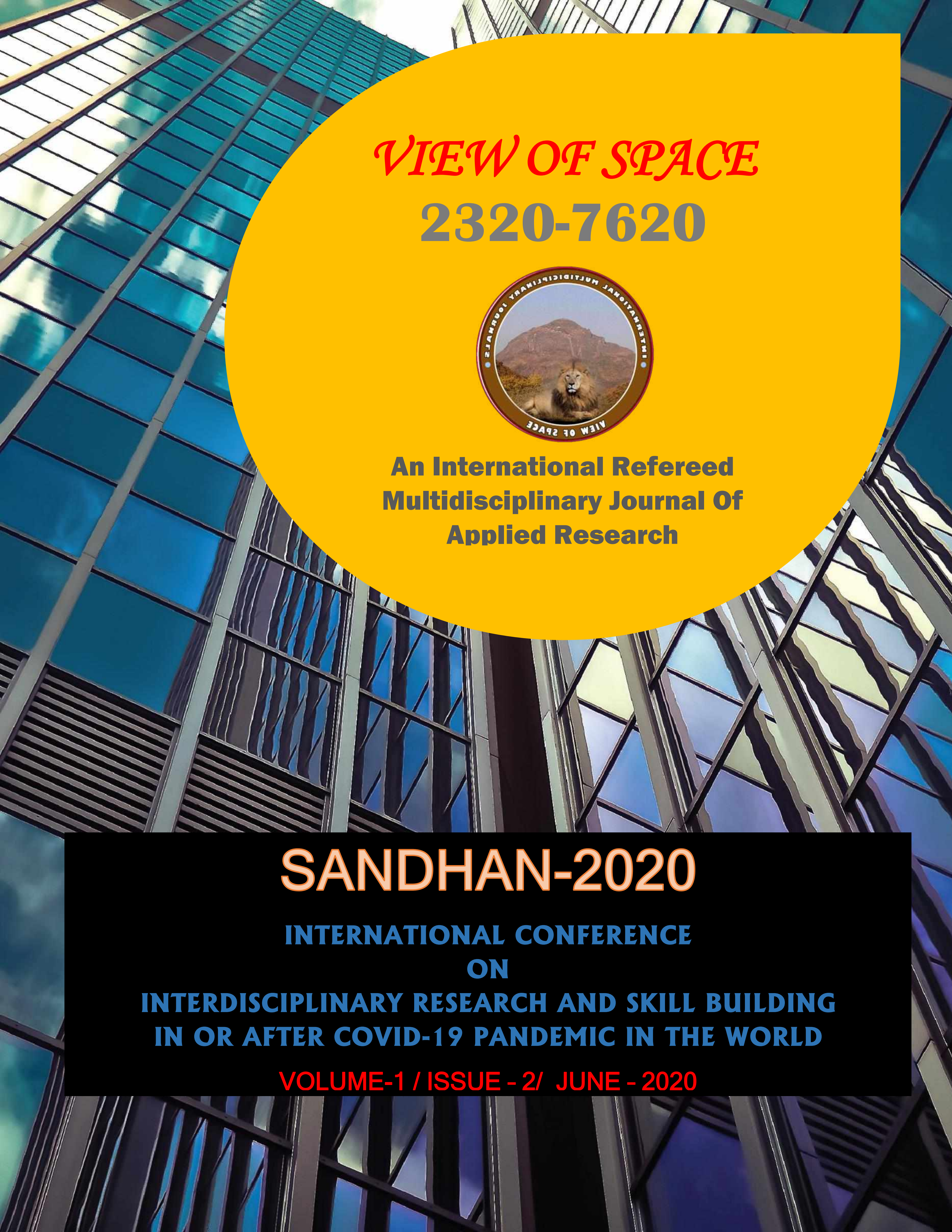

VIEW OF SPACE

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A STUDY ON INVESTOR'S PERCEPTION TOWARDS MUTUAL FUNDS WITH SPECIAL REFERENCE TO JUNAGADH CITY

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"Mutual funds are subject to market risk. Please read all offer related documents carefully." This is the famous tag line i.e. always mentioned in the pamphlets, brochures and even in the application form too. Approximately 40 Asset management companies are in India. Out of which some particular companies are known to the public and predominantly acceptable. This is totally depends upon the market situation. There are three options for investing segments such as online coma by banking sector and guidance of advisor. There are no dealings done in liquid cash but it is done by cheques and net banking.

The four main schemes of mutual funds are equity, balance, debt and sector funds

- Equity fund means it is 100% investing in share market which is fully risky.
- Balance fonts are 50% risky and 50% risk free
- Debt fund are 100% risk free like Bank deposits.
- Sector funds are like automobile, Pharma and infrastructure funds which are our also 100% risky.

Rajesh T., Prafulla k. (2017) They concluded the types of risk which are exist in mutual fund scheme. The data was collected from various types of investors of the industry. The research concentrated on the relationship among the investors decision and factors such as financial awareness, demographic details and liquidity as well. The conclusion found that low risk with liquidity of mutual fund scheme are having great impact on the investors perception towards mutual funds.

Khan AH, Agarwal SK (2017) In the study they concluded that in some particular areas, investors are not believing on private sector mutual funds while in Metros people are comparatively more aware and eagr to invest in private sector and PSU mutual funds as well. They also come to know that public are interested to invest in good venture but they don't have proper guidance in their own language or in simple way. They also found that people have some kind of knowledge about Mutual funds but they don't want to put their hard earned money in any private funds or in equity.

Balamurugan G., Rangeela M. (2018) The study is done only with reference to urban investors, rural investors are totally excluded from the study. From the study it found that in the area of mutual funds the factors which attract investors are like various types and scheme of the mutual funds, different investment avenues etc. They concluded that very good investment opportunities are provided by the mutual funds to investors but they should compare expected yield and risk after tax adjustment on various instruments while taking decision.

Kalaiselvi M. (2016) This study is exclusively focuses on the marketing of financial sector service named mutual funds. The specific area of the study is product awareness, brand preference and investor's satisfaction with the wider concept of this various functions of service marketing. As a result of the study it is concluded that the investors perception towards mutual fund and the factors determining their investment preference and investment decisions. The study will helpful to understand investor's perception and attitude for mutual funds as an investment option.

Nishi S. (2012) The study is concluded that the benefits which are come out from mutual fund are of three categories. The first one is related with scheme or fund related attributes which also includes safety of money favorable credit rating and also updates in intra-day trading. The second one is related to the monetary benefits or we can say capital appreciation, rate of return, relaxation charges, liquidity etc. The third one is related with reputation of sponsor, promptness in service etc.

Alamelu K., Indhumathi G. (2017) They concluded that the mutual fund industry is still in growth stage. The success of the industry depends on the high returns, investment of money in stock, bond etc., mutual fund bring together a group of people. It has advantages like economics of scale, professional management etc. The study analyze that the most of the investors have positive attitude for mutual fund investments. The attitude of investors are depend on demographic profile of investors that access age, income, gender etc. And it has direct effect on choice of investment.

Prithi M. (2016) The conclusion of the study is that the people are not ready to go with Mutual fund because of risk perspective rather people want to go with the other investment option which are comparatively less risky like recurring deposits and so on. Also the level of awareness towards mutual fund in the investors are very low due to partial knowledge of mutual funds which prevent them to invest also to avoid fear of losing money and risk bearing factor as well. Most of the investors prefer banker we can say fixed deposit as an investment option because of less risk and no fear of losing money.

Ankit G. The study concluded that the main reason for limited growth of mutual fund in India is only less awareness of benefits of it. Also very large number of schemes is available in the mutual fund so that investors are getting confused in selecting appropriate scheme. At present, the rate of return in the rate of return in traditional investment either bank or post office or any other options are shrinking day by day, so that mutual fund investments are helping to boome the return and therefore mutual fund are proved better to fulfill the financial goal of investment.

Research problem:

The aim of the study is to examine the investor’s perception and attitude towards mutual funds.

Research Objectives:

Objective 1. To know the investors view about mutual funds.

Objective 2. To know the awareness towards mutual funds in people of Junagadh.

Objective 3. To know the factors which affect the investors to invest in mutual funds.

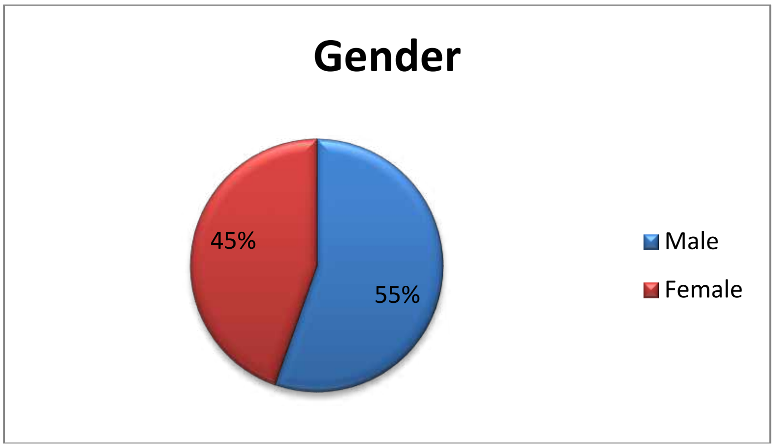
Objective 4. To find out the factors affecting selection of mutual fund option as an investment option.

DATA ANALYSIS AND INTERPRETATION

Q.1 Gender

	Frequency	Percent
Male	97	55.4
Female	78	44.6
Total	175	100.0

Table 1 Gender



Graph 5 Gender

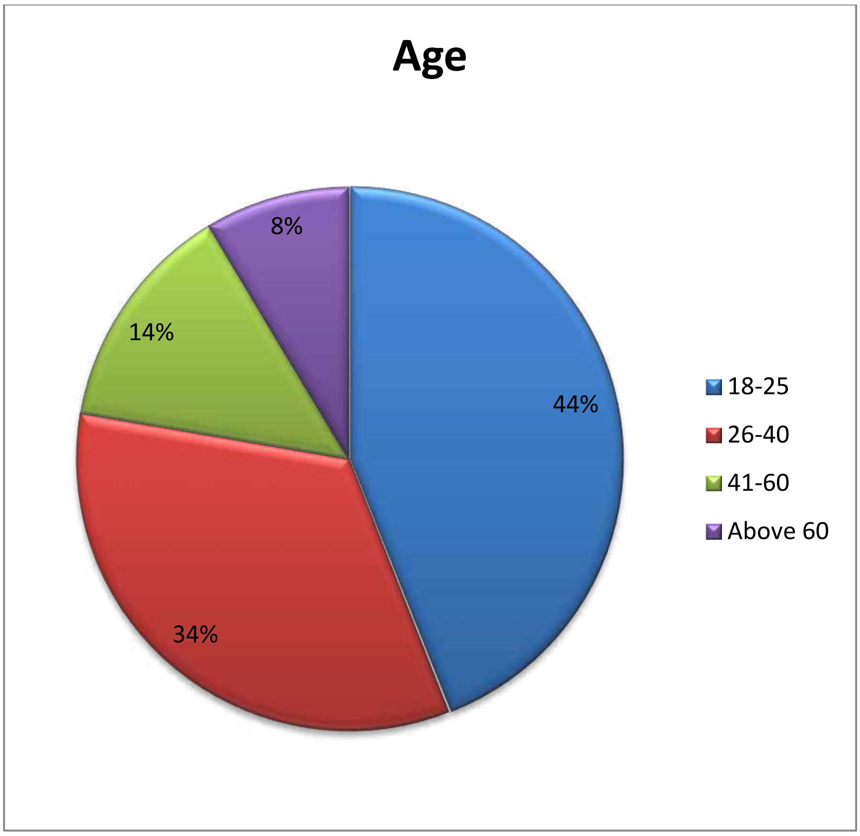
Interpretation:

From the above table and chart it can be seen that out of 175 respondents 55.43% (97 in numbers) are male respondents and 44.57% (78 in numbers) are female.

Q.2 Age

	Frequency	Percent
18-25	77	44.0
26-40	59	33.7
41-60	24	13.7
Above 60	15	8.6
Total	175	100.0

Table 2 Age



Graph 6 Age

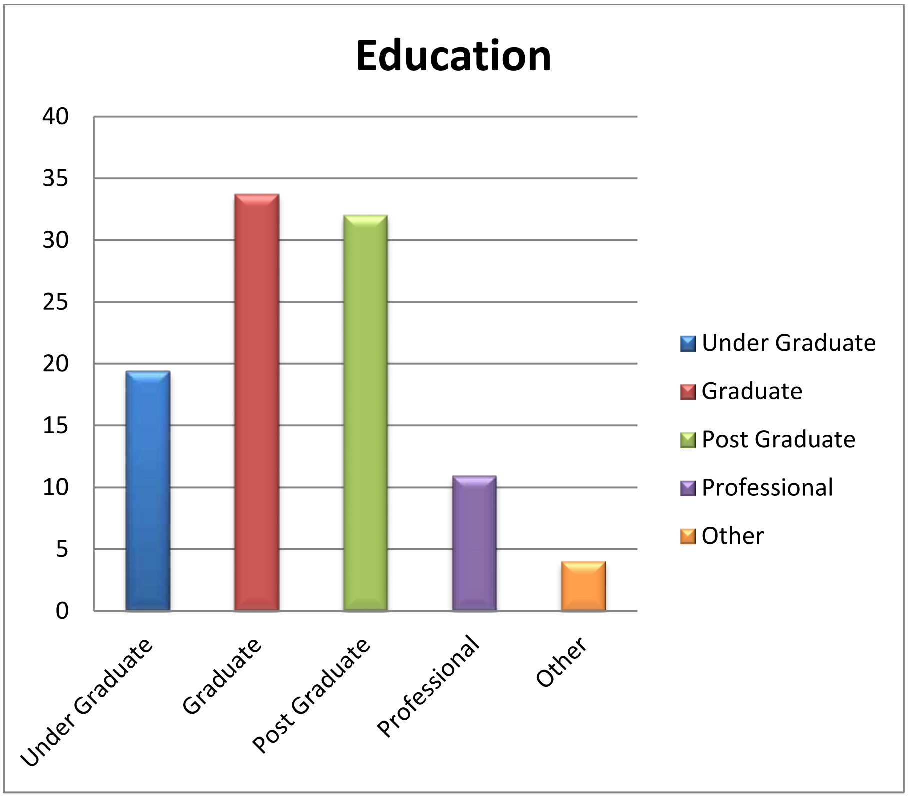
Interpretation:

From the above graph and table we can see that 77.71% respondents are of 18 to 40 years while rest 22.28% respondents are of above 40 years of age.

Q.3 Education

	Frequency	Percent
Under Graduate	34	19.4
Graduate	59	33.7
Post Graduate	56	32.0
Professional	19	10.9
Other	7	4.0
Total	175	100.0

Table 3 Education



Graph 7 Education

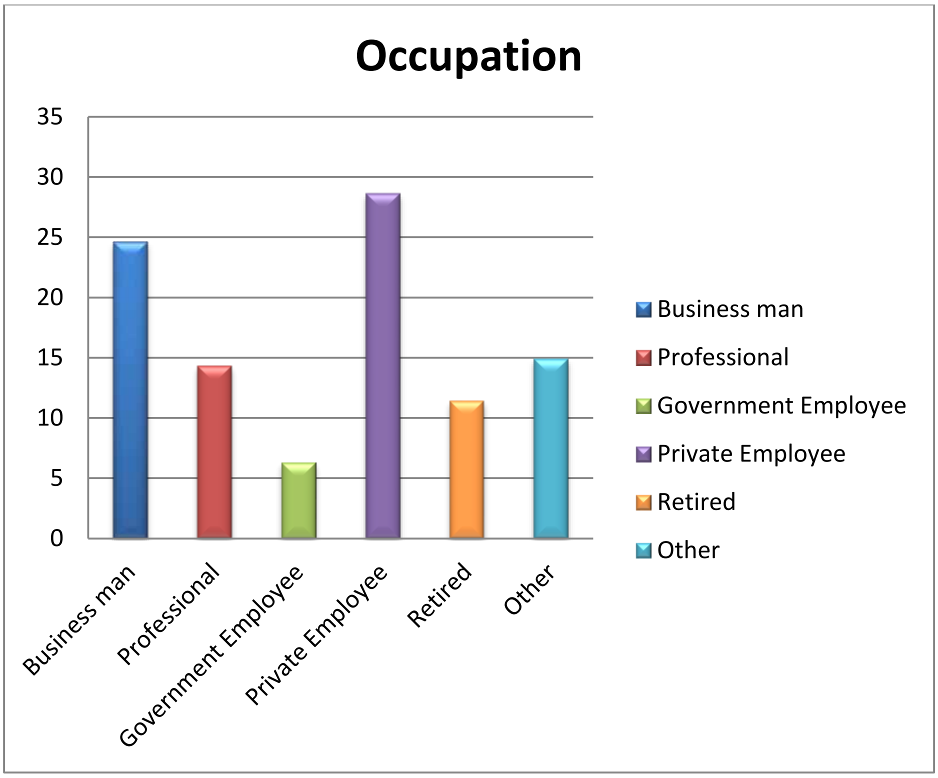
Interpretation:

Out of 175 respondents 34 are under graduate, 59 are graduate, 56 are post graduate, 19 are professional and 7 are belongs to the other category.

Q.4 Occupation

	Frequency	Percent
Business man	43	24.6
Professional	25	14.3
Government Employee	11	6.3
Private Employee	50	28.6
Retired	20	11.4
Other	26	14.9
Total	175	100.0

Table 4 Occupation



Graph 8 Occupation

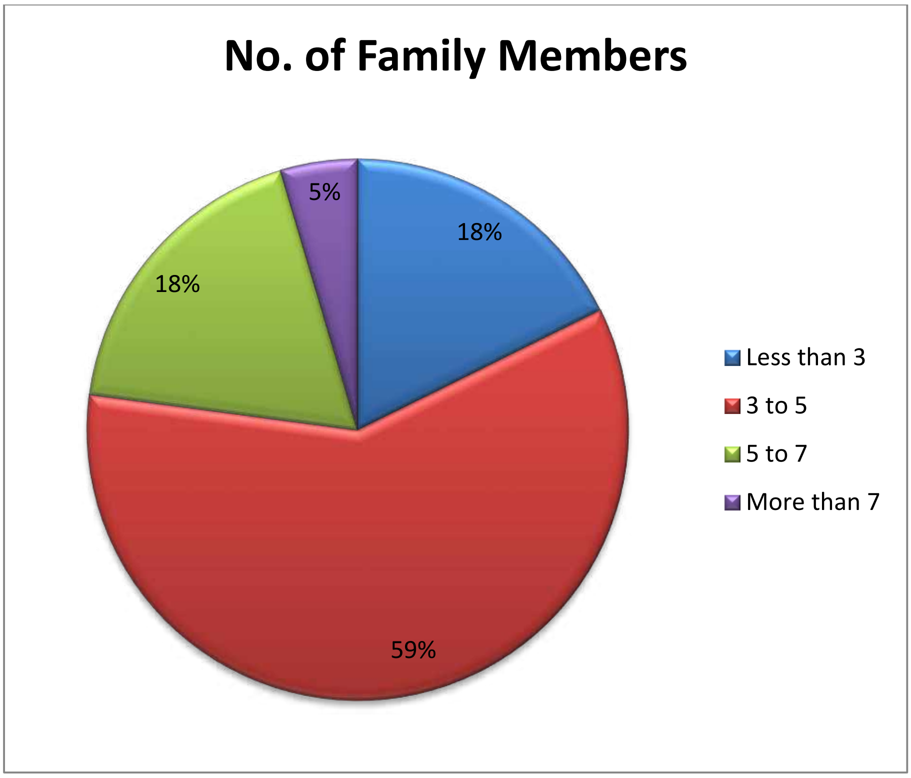
Interpretation:

From the above graph we can see that the highest 28.57% respondents are private employees whereas the lowest 6.29% of respondents are government employees.

Q.5 No. of Family Members

	Frequency	Percent
Less than 3	31	17.7
3 to 5	104	59.4
5 to 7	32	18.3
More than 7	8	4.6
Total	175	100.0

Table 5 No. of Family Members



Graph 9 No. of Family Members

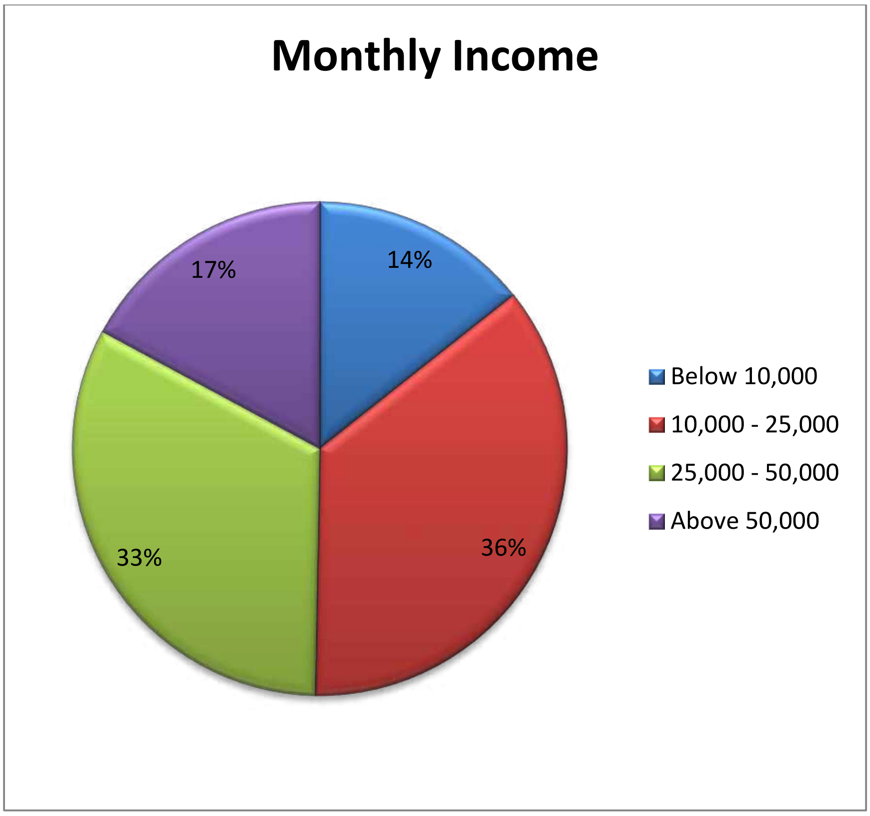
Interpretation:

From the above graph and table we can see that the highest 104 respondents that is 59.43% of the whole are having only 3 to 5 family members while only 4.57% that is 8 out of 175 respondents are having more than 7 family members.

Q.6 Monthly Income

	Frequency	Percent
Below 10,000	25	14.3
10,000 - 25,000	63	36.0
25,000 - 50,000	57	32.6
Above 50,000	30	17.1
Total	175	100.0

Table 6 Monthly Income



Graph 10 Monthly Income

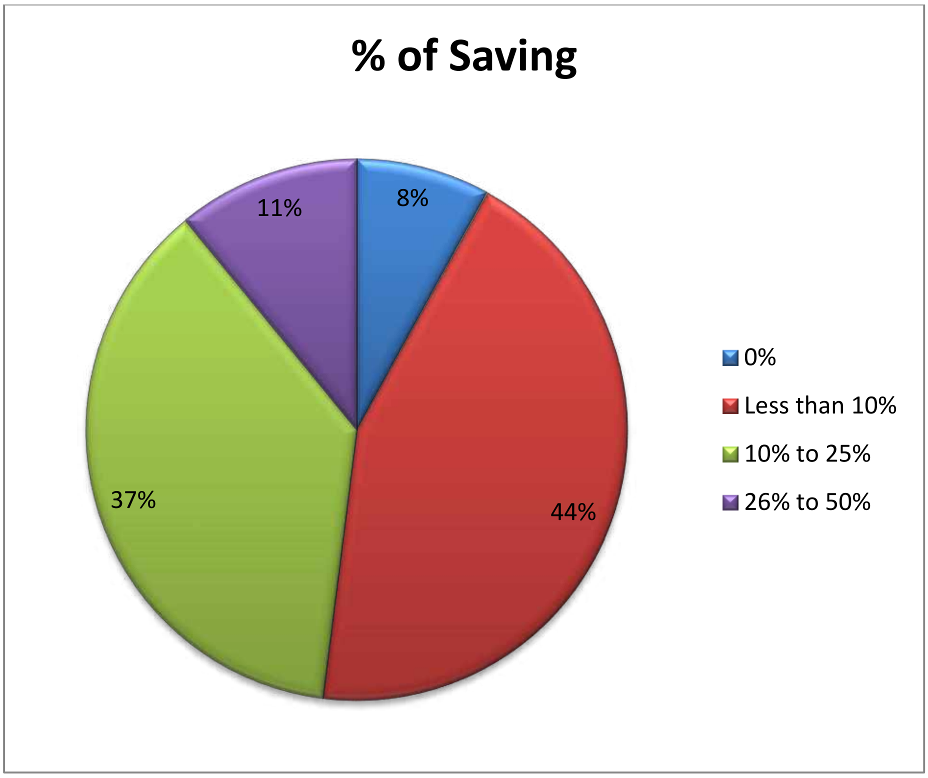
Interpretation:

Out of 175 respondents the income of 14.29% respondents are below 10,000 while the income of 36% respondents are 10,000 to 25,000 whereas rest approximate 50% respondents are earning above 25,000.

Q.7 How many % of income you save?

	Frequency	Percent
0%	14	8.0
Less than 10%	77	44.0
10% to 25%	65	37.1
26% to 50%	19	10.9
Total	175	100.0

Table 7 How many % of income you save

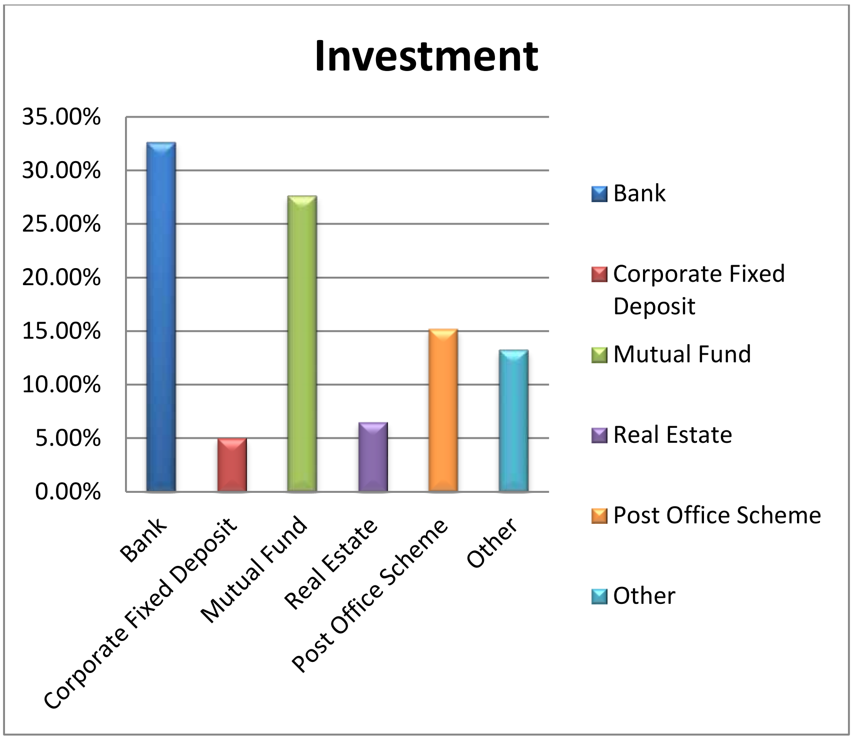


Graph 11 How many % of income you save

Interpretation:
From the above table and graph we can see that 52% respondents are saving less than 10% of their income while 48% respondents are saving more than 10% of their income.
Q.8 Where do you invest your money?

	Responses		Percent of Cases
	N	Percent	
Bank	111	32.6%	63.4%
Corporate Fixed Deposit	17	5.0%	9.7%
Mutual Fund	94	27.6%	53.7%
Real Estate	22	6.5%	12.6%
Post Office Scheme	52	15.2%	29.7%
Other	45	13.2%	25.7%
Total	341	100.0%	194.9%

Table 8 Investment



Graph 12 Investment

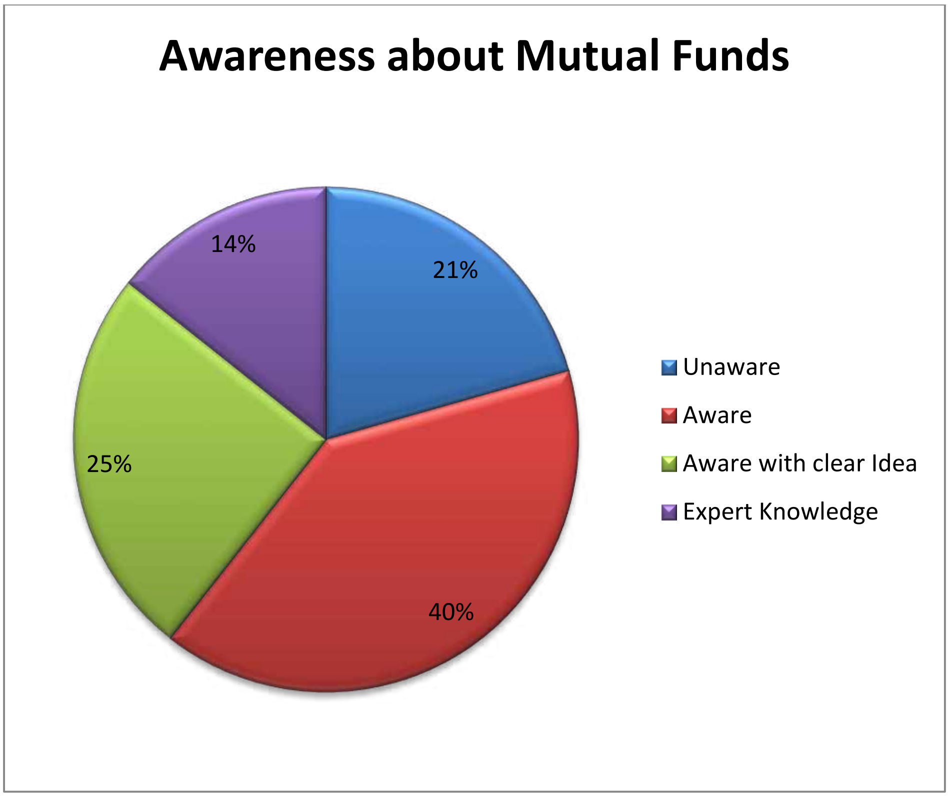
Interpretation:

From the above table and graph, Only 27.6% respondents are now investing in mutual funds while 32.6% and 15.2% respondents prefer bank and post office scheme respectively.

Q.9 Rate your awareness about Mutual funds.

	Frequency	Percent
Unaware	36	20.6
Aware	70	40.0
Aware with clear Idea	44	25.1
Expert Knowledge	25	14.3
Total	175	100.0

Table 9 Awareness about Mutual funds.



Graph 13 Awareness about Mutual funds.

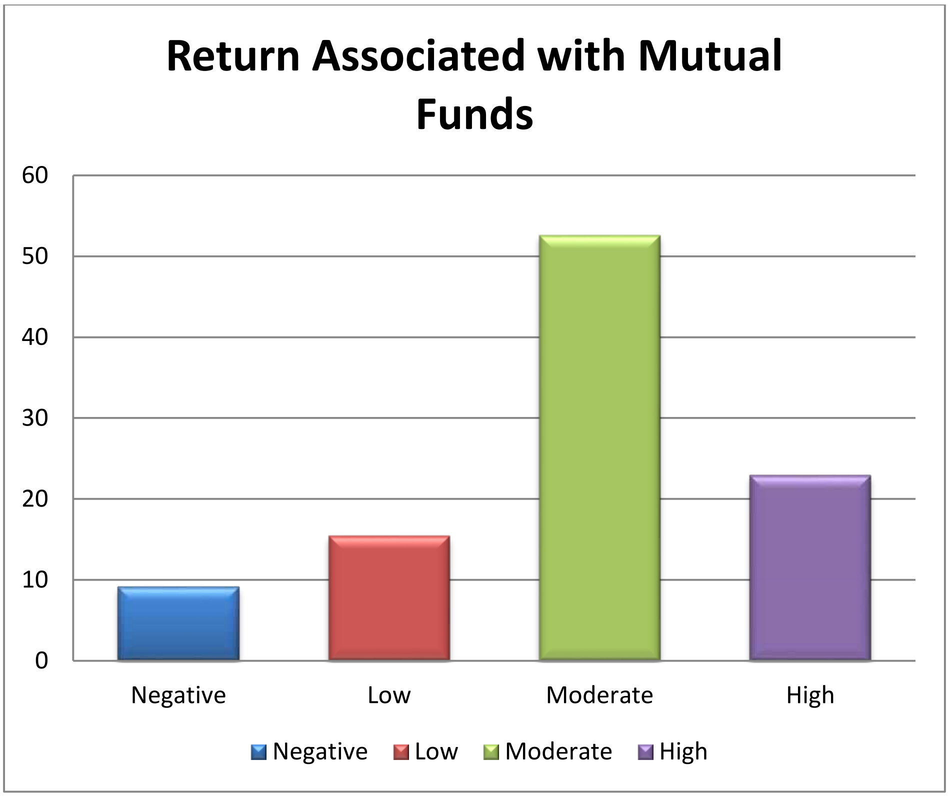
Interpretation:

From the above table and graph the highest 40% respondents are aware from mutual funds and the lowest 14.29% respondents are having expert knowledge about mutual funds while 20.57% i.e. almost 36 people out of 175 are totally unaware about mutual funds.

Q.10 How do you see the return associated with Mutual fund Investment?

	Frequency	Percent
Negative	16	9.1
Low	27	15.4
Moderate	92	52.6
High	40	22.9
Total	175	100.0

Table 10 The return associated with Mutual fund Investment



Graph 14 The return associated with Mutual fund Investment

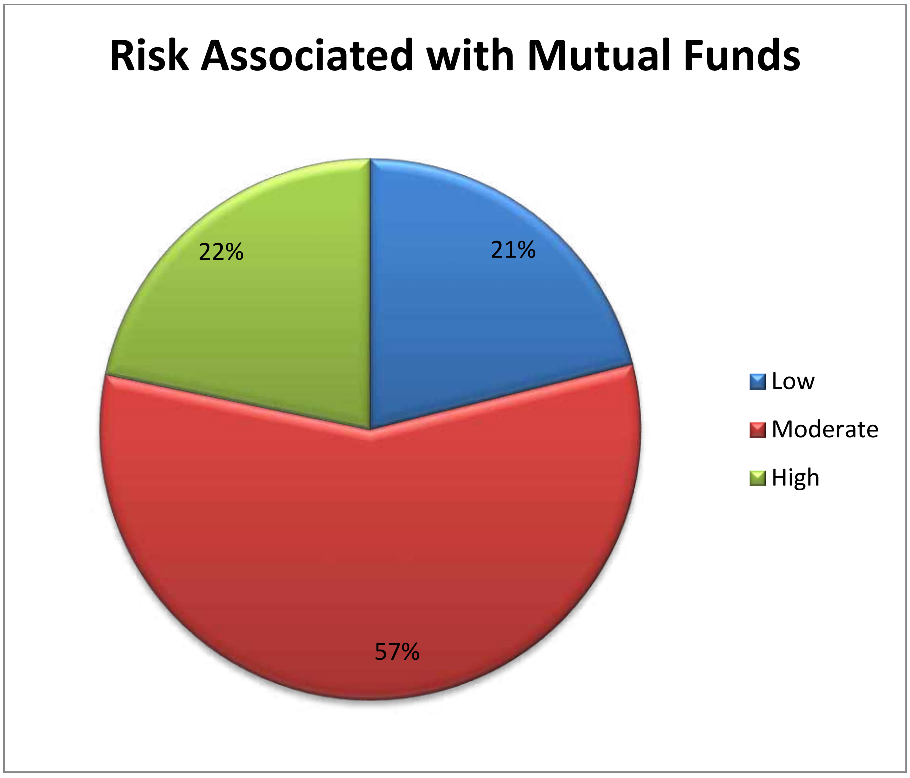
Interpretation:

From the collected data 52.57% respondents believe that return associated with Mutual funds is moderate while 9.14% respondents believe that return associated with Mutual funds is negative.

Q.11 How do you rate the risk associated with Mutual funds.

	Frequency	Percent
Low	37	21.1
Moderate	100	57.1
High	38	21.7
Total	175	100.0

Table 11 The risk associated with Mutual funds.



Graph 15 The risk associated with Mutual funds.

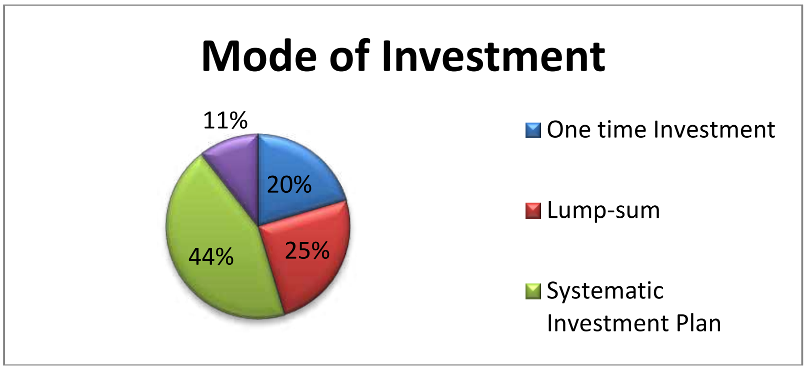
Interpretation:

The perception of respondents for risk associated with Mutual funds is that 57.14% says that there is moderated risk in mutual fund while for high and low risk 21% and 21% respondents are there respectively.

Q.12 In Mutual funds which mode of investment will prefer?

	Responses		Percent of Cases
	N	Percent	
One time Investment	50	20.4%	28.6%
Lump-sum	61	24.9%	34.9%
Systematic Investment Plan	108	44.1%	61.7%
Systematic Withdrawal Plan	26	10.6%	14.9%
Total	245	100.0%	140.0%

Table 12 Mode of Investment



Graph 16 Mode of Investment

Interpretation:

In mutual fund investment, 44.1% respondents prefer systematic investment plan and 24.9 % respondents prefer lump sum investment while only 20.4 % and 10.6% respondents preferred one time investment and systematic withdrawal plan respectively.

STATISTICAL TESTS

Rate the following factors affecting to invest in Mutual fund.

Table 13 Factors affecting to invest in Mutual fund

Interpretation:

From the above analysis it can be concluded that Saving, Potential return and Tax benefit is most affecting factors to the mutual funds while Portfolio Management, Liquidity, Balanced risk are least affecting factors to the mutual fund whereas Safety and Flexibility are moderately affect to the mutual fund investment.

Rate your perception about Mutual Fund.

Mutual funds are useful to small investor.

	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	36	1	36	15	2.4
Disagree	35	2	70	15	4.67
Neutral	27	3	81	15	5.4
Agree	42	4	168	15	11.2
Strongly Agree	35	5	175	15	11.67
Total	175	15			35.33

Table 14.1 Mutual funds are useful to small investor.

Mutual funds have better professional expertise than individual investor.					
	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	26	1	26	15	1.73
Disagree	33	2	66	15	4.4
Neutral	48	3	144	15	9.6
Agree	45	4	180	15	12
Strongly Agree	23	5	115	15	7.67
Total	175	15			35.4

Table 14.2 Mutual funds have better professional expertise than individual investor.

Mutual funds provide easy withdrawal facilities.					
	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	16	1	16	15	1.07
Disagree	37	2	74	15	4.93
Neutral	62	3	186	15	12.4
Agree	42	4	168	15	11.2
Strongly Agree	18	5	90	15	6
Total	175	15			35.6

Table 14.3 Mutual funds provide easy withdrawal facilities.
Table 14.4 NAV of mutual fund is disclosed on day to day basis.

NAV of mutual fund is disclosed on day to day basis.					
	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	25	1	25	15	1.67
Disagree	36	2	72	15	4.8
Neutral	48	3	144	15	9.6
Agree	46	4	184	15	12.27
Strongly Agree	20	5	100	15	6.67
Total	175	15			35
Management cost charged to the funds are reasonable.					
	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	16	1	16	15	1.07
Disagree	39	2	78	15	5.2
Neutral	57	3	171	15	11.4
Agree	39	4	156	15	10.4
Strongly Agree	24	5	120	15	8
Total	175	15			36.07

Table 14.5 Management cost charged to the funds are reasonable.

Mutual funds provide better tax benefits.					
	Frequency (f)	Weight (w)	f * w	∑w	Weighted Mean
Strongly Disagree	22	1	22	15	1.47
Disagree	20	2	40	15	2.67
Neutral	68	3	204	15	13.6
Agree	38	4	152	15	10.13
Strongly Agree	27	5	135	15	9
Total	175	15			36.87

Table 14.6 Mutual funds provide better tax benefits.

Rate your perception about Mutual Fund.		
Particulars	Weighted Mean	Rank
Mutual funds are useful to small investor.	35.33	5
Mutual funds have better professional expertise than individual investor.	35.4	4
Mutual funds provide easy withdrawal facilities.	35.6	3
NAV of mutual fund is disclosed on day to day basis.	35	6
Management cost charged to the funds are reasonable.	36.07	2
Mutual funds provide better tax benefits.	36.87	1

Table 14 Perception about Mutual Fund.

Interpretation:

From the above analysis it can be concluded that Tax benefits get 1st rank, reasonable cost charges get 2nd rank, easy withdrawal get 3rd rank, Professional expertise get 4th rank, and Useful for small investor is on 5th rank and Day to day NAV get 6th rank.

CHI-SQUARE

1) Gender And Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is Gender.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exists no association between Gender and Factors affecting to invest in Mutual Funds.

H1: There exists significant association between Gender and Factors affecting to invest in Mutual Funds.

Gender*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Gender	Savings	0.315	>	0.05	H0 Accepted
2	Gender	Tax Benefits	0.742	>	0.05	H0 Accepted
3	Gender	Portfolio	0.809	>	0.05	H0

		Management				Accepted
4	Gender	Balanced Risk	0.255	>	0.05	H0 Accepted
5	Gender	Safety of investment	0.234	>	0.05	H0 Accepted
6	Gender	Liquidity	0.598	>	0.05	H0 Accepted
7	Gender	Flexibility	0.567	>	0.05	H0 Accepted
8	Gender	Potential Return	0.209	>	0.05	H0 Accepted

Table 15 Gender*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between Gender and Factors affecting to invest in Mutual Funds.

2) Age And Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is Age.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exists no association between Age and Factors affecting to invest in Mutual Funds.
H1: There exists significant association between Age and Factors affecting to invest in Mutual Funds.

Age*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Age	Savings	0.227	>	0.05	H0 Accepted
2	Age	Tax Benefits	0.515	>	0.05	H0 Accepted
3	Age	Portfolio Management	0.341	>	0.05	H0 Accepted
4	Age	Balanced Risk	0.185	>	0.05	H0 Accepted
5	Age	Safety of investment	0.896	>	0.05	H0 Accepted
6	Age	Liquidity	0.052	>	0.05	H0 Accepted
7	Age	Flexibility	0.196	>	0.05	H0 Accepted
8	Age	Potential Return	0.089	>	0.05	H0 Accepted

Table 16 Age*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between Age and Factors affecting to invest in Mutual Funds.

3) Education And Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is Education.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exists no association between Education and Factors affecting to invest in Mutual Funds.
H1: There exists significant association between Education and Factors affecting to invest in Mutual Funds.

Education*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Education	Savings	0.004	<	0.05	H1 Accepted
2	Education	Tax Benefits	0.018	<	0.05	H1 Accepted
3	Education	Portfolio Management	0.087	>	0.05	H0 Accepted
4	Education	Balanced Risk	0.001	<	0.05	H1 Accepted
5	Education	Safety of investment	0.366	>	0.05	H0 Accepted
6	Education	Liquidity	0.094	>	0.05	H0 Accepted
7	Education	Flexibility	0.740	>	0.05	H0 Accepted
8	Education	Potential Return	0.124	>	0.05	H0 Accepted

Table 17 Education*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between Education and Factors affecting to invest in Mutual Funds like Savings, tax benefits, portfolio management, safety of investment, liquidity, flexibility and potential return while there is significant association between Education and Balanced Risk.

4) Occupation And Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is Occupation.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exists no association between Occupation and Factors affecting to invest in Mutual Funds.

H1: There exists significant association between Occupation and Factors affecting to invest in Mutual Funds.

Occupation*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Occupation	Savings	0.020	<	0.05	H1 Accepted
2	Occupation	Tax Benefits	0.295	>	0.05	H0 Accepted
3	Occupation	Portfolio Management	0.095	>	0.05	H0 Accepted
4	Occupation	Balanced Risk	0.037	<	0.05	H1 Accepted
5	Occupation	Safety of investment	0.199	>	0.05	H0 Accepted
6	Occupation	Liquidity	0.005	<	0.05	H1 Accepted
7	Occupation	Flexibility	0.920	>	0.05	H0 Accepted
8	Occupation	Potential Return	0.133	>	0.05	H0 Accepted

Table 18 Occupation*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between Occupation and Factors affecting to invest in Mutual Funds like Savings, tax benefits, portfolio management, safety of investment, flexibility and potential return while there is significant association between Occupation and Balanced Risk and Liquidity.

5) Monthly Income and Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is Monthly Income.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exists no association between Monthly Income and Factors affecting to invest in Mutual Funds.
H1: There exists significant association between Monthly Income and Factors affecting to invest in Mutual Funds.

Monthly Income*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Monthly Income	Savings	0.029	<	0.05	H1 Accepted
2	Monthly Income	Tax Benefits	0.028	<	0.05	H1 Accepted
3	Monthly Income	Portfolio Management	0.111	>	0.05	H0 Accepted

4	Monthly Income	Balanced Risk	0.062	>	0.05	H0 Accepted
5	Monthly Income	Safety of investment	0.143	>	0.05	H0 Accepted
6	Monthly Income	Liquidity	0.058	>	0.05	H0 Accepted
7	Monthly Income	Flexibility	0.532	>	0.05	H0 Accepted
8	Monthly Income	Potential Return	0.017	<	0.05	H1 Accepted

Table 19 Monthly Income*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between Monthly Income and Factors affecting to invest in Mutual Funds like portfolio management, Balanced Risk, safety of investment, liquidity, flexibility and while there is significant association between Monthly Income and Savings, tax benefits and potential return.

