરવો.

ધોરણ – ૧૧ ના વિદ્યાર્થીઓના અનુકૂળનની શૈક્ષણિક સિદ્ધિના સંદર્ભમાં અભ્યાસ કરવો.

**ઉત્કલ્પનાઓ**

ઉત્કલ્પનાઓ એ એક પ્રકારની માન્યતા કે ધારણા જેની સાચી હોવાની શક્યતા હોય છે આ અભ્યાસની ઉત્કલ્પનાઓ નીચે પ્રમાણે છે.

ધોરણ – ૧૧ ના છોકરાઓ અને છોકરીઓના અનુકૂળનસ્તરના સરાસરી પ્રાપ્તિઓ વચ્ચે કોઈ સાર્થક તફાવત નહીં હોય.

ધોરણ – ૧૧ ના ગ્રામ્ય અને શહેરી વિસ્તારના વિદ્યાર્થીઓના અનુકૂળનસ્તરના સરાસરી પ્રાપ્તિઓ વચ્ચે કોઈ સાર્થક તફાવત નહીં હોય.

ધોરણ – ૧૧ ના ઉચ્ચ અને નિમ્ન શૈક્ષણિક સિદ્ધિ ધરાવતા વિદ્યાર્થીઓના અનુકૂળનસ્તરના સરાસરી પ્રાપ્તિઓ વચ્ચે કોઈ સાર્થક તફાવત નહીં હોય.

**વ્યાપ વિશ્વ**

પ્રસ્તુત અભ્યાસનું વ્યાપ વિશ્વ વાંસદા તાલુકાની ગ્રામ્ય અને શહેરી વિસ્તારની ઉચ્ચતર માધ્યમિક શાળાઓમાં અભ્યાસ કરતા ધોરણ – ૧૧ ના વિદ્યાર્થીઓ હતા.

**નમૂના પસંદગી**

દક્ષિણ ગુજરાતના નવસારી જિલ્લાના વાંસદા તાલુકાની ગ્રામ્ય અને શહેરી વિસ્તારની ઉચ્ચતર માધ્યમિક શાળાઓમાંથી યાદચ્છિક રીતે ચિટ્ટી ઉપાડ પદ્ધતિ દ્વારા ત્રણ શહેરી અને ત્રણ ગ્રામ્ય વિસ્તારની ઉચ્ચતર માધ્યમિક શાળાઓ પસંદ કરવામાં આવી હતી. પસંદ પામેલ શાળાના તમામ વિદ્યાર્થીઓનો સમાવેશ નમૂના ઝૂમખા પદ્ધતિથી કરવામાં આવ્યો હતો. આમ અંતે નમૂનાનું કદ ૪૧૬ ઉચ્ચતર માધ્યમિક શાળાના વિદ્યાર્થીઓ હતા.

**ઉપકરણની પસંદગી**

ઉપકરણની રચના વૈજ્ઞાનિક પ્રક્રિયા છે પ્રસ્તુત અભ્યાસ માટે અનુકૂળન સ્તર ડૉ. જે.બી. આસોડીયા રચિત અનુકૂળન સંશોધનિકાનો ઉપયોગ માહિતી એકત્રીકરણ માટે કરવામાં આવ્યો હતો.

**માહિતી એકત્રીકરણ**

માહિતી એકત્રીકરણ માટે નમૂનામાં પસંદ પામેલી ઉચ્ચતર માધ્યમિક શાળાઓના આચાર્યશ્રીની પૂર્વ મજૂરી મેળવવામાં આવી હતી ત્યાર બાદ

વિદ્યાર્થીઓની અભ્યાસ અંગેની માહિતી આપી વિદ્યાર્થીઓને પ્રોત્સાહિત કરવામાં આવ્યા હતા. પ્રસ્તુત અભ્યાસના હેતુઓથી માહિતીગાર કરવામાં આવ્યા હતા. લગભગ બે તાસના સમયમાં માહિતી એકઠી કરવામાં આવી હતી.

#### **માહિતી પૃથક્કરણ**

પ્રસ્તુત અભ્યાસમાં પસંદ કરેલ નિદર્શના આધારે પ્રાપ્તકોનો સરવાળો અને મૂલ્ય દ્વારા ગણતરી કરવામાં આવી હતી.