6) % of saving and Factors affecting to invest in Mutual Funds.

Variable 1: Independent variable is % of saving.
Variable 2: Dependent variable is Factors affecting to invest in Mutual Funds.

H0: There exist no association between % of saving and Factors affecting to invest in Mutual Funds.
H1: There exist significant association between % of saving and Factors affecting to invest in Mutual Funds.

% of Saving*Factors affecting to invest in Mutual fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	% of Saving	Savings	0.247	>	0.05	H0 Accepted
2	% of Saving	Tax Benefits	0.001	<	0.05	H1 Accepted
3	% of Saving	Portfolio Management	0.071	>	0.05	H1 Accepted
4	% of Saving	Balanced Risk	0.586	>	0.05	H0 Accepted
5	% of Saving	Safety of investment	0.054	>	0.05	H0 Accepted
6	% of Saving	Liquidity	0.002	<	0.05	H1 Accepted
7	% of Saving	Flexibility	0.375	>	0.05	H0 Accepted
8	% of Saving	Potential Return	0.015	<	0.05	H1 Accepted

Table 20 % of Savings*Factors affecting to invest in Mutual fund.

Interpretation:

From the above table it is concluded that there is no significant association between % of Savings and Factors affecting to invest in Mutual Funds like Savings, Balanced Risk, safety of investment and flexibility while there is significant association between % of Savings and tax benefits, portfolio management, liquidity and Potential Return.

i. **ANOVA TEST**

1) **<u>Gender and Perception about Mutual Fund.</u>**

Variable 1: Independent variable is Gender.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different Gender group assigned same/equal mean towards Perception about Mutual Funds.
H1: Different Gender group do not assigned same/equal mean towards Perception about Mutual Funds.

Gender*Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Gender	Mutual funds are useful to small investor.	0.386	>	0.05	H0 Accepted
2	Gender	Mutual funds have better professional expertise than individual investor.	0.657	>	0.05	H0 Accepted
3	Gender	Mutual funds provide easy withdrawal facilities.	0.586	>	0.05	H0 Accepted
4	Gender	NAV of mutual fund is disclosed on day to day basis.	0.537	>	0.05	H0 Accepted
5	Gender	Management cost charged to the funds is reasonable.	0.527	>	0.05	H0 Accepted
6	Gender	Mutual funds provide better tax benefits.	0.036	<	0.05	H1 Accepted

Table 21 Gender*Perception about Mutual Fund.

Interpretation:

From the above table, there is no impact Gender to the following perception.

- Mutual funds are useful to small investor.
- Mutual funds have better professional expertise than individual investor.

- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.
- Management cost charged to the funds is reasonable.

From the above table, there is significant impact Gender to the following perception.

- Mutual funds provide better tax benefits.

2) Age and Perception about Mutual Funds.

Variable 1: Independent variable is Age.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different Age group assigned same/equal mean towards Perception about Mutual Funds.
H1: Different Age group do not assigned same/equal mean towards Perception about Mutual Funds.

Age*Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Age	Mutual funds are useful to small investor.	0.471	>	0.05	H0 Accepted
2	Age	Mutual funds have better professional expertise than individual investor.	0.477	>	0.05	H0 Accepted
3	Age	Mutual funds provide easy withdrawal facilities.	0.030	<	0.05	H1 Accepted
4	Age	NAV of mutual fund is disclosed on day to day basis.	0.039	<	0.05	H1 Accepted
5	Age	Management cost charged to the funds is reasonable.	0.237	>	0.05	H0 Accepted
6	Age	Mutual funds provide better tax benefits.	0.105	>	0.05	H0 Accepted

Table 22 Age*Perception about Mutual Fund.

Interpretation:

From the above table, there is no impact Gender to the following perception.

- Mutual funds are useful to small investor.
- Mutual funds have better professional expertise than individual investor.
- Management cost charged to the funds is reasonable.
- Mutual funds provide better tax benefits.

From the above table, there is significant impact Gender to the following perception.

- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.

3) Education and Perception about Mutual Funds.

Variable 1: Independent variable is Education.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different Education group assigned same/equal mean towards Perception about Mutual Funds.
H1: Different Education group do not assigned same/equal mean towards Perception about Mutual Funds.

Education*Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Education	Mutual funds are useful to small investor.	0.656	>	0.05	H0 Accepted
2	Education	Mutual funds have better professional expertise than individual investor.	0.099	>	0.05	H0 Accepted
3	Education	Mutual funds provide easy withdrawal facilities.	0.015	<	0.05	H1 Accepted
4	Education	NAV of mutual fund is disclosed on day to day basis.	0.015	<	0.05	H1 Accepted
5	Education	Management cost charged to the funds is reasonable.	0.047	<	0.05	H1 Accepted
6	Education	Mutual funds provide better tax benefits.	0.006	<	0.05	H1 Accepted

Table 23 Education*Perception about Mutual Fund.

Interpretation:

From the above table, there is no impact Education to the following perception.

- Mutual funds are useful to small investor.
- Mutual funds have better professional expertise than individual investor.

From the above table, there is significant impact Education to the following perception.

- Mutual funds provide better tax benefits.
- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.
- Management cost charged to the funds is reasonable.

4) Occupation and Perception about Mutual Funds.

Variable 1: Independent variable is Occupation.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different Occupation group assigned same/equal mean towards Perception about Mutual Funds.
H1: Different Occupation group do not assigned same/equal mean towards Perception about Mutual Funds.

Occupation*Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Occupation	Mutual funds are useful to small investor.	0.439	>	0.05	H0 Accepted
2	Occupation	Mutual funds have better professional expertise than individual investor.	0.444	>	0.05	H0 Accepted
3	Occupation	Mutual funds provide easy withdrawal facilities.	0.008	<	0.05	H1 Accepted
4	Occupation	NAV of mutual fund is disclosed on day to day basis.	0.004	<	0.05	H1 Accepted
5	Occupation	Management cost charged to the funds is reasonable.	0.095	>	0.05	H0 Accepted
6	Occupation	Mutual funds provide better tax benefits.	0.048	<	0.05	H1 Accepted

Table 24 Occupation*Perception about Mutual Fund.

Interpretation:

From the above table, there is no impact Occupation to the following perception.

- Mutual funds are useful to small investor.
- Mutual funds have better professional expertise than individual investor.
- Management cost charged to the funds is reasonable.

From the above table, there is significant impact Occupation to the following perception.

- Mutual funds provide better tax benefits.
- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.

5) <u>Monthly Income and Perception about Mutual Funds.</u>

Variable 1: Independent variable is Monthly Income.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different Monthly Income group assigned same/equal mean towards Perception about Mutual Funds.
H1: Different Monthly Income group do not assigned same/equal mean towards Perception about Mutual Funds.

Monthly Income*Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	Monthly Income	Mutual funds are useful to small investor.	0.180	>	0.05	H0 Accepted
2	Monthly Income	Mutual funds have better professional expertise than individual investor.	0.043	<	0.05	H1 Accepted
3	Monthly Income	Mutual funds provide easy withdrawal facilities.	0.002	<	0.05	H1 Accepted
4	Monthly Income	NAV of mutual fund is disclosed on day to day basis.	0.006	<	0.05	H1 Accepted
5	Monthly Income	Management cost charged to the funds is reasonable.	0.000	<	0.05	H1 Accepted
6	Monthly Income	Mutual funds provide better tax benefits.	0.002	<	0.05	H1 Accepted

Table 25 Monthly Income*Perception about Mutual Fund.

Interpretation:

From the above table, there is no impact Monthly Income to the following perception.

- Mutual funds are useful to small investor.

From the above table, there is significant impact Monthly Income to the following perception.

- Mutual funds provide better tax benefits.
- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.
- Management cost charged to the funds is reasonable.
- Mutual funds have better professional expertise than individual investor.

6) <u>% of Saving and Perception about Mutual Funds.</u>

Variable 1: Independent variable is % of saving.
Variable 2: Dependent variable is Perception about Mutual Funds.

H0: Different % of saving assigned same/equal mean towards Perception about Mutual Funds.
H1: Different % of saving do not assigned same/equal mean towards Perception about Mutual Funds.

% of Saving * Perception about Mutual Fund.						
Sr. No.	Independent Variable	Dependent Variable	Significant Value	>/<	Significance level	Remark
1	% of Saving	Mutual funds are useful to small investor.	0.033	<	0.05	H1 Accepted
2	% of Saving	Mutual funds have better	0.007	<	0.05	H1

		professional expertise than individual investor.				Accepted
3	% of Saving	Mutual funds provide easy withdrawal facilities.	0.002	<	0.05	H1 Accepted
4	% of Saving	NAV of mutual fund is disclosed on day to day basis.	0.000	<	0.05	H1 Accepted
5	% of Saving	Management cost charged to the funds is reasonable.	0.000	<	0.05	H1 Accepted
6	% of Saving	Mutual funds provide better tax benefits.	0.001	<	0.05	H1 Accepted

Table 26 % of Saving * Perception about Mutual Fund.

Interpretation:

From the above table, there is significant impact % of saving to the following perception.

- Mutual funds provide better tax benefits.
- Mutual funds provide easy withdrawal facilities.
- NAV of mutual fund is disclosed on day to day basis.
- Management cost charged to the funds is reasonable.
- Mutual funds have better professional expertise than individual investor.
- Mutual funds are useful to small investor.

CONCLUSION

The awareness towards mutual fund investment is still at moderate level in Junagadh City. Even in India, only 1% people directly invest in equity while in America this ratio is 20 to 25%. Thus, lack of awareness and proper information and guidance main reason for Limited growth of mutual fund industry.

The most important factor is lack of reliability and confidence about mutual funds because Mutual Funds are subject to market rate. A fixed return for specific time is given by various banks of India and various schemes of Indian post so here risk factor affect low with compared to mutual funds that's why most of people prefer traditional investments only.

However, from this study it is concluded that flexibility, liquidity, service quality, tax saving and transparency have create very high effect on perception of investors. The most of investors analyze risk factor and so the top priority of them is systematic investment plan in mutual fund investment.

At last the main reason for Limited growth of mutual fund industry is lack of awareness of benefits which can get from mutual funds investment. Another reason is very large number of schemes is there so investor is getting confused for selecting appropriate scheme. Now-a-days mutual fund investment gave almost double return as compared to other investment like banks and post office scheme so that mutual fund are proved better to fulfill the financial goal of investor.

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A STUDY OF DEATH RATEDURING COVID-19

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ABSTRACT
The COVID-19 outbreak started in different countries at different times, and now those countries are at different stages. For instance, as on 8th April, USA had reported 3,98,809 confirmed cases, while the India had only reported 5,194.The outbreak has inherent concern about the risk of death due to COVID-19. The fatality of COVID-19 differs by location, and has changed during the early period of the outbreak. Different countries have different growth rate as the outbreak of COVID-19 did not happen at the same time and spreads evenly in all countries. Present research study attempts to analyze the mortality rates in selected countries of the world. In addition to look at the trajectory of death amongst these countries, it is also inevitable to grasp e on daily number of new deaths reported . It was found that that countries were successful in bending the death rate curve through several containment measures will be able to win the battle against COVID-19.However, rigorous surveillance in countries is required to prevent further global expansion of the outbreak, because resolving the exact mechanism of the initial transmission event is crucial.

ORIGIN OF COVID-19

Coronavirus is a single stranded RNA virus, which is spherical in shape andhas petal-like spines. It usually causes mild respiratory infections with symptoms such as cough, fever and in more severe cases, difficulty in breathing (Chen, Y. 2020)

Coronavirus disease is basically substance based i.e it spreads when a person touches an object which is already having a virus on it. Virus settles on object when an infected person cough or sneezes, and droplets get settled on it.

The exact origin of COVID-19 in humans has notbeen confirmed. However, researchers speculated thatthe new coronavirus might come from wild bats. It is reported that first case of this infectious diseases was diagnosed in Huanan Sea Food market in Wuhan,China in the month of November, 2020. By December 31, 2019, officials in Wuhanconfirmed dozens of pneumonia cases of unknownetiology (Xifeng Wu, 2020). The main symptoms of patients in the early stage includedmild fever andfatigue, which were similar to the symptoms caused by general influenza (CCDC, Weekly Report Vol 2)

One more area of concern was that some infected patients were asymptomatic, that it diseases spreads from one person to another without person's awareness. On January 12, 2020, the World Health Organization officially named the new coronavirus causing pneumonia in Wuhan as "2019 newcoronavirus (SARS-CoV-19)". (WHO situation Report)

In the beginning of 2020, all the countries of the world kept an eye on China who was dealing with outbreak in the month of February, however scenario gets completely change after two months.

On March 11, 2020, the World Health Organization (WHO) officially declared coronavirus disease 2019 (COVID-19) a worldwide pandemic as the virus spreads rapidly with new cases and deaths rising exponentially in many countries. As of March 31st ,2020there were more than 5,00,000 confirmed cases and more than 20,000 deaths, and the numbers are still surging affecting various countries of the world (WHO COVID-19 situation Report 52)

Countries across the globe have experienced the outbreak of coronavirus at different times. Some are in the initial stages of managing the crisis followed by outbreak and few have already started with recovery phase. However, 15 th March carries a significant milestone as on this date number of confirmed cases outside China territories exceeds the cases in China where the virus was first found.

The COVID-19 pandemic has brought many urgent problems. When will the situationof the outbreak be improved? When the growing number of fatalities will diminish, When will the countries report no new case? To answer these questions, an empirical data of the number of cases reported, number of confirmed deaths resulted from pandemic was analysed

OBJECTIVES

The main objective of the study was to make comparative analysis of selected countries across the world in respect to fatality rate.

RESEARCH METHODOLOGY

Sample

For the purpose of analysis, world is geographically divided into 5 groups, consisting Regions of America, Africa, Asia, Europe and Oceania. The countries from Asia were China, India, Iran, ; African countries included were Egypt and South Africa; United States of America from region of America; European nations consisted of Italy, Spain and France, and Australia and New Zealand from Oceania. All together sample consisted of 12 countries across the world.

Sources of Data

Research study is basically secondary in nature. Secondary data from websites of WHO, Centre for Diseases Control set up United States Of America, European Centre for diseases control, Johns Hopkins University portal, Indian dashboard of corona virus update and various other portals providing data on COVID-19.

Discussion

In an ongoing outbreak the final outcomes-death or recovery for all cases cannot be ascertained. The incubation period i.e the time from symptom onset to death ranges from 2 to 8 weeks for COVID-19. To understand the underlying risks and subsequently to respond appropriately, it is inevitable to know the mortality risk of COVID-19 – the likelihood that someone who diagnose with the disease will die from it.To get insights on the mortality rate , it is important to know the number of total cases and final number of death resulting from infection.

Countries of the world are at different stages of coronavirus outbreak as on particular time. For instance, as on date of writing research paper on 8th April, USA had reported 3,98,809 confirmed cases, while the India had only reported 5,194.

Following table gives the total number of cases, total number deaths and Case Fatality Rate as on 8th April,2020.

Table 1.1 Total confirmed cases and total deaths, April 8, 2020

Countries	Confirmed cases	Confirmed Deaths	Case Fatality Rate(%)
USA	398809	12895	3.23
Spain	140510	13798	9.82
Italy	135586	17,129	12.63
France	78,167	10,328	13.21
China	82784	3337	4.03
India	5194	149	2.87
Germany	103228	1861	1.8
Iran	62589	3872	6.19
South Korea	10384	200	1.93
Egypt	1322	85	6.43
South Africa	1749	13	0.74
Australia	5956	45	0.76
New Zealand	969	1	0.1

Source: Ourworldindata.org

Case Fatality Rate is the risk of death due to COVID-19. It is obtained by dividing total number of death resulting from COVID-19 by total number of confirmed cases.

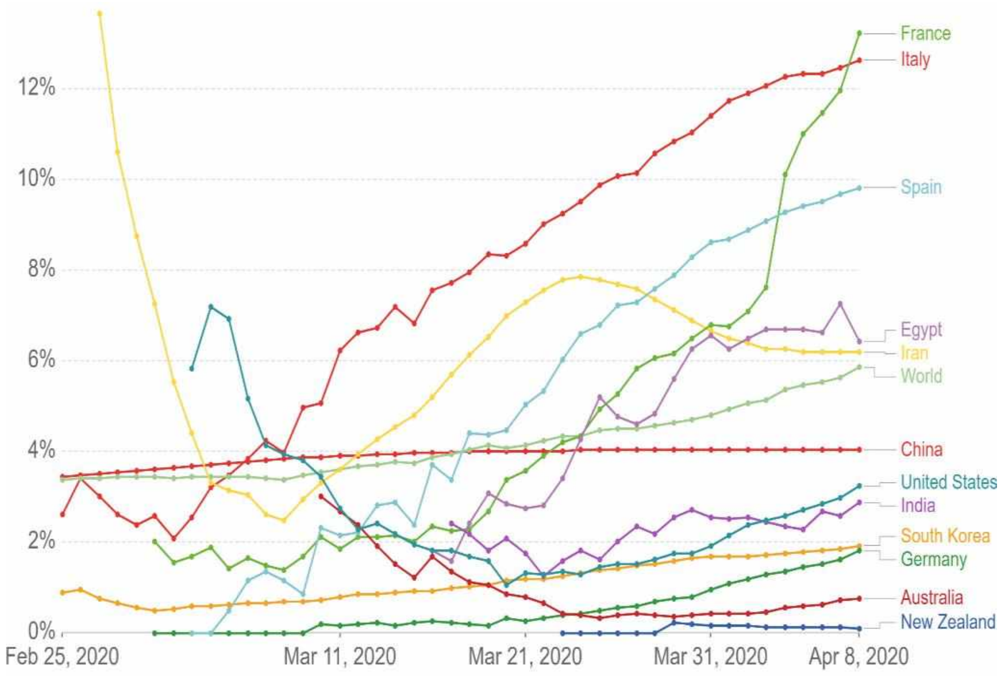
The probability that someone dies from a disease doesn't just depend on the disease itself, but also on the treatment they receive, and on the patient's own ability to recover from it. The case fatality rate is not constant; it changes with the context. Indeed, it reflects the severity of the disease in a particular context, at a particular time, in a particular population. It is inferred that fatality rate can increase or decrease as the patient responds to the treatment. It varies with location, age, sex, other comorbidities of the infected person. It is observed that elderly population seems to have higher fatality rate than the young generations.

The case fatality rate of COVID-19 is variable . Number of deaths due to COVID-19 were exponentially high during the early period of outbreak. However, with number of counter measures, China was able to flatten its curve of death rate by the month of March, 2020.

The number of deaths resulting from coronavirus differs by the location and changes as the outbreak spreads across the world.

Following chart depicts CFR of selected countries.

Figure 1: COVID-19: Total Confirmed Cases Versus Total Deaths (CFR), April 8th , 2020



Source: European CDC-Situation Update Worldwide- Accessed on 8th April, 2020.

From the above chart it was clear that countries have different CFR at different point of time. CFR of France was 2% at the initial phase which subsequently reached to 13.21% which is the highest ever reported by any country any time. China on an average maintained CFR rate around 3% . United States reported CFR around 6% which gradually reduced to 3%. China and South Korea which reported quantum of cases since February were able to maintain steady CFR through out outbreak. This can be attributed to several mitigation measures taken by the respective government such mandatory lockdown, mass testing, advocacy of self quarantine and issuance of health codes to its citizens. It was inferred from above graph, European nations consisting of Italy, France and Spain had higher CFR. Iran had shown more than 12 % CFR at the onset of outbreak, which reduced to 2% in beginning of March and then it raised to around 8% in the third week. There was wide fluctuation in CFR of Iran. Countries like New Zealand and Australian from Oceania have comparatively lower case fatality.

THE GROWTH RATE OF COVID-19 DEATHS

In a study of analyzing death rate of diseases, not only the number of fatalities resulting from diseases but also the rate at which deaths are increasing needs to be studied. This is because even if the current numbers of deaths are small when compared with other countries, a fast growth rate can lead to very large number of deaths rapidly.

Different countries have different growth rate as the outbreak of COVID-19 did not happen and increase rapidly on same day in all countries. In order to know whether the deaths are rising faster in China, USA, Spain or Italy, it is important to look at the trajectory of death amongst these countries. Following Chart shows the trajectory of deaths amongst the selected countries.

Figure 2: COVID-19: Total Confirmed Deaths, April 8th ,2020

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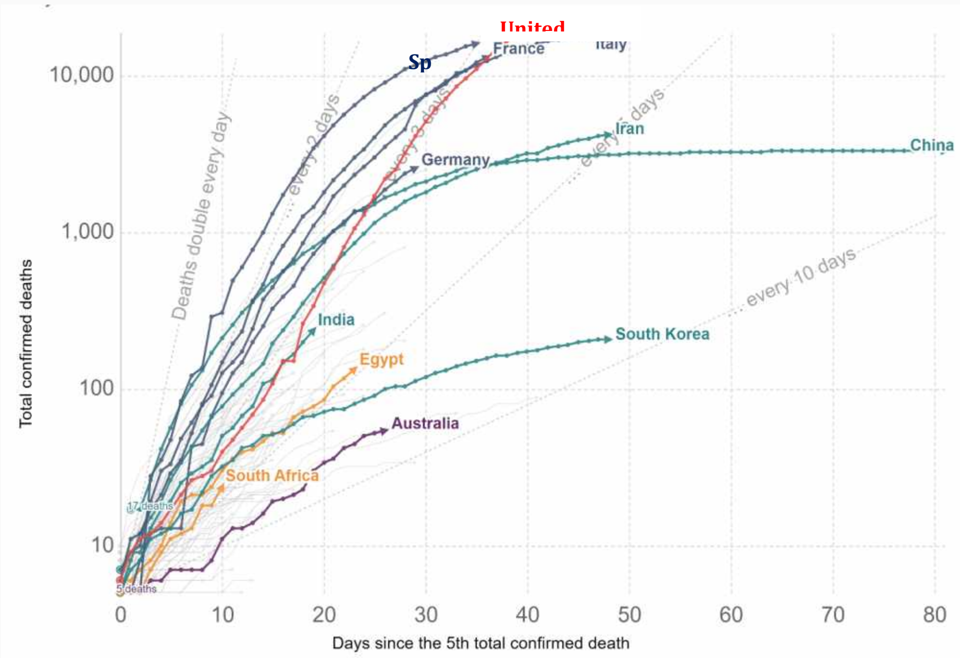

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Source: European CDC-Situation Update Worldwide- Acessed on April 8th , 2020.
This chart allows the reader to compare the trajectory of confirmed death cases in each countries.

On the x-axis we have the days since the confirmed death reported in that countrty, and on the y-axis, the total number of confirmed deaths.The grey lines represent paths for a doubling time of 2 days, 3 days, 5 days and 10 days. If a country's line on the chart is above than those grey lines, then its number of cases are doubling at a faster rate.

It can be inferred from the above graph that European countries consisting of Italy, France and Spain have steeper slope indicating the number of deaths are increasing at an alarming rate.

Spain had a particular fast rising. In just 10 days since the country reported its5 confirmed death, number of deaths rose to 450 which then increased to 7000 in next 10 days. Though the number of deaths are more in Italy, Spain and France had a steeper slope implying that number of deaths are getting doubled at a faster rate than Italy. Even United States shows that deaths are getting doubled sooner.

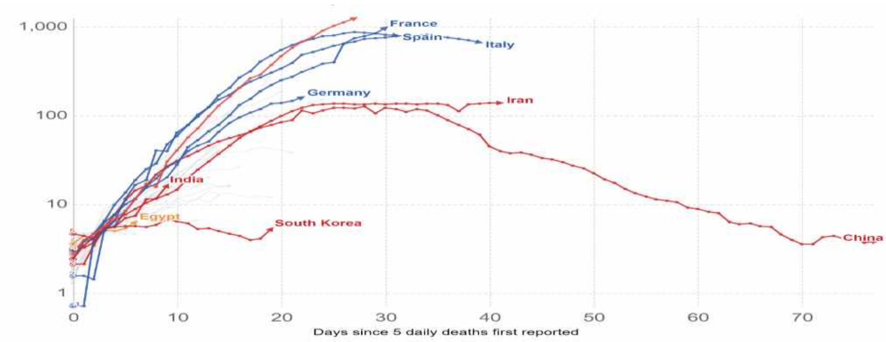
A rapid "doubling rate" poses a serious concern, as even countries like Italy and United States with advanced healthcare systems can become standstill by the rising number of cases. This was the case in the Lombardy region of Italy, where hospitals were mounted with rising number of patients requiring Intensive care and on the other hand , a sizeable medical staff were put to quarantine after being tested positive for the virus.

Other countries such as South Africa, Australia,Egypt saw a much slower increase. China, where the virus was first found, though witnessed mounting deaths in the initial phase of outbreak was able to flatten its curve. Further, it can be seen that China had fewer deaths even after 80th day since the its reported 5th death. . Countries like France, Italy, USA, Spain, Iran had already reported higher number of deaths as compared to China and South Korea within shorter span of time. The trajectory of China and South Korea shows the speed at which cases rose is not constant over time. They were able reduce fatalities by taking severe mitigation measures such as quarantine, lockdown, travel restriction, specialty hospitals and many more.

In order to an end pandemic, it is important to note the daily number of death in each country. To put an end to this pandemic, it is necessary to bend the curve, indicating declining number of daily death.

As the number of new infections reported around the world continues to grow, It can be inferred with the help of graph which countries are winning the battle against COVID-19, and which are still struggling to slow the rate of fatality?

Figure: COVID-19: Total Daily Deaths, April 8th, 2020



Source: European CDC-Situation Update Worldwide- Acessed on April 8th , 2020.

It was inferred from the above graph that China was able to bend it curve within 30 days since outbreak. However, country such as France, Spain, USA still shows rising trend in daily number of deaths. All the countries except China and South Korea were showing rising number of daily cases. Till the time these countries were not able to achieve a plateau that is a flattened curve followed by declining number of daily cases, it is not possible to bring an end to this pandemic COVID-19.

Implication

The COVID-19 pandemic exposed a situation of would happen if a contagious disease is not addressed at appropriate time While the government in all the countries on this pandemic are working unitedly behind a common goal – stamping out COVID-19 as soon as possible – each country has its own policies to follow and challenges to address to keep their population safe. Various countries are experiencing emerging cases of corona virus and therefore can get benefitted from the experience of their other countries in respect of policy measures adopted to combat this virus.

Some of the mitigation measures to help flatten the curve are quarantining, practicing personal hygiene, encouraging social distancing, encouraging working from home, closing schools and other institutions and placing restriction on social gathering.

Combating this exceptional challenge requires a systems approach and the coordination and cooperation of all patrons to respond. And last but not the least, the government must continue to ensure constant, consistent and credible communication to provide necessary public health guidance and to dismiss any fears and panic among the population.

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A STUDY OF THE EFFECT OF SELF-CONFIDANCE ON ACADEMIC ACHIVEMENT AMONG STUDENTS

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ABSTRACT

The study has been conducted on a sample of 200 students to examine the effect of the Self confidence on Academic Achievement. The sample of the students has been taken of those students who are studying in 12th in school of Rajkot city. The random sampling technique was used in this study. The data was analyzed statistically by using mean, S.D. & t-test and the study revealed that there is significant difference among academic achievement of 12th students with high and low self-confidence.

Key Words: Self-confidence, Academic Achievement, Students

INTRODUCTION

Education is the process of developing the capacities and potentials of the individual so as to prepare the individual to be successful in a specific society or culture. From this perspective, education is serving primarily as an individual development function. Education begins at birth and continues throughout life. It is constant and ongoing. It is an instrument for development and change.

Achievement in the educational situation has frequently been referred to as scholastic achievement or academic attainment. The term scholastic achievement signifies various aspects of learning as "Measures of motivation" (McClleland 1953), "Level of aspiration" (Sawrey, 1958). Dictionary of Psychology (Chaplin, 1965) defines educational or academic achievement as specified level of attainment proficiency in academic work as evaluated by the teacher, by standardized tests or by combination of both. According to Dictionary of Education (Carter 1959), "Academic achievement means the knowledge attained or skills developed in school subjects, usually determined by test scores or by marks assigned by teachers or both."

Self-confidence is an attitude which allows individuals to have positive yet realistic views of themselves and their situations. Self-confident people trust their own abilities, have a general sense of control in their lives, and believe that, within reason, they will be able to do what they wish, plan, and expect. Self confidence is central to good psychological adjustment, personal happiness and effective functioning in children and adults. The term self confidence is used to refer to individual's judgement about themselves. Children with over all high self concepts are confident about their abilities to accomplish their goals, academic competence and relationship with parents and peers. Children with low self confidence tend to be apprehensive about voicing unpopular or unusual ideas and avoid attracting attention. The future of students depends mostly on their self-confidence. Self-Confidence is the essential factor of personality. On the strength of self-confidence the students can solve the difficulties in individual, social, intellectual, educational fields. This paper attempts to study the effect of Self-Confidence on Academic Achievement among students. Self-Confidence makes them aware of their self and improve their intellectual and academic achievement.

Education is the process of developing the capacities and potentials of the individual so as to prepare the individual to be successful in a specific society or culture. From this perspective, education is serving primarily as an individual development function. Education begins at birth and continues throughout life. It is constant and ongoing. It is an instrument for development and change.

Achievement in the educational situation has frequently been referred to as scholastic achievement or academic attainment. The term scholastic achievement signifies various aspects of learning as "Measures of motivation" (McClleland 1953), "Level of aspiration" (Sawrey, 1958). Dictionary of Psychology (Chaplin, 1965) defines educational or academic achievement as specified level of attainment proficiency in academic work as evaluated by the teacher, by standardized tests or by combination of both. According to Dictionary of Education (Carter 1959), "Academic achievement means the knowledge attained or skills developed in school subjects, usually determined by test scores or by marks assigned by teachers or both."

Self-confidence is an attitude which allows individuals to have positive yet realistic views of themselves and their situations. Self-confident people trust their own abilities, have a general sense of control in their lives, and believe that, within reason, they will be able to do what they wish, plan, and expect. Self confidence is central to good psychological adjustment, personal happiness and effective functioning in children and adults. The term self confidence is used to refer to individual's judgement about themselves. Children with over all high self concepts are confident about their abilities to accomplish their goals, academic competence and relationship with parents and peers. Children with low self confidence tend to be apprehensive about voicing unpopular or unusual ideas and avoid attracting attention. The future of students depends mostly on their self-confidence. Self-Confidence is the essential factor of personality. On the strength of self-confidence the students can solve the difficulties in individual, social, intellectual, educational fields. This paper attempts to study the effect of Self-Confidence on Academic Achievement among senior secondary school students. Self-Confidence makes them aware of their self and improve their intellectual and academic achievement.

VARIABLES

Independent Variable

Self Confidence

Dependent Variable

Academic Achievement

Control variable

Higher secondary school students

OBJECTIVES

The main objectives of study were below

1. To compare the Academic Achievement of 12th class boys with high and low self confidence.

2. To compare the Academic Achievement of 12th class girls with high and low self confidence.

NULL-HYPOTHESIS:

1. There is no significant difference among academic achievement of 12th class boys with high and low self confidence.

There is no significant difference among academic achievement of 12th class girls with high and low self confidence.

METHODOLOGY

TOOLS:

For the purpose of study, the following test tools were considered with their reliability, validity and objectivity mentioned in their respective manuals. In present study there was one inventories were used for research.

The scale was developed by Dr. Rekha Agnihotri in 1987. The Agnihotri's self-confidence inventory (ASCI) has been designed in Hindi to assess the level of self confidence among adolescents and adults. It consists of 56 items. There are two response categories i.e. 'right' and 'wrong'. A score of one is awarded for a response as 'wrong' to item numbers 2,7,23,31,40,41,43,44,45,53,54 and 55. For making cross to 'right' response for rest of the items to be awarded a score of one. Hence, the lower the score, the higher would be the level of self-confidence and vice versa. The test-retest reliability of ASCI was found to be 0.78 and spilt half reliability was 0.91.

SAMPLES:

In the present study, random sampling technique was used to select the sample of 200 secondary school students. These were further stratified on the basis of male and female students with high and low self confidence. Out of these 200 students, 82 were high self confidence and 67 were low self confidence and out of these 38 were boys and 44 were girls of high self confidence and 30 were boys and 37 were girls low self confidence.

PROCEDURE :

The testing was done on students. The whole procedure of fill the inventory was explained to them clearly. All the instruction given them is explained clearly so they can understand.

It was also made clear to them that their scores will be kept secret. And used for research purpose only. It was also checked that none of the subject left any questions unanswered or none of them gave more than one answer.

STATISTICAL TECHNIQUES

Mean, S.D. and t-test were used as statistical technique for the analyzing the collected data.

RESULT AND DISCUSSION :

Comparison of Academic Achievement of 12th class Boys with high and low self-confidence.

The objective was to compare the academic achievement of 12th class boys with high and low self-confidence. To achieve this objective the data were subjected to t-test. The mean academic achievement scores of 12th class boys with high and low self-confidence have been presented. in the table and the figure.

Table-1 Mean S.D. and 't' value of Academic Achievement scores of boys with high and low self-confidence.

Group of value (self-confidance)	N	Mean	S.D	t Value
High	38	71.23	9.06	0.68
Low	30	69.7	9.34	0.68

*Significant at 0.01 level *Significant at 0.05 level *NS Not significant

According to table : 01

Mean and S.D. scores of Academic Achievement of boys with high and low self confidence Table 2 reveals that the mean academic achievement scores of boys with high and low self-confidence are 71.23 and 69.7 respectively. The obtained 't' value is 0.68. When compared with the table value, the obtained t-value (0.68) is insignificant at 0.01 level of significance. Hence the null hypothesis, "There is no significant difference among academic achievement of 12th class boys with high and low self-confidence" stands accepted. The present finding is contrast with the finding of Vamadevappa (2003) who found that self-confidence is in positively related to the achievement in biology, underachievers and overachievers differ significantly in their self-confidence. Underachievers have low self-confidence from this it may be concluded that low self-confidence is the cause of under achievement.

2. Comparison of Academic Achievement of 12th class Girls with high and low self-confidence. The objective was to compare the academic achievement of 12th class girls with high and low self-confidence. To achieve this objective the data were subjected to t-test. The mean academic achievement scores of 12th class girls with high and low self-confidence have been presented in the table and the figure 2.

Table-2 Mean, S.D. and 't' value of Academic Achievement scores of girls with high and low self-confidence.

Group (self-confidance)	N	Mean	S.D	t Value
High	44	75.82	9.98	*4.56
Low	37	65.84	9.66	

*Significant at 0.01 level *Significant at 0.05 level *NS Not significant

According to table : 02

Fig 2 Mean and S.D. scores of academic achievement of girls with high and low self confidence Table 3 reveals that the mean academic achievement scores of girls with high and low self-confidence are 75.82 and 65.84 respectively. The obtained 't' value is 4.56. When compared with the table value, the obtained t-value (4.56) is significant at 0.01 level of significance. Hence the null hypothesis, "There is no significant difference among academic achievement of 12th class girls with high and low self-confidence" stands rejected. The present finding is supported by the finding of Al-Hebaish (2012) who also found that there is positive significant correlation between general self-confidence and academic achievement.

CONCLUSION:

1. There is no significant difference among academic achievement of 12th class boys with high and low self-confidence. Therefore the null hypothesis is accepted.
2. There is significant difference among academic achievement of 12th class girls with high and low self-confidence. Therefore the null hypothesis is rejected.

In this study it was further founded that self-confidence effects the academic achievement of girl students and there is no effect of self-confidence on academic achievement of boy students.

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A STUDY OF THE EFFECTIVENESS OF ICT INTEGRATION IN TEACHING AND LEARNING AT SCHOOL

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ABSTRACT:

Integration ofICT will assist teachers to the global requirement to replace traditional methods with a technology-based teaching and learning tools and facilities. In India, ICT is considered as one of the main elements in transforming the country to the future development. The Ministry of Education, through the least Education blue print (2013-2015).The main purpose of the presented research to Study of the Effectiveness of ICT in teaching and learning in school. In the presented research, 30 schools were selected to collect information. Out of which 60 teachers were deliberately selected and information was obtained by giving self-written opinion. The information received by the opinion was interpreted and analysis by Percentage, Average merit, Priority and Chi-square (Non-Parametric). In the end it was found that ICT integration has a great effectiveness for both teachers and students.

Key Words:

ICT effectiveness, Teaching and Learning, School level, Teacher opinion,percentage, Average merit,Priority and Chi-square

(1) INTRODUCTION: -

In this 21st century, the term "technology" is an important issue in many fields including education. The education has vital role in building the society. It is one of the most important needs for the well-beingof individual and the society. Quality education helps to empowering the nation in all aspects. There are many ways to increase the learner's knowledge and technology is the most effective way. ICT is an acronym that stands for Information Communication Technologies, that includes all technologies for the manipulation and communication of information (Swati Desai, 2010).Computer and technology does not acts as a replacing tools for quality teachers but instead they are considered as an add-on supplements needed for the better teaching and learning. The needs for ICT integration in education is crucial, because with the help of technology, teaching and learning is not only happening in the school environment, but also can happen even if teachers and students are physically in distance. However, ICT integration is not a one-step learning process, but it is a continual process of learning that provides teaching-learning environment (Young, 2003). According to UNESCO: ICT is a scientific technology and engineering discipline and management technique used in handling information in application and association with social, economic and cultural aspects. Appropriate use of ICT can transform the whole teaching-learning processes leading to paradigm shift in both content and teaching methodology (Anu sharma et al.,2011).

(2) OBJECTIVE: -

The objectives of the research presented are as follows.

(2.1) To Study of the Effectiveness of ICT in teaching and learning in school.

(2.2) To Study of the demographic background of the respondents.
(2.3) To get the opinion of teachers about technology-based teaching and learning process.
(2.4) To get the opinion of Effectiveness of ICT integration for students learning.
(2.5) To get the opinion of Effectiveness Element in technology-based teaching and learning in school.

(3) RESEARCH METHODOLOGY: -
Method of the study: -
The research presented was conducted by a Survey research method.
Population and Sample selection: -
Population:
All Teacher of secondary and higher secondary of Gujarat State who were the population for the Present investigation.
Sample:
From the population, school(n=30)and teachers(n=60)of Tapi district was selected for thepresent research by Stratified Random sampling method.
Table: 1. Sample for the School and Teachers

School Area	Gender		Total
	Male	Female	
Urban	28	12	40
Rural	12	08	20
Total	40	20	60

Tools:
A self -written opinion was created by the researcher for data collection in the presented research. Which was divided into four section. Section A is about the demographic background of the respondents consisted of 6 items that includes gender, teaching experience, type of school, school area, preference of teaching style and the ability of handling ICT in teaching. The other 3 sections in the opinion focus more into teacher's perception and the elements of effectiveness of ICT integration in schools. Section B comes with 15 items that looks into teacher's perception of ICT in teaching, Section C consist of 15 items that looks into the effectiveness of ICT integration for student in learning meanwhile, Section D comes with 10 items that looks into the effective elements of ICT integration in teaching.

LIMITATIONS OF THE STUDY: -
(1) In the present research, only schools and teachers of Tapi district were selected.
(2) In the present research, only the Opinions tools was used for data collection.
(3)The presented study year was limited to 2019-20.
(4) Only two teachers from each school were deliberately taken as respondents.

(4) Methods of Data Collection and Analysis:
Methods of Data Collection
To give proper direction to the investigation Data Collection is necessary. The researcher obtained the required information from the teachers through face to face visit of the school with the prior approval of the school principals. After 2 weeks, all the complete filled-up opinion was gathered and collected for further data analysis by the researcher to get the output and findings for the research.

The statistical formula used in the present research is as follows.

Percentage = obtained score / total score * 100

Chi-square = (observed values – Expected values)^2 / Expected values
Df = (r-1) *(c-1) = (2-1) *(3-1) = 1*2 = 2
Chi-square table value in **0.01** = 9.210

Table: 2 Methods of Data Analysis:

No.	Tools	Methods of data Analysis
1	Opinion (Teachers)	Percentage, Average merit, Priority, Chi-square (Non-Parametric)

Table: 3 Attributes given to statements

No.	Statements	Agree	Neutral	Disagree
1	Positive	3	2	1
2	Negative	1	2	3

DATA ANALYSIS AND INTERPRETATION: -

The data analysis and interpretation include both descriptive and inferential analysis. The researchers used descriptive analysis to analysis the frequency and percentage of the overall population in the demographic background. Besides, it is also used to determine the Percentage, Average merit, Priority, Chi-square to identify the teachers about technology-based teaching and learning process, the effectiveness of ICT integration for students in learning as well as the effective elements of ICT integration in teaching in school in tapi.

(5) FINDINGS:

The findings of the research are as follows.

DEMOGRAPHIC BACKGROUND OF RESPONDENTS:

Table: 4 Demographic background of respondents

Factors	Frequency	Percentage (%)
Gender:		
Male	38	63.33
Female	22	36.67
Teaching Experience:		
<1year	15	25
1-5	24	40
>5	21	35
Type of School:		
Secondary	19	63.33
Higher Secondary	11	36.67
School Area:		
Urban	16	53.33
Rural	14	46.67
Preference of Teaching Style:		
Traditional	20	33.33
Modern (use of ICT)	40	66.67
The ability of handling ICT in teaching:		
High	18	30

Medium	32	53.33
Low	10	16.67

From the table above overall population(n=60) based on gender, there are 38 male respondents with a percentage of 63.33% as compared to only female respondents with a 36.67%. From the overall population(n=60) based on teaching experience, most of the respondents have 1-5 years of teaching experience with 24(40%) followed by >5 year of teaching experience with 21(35%) and 15 respondents with < 1 year of teaching experience with a percentage of 25%. From the overall population(n=30) based on Type of School, there are 36 respondents who are teaching secondary school with a percentage of 63.33% as compared to Higher Secondary with 11 (36.33%).From the overall population(n=30) based on school area, there are more respondents who are teaching in city school area with 16(53.33%) as compared to rural school with 14(46.67%), From the overall population(n=60) based on preference of teaching style, more respondents preferred modern teaching style with 40(66.67%) as compared to respondents who preferred traditional method of teaching with 20(33.33%). From the overall population (n=60) based on the ability of handling ICT in teaching, most of the respondents believe it the they possess medium ability with 32 (53.33%) followed by high ability in handling ICT with 18 (30%) and low ability with 10 (16.67%).

TEACHER'S PERCEPTION ON TECHNOLOGY-BASED TEACHING AND LEARNING:

Table:5 Teacher's Perception on Technology-based Teaching and Learning:

No.	Statements	Agree	Neutral	Disagree	A.M	Pr.	Chi.
1	You feel confident learning new computer skills.	55 (91.67%)	00	05 (8.33%)	2.83	05	92.5
2	You find it easier to teach by using ICT.	56 (93.33%)	00	04 (6.67%)	2.87	2.5	97.6
3	You are aware of the great opportunities that ICT offers for effective teaching.	58 (96.67%)	00	02 (3.33%)	2.93	1	108
4	You think the use of ICT I teaching is waste of time.	12 (20%)	03 ((5%))	45 (75%)	2.55	12	48.9
5	You are comforted that our student learn base without the help of ICT.	09 (15%)	02 (3.33%)	49 (81.67%)	2.67	10.5	64.3
6	The use of ICT help teachers to improve teaching with more updated materials.	53 (88.33%)	01 (1.67%)	06 (10%)	2.78	8.5	82.3
7	You think that ICT supported teaching makes learning more effective.	54 (90%)	01 (1.67%)	05 (8.33%)	2.82	6.5	87.1
8	The classroom management is out of control of ICT is used in teaching.	06 (10%)	01 (1.67%)	53 (83.33%)	2.78	5	82.3

9	Student's pay less attention when ICT is used in teaching.	09 (15%)	02 (3.33%)	49 (81.67%)	2.67	10.5	64.3
10	The use of ICT enabled to student to be more active and engaging in the lesson	55 (91.67%)	01 (1.67%)	04 (6.67%)	2.85	4	92.1
11	You think the use of ICT helps to prepare teaching resources and materials.	56 (93.33%)	00	04 (6.67%)	2.87	2.5	97.6
12	You think the use of ICT improve the quality of teaching.	54 (90%)	01 (1.67%)	05 (8.33%)	2.82	6.5	87.1
13	You can still have an effective teaching without the use of ICT.	32 (53.33%)	04 (6.67%)	24 (40%)	2.13	15	20.8
14	Student's makes no effort for their lesson if ICT is used in teaching.	20 (33.33%)	03 (5%)	37 (61.67%)	2.28	13	28.9
15	You think that by using ICT you can take the result of your subject higher.	36 (60%)	04 (6.67%)	20 (33.33%)	2.27	14	25.6

A.M =Average merit, Pr. = Priority, Chi. = Chi-square

It is clear from the table above that all the statements are meaningful at level 0.01. And In 1 statement most of the respondents have given their opinion in agree so themost teachers feel confident learning new computer skills,In 2 statement most of the respondents have given their opinion in agree so them find it easier to teach by using ICT, In 3 statement most of the respondents have given their opinion in agree so them are aware of the great opportunities that ICT offers for effective teaching,In 4 statement most of the respondents have given their opinion in disagree so using ICT in teaching is not a waste of time,In 5 statement most of the respondents have given their opinion in disagree so students cannot learn well without the use of ICT, In 6 statement most of the respondents have given their opinion in agree so the use of ICT help teachers to improve teaching with more updated materials,In 7 statement most of the respondents have given their opinion in agree so them think that ICT supported teaching makes learning more effective,In 8 statement most of the respondents have given their opinion in disagree so using ICT in teaching keeps the management of the classroom under control,In 9 statement most of the respondents have given their opinion in disagree so Student's pay more attention when ICT is used in teaching, In 10 statement most of the respondents have given their opinion in agree so the use of ICT enabled to student to be more active and engaging in the lesson, In 11 statement most of the respondents have given their opinion in agree so them think the use of ICT helps to prepare teaching resources and materials, In 12 statement most of the respondents have given their opinion in agree so them think the use of ICT improve the quality of teaching, In 13 statement most of the respondents have given their opinion in agree so them can still have an effective teaching without the use of ICT, In 14 statement most of the respondents have given their opinion in disagree so Student's makes effort for their lesson if ICT is used in teaching, In 15 statement most of the respondents have given their opinion in agree so them think that by using ICT you can take the result of your subject higher.

EFFECTIVENESS OF ICT INTEGRATION FOR STUDENT'S TEACHER'S LEARNING:
Table:6 Effectiveness of ICT integration for student's Teacher's Learning:

No.	Statements	Agree	Neutral	Disagree	A.M	Pr.	Chi.
1	ICT allows students to be more creative & imaginative.	58 (96.67%)	00	02 (3.33%)	2.93	2.5	108
2	The use of ICT help students to find related knowledgeand information for learning.	56 (93.67%)	00	04 (6.33%)	2.87	7	97.6
3	The use of ICT increases in achievement score of the students.	52 (86.67%)	02 (3.33%)	07 (11.67%)	2.73	10	72.7
4	ICT informs the student of the global situation.	49 (81.67%)	03 (5%)	08 (13.33%)	2.68	13.5	63.7
5	The use of ICT encourages students to communicate more with their classmates.	50 (83.33%)	01 (1.67%)	09 (15%)	2.68	13.5	69.10
6	The use of ICT increases student's confidence to participate actively in the class.	51 (85%)	01 (1.67%)	08 (13.33%)	2.72	11	73.3
7	You think the use of ICT helps to improve student's ability specifically in reading writing.	56 (93.33%)	00	04 (6.67%)	2.87	7	97.6
8	The students are more behaved and under control with the use of ICT.	58 (96.66%)	01 (1.67%)	01 (93.67%)	2.95	1	108
9	The use of ICT enables students to express their ideas and thoughts better.	56 (93.33%)	01 (1.67%)	03 (5%)	2.88	5	97.3
10	The use of ICT promotes active and engaging lesson for students best learning experience.	57 (95%)	01 (1.67%)	02 (3.33%)	2.92	4	102
11	You think students can learn additional knowledge in addition to content through ICT.	58 (96.67%)	00	02 (3.33%)	2.93	2.5	108
12	The use of ICT showed an increase in the	55 (91.67%)	00	05 (8.33%)	2.83	9	92.5

	student's IQ.						
13	The use of ICT impairs student's learning.	11 (18.33%)	03 (5%)	46 (76.67%)	2.58	15	52.3
14	You think students learn more effectively with the use of ICT.	56 (93.67%)	00	04 (6.33%)	2.87	7	97.6
15	You think the use of ICT helps to broaden student's knowledge paradigm.	57 (95%)	00	03 (5%)	2.70	12	102

It is clear from the table above that all the statements are meaningful at level 0.01. And In 1 statement most of the respondents have given their opinion in agree so ICT allows students to be more creative & imaginative,In 2 statement most of the respondents have given their opinion in agree so The use of ICT help students to find related knowledge and information for learning, In 3 statement most of the respondents have given their opinion in agree so The use of ICT increases in achievement score of the students,In 4 statement most of the respondents have given their opinion in agree so ICT informs the student of the global situation,In 5 statement most of the respondents have given their opinion in agree so The use of ICT encourages students to communicate more with their classmates., In 6 statement most of the respondents have given their opinion in agree so The use of ICT increases student's confidence to participate actively in the class,In 7 statement most of the respondents have given their opinion in agree so them You think the use of ICT helps to improve student's ability specifically in reading writing,In 8 statement most of the respondents have given their opinion in agree so The students are more behaved and under control with the use of ICT,In 9 statement most of the respondents have given their opinion in agree so The use of ICT enables students to express their ideas and thoughts better, In 10 statement most of the respondents have given their opinion in agree so The use of ICT promotes active and engaging lesson for students best learning experience, In 11 statement most of the respondents have given their opinion in agree so them think students can learn additional knowledge in addition to content through ICT, In 12 statement most of the respondents have given their opinion in agree so The use of ICT showed an increase in the student's IQ, In 13 statement most of the respondents have given their opinion in disagree so the use of ICT does not impairs student's learning, In 14 statement most of the respondents have given their opinion in disagree so them think students learn more effectively with the use of ICT, In 15 statement most of the respondents have given their opinion in agree so them think the use of ICT helps to broaden student's knowledge paradigm.

EFFECTIVE ELEMENTS IN ICT INTEGRATION IN TEACHING AND LEARNING IN SCHOOL:

Table:6 Effective elements in ICT integration in Teaching and Learning in school:
:

No.	Statements	Agree	Neutral	Disagree	A.M	Pr.	Chi.
1	Little access to ICT prevents me from using it in teaching.	43 (71.67%)	02 (3.33%)	15 (25%)	2.47	5	43.9
2	Lack of supports from the school top management discourages me from using ICT.	52 (86.67%)	03 (5%)	05 (8.33%)	2.78	1	76.9
3	The ICT facilities in my	22	04	34	2.20	8	22.8

	school are well functioning and can be used.	(36.67%)	(6.67%)	(56.66%)			
4	The technical supports are provided if teachers are faced with difficulties.	26 (43.33%)	02 (3.33%)	32 (53.34%)	2.10	9	25.2
5	Teaching time are not enough for me to use the ICT for teaching and learning purposes.	50 (83.33%)	02 (3.33%)	08 (13.34%)	2.70	3	68.4
6	There is enough training and professional development provided for teachers about ICT use in teaching.	20 (33.33%)	02 (3.33%)	38 (63.34%)	2.30	7	32.4
7	All ICT tools in my school go to waste and less used by teachers.	48 (80%)	04 (6.67%)	08 (13.33%)	2.67	4	59.2
8	Teachers are given more time to learn and be comfortable with the use of ICT in teaching.	15 (25%)	03 (5%)	42 (70%)	2.45	6	39.9
9	There is computer lab in my school in which I can bring students there to watch educating videos.	29 (48.33%)	03 (5%)	28 (46.67%)	2.02	10	21.7
10	There are enough computers available in your school so that every student has no difficulty in learning.	52 (86.67%)	01 (1.67%)	07 (11.66%)	2.75	2	77.7

It is clear from the table above that all the statements are meaningful at level 0.01. And In 1 statement most of the respondents have given their opinion in agree so Little access to ICT prevents me from using it in teaching,In 2 statement most of the respondents have given their opinion in agree so Lack of supports from the school top management discourages me from using ICT, In 3 statement most of the respondents have given their opinion in disagree so The ICT facilities in my school are not well functioning and can be not all teachers used in teaching,In 4 statement most of the respondents have given their opinion in disagree so The technical supports are provided if teachers are faced with difficulties,In 5 statement most of the respondents have given their opinion in agree so Teaching time are not enough for me to use the ICT for teaching and learning purposes, In 6 statement most of the respondents have given their opinion in disagree so There is no\enough training and professional development provided for teachers about ICT use in There is enough training and professional development provided for teachers about ICT use in teaching, In 7 statement most of the respondents have given their opinion in agree so All ICT tools in my school go to waste and less used by teachers,In 8 statement most of the respondents have given their opinion in disagree so Teachers are given more time to learn and be not comfortable with the use of ICT in teaching.,In 9 statement most of the respondents have given their opinion in agree so There is computer lab in my school in which I can bring students there to watch educating videos., In 10 statement most of the respondents have given their opinion in agree so In most school are enough computers available so that every student has no difficulty in learning.

(6) SUGGESTIONS: -

(1) Since many teachers may not have the required IT skills and feel comfortable, they must be trained for the use of these skills.

(2) Advance computer laboratories and other adequate infrastructure should be there in academic institutions.

(3) I might be too common for issue and challenges of ICT to be discussed but in the study of ICT in core subject in school is least discussed.

(4) It is good if further studies can be made based on what barriers teachers are facing in using ICT in their daily classroom in school.

(5) This is because most private school permit students to bring gadgets to school and teaching and learning process take place within the use of ICT.

(7) CONCLUSION: -

Thus, the integration of ICT in classroom needs serious consideration in order to increase the competency of the country's education system. This will help in increasing the world ranking of the national education and produce the better future work force. In order to enhance the use of ICT in classroom, the government needs to improve and change the teacher's belief about the integration of ICT in classroom. As the teacher's role is the key role in making any of the new policy to be implemented efficiently and successfully. The changes that is taking place is driven by advanced technology and communication device that should be available to students wherever they are either at school or home. In addition, the needs for teachers to be literate and have good skills and knowledge in using ICT to improve their teaching methods and approach is desired to promote effective learning as well as to meet the demand of the 21st century teaching skills.

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BANKING AND CLOUD COMPUTING

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ABSTRACT

Cloud computing is an emerging technology in future times. Business applications have become the largest market for cloud services. The biggest problem in the current scenario in banking is that the banking sector is booming and for that continues changes are occurring for that, the high cost of implementing advanced technologies and the efficient use of hardware is necessary. A large number of banks are now adopting clouds technology to fulfil their needs. This paper provides an insight into how cloud computing can be effectively used through Banking sector.

Keywords: Cloud Computing, Banking, Banking Services, Security

INTRODUCTION

In the banking industry, digitization essentially means making banking smooth and easier for customers.In recent years, use of digital banking has increased.Most private banks and public sector banks are focused on offering new technology-based services such as mobile banking, mobile banking apps and e-wallets to their customers.The biggest advantage of digital channeling in banking is its ability to provide new plan, changes and customer specific business models by analyzing the banking pattern that maximize customer value.

Indian banks are facing extensive changes in their banking processes due to rapid development of technology. Banks of all sizes in India have understood the importance of cloud based banking services and how these services can aid their issues. Earlier banks had to contact an IT personnel to provide additional applications and compute power which was very time consuming and would delay the decision making process. Therefore, these days IT will no longer be seen as a complex scenario and banks have started recognizing the opportunity and scope of cloud computing services.

OBJECTIVES

1) Provides overview of cloud computing in banking sector.
2) To know about the mechanism of cloud computing in banking sector.
3) Emphasizes on advantages and challenges of using cloud technologies in the banking sector.

WHAT IS CLOUD COMPUTING?

Cloud Computing is an on-demand delivery of compute, storage, applications, and other IT infrastructure with metered payment based on usage. Cloud computing is an emerging Internet-based computing technology, where a large pool of systems are connected through private or public networks, to provide dynamically scalable infrastructure for applications, data and file storage. Cloud computing is one of the most exciting technologies used these days. Its ability to reduce costs associated with services while increasing flexibility and scalability for computer processes are well-known.

By using Cloud Computing, banks and payments institutions around the world are optimizing operations that range from customer service delivery models to risk management and construct a foundation for long-term growth andinnovation. Cloud computing offers access to a wide ecosystem of consulting and technical partners and business solutions that maximize its performance. Banks can scale employee resources as needed and pay for what they used, without large upfront capital investments.
Cloud computing technology provides three fundamental services which are…
(1) Infrastructure as a Service (IaaS),(2) Platform as a Service (PaaS), (3)Software as a Service (SaaS), and which can be deployed on top of Public, Private and Hybrid cloud models.

(1) Infrastructure as a Service:

A pool of equipment including operating system, servers, virtual storage, data centers etc.AWS EC2, Rackspace, Google Compute Engine (GCE), Digital Ocean etc. are the IaaS providers.
IaaS Advantages:
Maintaining on premise IT infrastructure is costly and labor-intensives. It often requires a significant initial investment in physical hardware, and then you will probably need to engage external IT contractors to maintain the hardware and keep everything working and up-to-date.

(2) Platform as a Service:

PaaS providing computing environment as a service to the customers to develop applications so they not need to purchase any other tools, hardware and software to develop application or software which make this service more convenient for developer. Google's App Engine, Force.com AWS Elastic Beanstalk, Heroku, Windows Azure (mostly used as PaaS), OpenShift, Apache Stratos, Force.com, Magento Commerce Cloud, etc are the PaaS providers.
PaaS Advantages:
PaaS is primarily used by developers who are building software or applications. It provides platform for developers to create unique, customizable software. This means developers don't need to start from scratch when creating applications, saving them a lot of time and money on writing extensive code. PaaS is a popular choice for businesses who want to create unique applications without spending more money or taking on all the responsibility.

(3) Software as a service:

SaaS platforms make software available to users over the internet. SaaS is an "on-demand software" service where the required software is provided to the end users as an application to run on their systems through Internet. Today, SaaS is offered by companies such as Google Apps, Microsoft, Zoho, BigCommerce, Salesforce, Dropbox, MailChimp, ZenDesk, DocuSign, Slack etc.
SaaS Advantages:
With SaaS, you don't need to install and run software applications on any computer. Everything is available over the internet when you log in to your account online. You can usually access the software from any device, anytime with an internet connection. The same goes for anyone else using the software. All your staff will have personalized logins, suitable to their access level.

TYPES OF CLOUD DEPLOYMENT

Cloud deployment explains how cloud platform is implemented, how it's hosted, and who has access to it. All cloud computing deployments operate on the same principle by virtualizing the computing power of servers into segmented, software-driven applications that provide processing and storage capabilities.

1) **Public Cloud:**

A public cloud provides services like applications or storage to the public including individuals. Customers have no control over the location of the infrastructure. The examples of public cloud includes email, dropbox, office 365 etc.

2) Private Cloud

It is a cloud-based infrastructure used by stand-alone organizations. It offers greater control over security. Private clouds are perfect for organizations that have high-security requirements, high management demands, and availability requirements.

3) Community Cloud

It is a mutually shared model between organizations that belong to a particular community such as banks, government organizations, or commercial enterprises. Community members generally share similar issues of privacy, performance, and security. This type of deployment model of cloud computing is managed and hosted internally or by a third-party vendor.

4) Hybrid cloud:

A combination of both public and private clouds together is termed as Hybrid Cloud. it includes advantages of both cloud public as well as private. In the hybrid cloud, it offers applications as per the requirement of issues depending on their critical and non-critical standards. Critical applications can be confined to the private cloud and noncritical applications into the public cloud.

Cloud computing in banking in banking sector

Cloud computing provides wide range of services to bank

- Core Banking
- ATMs
- Document Management System
- Electronic Know Your Customer
- Anti-Money Laundering (AML)
- Asset Liability Management
- Applications in Banking and Insurance segment

- **Adding to this the managed and supported services are:**
  - Immediate Payment Service
  - Unified Payments Interface (UPI)
  - Financial Inclusion services
  - Bill Payment Service
  - Automated Clearing House,
  - National Payments Corporation of India,
  - Cheque Truncation System

❖ **Core Banking**

A core banking system is the software used to support a bank's most common transactions. Core banking system is a system that processes daily banking transactions and updates to accounts and other financial records. In simple terms, core banking refers to the systems that facilitate virtually every transaction for a bank.

Core banking systems typically includes

- Opening new accounts.
- Processing cash deposits and withdrawals.
- Processing payments and cheques.
- Calculating interest.
- Customer relationship management (CRM) activities.
- Managing customer accounts.
- Establishing criteria for minimum balances, interest rates, number of withdrawals allowed and so on.
- Establishing interest rates.
- Maintaining records for all the bank's transactions.

❖ **ATMs**

The full form of ATM is Automated Teller Machine. ATM is an electro-mechanical machine that is used for making financial transactions from a bank account. These machines are used to withdraw money from personal bank accounts. The cloud can lower the total cost of ownership of ATMs. According to NCR report NCR launched Kalpana software, an enterprise software platform that is driving ATM software and operations into the cloud. Kalpana can cut the running costs of an ATM network by up to 40 percent. For a bank with just 100 ATMs, that could mean savings of up to $800,000 a year.

❖ **Electronic Know Your Customer (EKYC)**

Electronic Know your Client or **e KYC** is the way of resident authentication used by organization like Banks, Aadhaar allows the residents to submit it as an address proof electronically which is valid as a Xerox copy through that people can link their mobile number to their bank account their self also they open bank account without visiting bank, apply for the loan and many other service.

❖ **Document Management System (DMS)**

A document management system is an automated way of organizing, securing, capturing, digitizing, tagging, approving, and completing tasks with your business files. Although most document management systems store data in the cloud. The importance of DMS is to Reduced Storage Space, enhanced Security, Improved Regulatory Compliance, Easier Retrieval, Better Collaboration, Better Backup and Disaster Recovery and the Intangibles.

❖ **Anti-Money Laundering (AML)**

Anti-money laundering refers to a set of laws, regulations, and procedures intended to prevent criminals from disguising illegally obtained funds as legitimate income. Simply cloud security is necessary to protect financial institutions' cloud-based AML solutions from criminals and other unforeseen data-loss incidents. Practically, this means implementing a range of measures that function to conceal personal information, withstand potential cyberattacks or unauthorized access, and maintain secure records in the cloud.

❖ **Asset Liability Management (ALM)**

Asset Liability Management system to strengthen its balance sheet, manage the risks arising from interest rate movements and liquidity as well as help in business planning and decision-making processes. ALM system make accurate and reliable decisions through sophisticated statistical analysis, well managed, auditable quality data and insightful business, economic and behavioral scenario analysis.

❖ **Applications in banking and insurance segment**

Cloud computing is a delivery model that you can use to facilitate or accelerate business transformation. The cloud represents enormous opportunities for change in the banking industry. There is a growing demand for cloud computing Cloud computing provides applications, data and IT resources to users as services delivered over a network for self service. It also offers economies of scale and flexible sourcing. With cloud computing, it is possible to manage large numbers of highly virtualized resources to deliver services.

❖ **Other manage and support services**

Through the help of cloud computing bank can offer numbers of service like IPMS, UPI, Financial Inclusion services, Bill Payment Service, Automated Clearing House, National Payments Corporation of India, Cheque Truncation System. Which is very helpful to peoples and banks to get benefit of this service in less cost also its vey time saving and convenient.

Cloud service provider also provide services which is most use full for bank which are data analytics, risk modelling for investment banks, payment fraud analytics, development and testing applications, business services, collaboration, desktop and devices and storage.

How banks determine whether cloud computing is right for their business or not?

Here is main point is consider as costs and benefits. Banks should get a complete understanding of all cloud-related expenses (e.g. hardware upgrades, monthly fees and outsourced IT consulting), and then compare with what it might cost to run the same level of computing in-house. Many companies save money through cloud computing because they do not have to revamp their infrastructure and hire additional IT staff to realise productivity gains. While moving to the cloud, apart from cost, other parameters like agility, operational efficiency, protection against infrastructure obsolescence, security posture.

Cloud Computing benefits both large and small banks. For example, smaller banks need not invest in infrastructure related to it and can start their operations quickly with faster development and deployment cycles. Larger banks will benefit from environments like High Performance Computing, Risk Management, etc. Simultaneously, CC provides small and medium-sized banks economically attractive access to professional IT operations and resources that were previously reserved for companies with much larger IT budgets.

ADVANTAGES

- **Cost Savings**

There is no needs to do heavy investments in new hardware and software. Also the unique nature of cloud computing allows financial institutions tochoose and pick the services required on a pay-as you-go basis.

- **Analytics**

Integrating customer data across banking platforms to enable near real-time insights.

- **Collaboration**

Enabling employees across distributed branches to access trading and banking systems through a secure cloud infrastructure

- **Desktops and devices:**

Using a private cloud to centralize management of desktops allows for greater remote flexibility without sacrificing control, while enabling banking employees to access the applications and data they need.

- **Development and testing:**

Enabling a bank's development teams to quickly and easily create virtual environments which increasing the agility of development and testing.

- **Infrastructure compute:**

Allowing capacity to be allocated, expanded and reallocated efficiently gives banks flexibility and agility while resolving the issues of complexity and cost increases related to scaling up traditional network models to accommodate future growth

- **Infrastructure storage**:

Providing scalable storage solutions to ensure that the real-time demands of today's trading and analytics processes are maintainable

- **Managed backup:**

Backing up a bank's critical business data to ensure that in the event of a disaster a bank can bounce back rapidly and easily.

- **Security:**

Enforcing active security and endpoint management to ensure corporate governance and banking IT policies are maintained.

- **Improve flexibility and scalability:**

The cloud gives banks the ability to respond quickly to changing market, customer and technological needs. They can scale up and scale down technology according to requirement. The ability to respond quickly will be an important competitive edge.

- **Data Virtualization:**

Data virtualization is the assimilation of data from multiple and diverse sources across the enterprise or external sources for the on demand consumption by a wide range of applications in a virtualized manner. Many mandates in context with the regulations and performance of banks require a data virtualization strategy. This strategy can be used to provide a single source of reference data, such as security master data. Also, risk and analytics calculations rely on many different types and sources of data, including relational and semi-structured XML. Combining such discordant data from public and private domains is a test. Accordingly, accessing that data from a single virtual source would drive scores of data consolidation within banks.

- **Mobility:**

Many of today's corporate world techno savvy workers want to access risk and analytics reports while they are on the move. They see the benefits of accessing the internet on their smart phones instantly even in remote locations. Likewise, they want similar interfaces for banking services-specific applications. And since a cloud facilitates users to access systems and infrastructure using a web browser or customized clients regardless of location and time, advancement of such interfaces has started taking shape.

CHALLENGES

- **Security and compliance:**

Maintain at all times the security of data, Banks need to demand stringent safety measures from suppliers and ensure new applications meet the latest and most rigorous security standards. Service Level Agreements (SLAs) are a must.

- **Recovery:**

It is very essential to recover the data when some problem occurs and creates failure. So the main question arises here is that can cloud provider restore data completely or not, this issue can cause a stalemate in security.

- **Cloud management:**

Achieving visibility and measuring performance are harder to do, especially if, as seems likely, large banks will source cloud services from several providers and to use them for both internal or private and external, or public, services. This could result in a bank having to handle multiple security systems, and the need to ensure all parts of their business can communicate with each other and where necessary with clients, means banks will need to develop fully-fledged cloud management platforms.

- **Regulation:**

The rules governing the cloud vary from country to country. Many countries' data protection laws impose constraints on where data is kept, limiting take-up.

CONCLUSION

When planning cloud computing initiatives, financial institutions should choose service and delivery models that best match requirements for operational flexibility, cost savings, and pay-as-you-use models. Banks should adopt a gradual evolutionary approach towards cloud computing services, evaluating each project based on the type of applications and nature of the data. Lower risk projects may include customer relationship management and enterprise content management. Higher risk projects will involve core business functional systems such as wealth management or core banking.
Trust and security have prevented businesses from fully accepting cloud platforms. To protect clouds, providers must first secure virtualized datacenter resources, uphold user privacy, and preserve data integrity. Financial services organizations are starting to use cloud computing technologies in a number of areas, in particular for mobile applications, innovation testing and micro-banking. The banks need to know that this is all about 'business model transformation' and to achieve business agility for the next level of growth. The key is to ensure that each bank starts working on a cloud reference architecture, which will define its winning strategy.

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AN EMPIRICAL STUDY ON LEVERAGE AND IT'S RELATIONSHIP WITH PROFITABILITY IN CONTEXT OF RETURN ON ASSETS OF STEEL AUTHORITY OF INDIA

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ABSTRACT
In all the enterprise main aim of management is to maximisation of wealth of owner's capital. Capital structure should like equity share holder who are maximum risk taker gain more return as compare to others. For that fund should be include debts. It is difficult to finance entire business by equity only. So, debenture should issue who bear fixed interest and more earning can be distributed among equity share holder. In this sense to use fixed interest-bearing securities along with the equity capital is called "Leverage". The purpose of this article is to understand decisions made by SAIL with regards to utilization of assets and leverage management. To analysis leverage and relationship between leverage and return on assets financial statement of SAIL company collected over period of nine years from 2010-11 to 2018-19. DOL, DFL, DCL, Current ratio, Quick ratio, Debt equity ratio, Assets turnover ratio and ROA Ratio used for analysis purpose. Karl Pearson correlation method to analysed data. The present study concludes that there is negative correlation between DOL and DFL, DOL and ROA, and DCL and ROA. There is a positive correlation between DCL and DOL, DFL and DCL, DFL and ROA.

Key words: Operating Leverage, Financial Leverage, Combined Leverage, Return on Assets.

INTRODUCTION:

The concept of leverage for financial manager is a tool through which it is easy to understand sensitivity of investment and financing decision. It is also defined as leverage is used to describe the firm'sability to use fixed costs to operating rate of return of the firm. Most of the company prefer debt financing along with equity financing because more equity result into diluting ownership power of shareholder. But the use of debt has certain limitation other wise over debt result into liquidation or non-payment of debt. There are mainly three types of leverages: operating leverage, financing leverage, combined leverage. All the leverage needs to examine to know the effect of operational activity on the risk and return of shareholders. It is a technique which quantify risk return relationship of different alternative of capital structure.

ABOUT COMPANY:

SAIL is the largest steel making company in India. SAIL produce iron and steel. Its plants located in the eastern and central regions of the India. Its main activity is to produce and sell the vide range of steel products. 75% of SAIL's equity owns The Government of India. So that voting control also in the hand of Government. It has status of "MAHARATNA". SAIL has sound infrastructure for the industrial development of the country. It has triggered the secondary and tertiary waves of economic growth by continuously providing the inputs for the consuming industry.

LITERATURE REVIEW:

- **Krishna Hari K. and Kumar Phani T.V.V. (2018)**analysed the impact of financial leverage on performance of the public sector companies. Researcher has considered 32 public sector undertaking listed in BSE for the financial year ended 31st march 2018. The correlation test and Multiple Regression is used for the study purpose. From the study it has been conclude that there is positive relationship between debts ratios and ROE and a negative relationship between debt ratios and ROA.
- **Takesh Ata and Dr. Navaprabha Jubiliy (2015).** attempt to examine capital structure and its impact on financial performance of selected steel Indian steel industry during 2007 to 2012. Correlation, multiple regression model, ANOVA and descriptive statistical are performed for the study. Study proved that there is significant impact of capital structure on financial performance of Indian steel industry. Results confirmed that there is negative relationship between capital structure and financial performance.
- **Ramana Kumar M. (2014)** study the leverage and its impact on profitability of Bata India Limited. For the study 7 years data from 2005-06 to 2012-13 taken into consideration. Ratio analysis and correlation analysis tools have been used for analysis purpose. It is concluded from the study that financial leverage and operating leverage has positive impact on ROI. So that combined leverage also positively correlates with ROI. So, company has to revised its capital structure to get maximum benefit of financial leverage
- **Kuria (2013)** studied on the effect of capital structure on the financial performance of commercial banks in kenya. The study was piloted on 35 commercial banks in Kenya which were in operation in Kenya for 5 years of study from 2008 to 2012. the various ratios of these commercial banks were computed from the various data collected from the data extracted from their financial statement for the period. The data was analysed using a linear regression model using to establish if there is any significant relationship of capital structure and the financial performance of these commercial banks. The finding of the analysis concluded that there was no significant relationship between the capital structure and the financial performance of commercial banks in Kenya

OBJECTIVE OF THE STUDY:

- To analyse financial performance of the SAIL
- To examine the Leverage analysis in SAIL
- To study the relationship between and profitability

Hypothesis

H1: There is significant positive correlation between Operating Leverage, Financial Leverage, Combined Leverage and Profitability of SAIL

Sources of data:

Researcher collect data from published and unpublished sources, books,journals, different website, magazine, official website of SAIL etc.

Time Period:

In this study 9 years data of SAIL company collected for the period 2010-11 to 2018-19.

Research technique:

Ratio analysis technique has been used to analyses the financial performance of the SAIL company. For leverage analysis DOL, DFL and DCL are used. The relationship between leverage and profitability is examine through statistical tool Karl person coefficient of correlation. For analysis SPSS tool used.

DATA ANALYSIS

Table 1 Degree of Operating Leverage = $\frac{\text{\% Change in EBIT}}{\text{\% Change in Sales}}$

YEAR	SALES	EBIT	% EBIT	% SALES	DOL

YEAR	EPS	EBIT	% EPS	%EBIT	DFL
Mar '19	5.27	6,707.43	-550.43	199.25	-2.76
Mar '18	-1.17	2241.34	-82.945	-183.64	0.45
Mar '17	-6.86	-2679.66	-29.569	-44.196	0.67
Mar '16	-9.74	-4801.92	-292.11	-223.08	1.31
Mar '15	5.07	3901.37	-19.90521327	-3.4818	5.71686
Mar '14	6.33	4042.11	20.57142857	2.41513	8.51774
Mar '13	5.25	3946.79	-41.07744108	-33.981	1.20883

Mar '19	66,967.31	6,707.43	199.25	16.35	12.1897
Mar '18	57,558.46	2241.34	-183.64	29.48	-6.2287
Mar '17	44,452.41	-2679.7	-44.196	13.8	-3.1959
Mar '16	39,051.88	-4801.9	-223.08	-14.567	15.31
Mar '15	45,710.78	3901.37	-3.48184	-2.11491	1.646331
Mar '14	46,698.41	4042.11	2.415127	4.70904	0.51287
Mar '13	44,598.26	3946.79	-33.9812	-3.76233	9.031956
Mar '12	46,341.79	5978.28	-20.9785	7.00673	-2.99404
Mar '11	43,307.36	7565.38	-27.4986	6.679147	-4.11708
Mar '10	40,595.90	10434.8			

Degree of Operative Leverage of the firm has mixed trend for the study period. Average Operating Leverage Ratio Maintain by the company was 2.46. Degree of Operative was highest in the year 2018-19. That is because of Increase in EBIT is higher than all other year. The Low impact of EBIT in the year 2017-18. DOL can be Positive or Negative that will depend on the EBIT. We can say that DOL is Positive if it is above Break-even point and Negative if it is below Break-even point. So that it is assumed that company not maintain Optimum Operative Leverage. Low Level of Operative Leverage is desirable.

Table 2: Degree of Financial Leverage= % change in EPS   % change in EBIT

Mar '12	8.91	5978.28	-24.9368155	-20.978	1.18869
Mar '11	11.87	7565.38	-27.40061162	-27.499	0.99644
Mar '10	16.35	10434.8			

Degree of Financial Leverage shows the mixed during the year 2010-11 to 2018-19. The average Degree of financial leverage maintain by the SAIL company was 1.92. The highest degree of FinancialLeverage was in the year 2013-14 is 8.52. and low in the year 2018-19 is -2.76. Financial leverage may be favourable or unfavourable depends upon the use of fixed cost of fund. Favourable financial leverage may be turned as Trading on Equity. Thus, it is observed that company is not maintaining optimum level of financial risk. A moderate financial leverage is advisable for the company.

Table 3 Degree of Combined Leverage = DOL DFL ✖

YEAR	DOL	DFL	DCL= DOL*DFL
Mar '19	12.19	-2.76	-33.6444
Mar '18	-6.23	0.45	-2.8035
Mar '17	-3.2	0.668	-2.1376
Mar '16	15.31	1.31	20.0561
Mar '15	1.65	5.72	9.438
Mar '14	0.51	8.51	4.3401
Mar '13	9.03	1.21	10.9263
Mar '12	-2.99	1.19	-3.5581
Mar '11	-4.12	0.99	-4.0788
Mar '10			

The significant of DCL lies in the fact that it measures the effect of changes in sales on changes in EPS. There is lots of ups and down come in Degree of Combined leverage during the period 2010-11 to 2018-19. The average Degree of Combined Leverage of SAIL is -1.624. The SAIL company attain high DCL in the 2015-16 and low DCL in the year 2018-19 are 20.056 and -33.64 respectively. In the year 2015-16 because of High DOL, DCL also gone high. Means in the year 2015-16 company has high operating risk. There for it is observed that company is not able to maintain combine leverage. so, it is advisable for the company to maintain low operating leverage and moderate financial leverage. So that company can maintain moderate combined leverage. The ideal condition for achieving the main objective of maximisation of wealth of shareholder will be the one in which operating leverage is low and financial leverage is high.

TABLE 4 ANALYSIS OF FINANCIAL PERFORMANCE

YEAR	CURRENT RATIO	QUICK RATIO	DEBT EQUITY RAITO	Asset Turnover Ratio (%)	ROA
Mar '19	0.64	0.41	1.09	57.51	1.87
Mar '18	0.7	0.4	1.18	50.4	-0.42
Mar '17	0.6	0.38	1.08	41.72	-2.65
Mar '16	0.61	0.42	0.84	38.91	-4

Mar '15	0.68	0.55	0.65	46.02	2.1
Mar '14	0.95	0.41	0.57	50.78	2.84
Mar '13	1.23	0.52	0.52	52.95	2.57
Mar '12	1.52	0.79	0.4	60.7	4.82
Mar '11	1.51	1.04	0.51	56.92	6.44
Average	0.94	0.55	0.76	50.66	1.51

A satisfactory Current ratio should enable an enterprise to meet its short-term obligation, even when value of current assets decline. The average current ratio for the period of the SAIL is 0.94 which is less than ideal current ratio of 2:1. Which shows that liquidity position it of SAIL company is not satisfactory. It is difficult for company to maintain it short-term obligation effectively. It is suggested for the company to maintain sufficient liquidity level.

Quick ratio is the most conservation test of the liquidity position of an enterprise. A reasonable standard of Quick ratio is varying from enter price to enter price and industry to industry. Generally, ratio 1:1 is considered to be satisfactory. An average quick ratio during the period is 0.55 which less the ideal ratio. Quick ratio less then one is not uncommon and should not, by themselves, be a cause for alarm. It is observed that higher the ratio sounder short-term position of company.

The debt equity ratio indicates the financial structure of an enterprise, i.e. the manner in which an enterprise has raised its finances. Higher the Debt equity ratio greater the risk for the creditor as well as owners. An ideal Debt equity ratio consider as 2:1. An average ratio of SAIL company during the period is 0.76 which is less then ideal Debt ratio. Lower the Debt equity ratio indicate danger sign which means company using excessive long-term debts and does not have the ability to service the interest due to the lenders on long term loan. So, it is suggested for the company to revised the capital structure.

The Assets turnover ratio of the firm was mixed during the study period from 2010-11 to 2018-19. The average Assets Turnover ratio over the period is 50.66. Higher the ratio is desirable for the company which indicate an efficient and effective utilisation of assets.

The Return of Assets ratio indicate the profitability of the enterprise on the funds invested by it in total assets. It shows the relationship between net profit and assets. The average Return on Assets ratio for the study period is 1.51. The Return on Assets ratio is highest in the year 2010-11 i.e. 6.44 and lowest in the year 2015-16 i.e. -4. Higher the Return on Assets ratio is beneficial for the company.

Table 5: Descriptive Statistics

	Mean	Std. Deviation	N
DOL	2.4611	7.81001	9
DFL	1.9209	3.27439	9
DCL	-.1624	15.01240	9
ROA	1.5078	3.35451	9

Table 6: Correlations between DOL, DFL, DCL and ROA

		DOL	DFL	DCL	ROA
DOL	Pearson Correlation	1	-.215	.073	-.351
	Sig. (2-tailed)		.578	.851	.354
	N	9	9	9	9
DFL	Pearson Correlation	-.215	1	.547	.148
	Sig. (2-tailed)	.578		.127	.705
	N	9	9	9	9
DCL	Pearson Correlation	.073	.547	1	-.291
	Sig. (2-tailed)	.851	.127		.447
	N	9	9	9	9
ROA	Pearson Correlation	-.351	.148	-.291	1
	Sig. (2-tailed)	.354	.705	.447	
	N	9	9	9	9

From above table we can conclude that there is negative correlation between DOL and DFL because r value is -0.215. So, we can say that increase DOL result in decrease in DFL. In the analysis sig (2-tailed) value is .578 which is less then more than 0.05 so there is no significant correlation between two variables. There is negative correlation between DOL and ROA because of r value is -0.351. so that there is inverse relationship between two variables. In the analysissig (2-tailed) value is 0.354 which is more than 0.05 so there is no significant correlation between two variables.

In the analysis we can see that there is positive correlation between DOL and DCL because r value is 0.073 and sig (2-tailed) value is 0.851 which is more than 0.05 so there is not statistically significant correlation.So,each variable is positively correlated but not significant statistically.

In the analysis we can conclude that DFL and DCL is positively correlated because r value is 0.547. It is also concluded that it is not statistically significant because sig(2-tailed) value0.127 which is more than 0.05

It is also observed that correlation between DFL and ROA is 0.148 which is statistically not significant assig (2-tailed) value is more than 0.05.So, we can say that DFL and ROA is positively correlated with ROA but not significant statistically.

It is concluded that correlation between DCL and ROA is =0.291 which shows the negative correlation between two variable and sig (2-tailed) value is more than 0.05 so we can say that there is no significant relation between two variables.

CONCLUSION:

The study considers DOL, DCL, DFL, Current ratio, Quick ratio, Debt equity ratio, Assets turnover ratio and Return on assets ratio for analysis of leverage and profitability. The present study concludes that there is negative correlation between DOL and DFL, DOL and ROA, and DCL and ROA. There is positive correlation between DCL and DOL, DFL and DCL, DFL and ROA. That means if DOL increases the DFL and ROA inversely behave i.e. decreasing. In the same way DCL increasing the ROA decreasing as there is negative correlation so it also behaves inversely. There is positive correlation between DCL and DOL and DFL and DCL which shows if one variable increase then another variable also increases. Same relationship we can see between DFL and ROA if one variable increases same way another variable also increases. Hence, the leverage is most dominant element which is having a great relation between profitability and leverage of the company. Company should try to maintain optimum leverage. It is suggest to the SAIL to revise capital structure which should include the optimum balance of equity and borrowed fund so that it has positive impact on Return on Assets.

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CITIZENS' RIGHT TO HEALTH CARE IN INDIA

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ABSTRACT: -
Good health of citizens is the most expensive capital of a nation. The primary component of people's well-being is health and good health. The objective of a democratic system of government is a welfare state, in which all the efforts for the well-being of the people are made by the administration. The good health and healthy society of the people of the nation has a direct impact on social development and economic growth. Health and education have been included in the natural right of a person to live life in modern times. A healthy and wholesome life of a person creates a peaceful and neat society.

The average life expectancy of the people of the nation, infant mortality rate, malnutrition rate in children etc. have an impact on the prosperity and economic viability of the nation. Increases the well-being of people by giving priority to health facilities in the so-called developed nations of the world.

After World War II, the United Nations was established at the international level, which established treaties and universal declarations on the natural rights of individuals and human rights to be adhered to by member nations. In general, the pursuit of good health is the protection of a person's natural right to life. The World Health Organization was established internationally by the United Nations for health well-being, establishing guidelines and standards for the good health of people around the world.

Due to the various Declarations and Declarations of Human Rights in the international arena, fundamental rights are enshrined in Part III of our Constitution, which protects the natural rights of the individual, including the health of the people.

Keywords: - Health, Right, Natural right, Human Rights, United Nations, World Health Organization,

INTRODUCTION: -

“પહેલું સુખ તે જાતે નર્યા”

Good health of the people is the cornerstone of the nation's strength. In a democratic system of government, the administration as well as the guardians of the people are the same, which gives warmth and affection to the citizens of the nation like parents. The well-being, education and security of the people is the primary responsibility of the administration.

Citizens have the right to a good life and health care. The fundamental right to health enshrined in Part-2 of our Constitution is not seen as an achievement but is enshrined in the right to life in Article 21 as well as in Article 4 of the Constitution's Guiding Principles in Article 47 to provide the state with good health for the people. Guided to.

OBJECT: -

1. The aim is to educate the people of the society by studying the rights of the citizens regarding health care in the present time of the epidemic of Corona virus.

2. The aim is to make citizens aware of the international legal provisions relating to health.

3. The aim is to make the people of the society aware of the provisions given in the Constitution regarding health care and wellness and the legal provisions at the national level.

HYPOTHESIS: -

1. The level of awareness about the right to health in the society will be negligible.

2. There will be a lack of knowledge in the society about the provision of international standards and certificates for health care.

3. Citizens will be able to understand the various legal provisions at the national level regarding health care.

RESEARCH METHODOLOGY: -

This research paper is prepared using theoretical research methodology in which information is obtained using secondary information i.e. books, current papers, website etc.

VARIOUS LEGAL PROVISIONS REGARDING THE RIGHT TO HEALTH CARE OF CITIZENS: -

The various legal provisions regarding the right of citizens to health care can be divided into two main levels. Internationally and nationally which are elaborated as follows.

PROVISIONS FOR INTERNATIONAL STANDARD HEALTH CARE.

The outbreak of human rights in the aftermath of World War II led to the establishment of the United Nations, which enacted various instruments and public names for the protection of human rights and natural law, including the provisions on health and the right to health.

CHARTER OF THE UNITED NATIONS

Article 57 (1)

to the various specialized bodies established by agreements between different Governments and having responsibilities in the economic, social and cultural spheres, as well as in the fields of education and health, Will be brought in relation to the United Nations.

● Universal Declaration of Human Rights – 1948

Article – 25

(1) Everyone has the right to a healthy and proper lifestyle for himself and his family. This right cover food, clothing, housing, medical care, and essential social services, as well as the right to protection in times of sickness, disability, widowhood, old age, and other necessities of life.

(2) Children and mothers have the right to special care and assistance. Every child (before or after marriage) has the right to social security.

● International Declaration of Economic, Social and Cultural Rights – 1966

Article - 12 The Right to Healthy Health

(1) Everyone has the right to the utmost care for his physical and mental health. Every member nation should make provision to recognize this right.

(2) Member States to take the following necessary steps.

(A) To make arrangements to reduce infant mortality, reduce birth rate and ensure healthy growth of the child.

(B) To develop all matters pertaining to environmental as well as non-harmful industrialization.

(C) To prevent and control epidemics as well as other diseases.

(D) To make arrangements for everyone to get proper treatment and medical facilities in case of illness.

● International Convention on the Elimination of All Forms of Racial Discrimination

Article -5

In compliance with the fundamental obligations laid down in article 2 of this Convention, States Parties undertake to prohibit and eliminate racial discrimination in all its forms and to guarantee the right of everyone, without distinction as to race, colour, or national or ethnic origin, to equality before the law, notably in the enjoyment of the following rights:

(iv) The public health, medical care, social security and social services.

● World Health Organization

Origins

The International Sanitary Conferences, originally held on 23 June 1851, were the first predecessors of the WHO. A series of 14 conferences that lasted from 1851 to 1938, the International Sanitary Conferences worked to combat many diseases, chief among them cholera, yellow fever, and the bubonic plague. The conferences were largely ineffective until the seventh, in 1892; when an International Sanitary Convention that dealt with cholera was passed.

Five years later, a convention for the plague was signed. In part as a result of the successes of the Conferences, the Pan-American Sanitary Bureau (1902), and the Office International hygiene Pulque (1907) were soon founded. When the League of Nations was formed in 1920, they established the Health Organization of the League of Nations. After World War II, the United Nations absorbed all the other health organizations, to form the WHO.

ESTABLISHMENT

During the 1945 United Nations Conference on International Organization, Seeming Sze, a delegate from the Republic of China, conferred with Norwegian and Brazilian delegates on creating an international health organization under the auspices of the new United Nations. After failing to get a resolution passed on the subject, Alger Hiss, the Secretary General of the conference, recommended using a declaration to establish such an organization. Sze and other delegates lobbied and a declaration passed calling for an international conference on health. The use of the word "world", rather than "international", emphasized the truly global nature of what the organization was seeking to achieve. The constitution of the World Health Organization was signed by all 51 countries of the United Nations, and by 10 other countries, on 22 July 1946. It thus became the first specialized agency of the United Nations to which every member subscribed. Its constitution formally came into force on the first World Health Day on 7 April 1948, when it was ratified by the 26th member state.

The first meeting of the World Health Assembly ended on 24 July 1948, having secured a budget of US $ 5 million (then GB £ 1,250,000) for the 1949 year. Andrija Stamper was the Assembly's first president, and G. Brock Chisholm was appointed Director-General of the WHO, having served as Executive Secretary during the planning stages. Its first priorities were to control the spread of malaria, tuberculosis and sexually transmitted infections, and to improve maternal and child health, nutrition and environmental hygiene. Its first legislative act was concerning the compilation of accurate statistics on the spread and morbidity of disease. The logo of the World Health Organization features the Rod of Asclepius as a symbol for healing.

The World Health Organization (WHO) is a specialized agency of the United Nations responsible for international public health. The WHO Constitution, which establishes the agency's governing structure and principles, states its main objective as "the attainment by all peoples of the highest possible level of health." It is headquartered in Geneva, Switzerland, with six semi-autonomous regional offices and 150 field offices worldwide.

The WHO was established by constitution on 7 April 1948, which is commemorated as World Health Day. The first meeting of the World Health Assembly (WHA), the agency's governing body, took place on 24 July 1948. The WHO incorporated the assets, personnel, and duties of the League of Nations' Health Organization and the Office International hygiene Pulque, including the International Classification of Diseases. Its work began in earnest in 1951 following a significant infusion of financial and technical resources.

RIGHTS AND RESPONSIBILITIES OF MEMBER STATES: -

The functions of the health organization are divided into two sections. Good voluntary cooperation and coordination play an important role. Members have to pay for their school to do these things. Apart from this the call does not raise legal relations. WHO conducts activities such as exchange of scientific knowledge, research in the field of health, epidemic prevention measures, organization of public health services, etc.

The organization conducts international conventions in the field of public health. A 2/3 majority is required to accept such conventions. Within 18 months of its passage, each member state has to take steps to get it accepted. It applies to whoever accepts it. The state that does not accept it will have to give reasons for it.

This health body makes its own regulations. Topics include public health regulations, treatment standards, the purity of herbs in the international drug trade, labels applied to herbs, and public effects, among others. This rule applies to all member states when it passes a meeting.

At the international level, the member states that sign the charters have a responsibility to comply with the provisions and standards of the right to health care.

PROVISIONS FOR NATIONAL LEVEL HEALTH CARE

Most of the provisions of the Universal Declaration of Human Rights are enshrined in our Constitution as fundamental rights, including the right to health.

- **Constitution of India**

The constitution is said to be the supreme law of the land, which outlines the rights of citizens and the system of governance of the country. Provisions are also found in the Constitution regarding the health care of the citizens which are as follows.

Part-3 Fundamental Rights

Article - 21 Protection of life and physical liberty

The basic right to health care is not directly addressed but the right to life is enshrined in Article 21.

Part-4 Guiding Principles of Politics

Article - 47

The duty of the state to raise the nutritional status and living standards of its citizens and to improve public health.

Related case: -

- **Public Health is State's Priority: In one of the earliest instances of public interest litigations-Municipal Council, Ratlam Vs. Vardhichand &Ors,**

The municipal corporation was prosecuted by some citizens for not clearing up the garbage. The corporation took up the plea that it did not have money. While rejecting the plea, the Supreme Court through Justice Krishna Iyer observed: "The State will realize that Article 47 makes it a paramount principle of governance that steps are taken for the improvement of public health as amongst its primary duties."