ચલ		સંખ્યા	સરાસરી	પ્રમાણ વિચલન	પ્રમાણ ભૂલ	મૂલ્ય	સાર્થકતા
જાતિ	છોકરા	208	416.50	46.91	4.23	5.01	0.01
	છોકરીઓ	208	395.28	39.02			
વિસ્તાર	શહેરી	160	407.07	41.72	4.48	0.429	NS
	ગ્રામ્ય	256	405.15	46.04			
શૈ. સિદ્ધિ	ઉચ્ચ	160	56.87	8.42	1.03	7.13	0.01
	નિમ્ન	256	64.53	9.94			

તારણો પ્રસ્તુત અભ્યાસના તારણો નીચે મુજબ છે.

ઉચ્ચતર માધ્યમિક શાળાના ધોરણ-૧૧ ની છોકરીઓ કરતાં છોકરાઓ વધુ નઅનુકૂલનન ધરાવે છે તેથી જાતિએ અનુકૂલન પર અસર કરનાર પરિબળ છે.

ઉચ્ચતર માધ્યમિક શાળાના ધોરણ-૧૧ ના ગ્રામ્ય વિસ્તાર કરતાં શહેરી વિસ્તારના વિદ્યાર્થીઓ વધુ અનુકૂલન ધરાવે છે. તેથી વિસ્તારએ અનુકૂલન પર અસર કરનાર પરિબળ છે.

ઉચ્ચતર માધ્યમિક શાળાના ધોરણ - ૧૧ ના ઉચ્ચ શૈક્ષણિક સિદ્ધિ કરતાં નિમ્ન શૈક્ષણિક સિદ્ધિ ધરાવતા વિદ્યાર્થીઓ વધુ અનુકૂલનન ધરાવે છે. તેથી શૈક્ષણિક સિદ્ધિએ અનુકૂલન પર અસર કરનાર પરિબળ છે.

#### **ઉપસંહાર**

આમ આજના હરીફાઈના યુગમાં વિદ્યાર્થીઓને સફળતા કે નિષ્ફળતા વિકસાવી વિદ્યાર્થીઓમાં વિકાસ પ્રેરક વાતાવરણ વિદ્યાર્થીની બુદ્ધિમાં વધારો કરે છે જ્યારે વિદ્યાર્થીઓનું અનુકૂલન વધારવા માટે વિદ્યાર્થીઓની પ્રશંસા કરવી, બદલો આપવો તેમજ સફળતા અને પ્રગતિ અંગે મદદ કરવી જોઈએ.

#### **સંદર્ભ સૂચિ**

- ૧ દેસાઈ એચ.જી અને દેસાઈ કે.જી, 'સંશોધન પદ્ધતિઓ અને પ્રવિધિઓ' (ત્રીજી આવૃત્તિ)અમદાવાદ યુનિ. ગ્રંથ નિર્માણ બોર્ડ - ૧૯૮૫
- ૨ દેસાઈ એચ.જી અને દેસાઈ કે.જી, 'મનોવૈજ્ઞાનિક માપન' (ત્રીજી આવૃત્તિ)અમદાવાદ યુનિ. ગ્રંથ નિર્માણ બોર્ડ - ૧૯૮૪
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- ૪ રાવલ,નટુભાઈ અને અન્ય, 'અધ્યેતા સ્વરૂપ અને વિકાસ' અમદાવાદ: નીરવ પ્રકાશન - ૧૯૮૫-૮૬
- ૫ શાહ, ડી.બી. (૨૦૦૫) 'શૈક્ષણિક સંશોધન' અમદાવાદ યુનિ. ગ્રંથ નિર્માણ બોર્ડ.
- ૬ પટેલ. શાસ્ત્રી અને અન્ય. અધ્યયન -અધ્યાપન , પ્રવિધિઓ તથા શૈક્ષણિક મૂલ્યાંકન અને આંકડાશાસ્ત્ર (પાંચમી આવૃત્તિ) અમદાવાદ : બી.એસ.શાહ પ્રકાશન-૧૯૮૦

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