- **Right to Health is a Fundamental Right: In 1991, in CESC Ltd. vs. Subash Chandra Bose, (AIR 1992 SC 573,585)**

The Supreme Court relied on international instruments and concluded that right to health is a fundamental right. It went further and observed that health is not merely absence of sickness:

"The term health implies more than an absence of sickness. Medical care and health facilities not only protect against sickness but also ensure stable manpower for economic development. Facilities of health and medical care generate devotion and dedication to give the workers' best, physically as well as mentally, in productivity. It enables the worker to enjoy the fruit of his labour, to keep him physically fit and mentally alert for leading a successful economic, social and cultural life. The medical facilities are, therefore, part of social security and like gilt edged security, it would yield immediate return in the increased production or at any rate reduce absenteeism on grounds of sickness, etc. Health is thus a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. In the light of Arts. 22 to 25 of the Universal Declaration of Human Rights, International Covenant on Economic, Social and Cultural Rights and in the light of socio-economic justice assured in our Constitution, right to health is a fundamental human right to workmen. The maintenance of health is a most imperative constitutional goal whose realisation requires interaction by many social and economic factors."

- **In Supreme Court Legal Aid Committee Vs. State of Bihar**

The Supreme Court held that the responsibility to provide immediate medical treatment to an injured person in a medico-legal case extends even to the police. Thus, where the deceased who was lynched by the mob for attempting to rob passengers of train, died because of negligence of the police in taking him to a hospital on time and also for the inhuman manner in which he was bound up and dumped in the vehicle, the Court held that this amounted to a violation of right to life and the State was bound to pay Rs.20, 000 as compensation for the loss of life. It is altogether another matter that the compensation awarded was a pittance.

- **Poonam Sharma Vs. Union of India**

Is another case pertaining to the liability of police and government hospitals in medico-legal case, the Petitioner's husband met with an accident while driving in an allegedly drunken state, The police took him to a government hospital for a check up where the doctor on duty stitched up an inch long cut on his scalp and gave him Burden tablets. Later the deceased was taken into custody and charged for drunken driving under the Motor Vehicles Act, 1988. In the night the deceased complained of severe headache and the police took him to the same doctor who again prescribed Burden tablets. During the night the condition of the deceased deteriorated. The next day his family bailed him out and took him to another hospital where he succumbed to brain haemorrhage.

The high court observed that in a case of head injury, it is elementary knowledge that extra care is required to be taken. Such extra care is required to be taken, particularly in

medico-legal cases. In medico-legal cases, the doctor as also the police authorities are under statutory obligation not only to see that injuries suffered by a person who has been brought to the hospital are properly taken care of but also, every doctor at the government hospital having regard to the paramount importance of preservation of human life is statutorily obliged to extend his services with due expertise.
The instant case was not of an error in clinical judgment. Within a few hours, the patient was brought back complaining of severe headache. Despite that no further treatment was given and he was asked only to take Burden tablets. Thus, in light of the facts and circumstances of the case and that the deceased was only 30 years old drawing a salary of Rs.3,000 per month, the high court ordered Rs. 2 lakhs as compensation to the Petitioner.

SUGGESTIONS: -

1. Citizens should be aware of the legal aspects of their rights to health.
2. It is in the interest of the nation that the welfare policies and schemes of the government in the health sector create more awareness in the society.
3. Citizens of the whole society must be aware that citizens have a natural right to health.

UTILITY: -

The present research paper "Citizens' Right to Health Care in India" will be useful to the people of the society, students, research students in the current time of Corona virus epidemic.

CONCLUSION: -

The right to health is a natural right of the individual, the state (government) is responsible for the health care of citizens as part of social security. The health and high standard of living of the citizens is a sign of prosperity of the nation. The good health of the people of the nation plays a vital role in economic and social development.

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VIEW OF SPACE : 2320-7620
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CORPORATE GOVERNANCE: A COMPARATIVE STUDY OF FIVE SECTOR OF GUJARAT

URVISHA M. SUKHADIYA

ABSTRACT

- Manuscript type : Empirical Study
- Research Issue : The word 'Governance' is a current topic not only in management but also in public administration and public life. It conveys about how a corporation is is directed and controlled under a set of mission values and philosophy. Good Governance is becoming a source of competitive advantage among economies for attracting international capital. Responsibility, Transparency, Fairness and accountability are the four vital pillars for strong Corporate Governance. Corporate Governance helps to the business management in achieving long-term value creation. This study presents Corporate Governance disclosure practices in five Gujarat sector (GNFC, GSFC, GACL, Torrent Power, Gujarat industries Power Company Limited.)

OBJECTIVE OF THE STUDY :

1. To understand the concept of Corporate Governance

2. To make comparative analysis of Corporate Governance practices between the selected sectors.

3. To make suggestion for better Corporate Governance practices.

KEYWORDS :- Corporate Governance, Clause 49, SEBI, Disclosure Practices, Companies Act 2013, corporate sector.

INTRODUCTION:

Corporate Governance is getting attention for satisfying the divergent interests of the stakeholder of the business enterprise, especially after the corporate scandals and loss of stakeholder 's value at Enron and several other large companies in a recent past Which focused more attention the issue of shareholder rights calling for greater transparency and accountability and enhancing corporate reporting and disclosure Corporate Governance in concerning with direction and control of Corporate bodies. These activities are for more basic as compared to profitability and performance of companies.

Corporate Governance focuses on a company's structure and processes to ensure fair, responsible, transparent and accountable corporate behavior. Corporate Governance helps to the business management in achieving long term value creation. In India the question of Corporate Governance has come mainly in the wake of economic liberalization, deregulation of industry and business. This new economic policy adopted by the government of India since 1991 has necessitated the demand for introduction and implementation of a proper Corporate Governance policy in management of the companies not only in the interest of their stakeholder but also for development of the economy .

Corporate Governance reform in India have evolved a wide range of institutional and Corporate initiatives that include (a) improving the functioning of capital market (b) ensuring more effective protection of minority investors (c) reforming company board structure (d) reforming governance mechanisms of financial institutional etc. various

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committees have been formed by the government of India, SEBI and industry associations and their recommendations for implementation of Corporate Governance norms in India Corporate houses have submitted during the period 1998-2005.but,there have been several major Corporate Governance initiatives launched in India since the mid-1990. The first was by the confederation of Indian Industry (CII) India's largest industry and business associations which came up with the first voluntary code of Corporate Governance in 1998. The second was by the SEBI, now enshrined as clause 49 of the listing agreement. The third was the Naresh Chandra Committee. Which submitted its report in 2002? Subsequently SEBI withdraw the revised clause 49 in December 2003. The fifth was major initiative that, the companies Act 2013,In January 2013,SEBI had issued a consultation paper with its draft proposals for changes in Governance requirement applicable to listed companies and after issue of secondary legislation under the companies Act , SEBI'S Governance in respect of listed companies were announced in 2014.

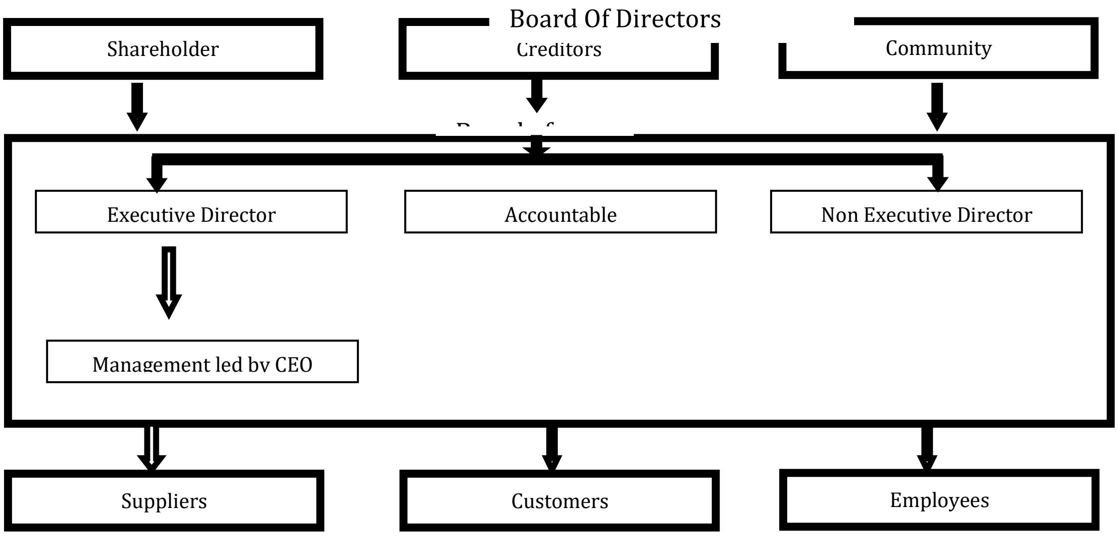
This paper divided into six section namely Introduction, meaning, review of literature, research methodology, Interpretation & Analysis and conclusion. The first section presents the theoretical framework of the study. The second section meaning of Corporate Governance, third section discusses review of literature. The fourth part elaborate on the research methodology adopted in which hypotheses has been developed and reveals objectives of the study. The fifth section will describe analysis on interpretation of discusses the finding and the final section deals conclusion of the study.

MEANING OF CORPORATE GOVERNANCE:

THE INSTITUTE OF COMPANY SECRETARIES OF INDIA:

Defines Corporate Governance as "Corporate Governance is the application of best management practices, compliance of law in true letter and spirit and adherence to ethical standards for effective management and distribution of wealth and discharge of social responsibility for sustainable development of all stakeholders."

The primary goal of any organization is the maximization of the shareholder's wealth in a legal and ethical manner. The main participants in a corporation are the shareholders. Management, led by the CEO and the Board of directors. There are other participants such as the employees, customers, suppliers, creditors and the community.



REVIEW OF LITERATURE:

A review of literature is provided in this section. This section tries to understand the disclosure practice of Corporate Governance across the different part of the country. This study bridge two stand of the literature first at the International level & second at the national level.

Literature review of International Level:-
Humayum K.M. and Adelopo. I.(2012),paper enlightens an account to Corporate Governance disclosure practice by public enterprises in Swaziland. To basic objectives of that study: first of assess that general level of development African country Swaziland. Secondly to investigate the disclosure practice amongst of the United Nation (UN).Finding Showed that all samples enterprises followed the international guidelines in disclosing financial and operating result and all enterprises disclosed their financial communication. Also found that disclosure items such as impact of alternative accounting decisions, anti-takeover measures availability and use of advisor ship facility during reporting period.

Kearncy,W.D. and Kruger, H.A.(2013)described a framework based on a value focused approach which is used to identity unique dimensions for evaluation in a large organization. The study comprises of three main steps. First the value focused approach was followed to identify the different dimensions of Corporate Governance. Secondly a survey was conducted to evaluate the identified dimensions and third a practical phishing exercise was conducted to show how organizational learning can take place from security incident which may improve specific Corporate Governance dimensions. The value focused thinking approach is described and the main objectives into six dimensions. The result in six different factors that were in line with those suggested in the literature on Corporate Governance and Governance for information technology.

Literature review at National Level:
Gupta,p.(2012), checked whether higher and better Corporate Governance scores lead to better performance of the companies. writer reveals that India follows more stringent Corporate Governance practices based on shareholders model as compared to Japan and South Korea. Author also found that Corporate Governance practices to have an impact on the share prices of the companies as well as one the financial performance of the companies.

Motwani, S.S. and Pandya,H.B.(2013),studied sectoral analysis of Corporate Governance practice in India is an attempt to reveal the secrets of Corporate Governance in India context. The aim of their study Corporate Governance practices in India context for selected leading sector over the period of five year for this purpose average scores have been calculated by dividing for the year. The researcher found that highest Corporate Governance practice was shown by the companies of automobile sector and low Corporate Governance practices in construction sector.

RESEARCH METHODOLOGY:-

This section covers objectives of the study and also develop hypothesis.

(1) Objectives of the study:

- To understand the concept of Corporate Governance.
- To develop Corporate Governance disclosure Index on the basic of mandatory and Non mandatory requirement issued by SEBI in revised clauses-49 of listing agreement .
- To determine the Corporate Governance practices in selected sector which are registered in Gujarat namely GNFC, GSFC, GACL, Torrent Power, Gujarat Industries Power Company limited which are listed in BSE Top 100.

- To make comparative analysis of Corporate Governance practice between the selected sectors.
- To make suggestion for better Corporate Governance practices.

(2) Sample size and Collection of Data:-

The sample comprises of five sector of Gujarat (GNFC, GSFC, GACL, Torrent Power, Gujarat Industries Power Company limited) which are listed in BSE Top -100. This research will be based on the secondary data. Present study has considered the duration of a financial year 2018-2019.All data and information has collected form annual report of each selected sector, journals etc.

(3) Hypothesis

Following hypothesis will be framed and tested on the basic revised Clause-49 of listing agreement.

H_0: selected sector does not shows complains with Corporate Governance standard and Disclosure Practices mentioned
in clause 49 of listing agreement.

H_1: selected sector shows complain with Corporate Governance
standard and Disclosure Practices mentioned in
clause 49 of listing agreement.

INTERPRETATION AND ANALYSIS:

The research comprises comparative analysis of Corporate Governance disclosure practices between five selected sectors listed in BSE SENSEX for the financial year 2018-2019. For this purpose company's performance have been measured against certain Governance parameter. The research has been undertaken to assess the level of compliance to key Governance parameter in these sector in tune with mandatory and non mandatory requirements under the companies Act 2013 and the SEBI (listing obligations and disclosure Requirement)Regulations 2015.to evaluate how much these sector are following governance standard a 100 point index has been framed ,where by an appropriate weightage in terms of points has been awarded for governance parameters according to their importance. These key Governance parameters and the criterion for evaluation of Governance standard have been selected on a 100-point scale consisting of parameters with their sub parameter both mandatory and non mandatory which are based on various researches, clause 49 of the listing agreement, companies Act 2013SEBI regulations 2013. After determining the total score based on key governance parameters, all selected units have been evaluated ,all selected units have been evaluated on a five –point scale, for the score 86-100 the excellent disclosure ,for the score 71-85 very good disclosure, for the score 41-55 the average disclosure and for below the most poor disclosure.

Table 1:- Score Result

Marks	Remarks
90-100	Excellent
75-80	Very good
60-74	Good
50-59	Satisfactory
0-49	Poor

Table 2 :- Criterion for Evaluation of Governance standard of selected units for the financial year 2018-2019.

Sr.	Governance	Point	Tota	GNF	GSF	GAC	Torren	GIP

No	Parameters	s	l scor e	C	C	L	t Power	C
1	Statement of company's philosophy on code of Governance	1	1	1	1	1	1	1
2	Composition of the board and BOD meeting held.		5					
(i)	Not less than 50% of the Board of Directors comprising of non-executive directors	1		1	1	1	1	1
(ii)	At least one women director	1		1	1	1	1	1
(iii)	Where Chairmen is non-Executive Director At least 53 of the board comprise independent Director where chairman is Executive At least 52 of the board Comprise independent Director	1		1	1	1	1	1
(iv)	At least four BOD meeting in a year	1		1	1	1	1	1
(v)	Attendance record of BOD meeting	1		1	1	1	1	1
3.	Chairman and CEO Duality		5					
(i)	Promoter Executive Chairman Cum-MD/CEO	1		0	0	1	1	0
(ii)	Non-Promoter Executive Chairman Cum-MD/CEO	2		0	0	0	0	0
(iii)	Promoter Non-Executive Chairman	3		3	3	0	3	0
(iv)	Non-Promoter Non-Executive Chairman	4		0	0	0	0	0
(v)	Non-Executive Independent	5		0	0	0	5	0
4	Discloser of tenure & age limit of directors	2	2	0	2	0	0	0
5	Disclosure of regarding to Independent Director(ID)		6					
(i)	Definition of ID	1		0	0	0	0	0
(ii)	Familiarization program to ID & details of such training imparted to be disclosed in the annual report	1		1	1	1	1	0
(iii)	Separate meeting of the	1		1	1	1	1	1

	ID							
(iv)	Selection criteria the terms and condition of appointment shall be disclosed on the website of the company	1		1	1	1	1	1
(v)	Formal letter of appointment of ID	1		1	1	1	1	1
(vi)	Limit of No. Of Directors ship for ID(In whole time director then three or it not whole time director then seven)	1		0	1	0	1	0
6	Discloser of:		2					
(i)	Remuneration policy	1		1	1	1	1	1
(ii)	Remuneration of directors	1		1	1	1	1	1
7	Directorship and committees membership/Chairmanship of directors across all companies	2	2	2	2	2	1	0
8	Code of conduct		2					
(i)	Information on code of conduct	1		1	1	1	1	1
(ii)	Affirmation of compliance	1		1	1	1	1	1
9	Post board meeting follow up system and compliances of the Board procedure	2	2	2	0	0	0	0
10	Board Committees:							
(A)	Audit Committee:		8					
(i)	Transparency in Composition of the committee.(Qualified and Independent)	1		1	1	1	1	1
(ii)	Compliance of minimum requirement of No. of Independent Directors in the committee (minimum three director and 2/3 of member should be ID	1		1	1	0	1	1
(iii)	Compliance of minimum requirement of the number of committee meetings.(At least four times).	1		1	1	1	1	1
(iv)	Information about	1		0	1	0	1	0

	literary & financial expertise of the committee							
(v)	Information about participation of Head of Finance, Statutory Auditors, Chef Internal Auditors and other invitees in the committees meetings.	1		1	1	0	1	0
(vi)	Discloser of audit committee charter & terms of reference	2		0	0	0	0	0
(vii)	Discloser of committee Report	1		0	0	0	0	0
(B)	Nomination and remuneration committee:		6					
(i)	Formation of the committee	1		1	1	1	1	1
(ii)	Information about number of committee meetings1	1		1	1	1	1	1
(iii)	Compliance of minimum requirement of No. of non Executive.(At least 3 member)	1		1	1	1	0	1
(iv)	Compliance of the Provisions of independent director as Chairman of the committee	1		0	1	1	1	1
(v)	Information about participation of meeting	1		1	1	1	1	1
(vi)	Discloser of committee report	1		0	0	0	0	0
(C)	Shareholders/Stakeholders Relationship Committee:		5					
(i)	Transparency in composition of the committee	1		1	0	1	1	1
(ii)	Information about nature of complaint & queries received and disclosed-item wise	1		0	0	1	0	0
(iii)	Information about number of committee meetings	1		0	0	1	1	1
(iv)	Information about action taken and investors/Shareholders	1		0	0	0	0	1

	Survey							
(v)	Investors/Shareholder Survey Discloser of committee report	1		0	0	0	0	0
(D)	Risk management committee:		2					
(i)	Formation of committee	1		1	1	1	1	0
(ii)	Discloser of committee charter report	1		0	0	0	0	0
(E)	Additional Committee		4					
(i)	Healthy and safety & Environment Committee	1		1	0	0	0	0
(ii)	CSR and Sustainable Development committee	1		1	1	1	1	1
(iii)	Investment Committee	1		0	1	1	0	0
(iv)	Other Committee	1		1	1	1	1	1
11	Discloser of Transparency		24					
(i)	Significant related party transaction having potential conflict with the interest of the company	2		2	2	2	2	2
(ii)	Non-compliance related to capital market matters during the last 3 years	2		2	2	2	0	0
(iii)	Board discloser-Risk management	2		2	2	2	0	1
(iv)	Information to the board on Risk management	2		1	1	2	0	0
(v)	Publishing of Risk Management Report	1		1	1	1	0	0
(vi)	Management Discuss and Analysis	2		2	2	2	2	2
(vii)	Information to Shareholders ● Appointment of new director/re appointment of retiring directors	1		1	1	1	1	1
	● Quarterly results & presentation	1		1	1	1	1	
	● Share-Transfer	1		1	1	1	1	1
	● Director's responsibility statement	1		1	1	1	0	0
(viii)	Shareholder Right	2		2	0	0	0	0
(ix)	Audit Qualification	2		0	0	0	0	0
(x)	Training Of board members	2		0	0	0	0	0
(xi)	Evolution of non-directors	2		0	0	0	0	0

(xii)	Resignation of Director with reason	1		0	0	0	0	0
12	General Body Meetings:		3					
(i)	Location and time of General meeting help in last 3 years	1		1	1	1	1	1
(ii)	Details of special Resolution passes in the last 3 AGM	1		1	1	1	0	0
(iii)	Detail of resolution passed last year through postal Ballot including the name of conducting official and voting procedure	1		1	0	0	0	0
13	Means of communication and general Shareholders information	2	2	2	2	2	2	2
14	Whistler-Blower policy & vigil mechanism	2	2	2	2	2	2	2
15	CEO/CFO Certification	2	2	2	2	2	2	2
16	Compliance of corporate Governance and Auditors certificate		5	5	5	5	5	0
(i)	Clean certificate from auditors	5	5	0	0	0	0	0
17	Code of Prevention of insider trading practices	5	5	5	0	0	0	0
18	Discloser of Shareholders interest:		5					
(i)	Environment Healthy & Safety measures (EHS)	1		1	1	1	1	1
(ii)	Human Resource Development initiative (HRD)	1	1	1	1	1	1	1
(iii)	Corporate social Responsibility (CSR)	1	1	1	1	1	1	1
(iv)	Industrial Relation (IR)	1		1	1	1	0	1
(v)	Disclosures of policies on EHS, HRD, CSR & IR	1		1	1	1	0	1
	Total	100	100	73	68	64	61	46

Source:- Annual Reports of sampled Units.

FINDINGS:-

On evaluation the result shows that the governance standards and practices in these selected companies are fair and good except Gujarat Industries power company ltd. GNFC has Shawn 'Very good' performance and Gujarat Industries power company ltd 'Poor' performance. GNFC, GSFC, GACL, torrent Power and GIPC'S scores being 73, 68, 61 and 46 respectively. It also reveals that these selected companies of Gujarat have an overall score of 62 thus showing merely 'Good' performance in maintaining the standards and attaining the quality of governance practices.

SUGGESTIONS:-

According to index table all the companies' scores are good, but to bring full marks, the companies should adopt the following Suggestions:-

- GNFC, GACL, Torrent Power and GIPC should disclose tenure & age limit of directors.
- All companies should mention about definition of Independent director in their annual report.
- All selected companies should disclose audit committee charter and terms of reference and committee report to get highest scores.
- GSFC, GACL, Torrent Power and GIPC should disclose about Health & safety and Environment committee
- GSFC, GACL, Torrent Power and GIPC should disclose Investment committee in their annual report.
- GSFC, GACL, Torrent Power and GIPC should disclose about code of prevention of insider Trading practices.

CONCLUSION:-

Good Governance is becoming a source of committee advantage among economies for attracting international capital. Responsibility, Transparency, Fairness and Accountability are the four vital pillars for strong corporate Governance. Corporate Governance helps in establishing a system where a director is showered with duties and responsibilities of the affairs of the company. This study present corporate Governance discloser practices in five Gujarat sector listed in BSE top 100 (GSFC, GACL, Torrent Power and GIPC). From the interpretation and analysis in this research alternative hypothesis has been proved that BSE listed sector (selected sector) show compliance with corporate Governance standard and disclose practices mentioned in Clause 49 of listing Agreement and provisions in companies Act. 2013. This research found that the degree of corporate governance compliance is fairly good in all sampled sector (overall Good Performance). GNFC gained highest score in all selected sector. All the selected companies have complies with all the code applicable mandatory requirements of the code of corporate Governance as prescribed under the SEBI listing Agreement Governance Discloser practices as per Clause 49.

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VIEW OF SPACE : 2320-7620
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A STUDY OF ATTITUDE TOWARDS THE DEVELOPMENT OF RESEARCH SKILLS ON THE LEGAL SYSTEM OF GOVERNMENT IN THE LOCKDOWN OF COVID-19[ROLE OF GOVERNMENT LAW IN COVID-19]

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RESERACHER

1.1 INTRODUCTION

Corona is an epidemic that has forced the Government of India to take strict action under Section 4 of the Disaster Management Act to protect the people. But there have been legal amendments to the government's policies that have criticized the duties of government officials and the government's lucrative announcements and subsequent situation. It includes law masters and Ph.D. What kind of research has been done by the class researchers? The present study was conducted with the aim of studying the information through the researchers of Porbandar webinars to get the information about the trend of development of research skills on the legal system of the government in the lockdown of covid-19.

1.2 OBJECTIVES OF THE STUDY

1. To formulate attitude criteria to know the attitude towards the development of research skills on the legal system of the government in the lockdown of COVID-19in the area of Porbandar district.
2. Establish the reliability and validity of the trending criteria for the development of research skills on the government's legal system in the lockdown of COVID-19.
3. Examining the impact of sexuality and area on the attitude towards the development of research skills on the legal system of government in the lockdown of Covid-19.

1.3 HYPOTHESES FOR STUDY

1. The lockdown of researchers' covid-19 on sexuality will not make a significant difference between the averages on the criteria for the development of research skills on the government's legal system.
3. The lockdown of COVID-19 by rural and urban researchers will not make a significant difference between the averages on the criteria for the development of research skills on the government's legal system.

1.4 TYPE OF THE STUDY

The present study was an experimental applied research based on practical method of research.

1.5 FIELD OF STUDY

The filds of the preset study were 'the development of research skills.'

1.6 RESEARCH METHOD

In the present study, the reseracher the survey method of reserach.

1.7 LIMITATIONS OF STUDY

1. The present study was conducted during the academic year 2020, So its results could change in future results.
2. The practice was limited to the reseracherin Porbandar city.

1.8 IMPORTANCE OF STUDY

1. The presented study will help Government to made policies.
2. Reseracer will understand to Govenrment polices.

1.9 POPULATION AND SAMPLE

Population and smaple for the present study were as follows.

Population. Thsreseracher, living in Porbandar District of year 2020-2021 were included in the population.

Sample. The study was carried out in one of whatshap and facebookgruops. The social mediasinstument was selected randomly. Hundredpeoples of porbandardistrict were selected randomaly as sample for the study.

1.10 TOOL USED FOR DATA COLLETION

Tool used for data collection for the present study was the Attitude Scale,made by researcher.

1.11 DATA COLLECTION PROCESS

The main purpose of the present study was to obtain information from twenty researchers on the development of research skills on the legal system of government in the lockdown of Covid-19.

1.12 DATA ANALYSIS PROCESS

The study was given to all the hundredreseracher involved in the study and theattitude scale were obtained form the responses given by the reseracher in the study. The information collected in the form of scores was statisiticallyanalysed. 't'- values were calculated to check the significance of mean difference of the scores obtained by the peoples. The significance of achieved T-values were identified at both the levels 0.05 and 0.01. The analysis of collected data is shown in Table 1.0.

Table 1.0

Mean Attitude Scale

Sr. No.	Sex	Mean AchievementScores	S.D	T-value
1.	Boys	77.48	5.58	2.12
2.	Gilrs	47.88	1.96	2.31
3.	Rural	27.28	3.78	2.59
4.	Urban	78.44	1.76	2.18
5.	ALL	67.05	7.84	3.14

1.13 CONCLUSION

1. The mean achievement score of all the reseracher of the group taught by Boyswas found significantly higher than the mean achievenment score of all the Girls of the Attitude Scale.

2. The mean achievement score of the reseracher of the group taught by Urbanwas found signifaicantly higher than the mean achievement score of the Ruralof the Attitude Scale.

1.14 EDUCATIONAL FACTS

At the end of the present study, the sponsors presented the following facts.

1. Researcher help to devlopereserach skillon covid-19.
2. Researcher can learningto legal reserach on covid-19 situations.
3. Government get new idea of researcher of covid-19.

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Attitude Scale

Sr.N	**Statements**	**Yes**	**No**
1	Legal research can be done on a topic like lockdown.		
2	Doing research on a current topic enhances research skills.		
3	Legal research on a topic like Covid-19 gives a new direction.		
4	It is difficult to research only Kovid-19 in every webinar.		
5	Criticism of government policy is not a good thing.		
6	Diseases can be researched in the branch of law.		
7	It’s hard to create a legal theme on Covid-19.		
8	Research develops in discussing the legal provision with the disease.		
9	Tired of doing research on the same theme.		
10	Research on Covid-19 will come later.		
11	The research of Covid-19 affects the law.		
12	There can be no legal research on the impact of lockdown.		
13	Research does not affect both law and administration.		
14	It is possible to know how much the law has affected the people.		
15	Not everyone is affected by the law so research cannot be done.		
16	The usefulness of the research decreases after Covid-19.		
17	The effect on the lockdown the general public could be explored.		
18	Research is always useful for future researchers.		
19	The government is unhappy with the legal amendment on Covid.		
20	The researcher's research skills on the same subject increased.		

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DEVELOPMENT OF THE NATION THROUGH DIGITAL TECHNOLOGY AFTER THE EPIDEMIC OF CORONA VIRUS

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ABSTRACT: -

This terrible epidemic of corona virus has changed the way of life of citizens of all nations of the world in the present times. Most of the nations of the world are facing this epidemic. Many developed nations such as America, Russia, Japan, China, Spain, Italy, France, etc. are looking for a vaccine to prevent this virus. But currently no nation has the option to avoid this virus except lockdown. During this time of lockdown, the use of digital technology through the internet increased tremendously. And it can be said that the development of the country is going on only through this digital technology. If we talk about India, the use of digital technology is increasing day by day. The use of this technology increased greatly during the lockdown period amid this epidemic of Corona virus. In particular, many activities like online education, exams, webinars, meetings, shopping, office work, etc. began to be done at home through online internet. This will be very useful during and in the future of this corona virus epidemic and besides this many new types of processes will be done online. Sitting at home we can do office work as well as receive the necessities of life. Also, if such a disease like corona virus occurs in the future, we will be able to continue the development of the country through digital technology during that period.

Keyword: -

Digital Technology, Use of Internet, Development of Nation, Future Perspectives, Cyber Crime, Corona Virus

INTRODUCTION: -

Corona virus has been spreading all over the world for the last few months now. The whole world is surrounded by virus infections. This global epidemic, like the corona virus, started in the Chinese city of Wuhan and has spread around the world, and it is still spreading. All the nations of the world are fighting to get rid of this virus. The biggest nations of the world are looking for a vaccine against this virus but so far, no nation has succeeded. Some nations have found a vaccine to prevent the virus, but it will still take time for it to coming the market.

All nations have resorted to lockdown in their own countries to prevent the spread of the virus. This lockdown has created a curfew-like situation in every nation. In which a person cannot leave his home. So business, employment, business, industry etc. all stopped. What do citizens do if they sit at home during this lockdown? The present time is considered as the time of digital technology. The use of internet is increasing in the present times and it is used by different electronic devices like mobiles, computers, laptops, iPads etc.The use of digital technology through the internet has greatly increased during this period of lockdown. The online medium of many things like online meeting, trade, education, exam, webinar, online shopping, financial transaction etc. has increased to a great extent which is not seen in normal situation.

It is also a matter of great concern that along with the use of digital technology, cyber-crime is also on the rise. But in view of these cyber-crimes, it is very important to use caution and use digital technology in the development of the nation. The virus and lockdown are currently causing a recession in most countries around the world. While most nations are facing economic recession, the Internet and digital technology can be overused to get out of this recession and try to get out of this recession while at the same time maintaining social distance among citizens to prevent the spread of the virus and its Transitions can also be avoided and business, employment, office work, etc. can be done. And the development of the nation can be furthered.

OBJECTS: -

1. The purpose to provide citizens with more information about digital technology in the wake of the Corona virus epidemic.

2. The purpose to educate ordinary citizens about the use of the Internet so that they can contribute to the development of the nation using digital technology.

3. The purpose to bring internet and digital technology from big business to the common man.

4. The purpose to make people aware that digital technology is being used more for the development of the nation.

5. The purpose was to make people aware of cyber-crimes through digital technology.

6. The purpose of studying the law related to cyber-crime.

HYPOTHESIS: -

1. The use of digital technology by citizens and organizations will increase in very large quantities in the wake of the Corona virus epidemic.

2. Digital technology will be used by organizations as well as ordinary citizens for the development of the nation.

3. The use of digital technology will prove to be effective for the development of the nation.

4. Ordinary citizens will be largely unfamiliar with cybercrime.

5. There will be enough laws to prevent cyber-crimes.

6. The use of digital technology in all fields for the development of the nation will increase tremendously.

RESEARCH METHODOLOGY: -

This research paper has been prepared using the theoretical research method. In which mainly secondary information has been used. Such as newspapers, magazines, books, websites etc.

USE OF DIGITAL TECHNOLOGY DURING CORONA VIRUS EPIDEMIC: --

At the present time it is called the time of different types of technologies. In which digital technology in particular is very effective. With the help of digital technology, a person

can easily do his work from any place, he does not have to go to any other place except need. In digital technology, work can be made easier through the internet using mobiles, computers, laptops, smartphones and any other electronic device. The use of this digital technology increased in various ways during the Corona virus epidemic, when most nations resorted to lockdowns to prevent the spread of the virus. Because in this lockdown trade, business, industry and all works were stopped. In the period of this lockdown, the citizens have used this technology to a great extent through the internet.
During this lockdown, many activities like online meeting, online education, online banking, home office work, meeting through various applications, education, taking exams, using social networking sites, receiving home education etc. Were made.
Thus, during this lockdown, the use of internet has increased tremendously and new techniques have been used which are proving to be beneficial to some extent.

DEVELOPMENT OF THE NATION WITH THE USE OF DIGITAL TECHNOLOGY AFTER THE CORONA VIRUS EPIDEMIC: -
In the above issue we saw that the use of internet increased a lot during the lockdown period during the Corona virus epidemic. Tasks that were done manually under normal circumstances are being done online with a variety of electronic devices during this lockdown. It can be said that this epidemic of Corona virus has created a need for a new and more usable digital technology all over the world.

The use of digital technology is very useful for the development of any nation. While this epidemic of Corona virus has plunged all the nations of the world into economic recession, it is imperative to develop the country to survive the virus. The transmission of this virus can also be avoided if one does the necessities of life and can also participate in the personal development and development of the country.

The use of this digital technology through the Internet will greatly increase in the future after the outbreak of the corona virus. In which the nation will be developed using this technology in every field.

CREATING CYBER-CRIMES WITH THE USE OF DIGITAL TECHNOLOGY: -
In the modern age digital technology is being used on a very large scale as well as technology related crimes which are known as cyber. It has also originated on a very large scale. It typically harms another computer, mobile or other device with a computer or mobile or other electronic device or commits various types of cyber-crimes.

Cyber-crimes include hacking a computer through an IP (Internet Protocol) address, hacking a mobile, stealing online identity (including a person's personal information as well as his bank account number, debit card information, credit card information, net-Banking information, social security numbers, etc.), illegal downloading, industrial espionage, child pornography, cyber terrorism, spreading viruses on computers and mobiles, phishing (sending e-mails, identity theft), selling illegal articles, online Many computer, mobile and other electronic device related offenses such as gambling, personal privacy and breach of privacy are covered under cyber-crime.
Amidst this epidemic of Corona virus, all these cyber-crimes have increased tremendously which is a matter of concern.Thus, cybercrime has taken a new shape in the time of lockdown during the epidemic of this corona virus and human beings are becoming victims of these cybercrimes in many ways, knowingly or unknowingly.

Laws to prevent and control cyber-crime: -
1. **Information Technology Act, 2000**
2. **Information Technology Act, 2008, including new amendments**

India enacted the first law on information technology in the year 2000. That IT. Act (Information Technology Act) is known as 2000. It is based on the model law of e-commerce given by UNCITRAL in 18. The introduction of IT Act 2000 has three objectives. The first to provide legal recognition for transactions made through electronic means, the second to provide electronic filing of documents with government agencies, and the third to amend specific laws. The IT Act 2000 legalized electronic documents and digital signatures and enabled legally valid and enforceable e-contracts. It also provides regulatory regulation to monitor certified authorities issuing digital signature certificates for violations of the provisions of the IT Act 2000 and to create civil and criminal liability.

As time went on, the method used to advance the method used by the Internet and computers evolved and new methods were developed. There was a need to amend the IT Act 2000 to introduce new types of cyber-crimes, and other barriers to IT. Paved the way for amendments to the Act 2000. This led to the passage of the Information Technology Reform Act 2006.

A law to provide legal recognition for transactions involving electronic data transactions and other means of electronic communication, commonly known as 'e-commerce', which uses alternatives to paper-based methods of communication and data collection.

3. Provision of Cyber Crime in Indian Penal Code, 1860

When I.T. When the Act 2000 was enacted, the Indian Penal Code 190 was also amended by its first appendix. It includes IPC. The word electronic record has been added to the new definition in Section 3 (a) of the Act. Apart from that, necessary additions have been made in Sections 13, 14, 15, 6, 17, 18, 206, 6, 7, 8, 8, 90, 9 and 9. Provision has been made to add electronic records. As cybercrime has expanded, so has the need to reform the IPC.

4. Provision regarding evidence of cyber-crime in Indian Evidence Act, 1872

IT The Indian Evidence Act has been amended by the second appendix to the Act 2000. That IT. There is another law amended by the Act. Prior to that, all evidence in court was merely physical. IT The Act recognized all electronic records and documents. All documents, including "electronic records", were transferred as part of the definitions in this Act. Words like digital signature, electronic form, secure electronic record, words used in IT Act, were included to make them part of law proof system.

The acceptability of electronic records as evidence presented in Section 3B of the Evidence Act is important. This is an extended section and is a landmark part of the law in the field of evidence. Which is made from a computer or electronic device.

Provisions on cyber-crime at the international level: -

1. Budapest Convention on Cyber-crime, First International Treaty, 23 Nov,2001

2. Additional Protocol to the Convention on Cybercrime Concerning the Criminalisation of Acts of a Racist or Xenophobic Nature Committed Through Computer Systems (2003)

Thus, all the above laws are related to cyber and the laws also require some new amendments.

SUGGESTION: -

1. Digital technology should be used in the midst of this epidemic of corona virus.

2. The government should provide guidance to the general public on the use of digital technology.

3. In the future, many things like money transactions, purchases, etc. should be made available online that even ordinary citizens can do.

4. In the age of modern technology, cyber seminars should be organized to create awareness among the people so that cyber-crimes can be avoided.

5. While digital technology is making a significant contribution to the development of the nation, it is the duty of the citizens of the country to make the most of it and participate in it.

UTILITY: -

The present study is in the context of the development of the nation through digital technology after the outbreak of the corona virus. The general public, students and researchers will be informed about this and will be useful in the future.

CONCLUSION: -

This epidemic of Corona virus has taught how to use digital technology at home for the development of the country. It is during this lockdown that we have learned how to continue the development of the country through digital technology while the nations of the world are struggling to avoid this virus. In which the country can be brought forward economically with low cost and at the same time many technological dimensions have come before us which can cope with many diseases like Corona virus in the future and also develop the country with it.

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VIEW OF SPACE : 2320-7620
An International Refereed Multidisciplinary Journal Of Applied Research

A COMPARATIVE STUDY OF THE PROFITABILITY PERFORMANCE OF RELIANCE INDUSTRIES LTD AND OIL AND NATURAL GAS CORPORATION

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Abstract: Profitability is the main goal of all business ventures. The financial health of any business can be measured through its profitability positions and business organizations cannot survive without profits. The article is an attempt to analyse and examine the Profitability Performance of two selected Oil and Gas industries in India : Reliance industries Ltd and Oil and Natural Gas Corporation. The article also aim to draw a comparison between the Profitability Performance of two oil and gas industries. Mathematical and statistical tools and techniques such as four different ratio as gross profit, net profit, return on capital employed and return on asset are used to analyse the data. The most appropriate Parametric and Non parametric test are used and the analysis of data is presented through different graphs and tables. The findings revels that financial performance of ONGC is better than RIL. So, ONGC generating higher profit than RIL.

words :- Profitability Analysis, Petroleum industry, Return on capital employed, Return on Asset, Comparative Study

1.INTRODUCTION

The oil and gas sector is among the **six core industry** in India and play a major role ininfluencing decision making for all the other important section of the economy. India's economic growth is closely related to energy demand; therefore the need and importance of oil and gas is projected to grow more.The Oil and Gas industry for any underdeveloped, developing and developed country is very critical and important. The various important function of this industry is exploration, extraction, refining, transporting and obviously marketing of various petroleum products. **Fuel oil** and **gasoline (petrol)** are the most important products of this industry. For the production of various pharmaceutical products, fertilizers and chemical products etc. Petroleum is also used as the raw material. The industry is usually divided into three major components: Upstream, Midstream , DownstreamMidstream operation are usually included in the downstream category. Upstream includes that have engaged on exploration and extraction of crude oil and gas. On the other hand, downstream includes the mainly koengaged in refining and marketing of petroleum products.

Petroleum is vital to many industries, and is of importance to the maintenance of industrial civilization in its current configuration, and thus is a critical concern for many nations. Oil account for a large percentage of the world's energy consumption, regionally from 32% for Europe and Asia, 40% for North America, 41% for Africa, 44% for South and 53% for the middle-east. The production, distribution, refining and retaining of petroleum taken as a whole represents the world's largest industry in terms of dollar value.

1.1 What is petroleum?

PETROLEUM is a dark coloured, viscous, and foul smelling crude oil. The name of Petroleum (from the old Greek *Petra,* meaning "rock " and *oleum* meaning "oil"), also known as crude oil or rock oil. It is found under the crust of earth trapped in rocks. The crude oil is a fluid mix of liquid and gaseous hydrocarbons, inorganic chemical elements, physical impurities. Petroleum is lighter than water and insoluble in it, petroleum is a natural product obtained from oil wells. Petroleum is often described as brown or black in colour.

1.2 What Is Petroleum Refinery?
Petroleum refinery or oil refinery is an industrial process plant where crude oil is processed and refined into more useful products such as petroleum naphtha, gasoline, diesel fuel, kerosene etc.

2 LITERATURE REVIEW

- Jain and Mehta (2013) have analysed the profitability position of the five selected automobile companies for a period of five years (2009-2013). Profitability position was analysed by using different profitability ratios and two ways ANOVA of ROCE of selected automobile companies. They have found the difference in ROCE of the sampled automobile companies due to different factors. The highest degree of positive correlation found between NP ratios of Maruti Suzuki & Tata Motors. All selected companies have different level of return on their investment. It was suggested that Mahindra & Mahindra, Maruti Suzuki and Ashok Leyland should retain their profitability position by making efficient employment of their available resources.
- Koradia (2013) examined the profitability position of three public sector companies i.e. BPCL, HPCL and IOCL. Profitability ratios considered for the purpose of analysis were Operating Profit Margin Ratio, Gross Profit Margin Ratio, Net Profit Ratioand Return on Capital employed. The results suggested that there was significant difference between Profitability Ratios between companies. There were significant differences found between profitability ratios of different years except Return on Capital employed. It was found that profitability position of all sampled companies were satisfactory.
- Joshi, Alpa (2013) analysed the profitability position of HUL, COLGATE, ITC for a period of 2008-09 to 2011-2012 with the help of some profitability ratios. It was found that there was a vast difference in net operating profit ratio, net profit ratio, PAT to net worth ratio and cash profit to net worth ratio of selected companies.
- An article authored by Gupta and Goyal (2013) entitled, “Financial Analysis of Indian Oil Corporation Limited” examined the financial analysis with the help of various ratios like profitability ratio, liquidity ratio, solvency ratio and investment ratio. On the basis of seven years study, it suggested that profitability position was not satisfactory.
- An article authored by Priya and Ajay (2013) entitled, “A Comparative Study on Corporate Social Responsibility Practices of HPCL and IOCL” revealed that the contribution of HPCL and IOCL towards society more or less in terms of education, community development, children care, livelihood, health care and environment. The HPCL’s contribution in child care is more as compared to IOCL. It was found that theHPCL covered various dimensions in child care like child rights, care of slum children and rescue of children distress.
- An article authored by Sharma and Hemlata (2014) entitled, “Financial Performance of ICICI Banks and SBI Bank: A comparative Analysis” attempted to evaluate and compare the financial performance of SBI & ICICI Bank. This study was based onsecondary source of information which covered the period of five years. It was found that various ratios were used for analysis like Credit Deposit Ratio, Operating Expense to Total Funds, Net Profit to Total Funds, Cash Deposit Ratio, and Return of Equity etc.

3. OBJECTIVE OF THE STUDY

- To study conceptual framework of profitability in two top oil and gas industries.

- To compare the overall performance of the RIL and ONGC with the help of selected ratios.
- To study the financial performance of RIL and ONGC.
- To study the profitability performance of RIL and ONGC.

4. RESEARCH METHODOLOGY

The current research study elucidates the comparative assessment of financial performance ofselected oil and gas industries in India with help of the financial analysis like ratioanalysis. Hence, it is essentially fact finding study.

- **Collection of Data:** In present study data was collected from secondary sources which waspublished companies selected annuals reports and accounts as well as published literature.
- **Tools & Techniques**: The ratio analysis acted as a financial tool for the purpose of analysis &interpretation. Statistical tools such as mean, standard deviation, coefficient of variation werealso calculated. Inter firm and intra-firm comparison was made to interpret the data.
- **Period of Research Study**: 2014-15 to 2018-19 (Five Years)
- **Selected Petroleum Companies under Study**: The sample of the study only includes two companies: RIL and ONGC and Simple random sampling was used to select the sample from top ten companies which are high market capitalisation

5. HYPOTHESIS OF THE STUDY

Some hypotheses have been formulated in line with the stated aims of this study. These hypotheses are stated below:

H0= There is no significance difference of gross profit ratio of RIL and ONGC during the study period.

H1= There is a significance difference of gross profit ratio of RIL and ONGC during the study period.

H0= There is no significance difference of Net profit ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Net profit ratio of RIL and ONGC during the study period.

H0= There is no significance difference of Return on capital employed ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Return on capital employed ratio of RIL and ONGC during the study period

H0= There is no significance difference of Return on assets ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Return on assets ratio of RIL and ONGC during the study period.

6. DATA ANALYSIS AND INTERPRETATION :-

To analyze the data, various statistical tools and techniques are used, including average, range, ‘F’ test and‘t’ test. The analysis is limited to Gross Profit Ratio, Net Profit Ratio, Return on Asset, and Return on Capital Employed. All
the data related to these aspects are presented and discussed below.

1.Gross Profit Margin Ratio

Financial results of a firm can be measured by computing the ratio of gross profit to sales, Gross profit is the result of the relationship between prices, sales, volume and cost. Gross profit can be found by subsracting the cost of goods sold from net sales. The ratio measures the efficiency of production as well as pricing. The formula for deriving gross profit ratio is:

Gross Profit Ratio = Gross Profit× 100
Sales

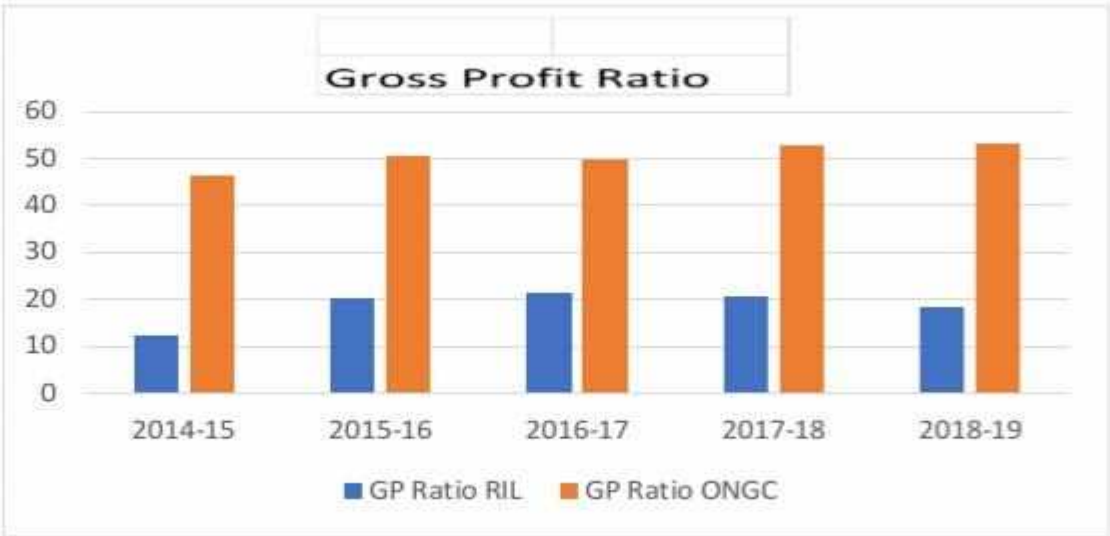
TABLE: 1 Gross Profit Ratios during 2014-15 to 2018-19

Gross Profit Ratio (%)		
Year	**RIL**	**ONGC**
2014-15	12.25	46.33
2015-16	20.46	50.61
2016-17	21.47	49.71
2017-18	20.67	52.81
2018-19	18.24	53.12
Maximum	**20.67**	**53.12**
Minimum	**12.25**	**46.33**
Mean	**18.62**	**50.52**

(Source :- Compute from annual report of RIL and ONGC)

Chart:- 1 Gross Profit Ratio during 2014-15 to 208-19

The above table shows the Gross Profit Ratio of RIL and ONGC are presented during the



period of the study from 2014-15 to 2018-19. In RIL Gross Profit Ratio is lower compare to ONGC. In RILGross Profit Ratio is maximum 20.67% during the year 2017-18 and minimum 12.25% in the year 2014-15. In ONGC Gross Profit Ratio is maximum 53.12% in the year 2018-19 and minimum 46.33% in the year 2014-15. In ONGC ratio shows overall increasing trend. In RIL ratio is very fluctuated trend. InONGC ratio is higher during the study period . Hence, performance of ONGC is good than RIL.

Hypothesis testing :-

H0= There is no significance difference of gross profit ratio of RIL and ONGC during the study period.

H1= There is a significance difference of gross profit ratio of RIL and ONGC during the study period.

Table 2 :- Gross Profit Ratio

t- test :- Two –sample Assuming equal Variances

	RIL	**ONGC**
Mean	18.618	50.516
Variance	14.10797	7.55608
Observations	5	5

df	8	
t Stat	-15.3242	
P(T<=t) one tail	1.6321	
t Critical one tail	1.8595	
P(T<=t) two-tail	3.2643	
t Critical two-tail	2.3060	

(At 0.05% level of significance)

Above table number 2 shows the result of t-test. According to that calculated value of 't' is -15.3242 , while table value of 't' is 2.306 which is more than the calculated value. So null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significant. It shows that there is a no significance difference in Gross Profit Ratio of RIL and ONGC during the study period.

2. Net Profit Margin Ratio

This is the ratio of net profit to net sales. Net Profit refers to the portion of sales revenue that is left to the equity and preference shareholders, after deducting all costs, charges, and expenses. The net profit ratio is the overall measure of a firm's ability to turn each rupee of business income into profit. It indicates the efficiency with which a business is managed. A firm with a high net profit ratio is in an advantageous position to survive in the face of cost of firm .where the net profit is low, the firm will find it difficult to withstand these types of adverse conditions.

It's computed as,

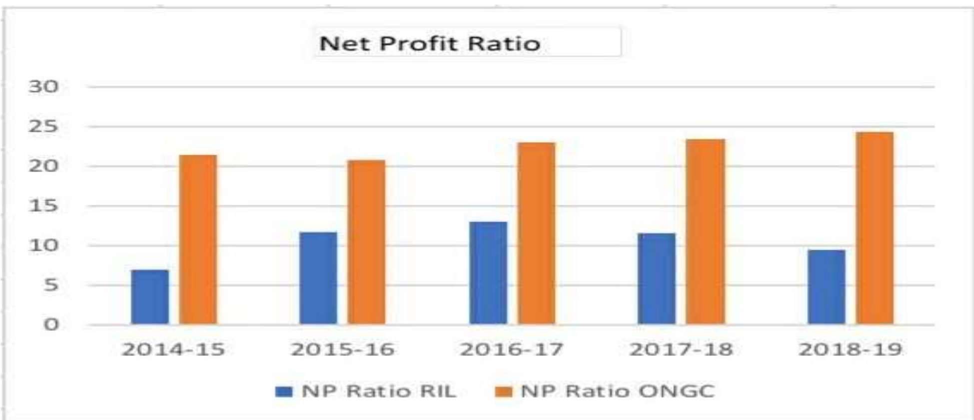
Net Profit Ratio = Net Profit × 100
Sales

TABLE: 3 Net Profit Ratios during 2014-15 to 2018-19

	Net Profit Ratio(%)	
Year	**RIL**	**ONGC**
2014-15	6.90	21.39
2015-16	11.75	20.81
2016-17	12.98	23.03
2017-18	11.58	23.47
2018-19	9.47	24.37
Maximum	**12.98**	**24.37**
Minimum	**6.90**	**20.81**
Mean	**10.54**	**22.61**

((Source :- Compute from annual report of RIL and ONGC)

Chart: 2 Net Profit Ratios During 2014-15 To 2018-19



The above table indicates the Net Profit Ratio of the RIL andONGC during the period of the study from 2014-15to 2018-19. In RIL the maximum net profit ratio is 12.98% in the year 2016-17 and minimum 6.90 in the year 2014-15. The average ratio of RIL is 10.54% . In ONGC maximum net profit ratio is 24.37% in the year 2018-19 and minimum 20.81% in the year 2015-16. In ONGC from 2015-16 shows continuous increasing trend. In ONGC Net Profit Ratio is higher during the study period, Hence the performance of ONGC is good than RIL .

Hypothesis Testing :-

H0= There is no significance difference of Net profit ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Net profit ratio of RIL and ONGC during the study period

Table 4: Net Profit Ratio

Two-Sample Assuming Equal Variance

	RIL	ONGC
Mean	10.536	22.614
Variance	5.72343	2.18548
Observations	5	5
df	8	
t Stat	-9.6033	
P(T<=t) one tail	5.7367	
t Critical one tail	1.8595	
P(T<=t) two-tail	1.1473	
t Critical two-tail	2.3060	

(At 0.05% level of significance)

Above table number 4 shows the result of t-test. According to that calculated value of 't' is -9.6033, while table value of 't' is 2.306 which is more than the calculated value. So null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significant. It shows that there is a no significance difference in Net Profit Ratio of RIL and ONGC during the study period.

3. Return on capital employed :-

Return on capital employed is one of the most important profitability ratios, which assess how much the capital invests has earned during the period. The term investment may refer to total assets or net assets. The funds employed in net assets are known as capital employed. Net assets equal net fixed assets plus current assets minus current liabilities excluding bank loan. Alternatively, capital employed is equal to net worth plus total debt.

Return on Capital Employed =Net Profit Before Interest and Tax× 100
Capital Employed

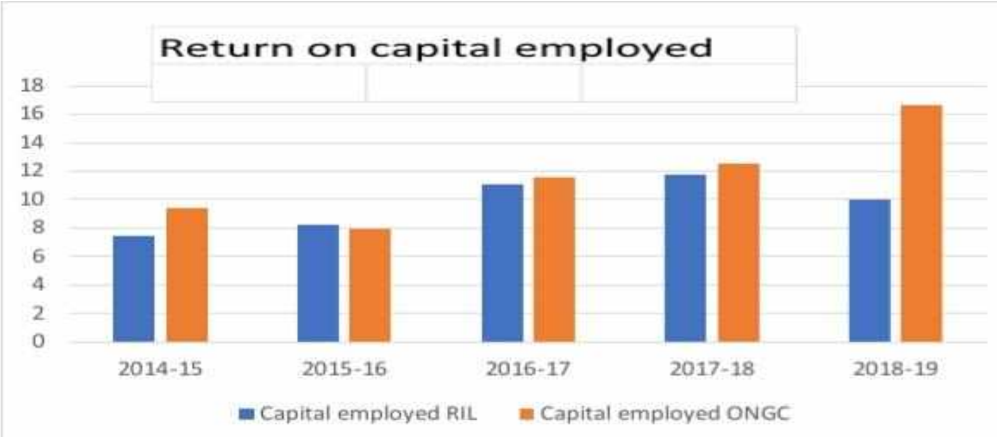
Table :- 5 Return on Capital employed during the 2014-15 to 2018-19

Return on capital employed (%)		
Year	**RIL**	**ONGC**
2014-15	7.41	9.38
2015-16	8.24	7.91
2016-17	11.04	11.59
2017-18	11.80	12.56
2018-19	9.95	16.61
Maximum	**11.80**	**16.61**
Minimum	**7.41**	**7.91**
Mean	**9.69**	**11.61**

(Source :- Compute from annual report of RIL and ONGC)

Chart:-3 Return on Capital Employed Ratios During 2014-15 to 2018-19

The above table 5 indicates the Capital Employed Ratio of the RIL and ONGC during the



period of the study from 2014-15 to 2018-19.In RIL Capital employed shows increasing trend but in the year 2018-19 is decrease. In RIL maximum return on capital employed is 11.80% in the year 2017-18 and minimum is 7.41% in the year 2014-15. In ONGC maximum return on capital employed is 16.61% in the year 2018-19 and minimum is 7.91% in the year 2015-16 after that continues increase in the return on capital employed. In ONGC the return on capital employed is higher during the study period, Hence, the performance of ONGC is good than RIL during the study period.

Hypothesis Testing :-

H0= There is no significance difference of Return on capital employed ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Return on capital employed ratio of RIL and ONGC during the study period

Table :- 6 Return on capital employed

Two-Sample Assuming Equal Variance

	RIL	ONGC
Mean	9.688	11.61
Variance	3.41077	11.14145
Observations	5	5
df	8	
t Stat	-1.1266	
P(T<=t) one tail	0.1463	
t Critical one tail	1.8595	
P(T<=t) two-tail	0.2926	
t Critical two-tail	2.3060	

(At 0.05% level of significance)

Above table number 6 shows the result of t-test. According to that calculated value of 't' is -1.1266, while table value of 't' is 2.306 which is more than the calculated value. So null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significant. It shows that there is a no significance difference in Return on capital employedof RIL and ONGC during the study period.

4. Return on Total Assets :--

Return on total assets considers net income available to equity and preference shareholders. It is calculated by dividing profit after tax (Net income) by total assets. Return on assets (ROA) is an indicator of how profitable a company is relative to its total assets. ROA gives a manager, investor, or analyst an idea as to how efficient a company's management is at using its assets to generate earnings. Return on assets is displayed as a percentage. The formula to calculate the Return on total assets as follows.

Return on Total Assets = Net Profit × 100
Total Assets

TABLE: 7 Return on Assets Ratios during 2014-15 to 2018-19

Return on Asset (%)		
Year	**RIL**	**ONGC**
2014-15	5.71	8.52
2015-16	5.98	7.27
2016-17	5.74	7.23
2017-18	5.44	6.84
2018-19	4.53	8.83
Maximum	**5.98**	**8.83**
Minimum	**4.53**	**6.84**
Mean	**5.48**	**7.74**

(Source :- Compute from annual report of RIL and ONGC)

Chart :- 4 Return on Total Assets during 2014-15 to 2018-19

The above table 7 indicates the Return on Assets Ratio of the RIL andONGC during the period of the study from 2014-15 to 2018-19. In RIL the Ratio shows fluctuated trend. The average Profit Ratio of the RIL was 5.48% during the study period. The ratio was the higher of 5.98% during 2015-16, where as it was the lower of 4.53% during 2018-19. In case of ONGC the Ratio shows decreasing upto 2017-18 than start to increase. The maximum return on asset is 8.83% in the year 2018-19 and minimum is 6.84% in the year 2017-18. In ONGC return on assets is higher during the study period, Hence the performance of ONGC is good than RIL during the study period.

Hypothesis Testing :-

H0= There is no significance difference of Return on assets ratio of RIL and ONGC during the study period.

H1= There is a significance difference of Return on assets ratio of RIL and ONGC during the study period.

Table 8 :- Return on Total Assets

Two-Sample Assuming Equal Variances

	RIL	ONGC
Mean	5.48	7.738
Variance	0.3187	0.7719
Observations	5	5
df	8	
t Stat	-4.8350	
P(T<=t) one tail	0.0006	
t Critical one tail	1.8595	
P(T<=t) two-tail	0.0013	
t Critical two-tail	2.3060	

(At 0.05% level of significance)

Above table number 8 shows the result of t-test. According to that calculated value of 't' is -4.8350, while table value of 't' is 2.306 which is more than the calculated value. So null hypothesis is accepted and alternative hypothesis is rejected at 5% level of significant. It shows that there is a no significance difference in Return on total assets of RIL and ONGC during the study period.

7. FINDINGS :-

The findings of the study reveal that the gross profit ratio is found to be higher in ONGC. This indicates that ONGC has better profit earning capacity.In Gross profit margin while testing hypothesis null hypothesis is accepted so we can say that there is no significant difference in gross profit ratio of RIL and ONGC during the study period. The net profit ratio in RIL is lower compare to ONGC. So we can say that financial efficiency of the ONGC is good than RIL. In testing the hypothesis null hypothesis is accepted.

In terms of return on capital employed, the study reveals that it is higher in ONGC except one year so it indicates that ONGC has great earning capacity of return on capital employed than RIL. In testing the hypothesis null hypothesis is accepted. Moreover, the results of the study demonstrate that return on assets ratio is higher in ONGC compair to RIL. This indicates the return on assets earned by ONGC is higher. In testing the hypothesis null hypothesis is accepted. From the study when we compare both industries in terms of profitability the performance of ONGC is better than RIL.

8. CONCLUSION :-

The study aimed at analyzing and measuring the profitability performance of RIL and ONGC. The results of the study reveal that ONGC profitability performance is better and higher than RIL. Overall, The ONGC is generating more profitability in this comparison. The similar steps can be adopted by RILin order to earn profit capacity. In RIL, average gross profit ratio is lower than ONGC. To increase the gross profit, thecompany should control the costs and expenses associated with operations. Incomparison to RIL , performance of the ONGC during the study period can be described as dynamic and flexible in attracting profit; RIL can take suggestion from ONGC also. Average Net Profit Margin ratio is lowest in RIL. The net profit ratio indicates the efficiency and advantageous position to cover the cost. So it is suggested that RIL should increase its income and reduce its expenses to maximize the profit.

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VIEW OF SPACE : 2320-7620
An International Refereed Multidisciplinary Journal Of Applied Research

THE IMPACT OF CORONA VIRUS (COVID-19) ON INDIAN ECONOMY

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INTRODUCTION:

Corona virus outbreak was first reported in Wuhan, China on 31 December, 2019. Before reading in detail about the impact, first, Corona virus (Covid-19) is a large family of viruses that causes illness. It ranges from the common cold to more severe diseases like Middle East Respiratory Syndrome (MERS-Covid-19) and Severe Acute Respiratory Syndrome (SARS-Covid-19). The novel corona virus is a new damage of virus that has not been known in human so far. WHO is working closely with global experts, governments, and other health organizations to give recommendation to the countries about precautionary and defensive measures? As the scientific name for Corona virus evolved in no time and so did its impact over the globe in terms of a pandemic & a health disaster, it has equally spelled disaster for the financial backbone of the world. With the offensive virus affecting over 228,020 people across 176 countries & territories, the pandemic fear of intractable scope has wrapped up the world resulting into an coming fall down of the global financial markets and India is no exception to that! In no time the Indian cases have also risen to almost 200 now. While much of the epidemic is contained in India and we as a country are taking necessary steps to combat the great disease, it could pose a significant challenge to the Modi government due to its complexities integrated to the world economy. And if the remarks by the IMF MD are to be looked at closely, those too are far from being motivating.

The sheer fluctuation and volatility in global stock markets, observed due to this pandemic, has caught investors off-guard over the past few weeks. Economic have already expressed their concern about the global impact of Corona virus on the Indian economy. Early estimates by the government suggest that there will be a hit of 0.3-0.5% on the GDP in the next fiscal year and growth in the first two quarters of the next fiscal could be as low as 4-4.5%. Sectors such as tourism, aviation, hospitality and trade will face the first brunt of the impact and these sectors would be severely affected. Though according to the RBI governor, India is insulated, but as a matter of fact it is integrated to the world economy and it will also see its low, considering there were already internal factors dragging it down.

India will be the 10th most impacted economy due to the supply chain disruptions in China with chemical, textiles & apparels, automotive industries and the medicinal & pharma companies bearing the brunt. Indian industries depending on Chinese imports are the most terrible affected. In imports, the dependence of India on China is huge. Of over the 20 products that India imports from abroad, China holds a lion's share. India's total electronic imports account for 45% of China. In terms of export too, India's 3rd largest export partner is China. Hence overall the virus would definitely affect the core sectors, thereby impacting market, business & trade. Expert analysts are in fact suggesting a Global financial crisis and India would not be far away from the same, considering we are an emerging market.

IMPACT OF CORONA VIRUS ON THE INDIAN ECONOMY

✓ It can be expected that at least two sectors; agriculture and government, will not see a reduction. In 2019-20, these two sectors had a share of almost 30% in total Gross Value Added (GVA). This means that the economic pain will be far more severe in the rest of the economy. The growth rate of agriculture and government sectors in the next two years will be the simple average of what they were in the past three years. This comes to 4.1% for agriculture and 9.7% for government.

✓ Using the World Bank's headline projections of 3.2% contraction in 2020-21 and 3.1% growth in 2021-22, we can calculate the projected growth for rest of the economy. This comes to a 7.2% contraction in 2020-21 and 1.4% growth in 2021-22.

✓ The non-farm, non-government economy contains many sub-sectors. A contraction in each sub-sector will have different impact across states and jobs. For example, the non-farm, non-government sector had a share of 86% in Gross State Value Added (GSVA) for Delhi. This share was 56% for Madhya Pradesh, and only 38% for Arunachal Pradesh. This means that Delhi's economic pain will be far more severe than Arunachal Pradesh's.

✓ According to the 2018-19 Periodic Labour Force Survey (PLFS), was 12%. Financial services, real estate and professional services, on the other hand, had a GVA share of 22% in 2018-19. The employment share of this sector was only 3.4%. This means that construction is a more labour-intensive sector than finance. A comparison of year-on-year growth in GVA and jobs in 2018-19 shows that the construction sector and the trade, hotels, transport, storage and communication sector had the highest employment elasticity in the non-farm, non-government sector.

✓ According to the data available with Pharmexcil, the cost of a simple paracetamol and ibuprofens has gone up by 30% to 40%. It is said that about a week ago, India, the world's biggest supplier of generic drugs, limited the export of certain medicines including paracetamol. The Chinese shutdown has broken the industry's supply chain as many of India's drug manufacturer's source their basic ingredients from there.

✓ According to the Annual Survey of Industry (ASI) data, Tamil Nadu, Gujarat, and Maharashtra had a share of 45% in value of output of textile and apparel in 2011-12. This output was consumed across the country. An analysis of the 2011-12 Consumption Expenditure Survey shows that Uttar Pradesh and Bihar had a share of 19.9% in total consumer expenditure on clothing and bedding. These two states had a share of just 3.9% in value of output of textile and wearing apparel. If consumer demand does not revive in these two states, supporting textile manufacturers will not yield results.

✓ According to the survey, COVID-19 is having a 'deep impact' on Indian businesses, over the coming month's jobs are at high risk because firms are looking for some reduction in manpower. Further, it is added that already COVID-19 crisis has caused an extraordinary fall down in economic activities over the last few weeks. Recently an industry survey that is jointly conducted by industry body Ficci and tax consultancy Dhruva advisors and took responses from about 380 companies across the sectors. It is said that businesses are grappling with "tremendous uncertainty" about their future. The present situation is having a "high to very high" level impact on their business according to almost 72 percent respondents. Further, 70 percent of the surveyed firms are expecting a degrowth sales in the fiscal year 2020-21. Ficci said in a statement, "The survey clearly highlights that unless a substantive economic package is announced by the government immediately, we could see a permanent impairment of a large section of the industry, which may lose the opportunity to come back to life again."

✓ According to Du & Bradstreet, COVID-19 no doubt disrupted human lives and global supply chain but the pandemic is a severe demand shock which has offset the green shoots of recovery of the Indian economy that was visible towards the end of 2019 and early 2020. The revised Gross Domestic Product (GDP) estimates for India downwards by 0.2 percentage points for the fiscal year 2020 to 4.8 percent and by 0.5

percent for the fiscal year 2021 to 6 per cent. Further, it is stated that the extent of the actual impact will depend upon the severity and duration of the outbreak.The data of the Dun & Bradstreet shows that at least 6,606 Indian entities have legal linkages with companies in countries with a large number of confirmed COVID-19 cases. And business activity in the foreign markets is slow which implies a negative impact on the top line of these companies. Sectors that would be much affected includes logistics, auto, tourism, metals, drugs, pharmaceuticals, electronic goods, MSMEs and retail among others.

✓ According to the World Bank's assessment, India is expected to grow 1.5 per cent to 2.8 per cent. And IMF projected a GDP growth of 1.9 per cent for India in 2020 because the global economy is affected by the COVID pandemic, the worst recession since the Great Depression in the 1930s. Also, we can't ignore that the lockdown and pandemic hit several sectors including MSME, hospitality, civil aviation, agriculture and allied sector.

✓ According to CLSA report, pharma, chemicals, and electronics businesses may face supply-chain issues and prices will go up by 10 percent. The report also says that India could also be a beneficiary of positive flows since it appears to be the least-impacted market. Some commodities like metals, upstream and downstream oil companies, could witness the impact of lower global demand impacting commodity prices.

✓ According to CII, GDP could fall below 5% in FY 2021 if policy action is not taken urgently. It is said that the government should take some strong fiscal stimulus to the extent of 1% of GDP to the poor, which would help them financially and also manage consumer demand. In the third quarter (October-December) growth is slowed down to 4.7% and the impact of COVID-19 will further be seen in the fourth quarter.

✓ According to Ficci survey showed 53% of Indian businesses have indicated a marked impact of COVID-19 on business operations. And 42% of the respondents said that up to three months could take for normalcy to return.

THE SECTOR-WISE IMPACT OF CORONA VIRUS (COVID-19) ON INDIAN INDUSTRY

Chemical Industry:

Some chemical plants have been shut down in China. So there will be restrictions on shipments and logistics. It was found that 20% of the production has been impacted due to the disruption in raw material supply. China is a major supplier of Indigo that is required for denim. Business in India is likely to get affected so people securing their supplies. However, it is an opportunity. US and EU will try and diversify their markets. Some of the business can be diverted to India which can also be taken as an advantage.

Shipping Industry:

Corona virus outbreak has impacted the business of cargo movement service providers. As per the sources, per day per vessel has declined by more than 75-80% in dry bulk trade.

Auto Industry:

Its impact on Indian companies will vary and depend upon the extent of the business with China. China's business no doubt is affected. However, current levels of the inventory seem to be sufficient for the Indian industry. If the shutdown in China continues then it is expected to result in an 8-10% contraction of Indian auto manufacturing in 2020.

Pharmaceuticals Industry:

Despite being one of the top formulations of drug exporters in the world, the pharma industry of India relies heavily on import as of bulk drugs. Due to the corona virus outbreak, it will also be impacted.

Textiles Industry:

Due to corona virus outbreak, several garments/textile factories in China have halted operations that in turn affecting the exports of fabric, yarn and other raw materials from India.

Solar Power Sector:

Indian developers may face some shortfall of raw materials needed in solar panels/cells and limited stocks from China.

ALL THE COUNTRIES IN THE WORLD AFFECTED BY CORONA VIRUS (COVID-19)

The International Monetary Fund (IMF) has revised its global GDP growth estimate from 3.3% just 3 months ago to a contraction of 3%, something not seen since the Great Depression of the 1930s. ET Wealth studies how India is placed in this scenario. With more than 20 lakh people infected worldwide and 1.27 lakh dead, the Covid-19 pandemic shows no signs of abating. As vaccine is yet to be found, lockdowns remain the only way to slow its spread. However, the lockdowns are also pushing major economies to the brink.

	United States	China	Japan	Germany	United Kingdom	France	India	Italy	Brazil	Canada
Annual GDP ($ billion)	20,544.34	13,608.15	4,971.32	3,947.62	2,855.30	2,777.54	2,718.73	2,083.86	1,868.63	1,713.34
GDP growth in 2019 (%)	2.30	6.00	0.70	0.40	1.10	0.90	4.70	0.09	1.67	1.80
Covid cases/Million	1,855	57	60	1,578	1,383	2,195	8	2,687	119	717
Covid deaths/ Million	79	2	1	42	178	241	0.30	348	7	24
Total Mcap ($ BN)	29,149.41	7,199.67	5,237.09	1,810.03	2,480.09	2,046.90	1,570.84	502.25	603.18	1,797.05
Mcap/GDP	1.42	0.53	1.05	0.46	0.87	0.74	0.58	0.24	0.32	1.05
Exp GDP Growth (JAN)	2.00	6.00	0.70	1.10	1.40	1.30	5.80	0.50	2.20	1.80
Exp GDP Growth (APR)	5.90	1.20	5.20	7.00	6.50	7.20	1.90	9.10	5.30	6.20
Benchmark index PE	16.39	13.13	16.91	18.30	16.77	16.41	18.78	16.16	14.28	14.01

(Source: Worldometer; Data as on 14 April 2020. Compiled by ETIG.)

Notes: *As on Dec 2019. **As on April 13, 2020. These values are 2020 GDP growth projections from IMF; First one is projection made in January and next one in April. Covid impact / million population;

- The death toll in New York has crossed 10,000 and the virus is now spreading to other states. Shutdowns are expected to continue for some more time.

- With the Covid situation appearing to be under control for now, China is likely to continue to grow in 2020, though at a slower than before pace.
- Though the Covid situation is reasonably under control, Japan's fragile economy won't be able to withstand global shutdowns.
- The death toll is low, but Germany is still battling the virus and its economy is expected to contract by 7%.
- The number of new cases detected and the death toll remains high. The negative impact on the economy will be significant.
- After Italy and Spain, France is the worst hit by Covid in Europe. Due to prolonged shutdowns, its economy is expected to contract by 7.2% in 2020.
- IMF says India will remain the 'fastest growing major economy in 2020'. But one must remember that the Covid onslaught is only at an early stage in India.
- Covid has ravaged Italy and its fragile economy. As per IMF's prediction, Italy will be the 'maximum contracting major economy in 2020'.
- The virus onslaught is at a starting stage in Brazil and therefore, its negative impact on the economy may be higher.
- The speed a which Covid had been spreading is slowing down now, so the need for long period of lockdowns may come down too.

Electronics Industry:
The major supplier is China in electronics being a final product or raw material used in the electronic industry. India's electronic industry may face supply disruptions, production, reduction impact on product prices due to heavy dependence on electronics component supply directly or indirectly and local manufacturing.

IT Industry:
The New Year holidays in China has been extended due to corona virus outbreak that adversely impacted the revenue and growth of Indian IT companies.

Tourism and Aviation:
Due to the corona virus outbreak, the inflow of tourists from China and from other East Asian regions to India will lose that will impact the tourism sector and revenue. An outbreak of COVID-19 impacted the whole world and has been felt across industries. The outbreak is declared as a national emergency by the World Health Organization. In India the three major contributors to GDP namely private consumption, investment and external trade will all get affected. World and Indian economy are attempting to mitigate the health risks of COVID-19 with the economic risks and necessary measures needed will be taken to improve it.

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FAMILY RELATIONSHIP AND IMPULSIVENESS AMONG YOUTHMALE AND FEMALE

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ABSTRACT
The main purpose of this study was to find out the mean difference between Family Relationship and Impulsiveness among youth male and female. The total sample consisted 60 as a variation belonging to 30 male and 30 female youth. The research tool for Family Relationship scale was developed by David Alka(1997) and Impulsiveness scale developed by Rai S.N. and Sharma A (1988). Here Guajarati adaption was used.Data was analyzed by t-test and co-relation. Result revealed that the significands difference in Family Relationship and Impulsiveness in youth male and Female. The co-relation between Family Relationship and Impulsiveness in -0.20 which was negative co-relation.

Key Word-*Family Relationship and Impulsiveness*

INTRODUCTION
In an effort to recognize the diversity of families define family as an arranged group, usually related by blood or some binding factor of commonality, where individual roles and relationships modify over time. Family relations are typically long term. Family is the environment where the children learned to use their faculties and understand and cope with the physical world. It is a time when they don't bother with trivial things, such as the family relationship, because they know they are the kingpin of their family. It is the place, where they learn how family relationships work, by observing their parents, grandparents, siblings and rest of the family members deal with each other. They enjoy meeting them on family vacations and family reunions and exchanging Family reunion gifts with them. Healthy family relationships, Home coziness, love of the dearest people, understanding and care.Everybody needs in this life.

Impulsiveness is a multifactorial construct.Impulsiveness actions typically are poorly conceived, prematurely expressed, unduly risky, or inappropriate to the situation that often result in undesirable consequences, which imperil long term goals and strategies for success. A functional variety of impulsivity has also been suggested, which involves action without much forethought in appropriate situations that can and does result in desirable consequences. When such actions have positive outcomes, they tend not to be seen as signs of impulsivity, but as indicators of boldness, quickness, spontaneity, courageousness, or unconventionality Thus, the construct of impulsivity includes at least two independent components: 1. acting without an appropriate amount of deliberation, which may or may not be functional, and 2. choosing short-term over long-term gains.

REVIEW OF LITERATURE :-
Dr. Amitkumar B. Parmar and Dr. Yogesh A Jogsan (2017), Family Relationship and Mental Health among Urban and Rural Youth Male and Female.Result indicates that the revealed significant difference in all groups. While the correlation between family relationship and mental health reveals 0.72 positive correlations.

Aashra, B. K. (2016) social maturity, family relationship and happiness in adolescents in relation to their birth order and gender. In addition, result indicates that the study revealed the significance difference family relationship between male and female.
Dr. Yogesh A Jogsan (2017), Impulsiveness and spirituality among different age women. Result indicates that the revealed significant impact of age on women's Impulsivity and Spirituality. Correlation between Impulsiveness and Spirituality was found Negative correlation (-0.67).

PROBLEM :-
Family Relationship and Impulsiveness among youth male and Female

OBJECTIVES :-
The main objectives of study were as under :
1. To measure the Family Relationship in youth male and Female.
2. To measure the Impulsiveness in youth male and Female.
3. To measure the correlation between Family Relationship and Impulsiveness.

HYPOTHESIS :-
To related objectives of this study, null hypothesis were as under :
1. There will be no significant difference in Family Relationship of youth male and Female.
2. There will be no significant difference in Impulsiveness of youth male and Female.
3. There will be no correlation between Family Relationship and Impulsiveness.

METHOD
Participants :-
According to the purpose of present study total 60 samples has been selected. There were 30 male and 30 female youth. Were taken as a sample from different societyin Rajkot city (Gujarat).
Tools :-
Family relationship scale :The scale was developed by Bhogle and prakash (1995). This scale translated by Dr. Yogesh A. Jogsan and Asharabhagyashri (2013) into Guajarati. Total 40 statements are in this scale, parting in two relation, good relation and poor relation. In good relation 2, 1, 0, marks award for always, sometimes and never. In poor relation 0, 1, 2, marks award for always, sometimes and never. Reliability coefficient of the scale was determined by half-split method and test-retest method with interval of one month and the coefficient correlation was fond 0.72 and 0.76 respectively. Validity coefficient was determined by correlated with family relationship scale constructed by Dr. G. Tiwari (Agra) and correlation coefficient was found 0.52.
Impulsiveness Scale: For Measure impulsiveness here Impulsiveness Scale by Rai S.N. and Sharma A. (1988)was used. It consisted total 30 items. Each Question carried one score for correct response and zero for incorrect one. The term 'Correct response' was used to indicate highly impulsive response and 'incorrect' as low impulsive response. Score obtained for each item are summed to get a total score. The Scores obtained from impulsiveness scale range is 0 to 30. Reliability was 0.72 which was found by kuder Richardson formula. Validity was found to be .58 which is significant at 0.01 level

RESEARCH DESIGN :-
The aim of present research was to study of Family Relationship and Impulsiveness of Youth male and Female. For the total 60 Youth male and Female were taken as a sample from randomly select in Rajkot city (Gujarat) out of 60 Youth 30 male and 30 female. Here to measure Family Relationship and Impulsiveness.

STATISTICAL ANALYSIS :-
The main objective of present study was to measure the Family Relationship and Impulsiveness in Youth male and Female. In it statistical t-test method is used, to check correlation between Family Relationship and Impulsiveness karlpearson 'r' method is used.

RESULT AND DISCUSSION :-
The main objective of present study was to do comparative study of Family Relationship and Impulsiveness among youth male and female. In it statistical t-test was used and their correlation was measured. Results discussions of present study is as under:
Table No. 1
Showing t - value score of Family Relationship inyouth male and Female

Variables	N	Mean	SD	t	Sig.
Male	30	54.06	12.25	4.94	0.01
Female	30	67.20	07.83		

Significance Level = 0.05 = 2.04 = 0.01 = 2.75
NS = Not Significant

According to t-test Family Relationship (table - 1) we said that t-value of youthvariable was found 4.94. The Mean Score of mane was found 54.06 and female was found 67.20. The standard deviation of mane was found 12.25 and female was found 07.83. The t-value of youthvariable was significant at 0.01 levels. So we can say that first hypothesis was not accepted because significant difference can be see the t-value of youth male and female 4.94.
Table No. 2
Showing t - value score of Impulsiveness inyouth male and Female

Variables	N	Mean	SD	t	Sig.
Male	30	18.93	5.72	2.65	0.05
Female	30	22.26	3.83		

Significance Level = 0.05 = 2.04 = 0.01 = 2.75
NS = Not Significant

According to t-test Impulsiveness (table - 2) we said that t-value of youthvariable was found 2.65. The Mean Score of mane was found 18.93 and female was found 22.26. The standard deviation of mane was found 5.72 and female was found 03.83. The t-value of youth variable was significant at 0.05 levels. So we can say that second hypothesis was not accepted because significant difference can be see the t-value of youth male and female 2.65.

Table No. 3
Correlation of Family Relationship and Impulsiveness in youth male and Female

Variables	N	Mean	R	Sig.
Family Relationship	60	60.63	-0.20	NS
Impulsiveness	60	20.60		

Significance Level = 0.05 = 0.25
= 0.01 = 0.40
NS = Not Significant

Here the correlation between Family Relationship and Impulsiveness is -0.20. This was negative correlation it means Family Relationship increase than Impulsiveness decrease and Family Relationship decrease than Impulsiveness increase. So we can say that third hypothesis was accepted.

CONCLUSION :-

We can conclude by data analysis as follows.

There was significant difference the Mean scores in Family Relationship of youth male and female. There was significant difference the Mean scores in Impulsiveness of youth male and female. The correlation between Family Relationship and Impulsiveness is negative correlation.

LIMITATION OF THE RESEARCH :-

This study is not without its limitations, which should be noted. The present investigation was carried out under the following delimitations.

- The major limitation of this study is that the sample size was small. So it was not sufficient for generalizing the result obtained by the study.
- This study was conducted only in Rajkot City (Gujarat).
- The findings made in the study May be biased by the incorrect information given by participants.
- No other mental except questionnaires had been adopted in the present research work for the collection of information.
- In sample selection for this research purposive method was followed.
- The present research is only a part of the study, thus generalization should not be consummated, and the scientific is not approached in the selection of sample.
- Here using only t-Test and correlation no other statistical techniques used for data analysis.

SUGGESTIONS :-

Endeavor can be executed to analyze move them 60 data of sample with efficacy to attain batter results. For the accumulation of information, variegated methods except scale can be adopted. Selection of sample can be accomplished with the intake of different city youth male and female, different state to ascertain in their Family Relationship and Impulsiveness. To crow the research work, other method of selecting sample can be appropriated.

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AN ASSESSMENT THE IMPACT OF GST ON GDP

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WHAT IS TAX ?

Tax is one of the most common financial terms. Taxes are one of the primary sources of income for the government through which it fulfils various projects and initiatives. They are levied by the central and state governments. Read on to know about the various aspects of tax.

A compulsory contribution to state revenue, levied by the government on workers' income and business profits, or added to the cost of some goods, services, and transactions.

TYPES OF TAX

Merely There are two types of taxes 1) indirect tax and 2) direct tax

Direct tax:-A government levy on the income, property, or wealth of people or companies. A direct tax is borne entirely by the entity that pays it, and cannot be passed on to another entity.

Types of direct tax are income tax, wealth tax, estate tax, corporate tax in corporate tax involvessecurity transaction tax, dividend distribution tax,fringe benefit tax and minimum alternative tax, and capital gains tax etc.

Indirect tax :-The indirect taxes are the levies made by Central and State government on the expenditure, consumption, services, rights and privileges yet not on the property or income. This includes duties of customs paid on imports, as well as excise duty paid on production and value added tax on certain stages of production and distribution of products etc.

All these comprise to make indirect taxes since they are not directly applicable on the consumer's income. Considering that indirect taxes are less as compared to income tax due to invisibility on pay slip, various state agencies tend to raise these taxes so as to generate higher revenue. Indirect tax is often also known as the consumption tax, since they are a regressive measure in application, and not rooted in paying ability.

Types of indirect tax are GST (Goods and services tax), sales tax, service tax, value added tax, customer duty &octroitax, excise duty, anti-dumping duty, etc.

FEATURES OF INDIRECT TAXES

- **Payment and Tax Load -** The service provider makes payment of indirect taxes and this is transferred to a final consumer.
- **Liability of Tax –** Here the seller or service provider makes payment on indirect taxes which are transferred to final consumer.
- **Nature –** Initially, indirect taxes used to have a regressive nature. Yet, now with the coming of GST, they have become quite progressive.

- **Evasion -** Indirect taxes are hard to evade due to direct implementation through goods and services.
- **Investment and Saving -** Most indirect taxes are largely growth-oriented since they de-motivate the consumer and encourage savings.
- **Social Coverage -** The indirect tax has a much larger coverage since their charge falls upon each individual buying products or services.

WHAT IS GST ?

Goods and Services Tax (GST) can be rightfully called as the largest Indirect Taxation Reform of the country since 1947. The history of GST in India goes back to 2006 when the Finance Minister proposed the idea of introducing it. The new tax regime of GST was finally implemented on 1st July 2017. The government proposed GST as a transparent and self-policing tax regime that is easier to administer that further shall boost economic growth of the country.

HISTORY OF GST

The then Union Finance Minister mooted the idea of GST in his Budget speech for 2006-07. The first discussion paper (FDP) on GST was released in November 2009 after a thorough discussion between the Empowered Committee of State Finance Ministers(**Arun Jaitley**)(which had also prepared the design of State VAT) and the central government.

To introduce a new institutional mechanism which would ensure that decisions regarding structure, design and operations of GST are taken jointly by the center and stage, the 122ndconstitutional amendment was introduced in the 16th Lok sabha. After being introduced in December 2014, the bill was passed in May 2015 by Lok sabha and was sent to select committee of Rajya Sabha in May itself. The report on bill was submitted in July by Rajya Sabha and was passed in Rajya Sabha with certain amendments and thereafter in Lok sabha. On 8th of September the bill received the assent of the President after being ratified by the required number of states, it was enacted as Constitution Act (101stAmendment) on 16th September 2016.This reform introduced by**VishwanathPratapshigh**.It was proposed by **Shri Sontoshkumar**minister of Statein the ministry of finance.

WHY GST ?

- Before the implementation of GST on 1stJuly, 2017, several indirect taxes were levied both by the state and the centre.
- Interstate sale of goods was taxed by the centre in the form of Central State Tax (CST).
- Different states followed different rules and regulations.
- Moreover, there were additional taxes like entertainment tax, local tax and octroi.

All this resulted in **lack of uniformity in taxation** and posed a barrier to interior trade within the country. It also resulted in overlapping of taxes by the Centre and state government all of which often featured different tax rates. Thus, under the earlier regimes, in many cases, tax was levied on tax, a phenomenon called 'the **cascading effect of taxes**'.

COMPONENTS OF GST

There are three components of GST, namely SGST, CGST and IGST.

- **SGST/UTGST:** It is collected by the individual states and union territories when the supply occurs within the same state/union territory. For example, when a good is both manufactured and sold within Gujarat, SGST will be levied by the Gujarat state.

- **CGST:** It is collected by the **Central government** in case of an intra-state transaction **i.e. transaction within the same state**. In the above example, CGST will be levied, in addition to SGST, by the Central government.
- **IGST:** IGST or Integrated GST is levied by the Central government when the location of **the** supplier of **a** good/service and the place of consumption lie in different states. The IGST so collected is subsequently divided between the State and Centre.

GSTC (GST Council) would be responsible for deciding the rates of **CGST, IGST and SGST/UTGST** with mutual agreement of the states and the center. The following taxes currently levied by the center have been absorbed with the introduction of GST:

1. Central Excise Duty
2. Duties of Excise (Medicinal and Toilet Preparations)
3. Special Additional Duty of Customs (SAD)
4. Service Tax
5. Cess and Surcharge applicable to goods and services.
6. Additional Duties of Excise (Textiles and Textile Products)
7. Additional Duties of Excise (Goods of Special Importance)
8. Additional Duties of Customs (commonly known as CVD)

The following taxes currently levied by the state have been absorbed with the introduction of GST-

1. Central Sales Tax
2. State VAT
3. Purchase Tax
4. Entry Tax (All forms)
5. Luxury Tax
6. Taxes on advertisements
7. Entertainment Tax (except those levied by the local bodies)
8. State Cesses and Surcharges applicable so far related to supply of goods or services
9. Taxes on lotteries, betting and gambling

HOW TO KNOW WHEN SGST, CGST OR IGST IS APPLICABLE?

The locations of the supplier of the goods/ services and that of the consumer determine whether a combination of SGST and CGST will be applicable or only IGST.

INTRA-STATE TRANSACTIONS

For a transaction completed within the state, **both SGST and CGST** are levied at the time of collection. For example, if 1 tonne of coal worth Rs. 5000 is supplied by a supplier in Gujarat to a consumer in the same state, total 5% of GST will be collected by the supplier from the consumer. This 5% GST will constitute 2.5% SGST and 2.5% CGST, and will be directly diverted to the state and the centre.

INTER-STATE TRANSACTIONS

For a transaction completed between 2 states, **IGST** is applicable. For example, if the coal supplier in Gujarat had sold the coal worth Rs. 5000 to a consumer in Maharashtra, IGST at the rate of 5% would have been collected. The IGST collected by the Centre is later divided between the State of consumption (i.e. Maharashtra in our example) and the Central Government.

Hence, for intra-state transactions, both SGST and CGST are levied. While for inter-state transactions only IGST is collected, which is later divided between the state and the centre. Notably, this does not create any difference for the consumer as the combined rate of SGST and CGST is always equal to the IGST rate. This system ensures smooth flow of taxes between the state and the centre without complicating the tax rates for the seller or the consumer.

SGST, CGST and IGST rates of some common items

Goods	SGST	CGST	IGST
Household necessities like tea, coffee (except instant), edible oil, spices, and sugar. Coal, life-saving drugs and Indian Sweets are also covered under this GST slab.	2.5%	2.5%	5%
Processed food and computers	6%	6%	12%
Hair oil, soaps and toothpaste, capital goods and industrial intermediaries.	9%	9%	18%
Luxury items, including premium cars consumer durables like AC and refrigerators, cigarettes, aerated drinks, and high-end motorcycles	14%	14%	28%

GST Rates- Tax Slabs Explained

The government has proposed a 4-Tier tax structure under 4 slabs of **5%, 12%, 18% and 28%** for all the goods and services. Read on to know regarding various goods and services, whether they are tax-free or taxable under the following slabs:

1) 0% (No Tax Slab)

No Tax on these products:

Fresh meat, jute, fish chicken, milk, eggs, curd, butter milk, fresh fruits and vegetables, natural honey, besan, flour, salt, bread, sindoor, prasad, bindi, stamps, printed books, judicial papers, handloom, bones and horn cores, newspapers, bangles, bone grist, etc.; hoof meal, cereal grains hulled, horn meal, salt-all types, palmyra jaggery, kajal, etc.

2) 5% Tax Slab

5% Tax would be applicable on goods such as apparel below Rs. 1,000, fish fillet and footwear below Rs 500 and packaged food items, skimmed milk powder, cream, branded paneer, coffee, tea, frozen vegetables, spices, rusk, pizza bread, kerosene, coal, sabudana, lifeboats, medicines, stent, cashew nut, raisin, cashew nut in shell, ice and snow, insulin, bio gas, kites, postage or revenue stamps, first-day covers Agarbatti, stamp-post marks etc.

3) 12% Tax Slab

Goods such as apparel above Rs 1,000, cheese, ghee, butter, frozen meat products, packaged dry fruits animal fat, fruit juices, sausage, Ayurvedic medicines, bhujia, namkeen, tooth powder, picture books, colouring books, exercise books and note books, sewing machine, umbrella, ketchup & sauces, cellphones, diagnostic kits and reagents, fertilisers, fish knives, spoons, forks, cake servers, ladles, skimmers, tongs, corrective, spectacles, chess board, playing cards, carom board and other board games would be taxed at the rate of 12%. Also, services such as non-AC hotels, state-run lotteries, business class air tickets will fall under 12% GST tax slab.

4) 18% Tax Slab

This slab has maximum goods under it, such as footwear costing more than Rs 500, biscuits (All categories), bidi patta, flavoured refined sugar, cornflakes, pasta, preserved vegetables, pastries and cakes, jams, soups, sauces, instant food mixes, ice cream, tissues, mineral water, tampons, envelopes, steel products, printed circuits, note books, speakers and monitors, Kajal pencil sticks, camera, aluminium foil, weighing machinery, headgear and parts thereof, CCTV, printers electrical transformer, bamboo furniture, optical fiber, mayonnaise and salad dressings, swimming pools and padding pools, mixed condiments and mixed seasonings, curry paste, etc.

5) 28% Tax Slab

Bidis, molasses, chewing gum, waffles and wafers coated with chocolate, chocolate not containing cocoa, pan masala, paint, deodorants, aerated water, shaving creams, hair shampoo, after shave, sunscreen, wallpaper, dye, water heater, ceramic tiles, weighing machine, dishwasher, ATM, washing machine, vacuum cleaner, vending machines, shavers, hair clippers, automobiles, aircraft for personal use, will be charged at the rate of 28%.

For services such as hotels with room tariffs above Rs 7,500, private-run lotteries authorized by the states, 5-star hotels, cinema, race club betting, will attract 28% tax under GST.

CENTRE-STATE FINANCIAL RELATIONS POST GST

Even prior to GST, the fiscal powers between the state and center were clearly demarcated without any overlap. Previously, the center was empowered to levy tax on manufacture of goods except for certain products such as alcohol/liquor made for human consumption. The state was allowed to levy tax on sale of goods, however in case of inter-state sales the tax was called as Central Sales Tax and was levied by the central government. The originating states use to both retain and collect these taxes. Center use to levy additional duties of customs for the sale or purchase of goods in the course of their export from India or import into India. This was in addition to the basic customs duty and was commonly known as CVD or SAD. In case of domestic products sales tax, State VAT and excise duties are levied for the same.

Post GST, a unique institutional mechanism has been put into place that ensures that decision about the designing and operation of GST would be taken by the center and state jointly. The tax shall be levied as Dual GST separately- the Union (CGST) and the States (SGST). On interstate trade or commerce (including imports) in goods and services, the Parliament has exclusive power to levy GST (IGST).

With the introduction of the new taxation regime a lot of rules would be changing. Salient features of GST can be summed up in the points given below.

KEY THINGS TO REMEMBER:

- Alcohol for human consumption would be the only product on which GST is not applicable
- Crude, Diesel, ATF, Petrol and Natural Gas are the five specific petroleum products on which GST would be applicable from a date decided by GSTC
- The center would levy central excise duty on tobacco and tobacco products and they would also be subject to GST

WHAT IS GDP ?

Gross domestic product (GDP) is the total monetary or market value of all the finished goods and services produced within a country's borders in a specific time period. As a broad measure of overall domestic production, it functions as a comprehensive scorecard of a given country's economic health.

OBJECTIVE OF STUDY

1. To study and understand the concept of GST.
2. To learn about the positive and negative aspects of GST.
3. To study the impact of GST on GDP
4. To know the advantages and disadvantages of GST.
5. To gain knowledge about the GST tax- slabs.

METHOD OF DATA COLLECTION

Collection of data is blood vain for any type of research. The kind of data collected and the method used to collect the data is a very important aspect of research. There are two basic types of data collection first is primary data collection and second is secondary data collection.

We are used here secondary data collection method from govt.website, particular topic site/ book, and literature review.

PERIOD OF THE STUDY

The period of the study is 6 years. 3 year before GST and after GST.

DATA ANALYSIS

Trend Analysis is to be used in this study.

GDP rates of India before and after GST

Before GST	Q1	Q2	Q3	Q4	FY
2014-15	7.5	8.3	6.6	6.7	7.2
2015-16	7.6	8	7.2	9.1	8.0
2016-17	7.9	7.5	7.0	6.1	7.1
After GST	Q1	Q2	Q3		FY
2017-18	5.1	7.3	8.7		7.0

2018-19	7.1	6.2	5.6		6.1
2019-20	5.6	5.1	4.7		5.0

Chart of GDP before GST
Chart of GDP after GST

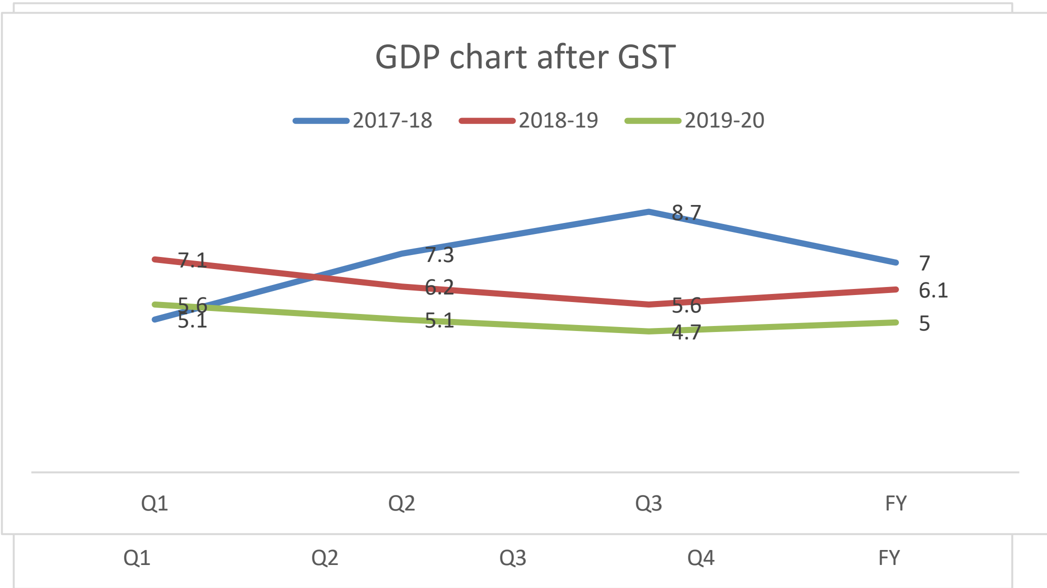
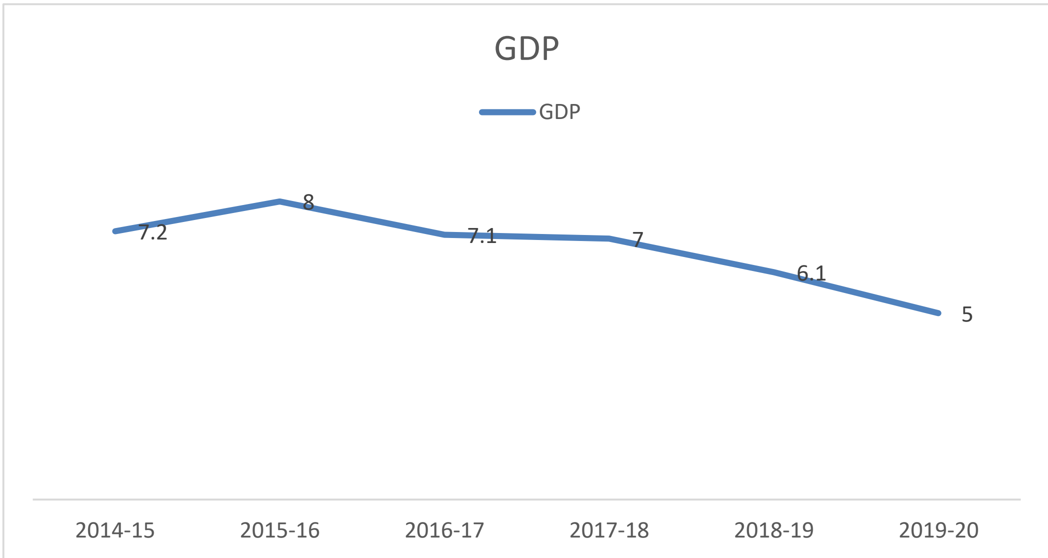


Chart of trend analysis of GDP



Sources- Central Statistics office (CSO)

The Indian economy is one of the 10 largest economy in the world. The Indian economy is the fastest growing major economy and is protected to grow faster in the coming years. However, India's economy appears to have slowed down slightly in 2018-19 but its also slowed down after GST implementation in July 2017. GDP of India in 2014-15 was 7.2 and GDP was increase to 8.0 in 2015-16, it was the highest during our period of study. After GST implementation it decrease to 6.1 in 2018-19 and in 2019-20 it was 5.0.

In last quarter of 2915-16 it was the highest 9.1. In last quarter of 2019-20 it was lowest 4.7 its also due to COVID-19.

GST POSITIVE IMPACT OF GDP

Now, There is only one tax rate for all which will create a unified market in terms of tax implementation and the transaction of **goods and services** will be seamless across the states.

The same will reduce the cost of the transaction. In a survey, it was found that 10-11 types of taxes levied on the road transport businesses. So the GST will be helpful to reduce transportation cost by eliminating other taxes.

After GST implementation the export of goods and services will become competitive because of nill effect of cascading effect of taxes on goods and products. In a research done by NCAER, it was suggested that GST would be the key revolution in Indian Economy and it could **increase the GDP** by 1.0 to 3.0 percent.

GST is more transparent in comparison to the previous law provision so it will generate more revenue to the Government and will be more effective in reducing corruption at the same time. Overall GST will improve the tax Compliances.

The GST regime has although a very powerful impact on many things including the GDP also. The Gross Domestic Product has the tendency to loom on the shoulders of revenue generated by the economy in a year. Still, a worthwhile point includes that the GST has the capability to extend the GDP by a total of 2 percent in order to complete the ultimate goal of increasing the per-capita income of every individual. Also, the GST scheme will certainly improve the indirect revenues to the government as the tax compliance will be further enhanced and rigid, extending the tax paying base which will add to the revenue. The increased income of the government will redirect towards the developmental projects and urban financing creating an overall implied scenario.

GST NEGATIVE IMPACT ON GDP

In a report, DBS bank noted that initially, GST will lead to the rise in inflation rate which will remain for a year but after that GST will affect positively on the economy.

As we know Real Estate also plays an important role in Indian economy but some expert thinks that GST will impact the Real Estate business negatively as it will add up the additional 8 to 10 percent to the cost and reduce the demand about 12 percent.

GST is applied in the form of IGST, CGST AND SGST on the Center and State Government, but some economists say that there is nothing new in the form of GST although these are the new names of Central Excise, VAT, CST and Service Tax etc. As every coin has two faces in the same way we tried here to familiarize the things related to GST with both perspective i.e. positively and negatively in this article. Despite having some factor which is being expected to affect the Economy adversely there are so many other things which are expected with a positive impact on GDP.

FINDINGS AND CONCLUSIONS

This helps me to learn that changes in society are bound to happen. We need to bring change accordingly to the society. Economic reforms are one such step. Seeing the present scenario, old economic policies seems to be outdated as it used to divide India into economic terms. Value of money was not the same to all persons. States which used to have less tax help their people save more tax which brings disharmony among people. New GST policy will put people of all states on equal footing. Moreover, the interstate trade will become easier that will help to boost the economy. It also brings the feeling of United India. Although India will move towards economic growth smoothly.

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VIEW OF SPACE : 2320-7620
An International Refereed Multidisciplinary Journal Of Applied Research

"A STUDY ON PERFORMANCE EVALUATION OF HBL POWER COMPANYBY USING ALTMAN'S Z SCORE MODEL"

RAMANI HARSHA

ABSTRACT:
To invest in a particular industry the first step is to make a performance evaluation of that particular industry or a company. It is necessary to evaluate the performance of companies to make investment in that particular company. So, in present research paper, researcher selected HBL Power Company for the performance evaluation by using Altman Z score model. Data Analysis is considered as the main part of any research. In a this research data analysis is be done using statistical tools like averages, ratios and by using Altman Z score model. The period of the study is 10 years i.e. from 2009 to 2018. Z score of HBL Power Company is respectively during 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018. HBL Power Company in 2009 in a safe zone because z score is more than 2.99 and from 2013 to 2018 in a grey zone.

KEY WORDS: PERFORMANCE EVALUATION, Z SCORE, ZONE

INTRODUCTION:
All the business organizations and companies are carried out with an objective of making a good profit. All the stakeholders i.e. Shareholders, Debenture holders, Preference shareholders, creditors and investors of company or the business organization will want to know whether an organization will do well in future in order to keep their interest in that organization. Forensic Accounting is one of the forms of investing accounting that helps to examine the financial records of the company with respect to fraud and distress. In today's competitive world it is necessary to evaluate the performance of the firm or industry on the regular basis to sustain in the market. With the help of evaluation of performance we can find out the Zone of Company.

$$Z= 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + .999X5$$

Where X1 = Working Capital / Total Assets
X2 = Retained Earning / Total Assets
X3 = EBIT / Total Assets
X4 = Market Value of Equity / Total Liabilities
X5= Sales / Total Assets

Z Score Discrimination:

$Z > 2.99$	Safe Zone
$1.81 < Z < 2.99$	Grey Zone
< 1.81	Distress Zone

RESEARCH GAP:
1. Study Period
2. Sample
3. Test

Title of the Study:
"**A Study on Performance Evaluation of HBL Power Company by using Altman's z score Model**"

OBJECTIVES OF THE STUDY:
1. To measure the Performance of HBL Power Company

2. To know the profitability of HBL Power Company
3. To identify zone of HBL Power
4. To give suggestions

REVIEW OF LITERATURE:

Studies done with the help of Atman Z score Model

❖ **Apoorva (2019**) Seven companies have been selected to check the efficiency and accuracy of this model. In conclusion it can be applied for Indian Companies but the same was not 100% accurate.

❖ **Rohini Sajjan (2016)** this study tries to apply the model to understand financial health of selected firms for the years 2011-2015 which are listed in BSE and NSE. Companies are selected from manufacturing and non manufacturing sector. It reveals that none of the companies completely belongs to safe zone except for few years. Most of the firms are in distress zone.

❖ **Setyani Dwi Lestari (2016)** the study was based on effect of z score to stock price is significantly 0.004. the study period was 2009 to 2014. Retained earning to total assets have no significant effect. Ratio of z score only ebit to total assets and significantly affect stock price partially.

RESEARCH METHODOLOGY

Population / Universe of Study:

The population of the study is all listed electronic manufacturing as well as non-manufacturing companies which are listed in BSE.

Sample Size:

From the whole population HBL Power Company randomly selected for analysis and which is listed in BSE.

Data Collection:

There are basically 2 methods of data collection. They are Primary and Secondary data collection. This study will be based on secondary data collection in which data is collected from the HBL Power company's annual report , websites and magazines. For the calculation of various ratios money control and annual report of respective companies will be used.

Period of the Study:

The period of the study will be of 10 years i.e. from 2009 to 2018.

Tools and Techniques:

Data Analysis is considered as the main part of any research. In a this research data analysis is be done using statistical tools like

- Averages,
- Ratios
- ✓ Current Ratio
- ✓ Quick Ratio
- ✓ Inventory Turnover Ratio
- ✓ Assets Turnover Ratio
- ✓ Leverage Ratio
- ✓ Return on Assets Ratio
- ✓ Return on Capital Employed and
- By using Altman Z score model

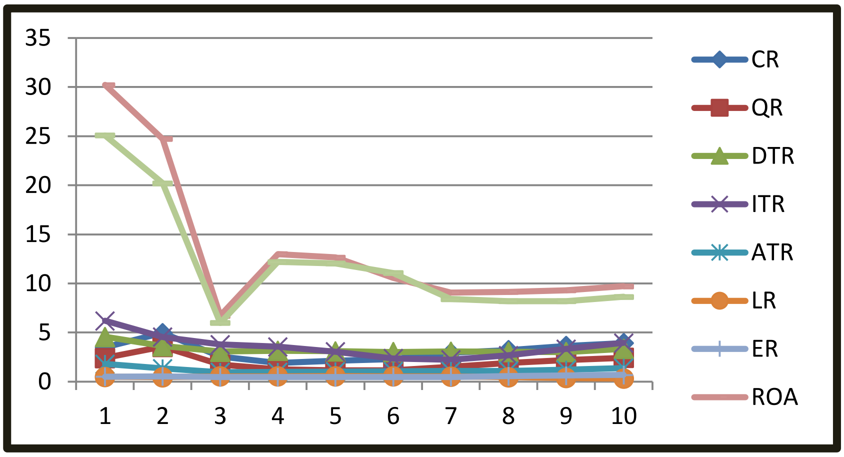
Data Analysis and Interpretation:

Ratio of HBL Power Company during 2009 to 2018

Ratio	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
CR	3.48	4.96	2.56	1.89	2.13	2.30	2.93	3.21	3.64	3.92
QR	2.41	3.55	1.72	1.26	1.15	1.16	1.52	1.91	2.19	2.43

DTR	**4.56**	**3.62**	**3.07**	**3.15**	**3.09**	**3.01**	**3.07**	**3.03**	**3.02**	**3.34**
ITR	**6.19**	**4.55**	**3.78**	**3.55**	**3.04**	**2.37**	**2.23**	**2.67**	**3.33**	**3.94**
ATR	**1.80**	**1.33**	**0.96**	**0.97**	**1.03**	**1.05**	**1.08**	**1.09**	**1.20**	**1.39**
LR	**0.49**	**0.46**	**0.54**	**0.53**	**0.55**	**0.53**	**0.52**	**0.45**	**0.38**	**0.31**
ER	**0.51**	**0.54**	**0.46**	**0.47**	**0.45**	**0.47**	**0.48**	**0.55**	**0.62**	**0.69**
ROA	**30.21**	**24.73**	**6.71**	**12.99**	**12.64**	**10.58**	**9.07**	**9.15**	**9.31**	**9.72**
ROCE	**25.09**	**20.21**	**5.98**	**12.19**	**12.04**	**11.06**	**8.41**	**8.19**	**8.20**	**8.63**
AVG.	8.30	7.10	2.86	4.11	4.01	3.61	3.25	3.36	3.54	3.82

[Source: Computed with the help of Annual Report 2009 to 2018]



[Source: Computed with the help of Above Table]

Above table and chart represent Current Ratio, Quick Ratio, Debtor Turnover Ratio, Inventory Ratio, Leverage Ratio, Equity Ratio, Return on Assets Ratio and Return on Capital Ratio during 2009 to 2018. The average of all ratio is 8.30, 7.10, 2.86, 4.11, 1.01, 3.61, 3.25, 3.36, 3.54 and 3.82 respectively during 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018. Highest average is in the year 2009 i.e. 8.30 and lowest average is in the year 2011 i.e. 2.86.

Altman Z Score Model for HBL Power Company:

Ratio	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**
X1	0.67	0.82	0.52	0.43	0.50	0.66	0.69	0.70	0.74	0.77
X2	0.17	0.15	0.02	0.01	0.02	0.05	0.02	0.01	0.04	0.04
X3	0.78	0.70	0.16	0.33	0.33	0.34	0.26	0.26	0.26	0.28
X4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
X5	1.68	1.20	0.87	0.97	0.99	1.03	1.10	1.13	1.18	1.44
Z= 1.2X1 + 1.4X2 + 3.3X3 + 0.6X4 + .999X5										
Z score	**3.30**	**2.87**	**1.58**	**1.74**	**1.84**	**2.08**	**2.06**	**2.09**	**2.22**	**2.53**
Zone	Safe	Grey	Distress	Distress	Grey	Grey	Grey	Grey	Grey	Grey

[Source: Computed with the help of Ratios.]

Z score of HBL Power Company is 3.30, 2.87, 1.58, 1.74, 1.84, 2.08, 2.06, 2.09, 2.22 and 2.53 respectively during 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018. HBL Power Company in 2009 in a safe zone because in 2009 z score is more than 2.99. The company is in Grey zone in the year 2010, 2013 to 2018. And in a distress zone during 2011 to 2012.

CONCLUSION AND FINDINGS:

With the help of this study a stakeholder can easily identify the company is in Safe Zone, Grey Zone and Distress Zone. Same way company also can know about the financial health and zone which it belongs to.Z score of HBL Power Company is 3.30, 2.87, 1.58, 1.74, 1.84, 2.08, 2.06, 2.09, 2.22 and 2.53 respectively during 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017 and 2018. HBL Company is in a grey zone because value of z score is between 1.81 to 2.99 in many years so HBL Company needs to take corrective measures for improvement of Financial Health

LIMITATIONS OF THE STUDY:

- Only one company is selected for the study
- Study period is only 10 years.

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"HUMAN RESOURCE MANAFEMENT AND GANDHIAN THOUGHT"

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ABSTRACT

Human life is so much critical in the era of Covid-19, so many problems related to the well being of human life is arising. So, to manage Human Resource is required to know human being very well. The paper focus on leadership qualities which are in link one another and sheds lights on Gandhi's thinking regarding Human Resource Management as it based on values such as Peace, Tolerance, Non-violence, Truth, Love, Sacrifice, Unity & Justice. Gandhi's life is the mirror of life. If one who follows his principle in his life, definitely he will get the satisfaction of leading a value life. What the whole world needs most today is a man of Gandhi's stamp who can be like a beacon- light in the deep gloom which now prevails generations to come, it may be , will scarce believe that such one as this ever in flesh and blood walked upon this earth..

HUMAN RESOURCE MANAFEMENT AND GANDHIAN THOUGHT

INTRODUCTION:

Human life is so much critical in the era of Covid-19, so many problems related to the well being of Human life is arising. We achieved a great success in leading a life in better way but unable to A achieve a life with better perspectives or better views. In such situation understanding Gandhi and following his thoughts and values is the only e\way to bring the international peace. The paper focus on leadership qualities which are in link one another and sheds lights on Gandhi's thinking regarding Human Resource Management as it based on values such as Peace, Tolerance, Non-violence, Truth, Love, Sacrifice, Unity & Justice.

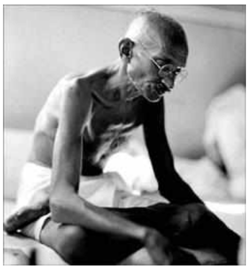
GANDHI THOUGHTS AND VALUES :

Mahatma Gandhi was a great man. He is ideal to every person to lead a life with specific purpose Gandhi led his life with some values which are useful to human being now a days let's study some of them.

PEACE-

Education can bring the international peace. Education should develop the students intellect as well as emotions though the attempt to give concrete expressions to the ideal of truth good and beauty. Gandhi was the follower of this Satyam Shivam Sundaram. Gandhi would never tell lie either to the students or to the teacher.

TOLERANCE:

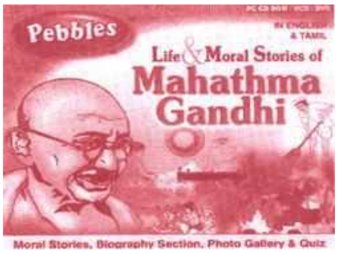


Tolerance was the Gandhi thought which is essential now days for the purpose of bringing international peace. As per Gandhian Thought Tolerance prove that "Tolerate with Pleasure not under Pressure". For that Gandhi was perform with conflicts exists then means adopted to resolve the conflict, according to Gandhi should be Satyagraha, i.e., non-violent, non-co-operation and along with this strike there should be patience and civility. Labourers can have tier grievances redressed by resort to non-violent non-co-operation peaceful strike.

NON-VIOLENCE-

Gandhi believed in non violence while fighting against Britishers. Violence is not the way to get the INDEPENDENCE ACCORDING TO HIM. Violence will destroy the human life. Gandhi's non-violence doesn't mean mere abstention form killing it means love for all beings it is the killing of a calf suffering from some incurable disease and writing the technique of non violence in the field of religion. It remained for Mahatma Gandhi to extend its application to the area of politics. His belief that violence could never be the way to achieve any objective An eye for an eye will only make the whole world blind-Mahatma Gandhi.

TRUTH-



Mahatma Gandhi was a worshiper of truth or one whose fundamental tenet was truth. His whole life was an experiment with where truth prevails violence which is rooted in untruth can have no place and that is why every devotee of truth is also a devotee of non violence.

LOVE-

When we study the whole life of Gandhi we come to know that his basic principle of his life was to spread the love between people and to bring the peace in society. Gandhian thought proves "To Live is To Love".

SACRIFICE-

We know that, Gandhiji's life was only for the purpose of independence. What a great sacrifice that was. I should state here the incident of Calcutta. Mahatma's stay in Calcutta for about a month during the critical period in our nation's history and the efforts he made to establish communal peace are never to be forgot without such sacrifice one cannot achieve the goal of life. A great leader always leads with an exemplary life that echoes his ideals. Mahatma Gandhi sacrificed his thriving law practice and adopted a simple life to live among the millions who lived in poverty during his freedom struggle. Today we see modern leaders cajoling the masses with promises that they never intend to keep let alone practicing what they preach in their own lives demonstrates peaceful acts of kindness daily. Mahatma Gandhi believed that we are all children of god. We should not discriminate amongst ourselves based on faith caste, creed or any other differences.

UNITY:

Gandhi was of firm belief in unity if we need freedom it is the only possible when we have unity according to him true Swaraj could be attained only in the non violent way. Freedom achieved by the united efforts of all men not excluding the weak, would be true Swaraj. Gandhi was staunch supporter of unity he believed that it is now time torealize that if India is to progress Bengalis, Bihar's, orias, assumes Guajarati's Marathi's Punjabis Rajasthan's tamales' must all live together.

JUSTICE-

An outstanding example of Mahatma Gandhi's leadership was his famous Salt March, which brought about a profound change. On March 2nd 1930, as a protest at tax on salt, Gandhi wrote a remark able letter to Lord lrwin, the Viceroy of India. He wrote, ''Dear Friend, I cannot intentionally hurt anything that lives, much less fellow human being, even though they may do the greatest wrong to me and mine. Whilst, therefore, l hold the British rule to be a curse, I do not intend to harm to a single Englishman or to any legitimate interest he may have in India.. "With these words, he inspired millions to fight for this righteous cause and eventually forced the British to leave India without inflicting harm to any Englishman. Such were the quintessential qualities of justice and peace that made Mahatma Gandhi the man who changed our world for the better with his ideals of faith love and tolerance.

LEADERSHIP-

Leader means who can lead himself and nation. A leader must know where he wishes to lead his people and how he intends to get them there. The world witnessed one such great leader whom people lovingly remember as 'BAPU' who was tallest among all leaders. He inspired non-violent people's struggles and ended colonization, Poland, Romania, Russia, Ukraine , etc and the recent example is liberation of Egypt on Gandhian ideologies, Gandhi showed that the spirit of Christ and of Buddha and of some Hebrew prophets and Greek sages could be applied in modern times. Gandhi did not preach about religion or god; he was a living sermon. The components of Gandhi's leadership according to Anil Dutta Sharma are as vision, courage and character, compassion, dedication, determination, communication skills, strategizing skills , organizational skills, charisma, management skills, patriotism, broad spectrum a few to mention. The above qualities were reflected in Gandhi at various occasions in South Africa and India. Hence it can be said that if such qualities are exhibited by leaders in business world it can bring the best out of their workers and lead to healthy growth both for the organization and the workers.

CONCLUSION-

Human life is so much critical in the era of Covid-19, so many problems related to the well being of human life is arising. So, to manage Human Resource is required to know human being very well. The paper focus on leadership qualities which are in link one another and sheds lights on Gandhi's thinking regarding Human Resource Management as it based on values such as Peace, Tolerance, Non-violence, Truth, Love, Sacrifice, Unity

& Justice. Gandhi's life is the mirror of life. If one who follows his principle in his life, definitely he will get the satisfaction of leading a value life. What the whole world needs most today is a man of Gandhi's stamp who can be like a beacon- light in the deep gloom which now prevails generations to come, it may be , will scarce believe that such one as this ever in flesh and blood walked upon this earth..

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IMPACT OF COVID -19 ON MSME SECTOR OF INDIAN ECONOMY

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The world is Fighting with Corona Virus Called COVID-19, which has left the entire world befuddled and in the lurch as to how one virus has brought the entire world to a standstill. This devastating virus which is declared by the WHO as the pandemic has taken over almost 195 countries in its grip.This virus is mounting a very serious threat to the global economy as well, which is already in grave peril.There is no doubt that the Indian economy,which is already sputtering, is growing at one of the lowest rates in the last six years.And now,a new set of economic challenges unleashed by this virus is leaving its impact on all sectors of the economy but nowhere is the hurt as much as the Medium, Small and Micro Enterprises (MSMEs) of India. All anecdotal evidence available, such as the hundreds of thousands of stranded migrant workers across the country, suggests that MSMEs have been the worst casualty of Covid-19 induced lockdown. It has also been reported that just like the first relief package, called the PM Garib Kalyan Yojana, which was announced by the government on March 26, the second package, too, would primarily focus on the MSME sector.

Many sectors in tatters.It is a well-known fact that in the global supply chain, China plays a very pivotal role for India and its MSME sector as well, this sector is largely dependent on China for its raw material.Its fact that Indian drug makers source almost 70 per cent of their ingredients from Chinese factories and Chinese goods worth $30 billion.Thus complete lockdown of China and partial lockdown of India has led to various issues ranging from shrinkage of exports, cessation of production, non-availability of manpower, the uncertainty of consumption, and liquidity squeeze in the market as well. According to the Confederation of All India Traders (CAIT) which represents 70 million traders in India and the majority of them are MSME. The trade impact for India is estimated to be around Rs 380 lakh and the chemical sector is expected to take a big hit of Rs 12 crore 90 lakh . Micro, small and medium enterprise is the sector which was already reeling under huge distress firstly because of demonetisation, then because of poorly implemented GST followed by the prolonged economic slowdown and finally, the biggest of all - the COVID-19 which is going to aggravate the crisis in this specific sector further.According to a study commissioned by All India Manufacturers Organisation (AIM0), India is currently home to over 75 million MSMEs and close to 25 per cent of these firms will face closure, if the lockdown imposed due to the COVID-19 goes beyond four weeks while a whopping 43 per cent will shut shop if panic extends beyond eight weeks. MSME forms the backbone of the Indian economy and is one of the most crucial segments that let the economy grow by leap and bounds.The sector which provides employment to over 114 million people and contributes to more than 30 per cent of the GDP is going through one of the tough phases, thus actions are required immediately.A stimulus financial package is required to re-energise the market economy. Many countries like the USA and China have rolled out many new measures to save MSMEs from the COVID-19 threat.

The coronavirus crisis has spelt crisis across the world as several countries now focussing on curbing the rapid spread of the virus while dealing with the economic ramifications. With governments around the world imposing lockdown and social distancing becoming the new norm, the post-pandemic world will wake up to a new trading culture. On the home grounds, the COVID-19 pandemic has battered all sectors of the economy, with the micro, small and medium enterprises (MSMEs) among the worst-hit. Considered as the growth engine of the nation, the MSME sector accounts for 33.4% of India's manufacturing output, employing about 120 million and generating 45% of India's export. However, the pandemic outbreak and the consequent stoppage of economic activities have triggered panic across the nation, with businesses facing extinction risks. Although some business activities within the 'non-essential category' were resumed as the lockdown extended, economic activity, except for agriculture and essential activities, remains halted. The MSME sector, the majority of which relies on day-to-day business to stay afloat, continues to be the most vulnerable owing to the lockdown and a decrease in demand. According to a survey covering 5000 MSMEs, conducted by the All India Manufacturers' Organisation (AIMO) has revealed that 71% of the businesses weren't able to pay salaries in March. The survey further revealed that a whopping 43% would shut shop if panic extends beyond eight weeks. Considering the stoppage of economic activity over the past few weeks, it is unfathomable that a vast number of MSMEs will be choked, perhaps to the point of permanent closure.

DEFINATIONS OF MSMES :

MSMEs are defined in terms of investment in plant and machinery (Chart 1). But this criterion for the definition was long criticised because credible and precise details of investments were not easily available by authorities.That is why in February 2018, the Union Cabinet decided to change the criterion to "annual turnover", which was more in line with the imposition of GST. According to the proposed definition, which is yet to be formally accepted, a micro enterprise will be one with an annual turnover less than Rs 5 crore; a small enterprise with turnover between Rs 5 crore and Rs 75 crore; and a medium enterprise with turnover less than Rs 250 crore.

Definations of MSME Sector Old & New			
MSME Criteria by the MSME Development Act, 2006			
Classification	**Micro**	**Small**	**Medium**
Manufacturing Enterprise	Inverstment < 25 Lakh	Inverstment < 05 Crore	Inverstment < 10 Crore
Service Enterprise	Inverstment < 10 Lakh	Inverstment < 02 Crore	Inverstment < 05 Crore
Revisied Criteria Announced on 13 May 2020 ,Based on Investment and Turnover			
Classification	**Micro**	**Small**	**Medium**
Manufacturing and Service	Investment up to 01 Crore and turnover up to 05 Crore	Investment up to 10 Crore and turnover up to 50 Crore	Investment up to 20 Crore and turnover up to 100 Crore

Estimated Number of MSMEs in india (In Lakh)				
Classdification	**Rural**	**Urban**	**Total**	**Share**
Manufacturing	114.14	82.50	196.55	31%
Trade	108.71	121.64	230.35	36%
Electricity	0.0.3	0.01	0.03	-
Other Services	102.00	104.85	206.85	33%
Total	324.88	309.00	633.88	100%
Source : Annual Reports 2018-19 ,MSMEs				

Estimated Employments in MSMEs in india (In Lakh)				
Classdification	**Rural**	**Urban**	**Total**	**Share**
Manufacturing	186.56	173.86	360.41	32%
Trade	160.64	226.54	387.18	35%
Electricity	0.06	0.02	0.07	--
Other Services	150.53	211.69	362.22	33%
Total	497.78	612.10	110.89	100%

Distribution of Enterprises Category wise (In Lakh)					
Sector	**Micro**	**Small**	**Medium**	**Total**	**Share**
Rural	324.09	0.78	0.01	324.88	51%
Urban	396.43	2.53	0.04	309.00	49%
Total	630.52	3.31	0.05	633.88	100%

According to the latest available (2018-19) Annual Report of Department of MSMEs, there are 6.34 crore MSMEs in the country.Around 51 per cent of these are situated in rural India. Together, they employ a little over 11 crore people but 55 per cent of the employment happens in the urban MSMEs.These numbers suggest that, on average, less than two people are employed per MSME.At one level that gives a picture of how small these really are. But a breakup of all MSMEs into micro, small and medium categories is even more revealing.99.5 per cent of all MSMEs fall in the micro category. While micro enterprises are equally distributed over rural and urban India, small and medium ones are predominantly in urban India. In other words, micro enterprises essentially refer to a single man or a woman working on their own from their home.The medium and small enterprises — that is, the remaining 0.5% of all MSMEs — employ the remaining 5 crore-odd employees.The distribution of enterprise by caste further completes the picture. About 66 per cent of all MSMEs are owned by people belonging to the Scheduled Castes (12.5%), the Scheduled Tribes (4.1%) and Other Backward Classes (49.7%). The gender ratio among employees is largely consistent across the board at roughly 80% male and 20% female.In terms of geographical distribution, seven Indian states alone account for 50 per cent of all MSMEs. These are Uttar Pradesh (14%), West Bengal (14%), Tamil Nadu (8%), Maharashtra (8%), Karnataka (6%), Bihar (5%) and Andhra Pradesh (5%).

PROBLEMS OF MSMES IN INDIA :

Given the shape and form of MSMEs, it is not hard to envisage the kind of problems they would face.To begin with, most of them are not registered anywhere. A big reason for this is that they are just too small. Even GST has its threshold and most micro enterprises do not qualify. This apparent invisibility tends to work for enterprises as well as against them. Being out of the formal network, they do not have to maintain accounts, pay taxes or adhere to regulatory norms etc. This brings down their costs. But, as it is clear in a time of crisis, it also constrains a government's ability to help them. For instance, in some of developed countries, the government has tried to directly provide wage subsidy and extra credit to smaller firms but that could happen because even smaller firms were being mapped.Related to this is possibly the single-biggest hurdle facing the MSMEs – lack of financing. According to a 2018 report by the International Finance Corporation

(part of the World Bank), the formal banking system supplies less than one-third (or about Rs 11 lakh crore) of the credit MSME credit need that it can potentially fund
In other words, most of the MSME funding comes from informal sources and this fact is crucial because it explains why the Reserve Bank of India's efforts to push more liquidity towards the MSMEs have had a limited impact.A key reason why banks dither from extending loans to MSMEs is the high ratio of bad loans (Chart 6); data show higher slippage for relatively bigger enterprises.The other big issue plaguing the sector is the delays in payments to MSMEs — be it from their buyers (which includes the government also) or things like GST refunds etc.

IMPACT ON COVID 19 IN MSME SECTOR :
The Covid-19 relief package for micro, small and medium enterprises and the changes to the defining criteria for MSMEs are examined. While the changes in the MSME definition open the sector to larger enterprises, the composite criteria introduce fresh ambiguities to the defining of MSMEs. Liquidity infusion measures at this juncture without adequate measures to revive demand will not help MSMEs tide over the Covid-19 lockdown-induced crisis.The MSME sector that forms the backbone of the Indian economy was hit due to the blows of demonetisation and GST implementation. However, as the situation began to show signs of improvement, the pandemic outbreak ushered in a new set of challenges, leaving many companies in the lurch due to the pandemic outbreak and the consequent lockdown. Additionally, factors like credit deficit, shortage of working capital, and a decrease in demand for non-essential goods paints a grim picture. Despite the fact that the government is taking countermeasures to combat the loss incurred due to the pandemic, MSMEs are struggling for stability as sales and revenue remain at a halt. As per the CII CEOs snap poll on the impact of COVID-19 on the economy and industry, 54% of company heads predict job losses in their respective sectors post the lockdown whereas 45% foresee 15-30% layoffs. Additionally, 33% of the firms are expecting a fall in revenue for FY21. For instance, auto manufacturers like Maruti Suzuki said the production for April was 'zero,' whereas, during February, the company produced 1,40,933 cars.This is the plight across the manufacturing industries, including textiles, chemicals, among others.What makes the situation worse is that with a decrease in demand, and no possible rebound in the future, it may get increasingly challenging for most of the businesses to adhere to their obligations. According to TransUnion Cibil, MSME loans worth Rs 2.3 lakh crore are at a higher risk of becoming non-performing. Further, the need for working capital will increase as payment cycles are likely to be extended, generating cashflow issues. This situation is expected to prevail, even as the government relaxes restrictions.

GOVERNMENT POLICY FOR MSME SECTOR IN THE CURRENT SITUATION OF COVID 19 :
To provide relief to millions of small businesses reeling under the impact of the Covid-19 lockdown, the government needs to soon arrive at a fiscal stimulus. The Reserve Bank of India declared several monetary policy measures to curb the impact of the coronavirus pandemic:

- Declared a considerable cut in the policy repo rate by 75 basis points to 4.4% – lowest policy rate in this century
- Announced to inject around ₹3.74 lakh crore liquidity into the system.
- The MSME sector contributes in a significant way to the growth of the Indian economy and its 6.3 crore units is often considered as the backbone of the nation. The share of around 30 % in nominal GDP in 2016-17 and the share of the sector in total manufacturing output was even higher at 45 percent.
- Allowed a 3-month moratorium on payment of installments on the existing term loans

- RBI has also opened another Rs 50,000 crore in refinancing window for Nabard, Sebi and NHB under which Banks will require to make these investments within one month from receiving the funds from the RBI Reduced the liquidity coverage ratio to 80% from 100% previously, and provided a special financial facility of Rs 50,000 crore to All India Financial Institutions (AIFIs) at the repo rate.Although these announcements are expected to assist the MSMEs in tackling economic stress, they may not prove to be remunerative immediately as the demand is likely to remain low due to the prevailing lockdown restrictions and low business emotions.
- Other Benefits for the MSME sector comprises emergency credit lines announced by Public Sector Banks, a low-interest loan rate of 5% within 48 hours declared by SIDBI, and business continuity measures by the RBI.

The Minister for MSME and Road Transport and Highways, Nitin Gadkari said that the government is working on an agro MSME policy that will focus on entrepreneurship development in rural, tribal, agricultural, and forest areas for manufacturing products using local raw material. While the measures are taken a focus on easing the short-term liquidity concerns, the stimulus package, soon to be announced by the government, needs to be far-reaching for the MSME sector to tide over the impacts of the pandemic.The government needs to arrive at a decisive plan to revive the MSME sector.This time was not be an easy task as it will take time for the situation to get anywhere near normalcy.Working capital will continue to be the mainframe of the sector, and any shortage at it will challenge its survival. Having said that, the allocation of a contingency fund for the MSME sector is the need of the hour, whereas, businesses need to rework on their budgetary requirements and restructure accordingly to keep functioning. The post-pandemic world will experience a dearth of capital and will require financial institutions to lend a helping hand to the MSME sector. The government will need to enable a comprehensive ecosystem for the MSMEs to get back on track and start conducting business in recovery Side.

RBI POLICY FOR MSME SECTOR :

The RBI has been trying to pump money into the MSME sector but given the structural constraints, it has had limited impact. Hetal Gandhi, Director, CRISIL, believes that there are no easy answers. The government can provide tax relief (GST and corporate tax), give swifter refunds, and provide liquidity to rural India (say, through PM-Kisan) to boost demand for MSME products, she said.

CREDIT GUARANTEES :

Loans to MSMEs are mostly given against property (as collateral) — because often there isn't a robust cash flow analysis available — but in times of crisis, property values fall and that inhibits the extension of new loans. A credit guarantee by the government helps as it assures the bank that its loan will be repaid by the government in case the MSME falters. To the extent such defaults happen, credit guarantees are shown as a departmental expense in the Budget of india.

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"IMPACT OF STRESS RELATED TO JOB ROLE OVER THE LEVELS OF EFFICACY AMONG TEACHERS DURING LOCKDOWN"

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ABSTRACT

Just a week ago, the shocking news of suicide of the famous Bollywood celebrity Sushant Singh Rajput has brought an unwanted negativity in our minds. The common man is thinking that even the glamorous are not immune from depression. Probably the stress, pressure or anxiety is more amongst the actors. If the rich and wealthy cannot save themselves from the miseries, common man would soon lose hope. Hence this paper would lead to find out the amount of stress and anxiety is being filled in the common middle-class people, especially teachers. In the stressful times where the future is uncertain, financial resources are crumbling, survival is difficult – the teaching class of people are the most vulnerable working class and with lot of insecurities piling their ways. The study will indicate the level of stress induced amongst the teachers and would cope a proper intervention to reduce and eliminate the stress. In this dark times it is necessary that we comfort each other and console those who are in trouble. Help is not always in form of money or charity; a simple talk with the person, a simple text or call enquiring his problems or providing moral support may make a huge difference. It can save a life & make living beautiful.

From Wuhan to the streets of Mumbai, the deadly red virus has put all our lives at a standstill. The crowded and bustling busy streets of Mumbai have gone to silence and empty paths. The backbone of every Mumbaikar, the Central Railway, which harbours lakhs of Mumbaikars daily is shut down. The never sleeping ever energetic financial capital city of the country is in an induced comatose condition. The critical impact of this pandemic has hit everyone irrespective of caste, creed, religion or income. From the rich in South Mumbai premiere locality to the rural parts of Maharashtra, everyone is suffering. What started in the month of March as a necessary lockdown has being given worse effects than a financial melt-down. People were made to stay at home, jobless away from native place and without any resources for survival. This in fact is driving them towards the state of depression.

College Teachers are the nation builders; they create an educated new generation. Student is like a raw clay & teacher is the mould who structures, polishes and labels them well for the society's acceptance. Student blindly trust the teachers and rely on their advice in the initial phase of their careers. After their parents, students confide in their teachers. College Teachers come in the life of students in the very delicate age where they are struggling with the innocent age of late teenage & embracing the little more matured age.

The teachers are currently playing dual roles in their professional lives. One being the academicians and researchers who are preparing notes, syllabus and teaching aids for their coming lectures & the second role being mentoring the students in the pandemic times. The overall work load on the plates of the teachers is really a good deal. To add to that the financial situation is not that rewarding as well. A new academic year paves way for fresh job opportunities, may vacations, increments and a lot of renewed hope. But this term the roll of the die is in some other directions. There is no clarity of coming academic year, there is no job security neither are there any job opportunities in the industry; teachers are forced to work from their homes at odd hours, satisfy the requirements of management, government and students at the same time. They cannot afford to hurt any of the stakeholder.

It could not be wrong to say that teachers are being taken for granted. They are asked to do all possible duties in and around the state. Where there is a deficiency in manpower teachers are forced to join. May it be the temperature screening outside government offices, or doing some menial clerical work or canvassing the areas for finding COVID – 19 suspects; the job of the teacher has changed it profile all together. This changing working style, nature and conditions has been coupled with the compulsory acquisition of the educational institutes by the government. Now teachers do not have any work nor do they have a place of employment for an indefinite period of time.

The government on humanitarian ground has taken a unanimous decision of not hiking the fees of the students. Various employers took the moto of "No fee rises no increment" as an agenda and put a full stop to the increments of the teachers. The profit for the institution is being marked since the day admissions start. Student pays the fees of entire year, so institute get the revenue of entire year at once. They use the revenue collected throughout the year. In the pandemic lockdown all the major fixed costs are relatively scaled down, and hence the institutes are also cutting down the salaries. Being helpless, teachers are forced to take whatever is put in their plate. Tough feeling exploited and underpaid, they cannot do much about it.

This financial difficulty, changing working pattern, work from & work for home is making teachers exhausted and frustrated. Their tension level is high. The uncertain future is making them anxious. The rising number of red virus patients is imbibing fear in them. And it is commonly known fact that stress, fear, anxiety, depression etc are not a good cultivator of efficiency and productivity. This paper would try to establish a relationship between stress and efficiency.

OBJECTIVE

To study whether there is any relation between the job role related stress & the amount of efficacy experienced by the person as a result of lockdown ensuing due to COVID-19.

LITRETURE REVIEW:

- A research was conducted with the help of survey of 64 fire fighters, it was indeed found that the emotional exhaustion was linked to the deterioration of Job performance (Halbesleben & Bowler, 2007).
- In another research that was conducted with teachers, it was found that teacher's stress and teachers' efficacy are negatively correlated with one another (Skaalvik et al 2017). Another research conducted with 1242 teachers in south-eastern United States in the similar area revealed the fact that educator stress was indeed linked to the decreased job satisfaction, negative instructional practices, as well as the poor student outcome (Embse, Mankin et al, 2015).
- In a research which was conducted with the 291 teachers at University of Nitra in Slovakia it was found a positive relation between the proactive coping and self-efficacy amongst the teachers. Rather it was found out that more the proactive coping showed by the teachers, the smaller was the level of their experienced stress. (Veresova & Mala 2012). Another study that was conducted by Lorenz et al with the beginning

teachers showed that negative emotions towards the job ultimately led to negative responses in the form of stress, tension, and discontent. And this very same discontent resulted in the high levels of attrition amongst the teachers. (Lorenz et al, 2018)

- The research conducted along with 310 Swedish teachers showed that low efficacy and high job demands resulted in the burnout and the changes in the level of burnout showed changes in the decision latitude (Arvidsson & Leo et al. 2019). However, there was one study which sought to understand the perceptions of the stress of the secondary school teachers & staff involved with a school based systematic change implementation in an attempt to turn around the otherwise ongoing attrition and attenuation of the teachers. Results for the same showed that there was indeed no correlation found between Stress levels as well as personality type at the beginning of year and at the end of the year.

RESEARCH METHODOLOGY –

Thane city was the area of study of the samples investigated in the research work. Online questionnaire being provided to the selected samples. The ideal samples size considered was 100 and all samples responded to the questionnaire. Convenience sampling method was used for research data collection. More significance was being given to the primary data collected for analysing the pattern of stress and anxiety. However, secondary data was also inferred for several interpretation of the primary data collected. The data was interpreted using graphical representation

PARTICIPANTS-

The survey was conducted over the 100 participant who were the teaching professionals out of which there were 44 males & 56 female participants. The participants considered were particularly based on the parameter of the nature of employment such as permanently, contractually or seasonally employed. The major focus of study was on the Indian population especially residing in Thane City.

PROCEDURE: -

Organisation Role Stress & Role Efficacy Scale –

The samples were tested with a combination of two self-administered tests through a google form. To avoid a bias of opinion, the questions were shuffled to get a better response.

Efficacy Scales –

The role of the individual in his organisation was analysed using the Role Efficacy Scale. The scale refers to worker's assessment of the atmosphere regarding the place of work. His attitude towards the workplace determines several factors like productivity, efficiency, confidence or even m his managerial skills. Several of the factors being considered are – problem solving mechanisms, role expectations, sensitivity, learning obstacles, handling pressure, team player & team work, office politics, general efficacies etc. for factoring analysis, several baselines, norms and scores are predetermined so as to calculate the exact of the person's Role Efficacy. This also helps the employee to analyse his belongingness to the organisation and the employer regarding the commitment levels

Following are the subscales mentioned in the survey –

1. **Inter-role Distance (IRD)** – conflict between the role played by the person in his/her family & that at the workplace. Related to the work-life balance.
2. **Personal Inadequacy (PI)** – Feeling of insufficiency or inadequacy

3. **Role Ambiguity (RA)** – Experience of lack of clarity pertaining the person's role in the family
4. **Role Stagnation (RS)** – Experience of lack of growth in organization
5. **CEN (CEN)** – Centrality-extent to which employee feels important
6. **Super – Ordination (SO)** – feeling that whatever person is doing in the organization is of larger value
7. **Pro – action (PRO)** – Scope the person has for taking the initiative in his job-related tasks
8. **Integration (INT)** – extent to which person's role in the organization helps him in utilizing the skills, knowledge, expertise etc.
9. **Inter-role Linkage (IRL)** – Extent of joint effort towards performing the task carried out in the organization.

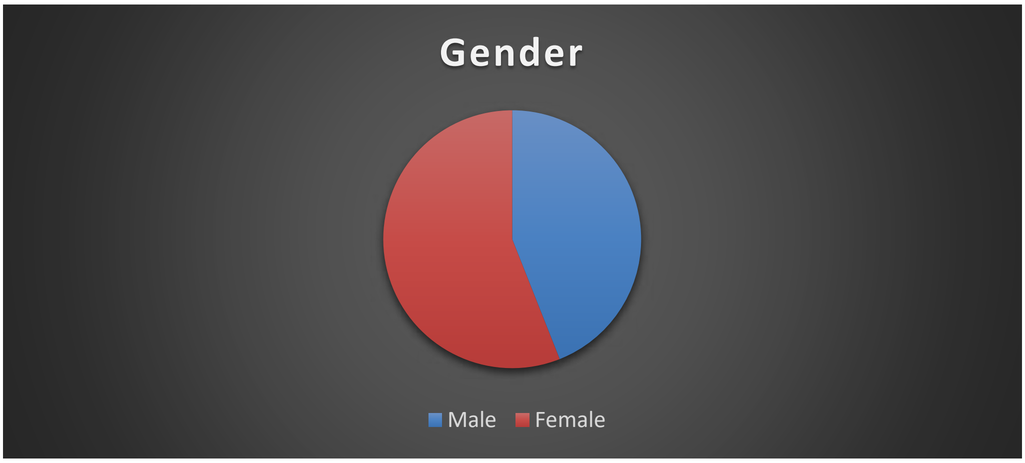
ANALYSIS & DATA INTERPRETATION –

A. Gender:

Out of the samples surveyed, majority of the samples are females. Males consist of 46% of the population while the females are 56%. Researcher had taken precaution to keep the uniformity in the gender of the samples for an impartial and unbiased opinion. It was seen that majority of the females were of the age group below 30 years and working on contractual basis, while males were between the age of 18 to 40 years and working either permanent or as freelancers. The gender distribution could be well be seen in the pie chart below.

Table no. 1- Composition of the sample based on gender

Gender	**Number**	**Percentage**
Male	44	44%
Female	56	56%
Total	100	100%



B. Age:

After the gender, the next parameter the researcher considered was the age group of the samples. Since the grant in aid jobs are quite rare, most of the teachers are working in the private sector on contractual basis. With the commercialization of the education sector, many of the teachers are linked to some private coaching classes as well. Some teachers do prefer to start own home tuitions and call themselves proprietors. All this is directly linked with the age of the sample. Like for example almost all the permanent job holders are above the age group of 40 years & samples below the age of 30 years are all on contract basis or seasonally employed in private sector. The table below would help us to analyse the age group classification.

Table No. 2- Composition of sample based on age

Age Group	Number	Percentage
18 – 30 years	71	71%
30 – 40 years	14	14%
40 – 50 years	9	9%
50 – 60 years	6	6%
60 years and above	0	0%
Total	100	100%

C. Work profile:

Due to the various categories of the job classes, the samples are segregated into three categories –

Table no.3- Classification within the sample based on work profile

Work Profile	Number	Percentage
Freelancer	10	10%
Private	82	82%
Government	8	8%
Total	100	100%

D. Nature of employment:

Since the grant in aid jobs are merely a dream for every aspirant pursuing in teaching field, most of the teachers in senior division of the college are satisfied with the clock hour, visiting, temporary or contractual kind of private employment. Given below is the table for the nature of employment –

Table no. 4: Classification of participants within the sample based on nature of employment

Nature of Employment	Number	Percentage
Permanent	29	29%
Contractual	61	61%
Seasonal	10	10%
Total	100	100%

The cross tabular inference between work profile & nature of employment is given below –

Table no. 5- Cross tabular inference between work profile & nature of employment

Work Profile / Nature of Employment	Permanent	Contractual	Seasonal	Total	%
Private	21	61	0	82	82%
Government	8	0	0	8	8%
Freelancer	0	0	10	10	10%
Total	29	61	10	**100**	
%	29%	61%	10%		

From the chart it is evident that the maximum number of employed teachers fall in the category of Contractual and Private working field. Adding to that there is a period wherein their contract expires in the month of April and month of May they are deemed to be unemployed. Also combined 30% of the teachers are either government employees enjoying a complete job security or are freelancers.

E. Faith in the employer:

Samples were asked about the faith or confidence they have in the employer regarding job security, welfare facilities, health care etc. the samples were asked to rate the confidence and faith on the score of 1 to 5, where 1 being the lowest and 5 being the highest. The data collected is given below –

Table no. 6: Faith in the employer

Faith in Employer	Number	Weights	No X Weight
Strongly Agree	12	5	60
Agree	2	4	8
Neutral	1	3	3
Disagree	42	2	84
Strongly Disagree	43	1	43
	∑ = 100		∑ = 198
198 / 100 = 1.98			

It could be seen from the data evaluated that majority of the samples are having low confidence pertaining to employers' willingness to employ them in the next academic year. In the pandemic situation, where job opportunities are getting reduced, employers also are making it tendency to enforce a pay cut and exploit the employees to full extent. Hence the statistical inference could be that on the scale of 1 to 5, 1 being lowest and 5 being highest the employee rate the employer as 1.98 on the scale of faith and confidence. The low confidence could be an impact factor on determining the stress levels amongst the teachers.

In the book named – "Actualizing Managerial Roles through Corporate Leadership: Exploring Indian Corporates" Dr. Tulika Saxena has said that there are some issues in regard to management decisions, deficiencies, faulty action plans, problems with corporate integration and transformation, policy framing and overall functioning. The hierarchal structure also hampers the open and frank communication. Span of Control, centralised planning process, selective acknowledgement of the work, bureaucracy, more emphasis on paper work and formalities, wide span of control etc lead to the increased stress level at workplace.

RESULTS AND DISCUSSION:

Table no. 7: Comparison of means with respect to the factors of Role stress & Efficacy

	Role Stress				Efficacy				
	IRD	PI	RA	RS	CEN	SO	PRO	INT	IRL
Permanent	80	90	80	86	50	30	35	46	50.1
Seasonal	44	83	77	79	40	45	30	49	34
Contractual	65	55.6	45.6	64	50	60	35.7	34	40
Individual means	63	76.2	67.53333	76.33333	46.66667	45	33.56667	43	41.36667
SD	14.76482	14.84408	15.55749	9.177267	4.714045	12.24745	2.538153	6.480741	6.64346

OVERALL MEAN	70.76 667				41.92				

Table no. 8: Overall means for stress and efficacy based on nature of employment

Nature of Employment	Stress	Efficacy
Permanent	84	42.22
Seasonal	70.75	39.6
Contractual	57.55	43.94

RESULTS &DISCUSSION: -

- **The stress levels were found to be very high whereas the efficacy levels were comparatively low**
- **Negative correlation was found showing that the increase in amount of stress was related to the decrease in amount of efficacy which was experienced by the participants**
- **The Mean for Personal Inadequacy was found to be highest (76.2), Followed by Role Ambiguity (67.53), In Efficacy scale it was found to be lowest for Pro - action - (33.6)**

This shows that increase in stress level had its impact on efficacy levels.

It can be observed in the above table that the job-related role stress levels were found to be much higher than the amount of role efficacy experienced by the employees. Moreso, the correlation analysis of the data showed that there was a negative correlation between the role stress and efficacy meaning the decrease in the amount of efficacy experienced among the group of the participant was indeed related to the increasing levels of the stress which ensued as a result of the lockdown imposed due to COVID-19.
On interviewing the participants, it was found that the high levels of stress that they were experiencing could indeed be attributed to the uncertain times and the erratic steps taken by many companies of downsizing the employees in the companies and institutions as they couldn't afford to keep them. Overall mean pertain to the factor of stress was found to be highest among the government employees which was **84.** The important reason that was found out during the interview was that since it was an institution aided by the government there were many administrative duties that were the part of job in government institutions. Moreso, these teachers were supposed to attend their duties after the interval of stipulated days which ultimately made them more insecure. The level of job stress was found to be lowest among the teaching professionals that were working on the contractual basis which was **57.55.** Interviewing the same revealed that most of the organization were enabling the work from home facilities for these teaching professionals. due to which they were very much at ease.

The levels of efficacy were found to be highest among the teachers working on the contractual basis which was **43.94** and at the same time, it was found to be lowest among the teachers who were working on the seasonal basis. It revealed that the teachers employed on the seasonal basis experienced the uncertainty in terms of finding a job as a visiting faculty during such dire times whereas, contractual teachers enjoyed latitudes as they taught in more than one place or institutions.

Considering the mean of overall population based on the subscales considered in the survey it was found that the mean for Personal Inadequacy was found to be highest **(76.2),** Followed by Role Ambiguity **(67.53),** In Efficacy scale it was found to be lowest for Pro - action **- (33.6).** This ultimately highlights the fact that be the nature of employment different the teachers in all the three sectors experienced the high levels of insufficiency at personal level & also somewhere they lost their enthusiasm to go an extra mile to perform their duties specifically during such dire times. Therefore, it can be found out that increase in the stress level had its impact on efficacy levels.

Limitations of the Study –

i. Efficacy and stress are the only parameters considered for evaluation.
ii. The area of study is limited to Thane City.
iii. The area of study is restricted to teaching professionals only.

SUGGESTIONS TO TEACHERS–

The following suggestions might help the teachers to reduce the level of stress and anxiety amongst the teachers. Stress and Efficiency are in negative relation, where stress increases efficiency collapses and viz. Hence is passive for the teachers to leave the habit of panic and focus on their self – improvement.

Sense of responsibility – since it is the most Nobel profession, teachers have a lot of social responsibility towards their students or the society in particular. Hence any rash or harsh step undertaken as a result of pay cut, non-payment of honorarium, mistreatment with regards to salary etc. could harm their career path in the long run. Hence, the key idea is to survive this tough time with a smiling face and then think about revival and growth. We should take baby steps and small steps at a time.

Risk taking attitude – the time is risky enough to seek out the wrath of unemployment. Hence, stay calm and not to take unnecessary steps to venture out and increase the risk of getting affected by the red virus.

Flexibility – gone is the time when the rigidity of the work was a 9 to 5 job. but now we need to venture out of the zone. Now we have to work both work for the home and also work from home. Resent agenda of the teachers is just to save the job at hand and survive for next 3 to 6 months.

Diplomacy–the best way to solve financial crisis is to negotiate with the management in diplomatic manner. Hot temper would not get you anywhere. Placing your demands in front of the manager would explain your hardship to them and would also be most professionally appropriate step.

Time and resource management – gifted are we that we have a shelter and food. Also, we have some excess resources by which we can indulge in luxuries. We must remember that we should not waste times such as these and complain; but invest the time for our own self development. Teaching is a profession where one person has to continuously

Emotional stability – now is not the time for the teachers to lose their nerves and get depressed. They are the nation builders and hence they should prepare a plan to maintain their composure. if a teacher loses his stability the students are going to get depressed as well.

Integrity – instead of complaining a teacher should always be honest with his or her work. He should give his 100 percent for the development of student. Even when the next academic year is unclear, he should be prepared with an approach to tackle the drawbacks in learning methodologies and device new strategies.

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લોકડાઉન દરમિયાન કૌશલ્યોના વિકાસ અંગેનો અભ્યાસ

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સારાંશ/Abstract

લોકડાઉનના સમય દરમિયાન કેવા પ્રકારના કૌશલ્યોનો વિકાસ થયો તે જાણવાના હેતુસર પ્રસ્તુત સંશોધન હાથ ધરવામાં આવેલ હતું.પ્રસ્તુત સંશોધનના હેતુઓ આ મુજબ હતા. 1. લોકડાઉન દરમિયાન વિવિધ કૌશલ્યોની જાણકારી મેળવવા પ્રશ્નાવલિની રચના કરી.2. શિક્ષક તાલીમાર્થીઓના લોકડાઉન દરમિયાન કૌશલ્યો પ્રત્યેની સભાનતા જાણવી.3. સર્જનાત્મકતા, શૈક્ષણિક ક્ષેત્રે વિકસેલ કૌશલ્યોની જાણકારી કેળવવી.4. શિક્ષક-તાલીમાર્થીઓના કૌશલ્યો અંગે પ્રાપ્ત પ્રતિચારોનું પૃથકકરણ અને અર્થઘટન કરી તારણો તારવવા. પ્રસ્તુત સંશોધન સર્વેક્ષણ પદ્ધતિએ હાથ ધરવામાં આવે હતું. વર્ષ 2020-21 દરમિયાન દક્ષિણ ગુજરાતની પ્રાથમિક અને માધ્યમિક શાળામાં શિક્ષણ કામ કરતા શિક્ષકો અને બી.એડ કોલેજોમાં અભ્યાસ કરતા તાલીમાર્થીઓ પ્રસ્તુત સંશોધનનું વ્યાપવિશ્વ હતું.નમૂનોઃ પ્રસ્તુત સંશોધનમાં દક્ષિણ ગુજરાતમાં આવેલ પ્રાથમિક અને માધ્યમિક શાળાના શિક્ષકો અને બી.એડ કોલેજના તાલીમાર્થીઓમાંથી 150 જેટલા શિક્ષકો અને બી.એડ કોલેજના તાલીમાર્થીઓનો નમૂનામાં સમાવેશ કરવામાં આવેલ હતો.પ્રસ્તુત સંશોધન માટે માહિતી એકત્રિત કરવા માટે સ્વરચિત પ્રશ્નાવલિનો ઉપયોગ કરવામાં આવેલ હતો. માહિતીનું પૃથકકરણ અને અર્થઘટન ટકાવારી અને ગુણાત્મક રીતે કરવામાં આવેલ હતું.શિક્ષક અને તાલીમાર્થીઓમાં વિશિષ્ટ કૌશલ્યો હતા.શિક્ષકો અને તાલીમાર્થીઓએ પોતાનામાં રહેલ કૌશલ્ય શોધવાનો પ્રયત્ન કર્યો હતો. લોકડાઉનના સમય દરમિયાન શિક્ષકો અને તાલીમાર્થીઓમાં લેખન, વાંચન, ચિત્રકામ, વ્યકિત વિકાસ, શારીરિક ક્ષમતા, રમત-ગમત, રસોઇકામ, , ICT નો ઉપયોગજેવા કૌશલ્યો વિકસ્યા હતા.

1. પ્રસ્તાવનાઃ

વર્તમાન સમયમાં વિશ્વહજી પણકોરોના મુકતનથી થઇ શકયુંસમગ્ર વિશ્વમાં કોરોનાનો કહેર વર્તાય રહ્યો છે. માર્ચ- એપ્રિલ મહિનામાં કોરોના અસરની શરૂઆત થઇ સમગ્ર વિશ્વમાં મોટાભાગના દેશોમાં લોકડાઉન રાખવામાં આવેલ હતું મોટા ભાગના લોકોએ 50 થી 60 દિવસથી વધુ સમય ઘરમાં જ રહેવું પડયુ હતું.

લોકડાઉનના સમયમાં ઘરમાં રહેવાને કારણે ઘણા લોકોને સમય પસાર કરવામાં મુશ્કેલીઓ પડી રહી હતી. તેવા સંજોગોમાં ઘરમાં રહીને ઘણા લોકોએ આત્મમંથન કરવાની કોશિશ કરી. પોતાની જાતને કોઇને કોઇ કાર્યમાં પરોવી રાખવાનો પ્રયત્ન કર્યો. દરેકે પોતાની જાતને ઓળખવાનો પ્રયત્ન આ સમય દરમિયાન કર્યો. ઘણા લોકોને પોતાનામાં કઇ વિશિષ્ટતા જડી હશે. કોઇને કોઇ કૌશલ્ય પોતાની અંદર જોવા મળ્યું હશે. તેમજ કૌશલ્યો વિકાસની પ્રવૃત્તિઓ પણ કરી હશે તો

લોકડાઉનના સમય દરમિયાન કેવા પ્રકારના કૌશલ્યોનો વિકાસ થયો તે જાણવાના હેતુસર પ્રસ્તુત સંશોધન હાથ ધરવામાં આવેલ હતું.

2. સમસ્યાકથન:

લોકડાઉન દરમિયાન કૌશલ્યોના વિકાસ અંગેનો અભ્યાસ

3. સંશોધનના હેતુઓ:

પ્રસ્તુત સંશોધનના હેતુઓ નીચે મુજબ છે.

1. લોકડાઉન દરમિયાન વિવિધ કૌશલ્યોની જાણકારી મેળવવા પ્રશ્નાવલિની રચના કરી.
2. શિક્ષક તાલીમાર્થીઓના લોકડાઉન દરમિયાન કૌશલ્યો પ્રત્યેની સભાનતા જાણવી.
3. સર્જનાત્મકતા, શૈક્ષણિક ક્ષેત્રે વિકસેલ કૌશલ્યોની જાણકારી કેળવવી.
4. શિક્ષક-તાલીમાર્થીઓના કૌશલ્યો અંગે પ્રાપ્ત પ્રતિચારોનું પૃથકકરણ અને અર્થઘટન કરી તારણો તારવવા.

4.સંશોધનના પ્રશ્નો:

પ્રસ્તુત સંશોધનના પ્રશ્નો નીચે મુજબ છે.

1. લોકડાયન દરમિયાન શિક્ષકો અને તાલીમાર્થીઓમાં કેવા કેવા કૌશલ્યો વિકસ્યા હશે?
2. લોકડાઉન દરમિયાન શિક્ષકો અને તાલીમાર્થીઓની સર્જનાત્મકતા કેવી રહી હશે ?
3. લોકડાઉન દરમિયાન વિકસેલ શૈક્ષણિક કૌશલ્યો કયા-કયા હશે ?

5. સંશોધનનુંમહત્ત્વ:

પ્રસ્તુત સંશોધનનું મહત્ત્વ નીચે મુજબ છે.

1. પ્રસ્તુત સંશોધન દ્વારા શિક્ષકો અને તાલીમાર્થીઓના વિવિધ કૌશલ્યોની માહિતી પ્રાપ્ત કરી શકાય હતી.
2. શિક્ષકો અને તાલીમાર્થીઓમાં કયા-કયા કૌશલ્યો વિકસ્યા તે સંદર્ભે માહિતી પ્રાપ્ત કરી શકાય હતી.
3. વિવિધક્ષેત્રે વિકાસ પામી રહેલ કૌશલ્યોની જાણકારી મળી હતી.
4. શિક્ષકો અને તાલીમાર્થીઓમાં વિવિધ કૌશલ્યના વિકાસ માટે જરૂરી માર્ગદર્શન અને તાલીમનું આયોજન કરવા પ્રસ્તુત સંશોધનનું મહત્ત્વ છે.

6. સંશોધનનુંસીમાંકન:

1. પ્રસ્તુત સંશોધનમાં માત્ર શિક્ષકો અને બી.એડના તાલીમાર્થીઓનો જ નમૂનામાં સમાવેશ કરવામાં આવેલ હતો.
2. પ્રસ્તુત સંશોધનમાં સ્વ-રચિત ઉપકરણનો ઉપયોગ કરવામાં આવેલ હતો.
3. પ્રસ્તુત સંશોધનમાં માત્ર દક્ષિણ ગુજરાતના શિક્ષકો અને તાલીમાર્થીઓનો જ સમાવેશ કરવામાં આવેલ હતો.

7. સંશોધનપદ્ધતિઃ

પ્રસ્તુત સંશોધનમાં પ્રશ્નાવલિ દ્વારા જરૂરી માહિતી પ્રાપ્ત કરવામાં આવેલ હતી. પ્રાપ્ત કરેલ માહિતીનું વિશ્લેષણ કરી, પૃથકકરણકરી, અર્થઘટન કરીને તારણો તારવવામાં આવ્યા હતા.
આમ, પ્રસ્તુત સંશોધન સર્વેક્ષણાત્મકપદ્ધતિએ હાથ ધરવામાં આવેલ હતું.

8. વ્યાપવિશ્વ અને નમૂનોઃ

પ્રસ્તુત સંશોધન દક્ષિણ ગુજરાતમાં આપેલ પ્રાથમિક- માધ્યમિક શાળાના શિક્ષકો અને બી.એડ કોલેજના તાલીમાર્થીઓ પૂરતુ સીમિત હતુ. આથી પ્રસ્તુત સંશોધનનું વ્યાપવિશ્વ આ મુજબ હતું. વર્ષ 2020-21 દરમિયાન દક્ષિણ ગુજરાતની પ્રાથમિક અને માધ્યમિક શાળામાં શિક્ષણ કામ કરતા શિક્ષકો અને બી.એડ કોલેજોમાં અભ્યાસ કરતા તાલીમાર્થીઓ પ્રસ્તુત સંશોધનનું વ્યાપવિશ્વ હતું.

નમૂનોઃ પ્રસ્તુત સંશોધનમાં દક્ષિણ ગુજરાતમાં આપેલ પ્રાથમિક અને માધ્યમિક શાળાના શિક્ષકો અને બી.એડ કોલેજના તાલીમાર્થીઓમાંથી 150 જેટલા શિક્ષકો અને બી.એડ કોલેજના તાલીમાર્થીઓનો નમૂનામાં સમાવેશ કરવામાં આવેલ હતો.

9. ઉપકરણઃ

પ્રસ્તુત સંશોધન માટે માહિતી એકત્રિત કરવા માટે સ્વરચિત પ્રશ્નાવલિનો ઉપયોગ કરવામાં આવેલ હતો. જેમાંકુલ- 10 પ્રશ્નો હતા. જેમાંથી ત્રણ પ્રશ્નમાં વિકલ્પ પસંદ કરી જવાબ આપવાનો હતો. અને 7 પ્રશ્નમાં મુકત જવાબો આપવાના હતા.

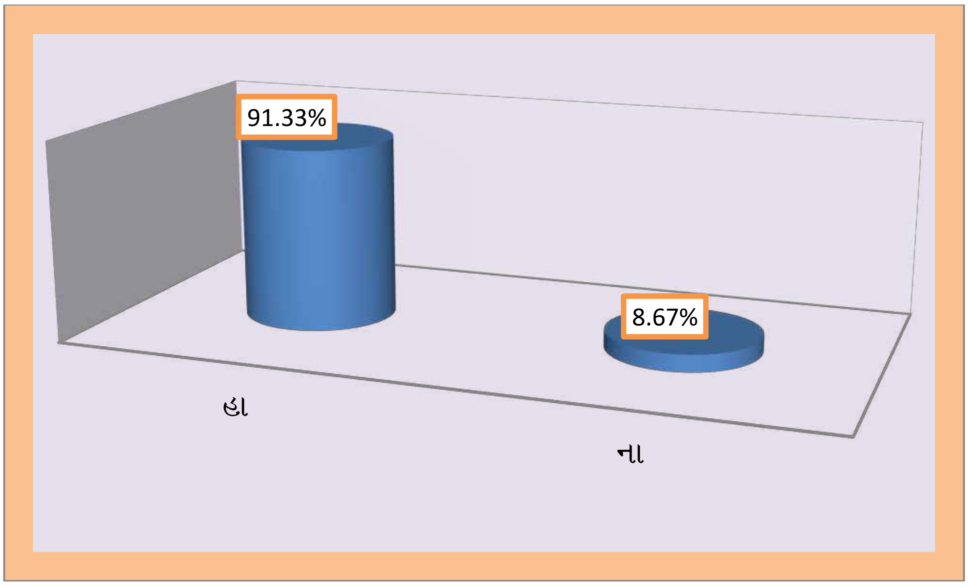
10. માહિતી એકત્રિકરણની રીતઃ

પ્રસ્તુત સંશોધન માટે જરૂરી માહિતી એકત્રિત કરવા માટે રચેલ પ્રશ્નાવલિનું ગુગલ ફોર્મમાં નિર્માણ કરી નમૂનાના પાત્રો પાસેથી ઓનલાઇન માહિતી ગુગલ ફોર્મદ્વારા લેવામાં આવેલ હતી.

11. માહિતીનુંપૃથકકરણઅનેઅર્થઘટનઃ

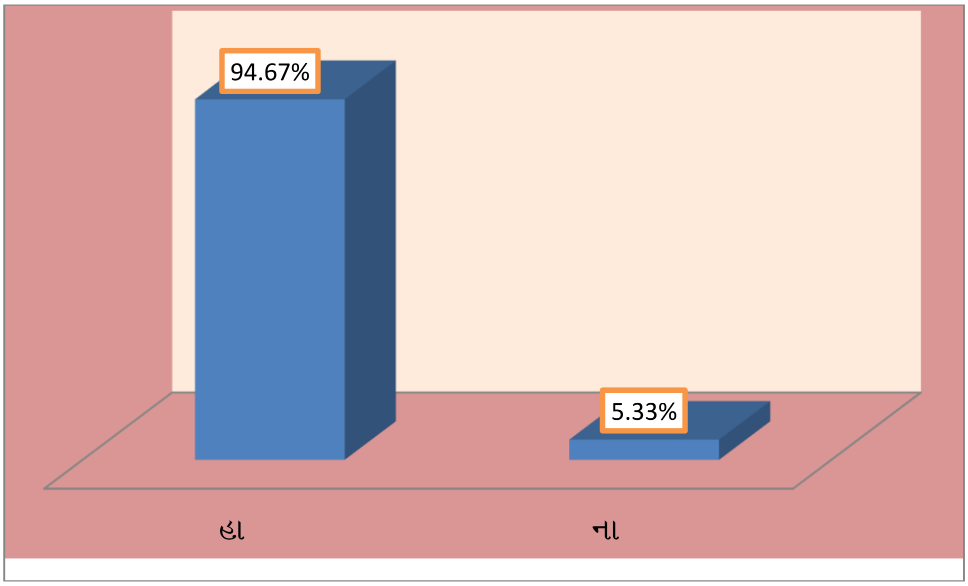
પ્રાપ્ત માહિતીનું પૃથકકરણ અનેઅર્થઘટન ટકાવારી અને ગુણાત્મક રીતે કરવામા ંઆવેલ હતું.
પ્રશ્ન-1 તમે માનો છો તમારામાં કોઇ વિશિષ્ટ કૈાશલ્ય છે ?

ઉપરોકત પ્રશ્નમાં 150 માંથી 137 શિક્ષક-તાલીમાર્થીઓએ હા માં જવાબ આપ્યો હતો અને 13 શિક્ષક-તાલીમાર્થીઓએ ના મા જવાબ આપેલ હતો. એટલે કે 91.33% લોકોએ હા માં પ્રતિચારો આપ્યા હતા. આથી કહી શકાય કે શિક્ષક અને તાલીમાર્થીઓમાં વિશિષ્ટ કૈાશલ્યો હતા.



પ્રશ્ન-2 લોકડાઉન દરમિયાન તમે તમારામાં કૌશલ્ય શોધવાનો પ્રયત્ન કર્યો હતો ?

ઉપરોક્ત પ્રશ્નમાં 150 માંથી 142 લોકોએ હા માં જવાબ આપ્યો હતો અને 8 શિક્ષક-તાલીમાર્થીઓએ ના મા જવાબ આપેલ હતો. એટલે કે 94.67 % લોકોએ હા માં પ્રતિચારો આપ્યા હતા. આથી કહી શકાય કે શિક્ષકો અને તાલીમાર્થીઓએ પોતાનામાં રહેલ કૌશલ્ય શોધવાનો પ્રયત્ન કર્યો હતો.



પ્રશ્ન-3 લોકડાઉનના સમય દરમિયાન તમને કયા-કયા કૌશલ્ય પોતાનામાં જોવા મળ્યા ?

ઉપરોક્ત પ્રશ્નના ઉત્તરમાં નીચે મુજબ સામાન્યતઃ ઉત્તરો પ્રાપ્ત થયેલા હતા.

લેખન, વાંચન, ચિત્રકામ, વ્યકિત વિકાસ, શારીરિક ક્ષમતા, રમત-ગમત, રસોઇકામ,વિચારો કેળવવા, સિલાઇ, સંગીત, કાવ્ય લેખન, પરીક્ષાની તૈયારી, વેસ્ટમાંથી બેસ્ટ, મટીરિયલ નિર્માણ,યોગ ધ્યાન, કોમ્પ્યુટર સ્કિલ.

પ્રશ્ન-4 લોકડાઉનના સમય દરમિયાન કઇ-કઇ સર્જનાત્મક પ્રવૃત્તિઓ કરી ?
વેસ્ટમાંથી બેસ્ટ, પેપર કટિંગ, બાગકામ, યોગ,શારીરિક ક્ષમતાઓનો વિકાસ,ઘરકામની ચીજવસ્તુઓનું સમારકામ, સંગીત,ખાવાની વસ્તુઓમાં વૈવિધ્યતા, સિલાઇકામ, માસ્ક બનાવ્યા,વોલહેંગિગ, કાગળની બનાવટો, હેન્ડિક્રાફટ તોરણ, કવિતાસર્જન, લેખ,ચિત્રો,પ્રશ્નબેંક બનાવવી, મહેંદી , ICT ના ઉપયોગથી શિક્ષણ, ભરતકામ.

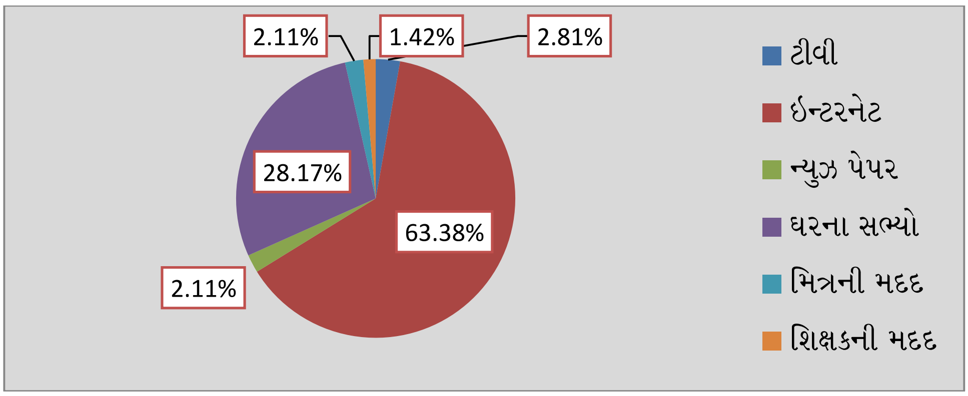
પ્રશ્ન-5 કઇ-કઇ વસ્તુઓનું નિર્માણ કર્યું?
માટીકામ, ઘર રમકડાં, ગાર્ડન, ખેતરામાં ગોડ-વાઢનું કામ, બાગને સજાવ્યો,કેક,આઇસક્રીમ, ટોપી,ગાદલાં,સિલાઇકામથી કપડા, માસ્ક, ક્લોક ડિઝાઇન, પેપર ક્રાફટ, શો-પીસ, કપ-ઓફ-ફ્લાવર.

પ્રશ્ન-6 કયા-કયા ઘરકામ શીખ્યા?
રસોઇ,સફાઇ, જયુસ બનાવ્યુ, ચટણી,અથાંણા,વેફર, બ્રેડ બનાવી, બાગકામ,સુશોભન, આર્ટ-ક્રાફટ.

પ્રશ્ન-7 ઘરકામમાં કયા-કયા કૌશલ્યો વિકસ્યા ?
રસોઇ, સ્વચ્છતા, ગણન કૌશલ્ય,સ્વસ્થતા, બચતનો મૂલ્ય, અનુકૂલન, લાગણીને અંકુશમાં રાખવું, કરકસર.

પ્રશ્ન-8 લોકડાઉનમાં જોવા મળેલ કયા-કયા કૌશલ્યનો ભવિષ્યમાં વિકાસ કરશો ?
લેખન, વાંચન, રસોઇ,સ્વચ્છતા, કરકસર,ચિત્રકામ, ઓનલાઇન ટીચીંગ, તોરણ બનાવવુ, મટીરિયલ નિર્માણ,સંગીત.

પ્રશ્ન-9 કયા માધ્યમોથી કૌશલ્યો વિકસ્યા ?
ઉપરોકત પ્રશ્નના ઉત્તરમાં ટીવીના માધ્યમથી-4(2.81%),ઇન્ટરનેટના માધ્યમથી-90(63.38%) , ન્યુઝ પેપર-3(2.11%), ઘરના સભ્યોની મદદથી-40(28.17%) મિત્રોની મદદથી-3(2.11%),શિક્ષકની મદદથી-2(1.42%), શિક્ષકો અને તાલીમાર્થીઓના પ્રતિચારો મળેલ હતા. આથી કહી શકાય કે શિક્ષકો અને તાલીમાર્થીઓએ સૌથી વધુ ઇન્ટરનેટના માધ્યમથી કૌશલ્યો વિકસ્યા હતા.



પ્રશ્ન-10 શૈક્ષણિક ક્ષેત્રે કયા-કયા કૌશલ્યો વિકસ્યા ?
લેખન, વાંચન, ગણન,મનન, ચિંતન, વિડીઓ બનાવ્યા, ICT નો ઉપયોગ, કાવ્યો બનાવ્યા, Digital test , વાર્તાકથન, પરીક્ષાને લગતી તૈયારી.

12. તારણોં:

પ્રસ્તુત સંશોધના તારણો નીચે મુજબ મળેલ હતા.

1. શિક્ષક અને તાલીમાર્થીઓમાં વિશિષ્ટ કૌશલ્યો હતા.
2. શિક્ષકો અને તાલીમાર્થીઓએ પોતાનામાં રહેલ કૌશલ્ય શોધવાનો પ્રયત્ન કર્યો હતો.
3. લોકડાઉનના સમય દરમિયાન શિક્ષકો અને તાલીમાર્થીઓમાં લેખન, વાંચન, ચિત્રકામ, વ્યકિત વિકાસ, શારીરિક ક્ષમતા, રમત-ગમત, રસોઇકામ, , ICT નો ઉપયોગ, કાવ્યો બનાવ્યા, Digital test,વાર્તાકથન, પરીક્ષાને લગતી તૈયારી, ઓનલાઇન ટીચીંગ, તોરણ બનાવવુ, મટીરિયલ નિર્માણ,સંગીત, ગાદલાં,સિલાઇકામથી કપડા, માસ્ક, કલોક ડિઝાઇન, પેપર ક્રાફટ, શો-પીસ, કપ-ઓફ-ફલાવર જેવા અનેક કૌશલ્યોનો વિકાસ થયેલ હતો.
4. શિક્ષકો અને તાલીમાર્થીઓએ સૌથી વધુ ઇન્ટરનેટના માધ્યમથી કૌશલ્યો વિકસ્યા હતા.

13. ફલિતાર્થો:

પ્રસ્તુત સંશોધનના ફલિતાર્થો નીચે મુજબ છે.

1. લોકડાઉન જેવા ફ્રી શિક્ષકો અને તાલીમાર્થીઓ ધારે તો પોતાનામાં ઘણા કૌશલ્યોનો વિકાસ કરી શકે.
2. વેકેશન જેવા સમયમાં શિક્ષકો અને તાલીમાર્થીઓએ વિશિષ્ટ કૌશલ્યો ખીલવવા જોઇએ.
3. ઈન્ટરનેટના માધ્યમથી ઘણા બધા કૌશલ્યોનો વિકાસ કરી શકાય છે.
4. દરેક વ્યકિતમાં કોઇ ને કોઇ કૌશલ્ય હોય જ છે.
5. દરકે પોતાનામાં રહેલ કૌશલ્યને ઓળખીને વિકસાવવું જોઇએ.

14. સમાપન:

ઉપરોકત સંશોધનના પરથી જાણવા મળે છે કે સમયનો અવકાશ મળે ત્યારે દરેકે પોતાની અંદર રહેલા કૌશલ્યને સેળખવા જોઇએ અને તેના વિકાસ માટે જુદા જુદા માધ્યમોની મદદ લઇ પોતાના કૌશલ્યને વિકસાવવા પ્રયત્નો કરવા જોઇએ.

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સોરઠી ભક્ત કવયિત્રીઓ

ડૉ .જલ્પાબેન ડી.ડાભી

મધ્યકાલીન યુગમાં અનેક સંતો અને ભક્તોએ પદ, ભજન અને આખ્યાન જેવી રચનાઓ ધ્વારા ધર્મજ્યોતિ પ્રગટાવી છે. સૌરાષ્ટ્રના સંતો જુદી-જુદી સંત પરંપરાઓને અનુસર્યા છે, કોઇ કબીર તો કોઇ ગોરખપંથી બન્યા છે. પરમ કૃપાળુ પરમાત્માને પ્રાપ્ત કરવાના જ્ઞાન, ભક્તિ અને યોગ આ ત્રણેય માર્ગોનો ત્રિવેણી સંગમ સૌરાષ્ટ્રના સંતોની વાણીમાં જોવા મળે છે, સૌરાષ્ટ્રની ભૂમિ પર મૂળદાસ, ભાણદાસ, રવિસાહેબ, ખીમસાહેબ, દાસી જીવન એન હોથી જેવા સંતોએ અલખની ધુણી ધખાવી હતી. આ સંત પરંપરામાં સાધના કરનાર માત્ર પુરુષો જ ન હતાં. સૌરાષ્ટ્રની કેટલીક સ્ત્રીઓએ પણ આ માર્ગ અપનાવ્યો છે. આમાં મહા માર્ગને અનુસરનાર સ્ત્રીઓની સંખ્યા વધારે છે. સૌરાષ્ટ્રના સ્ત્રી સંતોમાં દેવળદે, લીરબાઇ, ગંગાસતી વગેરે મહત્વનું સ્થાન ધરાવે છે.

સૌરાષ્ટ્રની વિવિધ સંત વાણી પરંપરાઓમાં આ સ્ત્રી સંતો આગવું સ્થાન ધરાવે છે. આ સ્ત્રી સંતોના ભજનોની ખુબ ઓછી માહિતી મળે છે. પણ જેટલા ભજનો મળ્યા છે તે ખુબ જ ચમત્કારી અને અલૌકિક છે આ સ્ત્રી સંતોના ભજનો આજે પણ લોકકંઠે કંઠસ્થ પરંપરામાં જળવાયા છે. આ સ્ત્રી સંતોનું જીવન અને ભજન વાણી ખુબ જ ઉચ્ચ કોટીના હતાં

- **સોરઠ પરિચય:-**

" સોરઠ ધરા ન સંચર્યો, ન ચડ્યો ગઢ ગીરનાર,
ન નાહ્યો દામો રેવતી, અફળ ગયો અવતાર"

સોરઠ એક માત્ર પ્રદેશ વિશેષ નામ જ નથી પણ એક સંસ્કૃતિ છે, અસ્મિતા છે. જેની પ્રાચીન સંસ્કૃતિ યશોગાથા છે. ગુજરાતના સુલતાનોએ સૌરાષ્ટ્રના દક્ષિણ પ્રશ્ચિમ પ્રદેશને સોરઠ નામે ઓળખાવવો શરુ કર્યો તે પહેલા શાતમી થી દસમી શદીમાં સૌરાષ્ટ્રમાં રચાયેલા સૌરાષ્ટ્રીય જૈન તીર્થધર્મો પરના ગ્રંથોમાં સૌરાષ્ટ્રના સ્થાને સુરઠા –સુરટ્ટ જેવા શબ્દો પ્રયોજાયેલા છે. પંદરમી સદીમાં રચાયેલા "કાન્હડદે પ્રબંધ" અને વસંત વિલાસ" માં પણ સોરઠા શબ્દ પ્રયોજાયો છે. મુસ્લિમોએ સૌરાષ્ટ્રમાં સામ્રાજ્ય સ્થાપ્યું તે પહેલા રચાયેલું અપભ્રશકાલીન જૈન સાહિત્યમાં,બ્રામ્હણ ગ્રંથોમાં અને લોકસાહિત્યની સંખ્ય કૃતિઓમાં સોરઠ શબ્દ પ્રયોગ વારવાર થયેલ છે.

સોરઠ શબ્દ વિશે ગુજરાતી પ્રમાણભૂત શબ્દ કોષ " ભગવદગોમંડળ " માં નોધ્યું છે કે-
"ગીરનારની આસપાસનો એક પ્રાંત, સૌરાષ્ટ્રનો એક ભાગ, ભારતના પશ્ચિમ કિનારાના એક ફળદ્રુપ દ્રીપકલ્પ"

" ગજવતો ઈ ગીર ત્રાડે કુદે કેસરી, એકલ હિન્દવીર, દુનિયા પરના દેખશો,
તેજણ તારોતાર, કાનસુરીયુ કમાન થઇ, સોરઠનો શણગાર ક્યા નિરખશો નુરજહાં
ભગરી સોરઠભેસ, ગોધન ધાટે ધાટીલા, ઘી દહીં દુધલ દેશ, મીઠા ક્યાય મળે નહિ,
ફૂળો કાઠીયાવાડ, ભાવભીનોને ભોળિયો, જીભહાલે હાડ પરણોગતનો પરોહી,
ખડતલ ને ખમનાર, જમીન જાને કેળવી, ખાતરનો ખાનાર, ખેડુ સોરઠ ખંડનો
સુરતા ભીનો સ્નેહ , સ્નેહભીના સાંજણા, ચાહનાભીની ચેહ, પ્રેમશોર્યના પારખા.
ઉઠે કમકમી કાળ, ખાંભી ખોળી ખળભળે, પાણા કરે પીતાળ, દુહો સોરઠ દેશનો "......૧

ભૌગોલિક દર્ષ્ટિએ સોરઠના ઘેડ, નાઘેર, ગિર, કાંઠાળ અને મધ્ય સોરઠ એમ વિભાગો પડે છે. અહી ઓઝત, ઉબેણ, હિરણ, સરસ્વતી, કપિલા, અંબાજળ, મંધુવંતી, કાળવો, સિંગવડો વગેરે મુખ્ય નદીઓ વહે છે. તો દ્વારકા ગીરનાર, માધવપુર, ભાલકાતીર્થ, પ્રભાસપાટણ જેવા ધાર્મિક સ્થળોનું અનેરું મહત્વ છે. આપણા આજના ગુજારાતના નકસા પ્રમાણે સૌરાષ્ટ્રના અગિયાર જીલ્લાઓ છે જે

પોતપોતાની આગવી વિશેષતાઓ ધરાવે છે. આમ સોરઠ પ્રદેશ ખુબ જ રમણીય છે. આવા રમણીય અને ધાર્મિક પ્રદેશ સોરઠમાં થયેલ સંત કવિયત્રીની માહિતી નીચે મુજબ મેળવી શકાય.

- **ભક્ત કવયિત્રી સતી દેવળદે:-**

મહાપંથ નીજાર પંથની પરંપરામાં જતિ-સતિ સંત યુગલનું મહત્વ છે. સ્ત્રી પુરુષ બંનેનો ધર્મ છે. ક્યારેક તો સ્ત્રીનું સ્થાન ઉચું જોવા મળે છે. એટલે કે સ્ત્રી ગુરુ સ્થાને હોય છે. લાખાને લોયાણે ઉપદેશ આપ્યો, જેસલને તોરલે ઉપદેશ આપ્યો આવા અનેક ઉદાહરણો છે. આવા સંત યુગલોમાં દેવાયત પંડિતની સાથે તેમના પત્ની દેવળદેનું પણ નામ બોલાય છે. દેવાયત પંડિતના જીવનની જેમ દેવળદે ના જીવન વિશે પણ આછી-પાતળી વિગતો મળે છે. એક દંતકથા રૂપે કહેવાય છે.

રામદેપીરના પાટના ઉત્સવમાં હાજર રહેલ સંત યુગલોમાં દેવાયત પંડિત તેમના પત્ની દેવળદે પણ હતા. આવું હરજી ભાટી એક ભજનમાં નોંધે છે. દેવાયત પંડિત સાથે દેવળદે પણ હેમાળે હાડ ગાળવા ગયેલા એવી લોક્વાયીકા છે. દેવળદે અને દેવાયત પંડિત બંનેના ગુરુ શોભાજી હતા.

કેવાય છે કે દેદલ સાધુની ઝુપડીમાં દેવળદેના લગ્ન દેવાયત પંડિત સાથે થયેલા દેવળદે અપ્સરા હતાં લગ્ન કરવા માટે તેમને બે શરતો મૂકી હતી એક દેવાયત મારા પર ખોટો આરોપ મુકશે કે મુકાવશે અથવા મનમાં મારા વિશે ખોટા વિચાર લાવશે ત્યારે હું ચાલી જઈસ અને બીજું એક હું જ્યારે દેવને બોલાવું ત્યારે તે મારી પાસે હાજર થશે. એ સમયે કોઈએ આવવું નહિ. દેવાયત પંડિતએ આ બંને શરતો કબુલ કરી રાખી.

લગ્ન પછી પતિ-પત્ની સૌરાષ્ટ્રમાં આવ્યા ઘણો સમય વિત્યા બાદ દેવળદે પોતાના દેવ ઇન્દ્રને બોલાવી તેની સાથે વાત કરતા હતાં દેવાયત પંડિતએ પૂછ્યું, દેવી તમે કોની સાથે વાત કરો છો ? દેવળદેએ કહ્યું હું તો મારા દેવ ઇન્દ્ર સાથે વાતકરું છું. પણ દેવાયત પંડિતને શકા ગઈ કે દેવળદે કોઈ પર પુરુષ સાથે વાત કરે છે. દેવાયત પંડિત નાઆા ખોટા વ્હેમનો દેવળદેને ખ્યાલ આવી ગયો શરતનો ભંગ થયો અને દેવળદે રિસાઈને ચાલ્યા ગયા.

બીજી દંતકથા પ્રમાણે દેવાયત પંડિતે શોભાજી પાસેથી દિક્ષા લીધી ત્યારે ગુરુએ આદેશ આપ્યો ત્યારે તારે સાધુ જીવન નહિ પણ તારે સંસારી જીવન જીવવાનું છે. ગુરુની આજ્ઞા પ્રમાણે દેવાયત પંડિતે દેવળદે સાથે લગ્ન કર્યા દેવળદે સાધ્વી સ્ત્રી હતી ઉપરાંત સ્વમાની અને હિમંત વાળી પણ હતી. દેવાયત એકવાર દેવળદેના શીલ ઉપર શંકા કરી ત્યારે તે દેવાયત પંડિતનું ઘર છોડી ચાલી નીકળ્યા આમ દેવાયત પંડિત અને દેવળદેના દાંપત્યજીવન વિશે કેટલીક વાતો લોક મુખે સાંભળવા મળે છે. પણ એટલું ચોક્કસ છે કે દેવળદે પતિ સાથે ભક્તિ માર્ગે આગળ વધ્યા હતા.

દેવળદેનું એક ભજન મળે છે. વિશેષ ભજનો હશે પરંતુ કાલની ગર્તામાં ક્યાંક વિલીન થઇ જવાની સંભાવના છે. છતા પણ એક આ ભજનથી તે સંત કવયિત્રી પ્રસિદ્ધ છે. પતિના અવસાન સમયે રચાયેલુ ગણાતું તેમનું સુપ્રસિદ્ધ ભજન...

" હંસા રાજા અબ મત છોડો અમને એકલા
આરે કાયાનો કોણ માલમી
હંસારાજ એક રે વાડીના દોનું અમે ઝાડવાં
માળી રે હતો ઈ હાલ્યો ગીયો".......૨.

આ ભજન જ્યારે કોઈ સાધેલા ભજનિકને સ્વરે રેલાય છે. ત્યારે શ્રોતાઓને કારુણ્ય ભાવનો અહેસાસ કરાવે છે. દેવાયત પંડિત અને દેવળદે સૌરાષ્ટ્રનું તેજસ્વી સંત યુગલ છે.

- **ભક્ત કવયિત્રી રતનબાઈ:-**

ભક્ત કવયિત્રી રતનબાઈ જુનાગઢની વણકર જ્ઞાતિના હતાં નરસિંહ મહેતાના જીવનમાં હારનો પ્રસંગ બન્યો આશરે ઈ.સ.૧૫૧૨ ત્યારે તે હયાત હતા ત્યારે તેમની ઉમર કેટલી હશે તે નિશ્ચિત કરી શકાતું નથી વળી રતનબાઈ અને નરસિંહ મહેતા વચ્ચે શો સંબધ હતો તે બાબતે પણ અનેક મત મતાંતરો ચાલે છે. કોઈ રતનભાઈ ને નરસિંહ મહેતાની શિષ્ય કહે છે. તો કોઈ નિકટની સગી તરીકે

ઓળખાવે છે, તો કોઇ વળી ગુરુ હોવાનો દાવો કરે છે. પરંતુ રતનબાઇ અને નરસિંહ મહેતા વચ્ચે ભક્તિના નાતે એક પ્રવિત્ર નાતો બંધાયો એ નિ:શંક છે. રતનબાઇના જીવનની સંપૂર્ણ હકીકતો ભલે પ્રાપ્ત થતી નથી. પરંતુ તેના પદ તેને એક ભક્ત કવયિત્રી તરીકે પ્રસ્થાપિત કરે છે.

ગુજરાતી મધ્યકાલીન ભક્ત કવયિત્રીઓમાં રતનબાઇ સમયની દ્રષ્ટીએ પ્રથમ સ્થાનના અધિકારી છે. રતનબાઇ પહેલા કોઇ ભક્ત કવયિત્રી થયાનું જાણવા મળ્યું નથી. નરસિંહ મહેતાને જેલમાંથી છોડાવા ભગવાન કૃષ્ણને વિનંતી કરતા પાંચ પદ પ્રાપ્ત થાય છે. આ ભજનો પંચપદી કહેવામાં આવે છે. સળંગ એક સાથે ગાઈ શકાય તેવા ચાર ભજનોને શોહર કહેવામાં આવે છે.

રતનબાઈએ ગાયેલી આરાધનાથી કહેવાય છે કે ભગવાન સાક્ષાત ભક્ત નરસિંહ મહેતાની વ્હારે દોડી આવે છે. તેમાં કેટલી ઉચ્ચ કોટીની ભક્તિ ભાવના છે. તેથી તો આ ભક્ત કવયિત્રીની આરાધનાનો પડઘો આજ સુધી સંભળાય છે. પ્રભુના દર્શન કરવા માટે કેટલાક સંતો ભક્તો પ્રાર્થના, અર્ચના,તપ, ધ્યાન, યોગ, સમાધિ કરતા રહ્યા છે. દરેક સંતો ભક્તોની એક જ ઇચ્છા પ્રભુ એમને દર્શન દે. જયારે ભક્ત કવયિત્રી રતનબાઇએ બીજા ભકતની વારે આવવા પ્રભુને આરાધ્યા છે. એમના પાંચ પદોમાં પ્રભુ પ્રાપ્તિનો સ્વીકાર છે.

" શામળિયા અમ ઘેર આવો રે....
કહું મારા મનડા કેરી વાત.
મોગરાની માળા રે લટકતી લાવજે રે....
રાણીયા જુઓ વીતી ગઈ રાત"......૩

રતનબાઈ પ્રભુને કહે છે એક ફૂલની માળા લઈને જલ્દી આવી જાય નહિ તો સવારે રાજા માંડલિક નરસિંહને મારી નાખશે.

"તમારે જગતમાં ભક્તો અનેક છે..
અમારે તો તમે એક ભગવાન,
રતનભાઇ કહે છે રે પ્રભુ ! પધારીયો રે..
વ્હાલા હાર આપી ને રાખો માન.....૪

ઘણી વિનંતી કરવા છતા પ્રભુ આવ્યા નથી રતનબાઇ નો વિષાદ ઘેરો બનતો જાય છે. તે વધુ ગહન ભાવે પ્રભુને કરગરવા લાગે છે. અંતે પ્રભુ રતનબાઈની વિનંતી સાંભળીને દોડતા આવે છે. સીધા નરસિંહ મહેતા પાસે જવાને બદલે રતનબાઇ પાસે આવે છે. જેમ કે.

" રતનબાઈની વિનંતી રે, સાંભળી દામોદર રાય રે....
આજ્ઞાનથી હારી ઉઠ્યાને, દાસીને ચાંપી રુદિયા માયરે".....૫

રાતનબાઈના પદો નરસિહ મહેતાના હારમાળાના પદો સાથે સરખાવી શકાય એટલે કવિ પ્રતિભાની દ્રષ્ટીએ પદો ગુણવતાવાલા છે. રતનબાઇમાં ઉચ્ચ કોટિની કવિત્વ શક્તિ ભલે ન હોય પરંતુ ભક્તિની આરત અને પ્રભુ શ્રધ્ધા ઉત્કટ છે. પદોની ગેયતા, લય અને બાંધણી એકસરખી છે. આ પદોમાં છંદ અલંકાર કલ્પન અને પ્રતિક વગેરે તત્વો પણ જોવા મળેલ છે. વિશેષ ધ્યાન ખેચનાર બાબત તો એ છે કે આ પાંચેય પદોનું અવતરણ ફક્ત નરસિંહ મહેતાને જેલમાંથી મુક્ત કરવા માટે પ્રભુને પ્રાર્થના કરવા માટે જ થયું છે.

- **સતી લીરબાઇ :-**

જુનાગઢથી આશરે ૧૫ કી.મી દુર ઉબેણ નદીના કાઠા ઉપર આવેલું સુંદર રળિયામણું મજેવડી ગામ. આ ગામમાં એક લુહાર ભક્ત રહેતા હતા. તેમને ત્યાં એક દ્કીનો જન્મ થયો. એ દીકરી મોટી થતાં માં-બાપમાં પડેલા ધર્મ-ભક્તિના પ્રબળ સંસ્કારો દીકરીમાં ઉતરે છે. માતા-પિતા બંને મહાપંથના ભક્ત હતાં. સંસ્કારી નીતિમાન અને ભક્તિમય જીવન જીવતા હતાં. લીરબાઇ માં બાળપણથી જ આ સંસ્કારો પાડવા લાગ્યા.

દંતકથા તો એવી છે કે, દેવાયત પંડિત જ્યારે દેવતણખીને ત્યાં ધરો સંધાવવા આવ્યા ત્યારે લીરબાઇ ઘોડિયામાં સુતા હતા. અને તેને દેવાયત પંડિતની ભક્તિની ઘમંડનો ખ્યાલ આવી જાય છે. અને લીરબાઇ એ જ દેવાયત પંડિતનું અભિમાન ઉતાર્યું હતું. આવી દંતકથા ફેલાયેલી છે. અનુયાયી ભાવીક વર્ગ તેને શ્રધ્ધાથી અને અહોભાવથી જુવે છે. પરંતુ

આવી ઘટના પરથી એટલું તો ચોક્કસ કહી શકાય છે કે લીરબાઇના ઘરમાં જન્મથી ભક્તિનું વાતાવરણ હશે.

લીરબાઇ દેવાયત પંડિત અને રામદેપીરના સમકાલીન હોવાથી તેનો સમય પંદરમી સદી ગણી શકાય. આ ઉપરાંત તેમના જીવન વિશેના વિશેષ કોઈ આધારો કે વિગતો મેળવવી મુશ્કેલ છે. મજેવડીમાં લીરબાઇ અને દેવતણખી બાપાની જગ્યા છે. જ્યાં દર વર્ષે ભાદરવા સુદ બીજના દિવસે મેલો ભરાય છે. લીરબાઇ વિશે વધુ માહિતી આપતા ડૉ.નાથાલાલ ગોહિલ નોંધે છે કે----

"મહાપંથી સંત કવયિત્રી , ભજનવાણી અને ભક્તોની ચર્ચામાં જાણી શકાય કે, એક લીરબાઇ કવયિત્રી મજેવડી (જી.જુનાગઢ) લુહાર જ્ઞાતિના ભક્ત દેવતણખીની દીકરી અને દેવાયત પંડિતના શિષ્ય હતાં." ૬

ડૉ નિરંજન રાજ્યગુરુ નોંધે છે.

"મહાપંથી સંત કવયિત્રી, મજેવડી (જી.જુનાગઢ) ગામે લુહાર જ્ઞાતિના દેવતણખીને ત્યાં જન્મ દેવાયત પંડિતને ભક્તિનો સાચો ધર્મ બતાવનાર નારી. યૌગીક પરિભાષામાં ગણપતિ મહિમા તથા મહાપંથી યોગ વૈરાગ્ય, ઉપદેશપ્રધાન ભનવાણી આપી છે.

"ઉંચી ઉંચી મેડી, અજબ ઝરૂખા વીરા,
અધર સિંહાસન સોપે બેસતા,
હોય કર જોડી સતી લીરબાઇ બોલ્યા વીરા,
ધરમુના તાળા સો પે ખોલતા,
દેખ્યા રે મેવાડી રામા,"

લીરબાઇ આ ભજનમાં કહે છે કે ઉંચી ઉંચી મેડી, અજબ ઝરૂખા વાળા મહા અદભુત, કારીગરીવાળા આ દેહરૂપી મહાલપમાં ગણપતિ બિરાજે છે. અને ધર્મના રહસ્ય ખોલી આપે છે. લીરબાઇના ભજનોની ગાયકી ભજ્નીકોને આકર્ષે છે.

- **સતી અમરબાઈ:-**

જુનાગઢની પૂર્વમાં ૩૫ કી.મી દુર ભેસાણ પાસે પરબ વાવડીની જગ્યા આવેલી છે. આ જગ્યાનું બીજારોપણ સત દેવીદાસે કરેલું. રક્તપિતિયાઓની સેવાઓમાંથી આ ભક્તિધામ ઉભું થયું છે. સંત દેવીદાસની પરમ શિષ્ય અમરબાઈ.

અમરબાઈ મચ્છોયા આહીર જ્ઞાતિમાં જન્મેલા પિતા ખેતી કરતા અને ધાર્મિક વૃતિ વાળા હતાં. અમરબાઈ ભક્તિભાવ વાળા અને શ્રધ્ધાળુ કુટુંબમાં ઉછર્યા હોવાથી બાળપણથી જ હૃદયમાં ભક્તિ અને શ્રધ્ધાનુ સિંચન થયેલું. અમરબાઈ ઉમરલાયક થતાં તેમના લગ્ન શોભાવડલા ગામે કરેલા. લગ્ન પછી અમરબાઈ આણુ વળીને સાસરે જવા નીકળ્યા ત્યારે રસ્તામાં એક જગ્યાએ વિસામો ખાવા માટે વેલડું એક રળિયામણી જગ્યાએ ઉભું રહે છે. વેલડામાંથી અમરબાઈ અને તેમના સાસુનીચે ઉતર્યા.હાલો થોડુક ખાઇ લઈએ. ત્યાંજ અમરબાઈએ પૂછ્યું આ સામા ખોરડા કોના છે ? ત્યારે સાસુએ કહ્યું એ સંત દેવીદાસ બાપુનો આશ્રમ છે. જેનો કોઈ હાથ ના ઝાલે, જેના પડછાયા થી સહુ દુર ભાગે એવા અનાથ રક્તપિતિયાને નવરાવે-ધોવરાવે દવા લગાવે છે. અને જમાડે છે અને સાંજ –સવાર પ્રભુનુ સમરણ કરે અને રાતે ભજનો ગાય અને ગવડાવે છે. અમરબાઈ ઊંડા વિચારમાં ગરકાવ થઇ જાય છે. તેને સેવાનું કામ કરતા બાપુના સાક્ષાત દર્શન કરવાની ઈચ્છા થઈ તે જઈને જુએ તો ઝુપડી પાછળથી ચીચીયારી સંભળાતી હતી, દેવીદાસ બાપુ રક્તપિતિયાઓને દવા લગાડતા હતાં દવા લગાડી બાપુ એમને વિજણાથી વાયુ ઢોળવા લાગ્યા આમેય અમરબાઈનું હૃદય હચમચી ગયું. તે આશ્ચર્યમાં ગરકાવ થઇ ગયા મનમાં વિચારોના વમળો ધુમરાવવા લાગ્યા અને મનમાં મક્કમ નિર્ણય લીધો કે, હવે મારે સંસાર માંડવો નથી. અહીયાજ આવા રોગિયા-દુખિયાની સેવામાં લાગી જવું છે. તેને ઘરેણા ઉતારીને સાસુને આપી દીધા અને સત દેવીદાસ બાપુના સરણમાં જતા રહ્યા. સત દેવીદાસ પણ અમરબાઇને પારખી ગયા અને સતની ઝોડી તેમની કાંધે મૂકી અમરબાઈનું મન ભક્તિમાં પરોવાતું જાય છે. સેવા પૂજા અને ભજનમાં રસ જાગતો જાય છે.

અમરબાઇના પાંચ ભજનો સાંભળવા મળે છે. આ ભજનોમાં ગુરુ મહિમા, ભક્તિ, સમાજ સેવા, દિન દુખીયાને પ્રત્યે સહાનુભુતિ અને ઉપદેશ પ્રગટ થાય છે. મહાપંથી ગુરુ પરંપરાને જાળવી રાખતી વિચારસરણી આ ભજનોમાંથી મળે છે. જેમકે......

" અમે તમારા ઓળગું દેવાંગી ! અમે તમારા ઓળંગુ,
પરગટ દેવીદાસ અમે તમારા ઓળંગુ,

ગુરુના ચરણોમાં શીશ નમાવી અમરબાઈ ભક્તિનો માર્ગ લે છે.

" મે તો પુણ્યના પાટ મંડાવીયા,
જ્યોતું જગાવે દેવીસાસ
જો તો કરુણાના કળસ થપાવિયા
પાટે પધાર્યા પીર દેવીદાસ"

આ ભજનમાં અમરબાઈ મહાપંથની પાટ ઉપાશના ના લક્ષણો-સિંધ્યાતોની વાત કરે છે. અમરબાઇના ભજનોમાં સીધી –સાદી ભાષામાં, સરળ શબ્દોથી હૃદયનો નાદ, ભક્તિની આરત પ્રગટાવી છે.

જેમાં ગુરુ મહિમા વિશેષ ગવાયો છે. પંરતુ જ્ઞાન વૈરાગ્ય ઉપદેશ પણ પ્રગટ્યા વગર રહેતો નથી. અમરબાઈના ભજનોની ગેયતા સ્ત્રી કંઠે શોભે તેવી છે. અમરબાઈના ભજનો સોરઠી ભક્તિ સાહિત્યમાં આગવું સ્થાન ધરાવે છે.

- **ગંગાસતી:-**

ગંગાસતી આપણા નજીકના સમયમાં થઇ ગયેલા સંત કવયિત્રી છે. ગંગા સતીનો જન્મ ભાવનગર જીલ્લાના પાલીતાણા તાલુકાના રાજપરા ગામે થયો હતો. પિતા ભાઈ જીભી સરવૈયા અને માતા રૂપાળીબા હતાં ગંગાબાનું બાળપણનું નામ હીરાબા હતું. તેમના લગ્ન સમઢીયાળા કહળસંગ ગોહિલ સાથે થયા હતા. તે સમયના રાજપૂત પરંપરા પ્રમાણે ગંગાબા સાથે પાનબાઈ નામની ખવાસ કન્યા સેવિકા તરીકે સાથે આવી હતી પિયર અને સાસરિયું બંને ભજન સાથે જોડાયેલ હતા કહળસંગને બે પુત્રીઓ રાજબા અને હરિબા હતી. જેમનો વંશ પરિવાર આજે ચાલી રહ્યો છે.

ગંગાબા નાનપણથી જ ભજનમાર્ગી આધ્યત્મિક દર્શનમાં રસ ધરાવતા હતા તેમાં અલખ આરાધનાને વરેલા જીવનસાથી કહળસંગ મળ્યા જે સોનામાં સુંગધ મળી. એકવાર કહળસંગની સિદ્ધિ લોકો સમક્ષ જાહેર થઈ જાય છે. ત્યારબાદ કહળસંગ સમાધિ લેવાનો નિર્ણય લીધો. પરંતુ તેમની સાથેનું ત્રીજું પાત્ર પાનબાઇને સિદ્ધ થવું બાકી હતું. વળી આ સંત-સાધના ભજન-સાધના લોકોમાં વહેતી રહે તે પણ જરૂરી હતું એટલે કહળસંગના સમાધી લીધા પછી ગંગાસતી બાવન દિવસ જીવન જીવે છે. અને રોજ એક ભજન રચના પાનબાઈને સંભળાવે છે. અને ઉપદેશ, જ્ઞાન આપે છે. પછી સમાધી લે છે.

ગંગાસતીએ પાનબાઇને સંભળાવેલી આ બાવન રચનાઓજ તેમનું કવન ક્ષેત્ર છે જેમાં મન તો ડગે, સાધુની સંગત , ગુપ્તરસ , હરીનો દેશ, ત્રિગુણની પાર જેવી અલૌકિક રચનાઓ સાપડે છે.

- **પાનબાઈ:-**

પાનબાઇ ગંગાસતી સાથે આવેલ એક સેવિકા હતા તેમને જ્ઞાન અને ઉપદેશ આપવા માટે ગંગાસતી બાવન દિવસ પૃથ્વી પર રોકાણ કરે છે અને પાનબાઈને પરમ કૃપાળુ પરમાત્માના દર્શન કરાવે છે. આ જીવનું શિવ સાથે મિલન થયા પછી પાનબાઈની આધ્યાત્મિકતા મોહરી ઉઠે છે. તેમના ધ્વારા ત્રણ ભજનો રચાયા છે. અને ગંગાસતીના દેહ છોડીયાના ચોથા દિવસે પાનબાઈ પણ સ્વેચ્છાએ દેહ છોડી સમાધિ લે છે. આ સમાધી સ્થાનો આજે પણ સમઢીયાળા ગામે મોજુદ છે. પાનબાઈની ભજન રચના જોઈએ તો મળી ગયો હરીમાં તાર, સતી ગયા સ્વધામ, હારી જોયા અખંડ આ રચનાઓ ખુબ જ અલૌકિક છે.

આમ જોઈએ તો સંત સાહિત્યમાં પુરુષ સંતોની સરખામણીમાં સ્ત્રી સંતોનું પ્રમાણ ખુબ જ જુજ છે. પરંતુ આ સ્ત્રી સંતોની રચનાઓ અને તેમના જીવન અલૌકિક છે. આ

નારીઓએ સોરઠની ધરાને ઉજળી કરી છે. આ નારી સંતો આજે પણ લોક હ્રદયમાં વસે છે. તેમની રચનાઓ આજે પણ હોસે હોસે ગવાય છે. આથી વધુ સિદ્ધ તો બીજુ શું હોય શકે.

- **પાદટીપ:**
  - ભગવત ગો મંડળ –ભગવતસિંહ -૮૯૪૪
  - સત કેરી વાણી –મકરંદ દવે -૧૬૪
  - ગુજરાતી સાહિત્ય કોશ–ગુ.સા.પ-૩૪૦
  - સૌરાષ્ટ્રના હરિજન ભક્ત કવિઓ-ડૉ.નાથાલાલ ગોહિલ -૧૭૮
  - સૌરાષ્ટ્રના હરિજન ભક્ત કવિઓ-ડૉ.નાથાલાલ ગોહિલ -૧૭૯
  - આગમવાણી-ડૉ નાથાલાલ ગોહિલ -૧૧૨
  - બીજમારગી ગુપ્તપાટ ઉપાસના –ડૉ.નિરંજન રાજ્યગુરુ -૨૦૬
  - પુરાતન જ્યોત –ઝવેરચંદ મેધાણી-૨૪
  - પુરાતન જ્યોત –ઝવેરચંદ મેધાણી-૨૫

- **સંદર્ભ નોંધ:-**

  - સત કેરી વાણી –મકરંદ દવે
  - આગમવાણી-ડૉ નાથાલાલ ગોહિલ
  - સૌરાષ્ટ્રના હરિજન ભક્ત કવિઓ-ડૉ.નાથાલાલ ગોહિલ
  - પુરાતન જ્યોત –ઝવેરચંદ મેધાણી
    બીજમારગી ગુપ્તપાટ ઉપાસના –ડૉ.નિરંજન રાજ્યગુરુ

MENTAL HEALTH AND SPIRITUALITY AMONG RURAL YOUTH MALE AND FEMALE

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ABSTRACT

The main purpose of this study was to find out the mean difference between Mental Health and Spirituality among youth male and female. The total sample consisted 60 as a variation belonging to 30 male and 30 female rural youth. The research tool for Mental Health scale was developed by Jagdish and A. K. Srivastva (1983) and Spirituality scale developed by Husain A., Jahan Musaddiq, Ashifa N., Siddiqui R.N. and Akram M. Here Guajarati adaption was used. Data was analyzed by t-test and co-relation. Result revealed that the no significands difference in Mental Healthand Spirituality in youth male and Female. The co-relation between Mental Healthand Spirituality in 0.05 which was positive low co-relation.

Key Word-Mental Healthand Spirituality

INTRODUCTION

Globally in early history, mental illness was viewed as a religious matter. In ancient Greek, Roman, Egyptian, and Indian writings, mental illness was viewed as a personal issue and religious castigation. In the 5th century B.C., Hippocrates was the first pioneer to address mental illness through medication or adjustments in a patient's environment. Although his work was greatly influential, views on religious punishment and demonic possession persisted through the middle Ages.

Mental health is the level of psychological well-being or an absence of mental illness. It is the state of someone who is "functioning at a satisfactory level of emotional and behavioral adjustment. From the perspectives of positive psychology or of holism, mental health may include an individual's ability to enjoy life and to create a balance between life activities and efforts to achieve psychological resilience. According to the World Health Organization (WHO), mental health includes subjective well-being, perceived self-efficacy, autonomy, competence, inter-generational dependence, and self-actualization of one's intellectual and emotional potential, among others. The WHO further states that the well-being of an individual is encompassed in the realization of their abilities, coping with normal stresses of life, productive work, and contribution to their community.

Spirituality is a broad concept with room for many perspectives. In general, it includes a sense of connection to something bigger than us, and it typically involves a search for meaning in life. As such, it is a universal human experience something that touches us all. People may describe a spiritual experience as sacred or transcendent or simply a deep sense of aliveness and interconnectedness. Spirituality does not mean any particular practice. It is a certain way of being. To get there, there are many things to do. This is like a garden in our house. If the soil, sunlight or stem of a plant is in a certain way, it won't yield flowers, we have to do something. we have to take care of those things. So if we cultivate our body, mind, emotions and energies to a certain level of maturity, something else blossoms within us – that is what is spirituality. When our rationale is immature, it doubts everything. When our rationale matures, it sees everything in a completely different light.

REVIEW OF LITERATURE :-
Hasmukh M. Chavda (2017) Emotional maturity and Mental Health among working and nonworking women. In addition, result indicates that the revealed significant difference in Emotional maturity and mental health at 0.01 level.0.43 positive correlation.

Revati R. Dudhatraand Dr. Yogesh A Jogsan (2012), Mental health and Depression among working and non-working women. In addition, result indicates that the revealed significant difference in mental health and depression of working and non-working women. 0.71% high positive correlation.

Dr. Amitkumar B. Parmarand Dr. Yogesh A Jogsan (2017),Family Relationship and Mental Health among Urban and Rural Youth Male and Female.Result indicates that the revealed significantdifference in all groups. While the correlation between family relationship and mental health reveals 0.72 positive correlations.

Dr. Yogesh A Jogsan (2017),Impulsiveness and spirituality among different age women. Result indicates that the revealed significant impact of age on women's Impulsivity and Spirituality. Correlation between Impulsiveness and Spirituality was found Negative correlation (-0.67).

PenerbitAkademiaBaru (2019), Spirituality Development: A Study on Awareness and Effectiveness of Spirituality Trainings among Youth. Result indicates that the revealed awareness and effectiveness of spirituality trainings among youth in Malaysia. The findings of this study may have policy ramifications towards enhancing spirituality among youth in Malaysia. Keywords: Awareness, effectiveness, spirituality, youth.

PROBLEM :-
Mental Healthand Spirituality among Rural Youth Male and Female

OBJECTIVES :-
The main objectives of study were as under :
4. To measure the Mental Healthin rural youth male and Female.
5. To measure the Spirituality in rural youth male and Female.
6. To measure the correlation between Mental Healthand Impulsiveness.

HYPOTHESIS :-
To related objectives of this study, null hypothesis were as under :
4. There will be no significant difference in Mental Healthof rural youth male and Female.
5. There will be no significant difference in Spirituality of rural youth male and Female.
6. There will be no correlation between Mental Healthand Impulsiveness.

METHOD
Participants :-
According to the purpose of present study total 60 samples has been selected. There were 30 male and 30 female youth. Were taken as a sample from different rural in Rajkot district (Gujarat).
Tools :-

Mental Health Scale : The mental health scale was developed by Jagdish and A. K. Srivastva (1983). This scale has total 56 sentences which measured mental health. This scale has four point scales. Split half reliability co-efficient for the scale 0.73.

Spiritual Attitude Scale: The scale was developed by Husain A., Jahan Musaddiq, Ashifa N., Siddiqui R.N. and Akram M. The scale is measure Sense of purpose and Maintenance of discipline. Total 31 sentences are in this scale. Each scored on a Likert scale ranging from 5 (Strongly agree) to 1 (Strongly Disagree). Positive items (Maintenance of Discipline) were scored in the same direction, where the negative items (sense of purpose) were scored in the reverse direction. The validity and reliability of the scale was high.

Research design :-

The aim of present research was to study of Mental Healthand Spirituality of rural youth male and Female. For the total 60 rural youth male and femalewere taken as a sample from randomly select in Rajkot district (Gujarat) out of 60 rural youth 30 male and 30 female. Here to measure Mental Healthand Impulsiveness.

Statistical Analysis :-

The main objective of present study was to measure the Mental Healthand Spirituality in rural youth male and Female. In it statistical t-test method is used, to check correlation between Mental Healthand Spirituality karlpearson 'r' method is used.

Result and discussion :-

The main objective of present study was to do comparative study of Mental Healthand Spirituality among rural youth male and female. In it statistical t-test was used and their correlation was measured. Results discussions of present study is as under:

Table No. 1

Showing t - value score of Mental Healthinrural youth male and female

Variables	N	Mean	SD	t	Sig.
Male	30	145.86	36.81	1.76	NS
Female	30	160.73	28.04		

Significance Level = 0.05 = 2.04 = 0.01 = 2.75

NS = Not Significant

According to t-test Mental Health(table - 1) we said that t-value of rural youthvariable was found 1.76. The Mean Score of mane was found 145.86 and female was found 160.73. The standard deviation of mane was found 36.81 and female was found 28.04. The t-value of youth variable was not significant. So we can say that first hypothesis was accepted because significant notdifference can be see the t-value of rural youth male and female 1.76.

Table No. 2

Showing t - value score of Spirituality inrural youth male and female

Variables	N	Mean	SD	t	Sig.
Male	30	101.06	22.85	1.22	NS
Female	30	93.83	25.81		

Significance Level = 0.05 = 2.04 = 0.01 = 2.75

NS = Not Significant

According to t-test Spirituality (table - 2) we said that t-value of youthvariable was found 1.22. The Mean Score of mane was found 101.06 and female was found 93.83. The standard deviation of mane was found 22.85 and female was found 25.81. The t-value of youth variable was not significant. So we can say that second hypothesis was accepted because significant not difference can be see the t-value of rural youth male and female 1.22.

Table No. 3
Correlation of Mental Healthand Spirituality in rural youth male and female

Variables	N	Mean	R	Sig.
Family Relationship	60	60.63	0.05	NS
Impulsiveness	60	20.60		

Significance Level = 0.05 = 0.25
= 0.01 = 0.40
NS = Not Significant

Here the correlation between Mental Healthand Spirituality is 0.05. This was positivelow correlation. So we can say that third hypothesis was accepted.

CONCLUSION :-
We can conclude by data analysis as follows.
There was not significant difference the mean scores in Mental Healthof rural youth male and female. There was not significant difference the mean scores in Spirituality of youth male and female. The correlation between Mental Healthand Spirituality is positive low correlation.

LIMITATION OF THE RESEARCH :-
This study had several limitations that can be addressed by future research. The participants consist only rural youth male and femaleof different rural in Rajkot district. So it is not representative of all other rural area. Hence, a more representative participant might yield different result. For example a participant from different rural and city of Gujarat might show significant interaction effects of different rural area.

SUGGESTIONS :-
Endeavor can be executed to analyze move them 60 data of sample with efficacy to attain batter results. For the accumulation of information, variegated methods except scale can be adopted. Selection of sample can be accomplished with the intake of different rural youth male and female, different state to ascertain in their Mental Healthand Spirituality. To crow the research work, other method of selecting sample can be appropriated.

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MAGIC AND REAL WALK HAND IN HAND IN J.K. ROWLING'S HARRY POTTER-A STUDY

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ABSTRACT:
Magical Realism is a genre of fiction that merges magical elements with reality in a way that it blurs the edges until the unrealistic and imaginary things become apparently sensible. It is said to be an intermingling of fantasy and reality. It has aspects of dreams and visions of magic or fantastical creatures. The main idea of this paper is to study the mixture of magic with reality as a genre of literature with the perspectives of *Harry Potter* novels. The use of magical elements that can also be used in the normal world.

Keywords: Magical Realism, Fantasy, Reality, Harry Potter.

INTRODUCTION:
The term *Magical Realism* was first coined by the art historian *Franz Roh* in 1925. Magic realism is totally different from fantasy as a result of it doesn't involve superheroes with superpowers or fancy gadgets.

The contemporary British author, screenwriter, producer and philanthropist *J.K Rowling* was born on 31st July in 1965. She started writing from an early age. She wrote her very first book at the age of six which was a story about rabbit called Rabbit. Her classical studies came handy when she was writing *Harry Potter* series and thinking up the spells which are based in Latin language.

The *Harry Potter* series consists of seven books which includes many themes like Love, Choice, Rebellion, Friendship, Death and Power. It became famous worldwide just in a month of publication of the very first part in 1997, it gained immense popularity and critical acclaim. The intermingling of these two elements magic and reality make the readers relate to the story and yet experience the fascination within the mundane.

ANALYSIS OF MAGICAL REALISM IN HARRY POTTER:
The *Harry Potter* series is a story of the eponymous hero, whose parents died at his birth and was left under the guidance of his cruel aunt and uncle, who were *Muggles* (non-magical people).The magic and reality comes hand in hand when the boy who has lived an ordinary life turns eleven years old, and on that day despite the obstacles of muggle-guidance he receives an invitation to *Hogwarts*, a school for young wizards and witches. Where they are taught magic, making potions and flying broom-sticks. Hogwarts was a world of wonder and mystery.

When *Harry* learns that his parents were murdered by the Evil Dark *Lord Voldemort*. And that he will return to kill him as well, his globe spins into chaos around him. *Voldemort* was obsessed with the concept of living forever, no matter what it costs. This world of book includes their own shops, cafes and much more just for the wizards and witches same as we have in real life. The wizards have their own governed Ministry of Magic , schools like Hogwarts and Beauxbatons etc, newspaper, magazines, radio, money, banks, hospitals with magical medicines and prisons too.Games like Quidditch and The

Triwizard Tournament which is the most integral trigger of the actions of the fourth book, *Harry Potter and the Goblet of Fire* focuses to create ties "between young witches and wizards of differentnationalities*"(Rowling83)*.- Like modern day Olympics only with flying broomsticks and flickering different sized balls.

Harry Potter presents two seemingly real worlds, The world of muggles, the non-magical folk and The world of witches and wizards, where spells and magic are a part of natural phenomenon. These are the two worlds on either sides like two sides of a same coin. Magic is an essential part of the narration. In *Rowling*'s magical world, all wizards are not evil. In fact, the series constantly indicates the reader that it is the choice one makes that defines them, not who or what they are. The wizards have choices of good and evil which reflects in their magic they cast. The magic itself is not at all evil, the purpose only matters so that it can direct people to both sides which side they desire to be that is in the hands of the individual. Apart from the characters and setting, *Rowling* uses magic as the significant elements of the plot. It is considered as one of the character because it is an essential part of *Rowling*'s reality.

Nonetheless, *Harry Potter* series is not the stories only about magic. Magic is what makes the story unreal though not fallacious. However, It gives the realistic representation about life. Magic realism beckons an ingrained hybridity of cross traditions and reading experiences. Fabulism refers to a form of magic realism in which fantastical elements are placed into everyday setting. Similarly, the elements in common setting, like Dementors the prison guards of Azkaban, photographs which move, mirror that shows our desires, a bird's tears that can heal wounds, ability of talking to snakes, making prophecies in a trance and so on. The hybridity of culture and reading experiences occur in the *Harry Potter* series mainly through the uses of myths from all around the world.

A unique narrative strategies are intended to intensify the magical atmosphere of the novel and contribute to representing reality more vividly. To analyze the mythological archetypes in *Harry Potter* series enlights *Carl Jung's "Archetypal Theories*" and explores how the employment of the archetypes manifests the characteristics of magic realism. The mythological archetypes delivers their collective unconsciousness so that *Rowling's* writing intension is expressed. The social issues that the world is concerned with, religious tolerance, cultural diversities, etc are highlighted and closely discussed.

CONCLUSION:

It is a hypercritic story which throws highlight on the magical realism as well as normal life. We are aware of the elements of the novel's story written by the author. This story has two different sides of one coin. One is realistic and the other is fantasy magical world. It is transferred from real to unreal art *Harry Potter* the analysis has a strong image of featuring new perspectives to the novel and readers. It is an enhanced masterpiece of magical fantasy which is beautifully described in the novel. *Harry Potter* is personification of modern school life. Concluding to the novel, It is a huge contribution to the Literature.

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A STUDY OF LIFESTYLE AND HAPPINESS IN GRADUATE STUDENTS

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ABSTRACT
The main purpose of this research was to find out the Mean difference between graduate students in lifestyle and Happiness. The total 100 sample were taken out which 50 were boys and 50 were girls students. The research tool for lifestyle scale was developed by S. K. Bawa and S. Kaur (2012) and oxford happiness scale was developed by Peter Hills and Michael Argyle (2002) scale was used. Here Guajarati adaption used and the t-test was applied to check the difference of lifestyle and happiness and the Karl-person 'r' method used to check the correlation. Result reveals that was significant difference in lifestyle in students and significant difference in happiness in students. While co-relation between Lifestyle and happiness revels 0.01positive correlation.

Key Word- Lifestyle and Happiness

INTRODUCTION

Lifestyle is the interests, opinions, behaviours, and behavioral orientations of an individual, group, or culture. The broader sense of lifestyle as a "way or style of living" has been documented since 1961. Lifestyle is a combination of determining intangible or tangible factors. Tangible factors relate specifically to demographic variables, i.e. an individual's demographic profile, whereas intangible factors concern the psychological aspects of an individual such as personal values, preferences, and outlooks. A way of living of individuals, families (households), and societies, which they manifest in coping with their physical, psychological, social, and economic environments on a day-to-day basis. Lifestyle is expressed in both work and leisure behavior patterns and (on an individual basis) in activities, attitudes, interests, opinions, values, and allocation of income. It also reflects people's self-image or self-concept; the way they see themselves and believe they are seen by the others. Lifestyle is a composite of motivations, needs, and wants and is influenced by factors such as culture, family, reference groups, and social class.

When psychologists use the term happiness, they tend to mean one of two things. In the narrow sense, happiness is a specific emotion that people feel when good things happen. It includes feelings of pleasantness along with moderate levels of arousal. In addition, the emotion often co-occurs with a specific facial expression: the smile. Happiness can be distinguished both from negative emotions such as sadness, fear, and anger and also from other positive emotions such as affection, excitement, and interest. People from around the world tend to have a similar concept for happiness and can recognize happiness in others. As a result, the emotion of happiness is often included as one of a small number of basic emotions that cannot be broken down into more fundamental emotions and that may combine to form other, more complex emotions (in fact, it is sometimes the only positive emotion that is considered to be basic). Thus, happiness is an important concept for researchers who study emotions. Happiness yet happiness also has a broader meaning, and an entire field of research has developed around this more inclusive concept. Psychologists often use the term subjective well-being to distinguish this broad collection of happiness-related phenomena from the more specific emotion. In this broader sense, happiness is a global positive evaluation of a person's life as a whole. As one might expect, people who are happy in this way tend to experience frequent positive emotions and infrequent negative emotions. But this broader form of happiness is not purely emotional; it also has a cognitive component. When happy people are asked to think back on the conditions and events in their life, they tend to evaluate these conditions and events positively. Thus, happy people report being satisfied with their lives and the various domains in their lives.

REVIEW OF LITERATURE :-

Dr. Kiran Vaghela (2018) A comparative study of lifestyle among joint and nuclear family's school teachers. In addition, result indicates that the revealed significant difference in lifestyle of joint and nuclear family's school teachers.

Dr. Syed Noor-ul-Amin (2017) An analysis of lifestyle of internet-user and non-user university students with special reference to the type of faculty. In addition, result indicates that the revealed significant difference in internet-user and non-user group of subjects from science and arts faculty. Internet user from science faculty found to have better adaptation towards lifestyle.

Dr. Gopal C. Mahakud and Ritika Yadav (2015). Effects of Happiness on Mental Health. In addition, result indicates that the revealed effects of happiness in day to day life in a social situation to deal with different mental disorders to make the individual mentally healthy and prosperous in life.

Sameera Shafiq, Rifqa Anam Naz, Madiha Ansar, Tanzeela Nasrulla, Maham Bushra, and Sohil Imam (2015). Happiness as related to Mental Health among University Students. In addition, result indicates that the revealed positive correlation between Happiness and Mental Health and significant difference in Happiness and Mental Health in males and females.

Problem :-

A study of Lifestyle and Happiness in graduate students.

Objectives :-

The main objectives of study were as under :

1. To measure the lifestyle in boys and girls graduate students.
2. To measure the Happiness in boys and girls graduate students.
3. To measure the correlation between lifestyle and Happiness.

Hypothesis :-

To related objectives of this study, null hypothesis were as under :

1. There will be no significant difference in lifestyle of boys and girls graduate students.
2. There will be no significant difference in happiness of boys and girls graduate students.
3. There will be no correlation between lifestyle and happiness.

METHOD

Participants :-

According to the purpose of present study total 100 samples has been selected. There were 50 boys graduate students and 50 girls graduate students. Were taken as a sample from different college of Rajkot city (Gujrat).

Tools :-

Following instrument were used for data collection.

1. Lifestyle scale (LSS-BK):-

The lifestyle scale was made by S. K. Bawa and S. Kaur (2012) (LSS-BK). The scale has been standardized in version is English. Guajarati adaption was used made by S. K. Rathod. This scale consists 60 items (43 positive and 17 negative items) to measure the lifestyle of the students in six different dimensions: 1. Health Conscious Lifestyle, 2. Academic Oriented Lifestyle, 3. Career Oriented Lifestyle, 4. Socially Oriented Lifestyle, 5. Trend Seeking Lifestyle, and 6. Family Oriented Lifestyle.

2. Oxford Happiness Inventory (OHI)

The Oxford Happiness Inventory developed by Peter Hills and Michael Argyle (2002). The scale has been standardized in version is English. Here Guajarati adaption was used made by Jogsan, Y. A. and Kharadi K.S. Thus the happiness scales contains 29 valid items belonging to six different dimensions of Happiness. 1. life Satisfaction, 2. Joy, 3. Self-esteem, 4. Calm, 5. Control and 5.Efficacy. Happiness scales contains 29 valid items belonging to six different dimensions of happiness. The final form of the test has been prepared with 29 items 17 positive and 12 negative in all and the distribution of items is as given below. Each item has 6- point Likert scale.

Research design :-

The aim of present research was to study the Lifestyle and Happiness in graduate students. For the total 100 graduate students were taken as a sample from randomly select in Rajkot city (Gujrat) out of 100 graduate students 50 boys and 50 girls. Here to measure Lifestyle and Happiness.

Statistical analysis :-

The main objective of present study was to measure the Lifestyle and Happiness in graduate student. In it statistical t-test method is used, to check correlation between Lifestyle and Happiness karl pearson 'r' method is used.

Result and discussion :-

The main objective of present study was to do comparative study of Lifestyle and Happiness in graduate students. In it statistical t-test was used and their correlation was measured. Results discussions of present study is as under:

Table No. 1

Showing t-value score of Lifestyle in graduate students.

Variables	N	Mean	SD	T	Sig.
Boys	50	163.56	13.53	2.82	0.01
Girls	50	155.96	13.40		

Significance Level = 0.05 = 1.98

= 0.01 = 2.63

NS = Not Significant

According to t-test lifestyle (table - 1) we said that t-value of students variable was 2.82. The mean of boys received 163.56 and girls received 155.96. The standard deviation of boys 13.53 and girls 13.40. The t-value of student's variable was significant difference at the 0.01 levels. So we can say that first hypothesis was not accepted because significant difference can be see the t-value of graduate students 2.82.

Table No. 2

Showing t - value score of Happiness in graduate students.

Variables	N	Mean	SD	T	Sig.

Boys	50	130.14	21.86	3.56	0.01
Girls	50	116.64	15.50		

Significance Level = 0.05 = 1.98
= 0.01 = 2.63
NS = Not Significant

According to t-test happiness (table - 2) we said that t-value of students variable was 3.56. The mean of boys received 130.14 and girls received 116.64. The standard deviation of boys 21.86 and girls 15.50. The t-value of student's variable was significant difference at the 0.01 levels. So we can say that second hypothesis was not accepted because significant difference can be see the t-value of graduate students 3.56.

Table No. 3
Correlation of Lifestyle and Happiness in graduate students:

Variables	**N**	**Mean**	**R**	**Sig.**
Lifestyle	100	159.76	0.01	NS
Happiness	100	123.39		

Significance Level = 0.05 = 0.27
= 0.01 = 0.35
NS = Not Significant

Here the correlation between Lifestyle and Happiness is 0.01. This was positive correlation. So we can say that third hypothesis was accepted.

CONCLUSION :-
We can conclude by data analysis as follows.
There was significant difference the Mean scores in lifestyle of boys and girls graduate students. There was significant difference the Mean scores in happiness of boys and girls graduate students. The correlation between Lifestyle and Happiness is positive correlation.

LIMITATION OF THE RESEARCH :-
This study had several limitations that can be addressed by future research. The participants consist only students of different college of Rajkot city. So it is not representative of all other city. Hence, a more representative participant might yield different result. For example a participant from different city of Gujarat might show significant interaction effects of different city.

SUGGESTIONS :-
Endeavor can be executed to analyze move them100 data of sample with efficacy to attain batter results. For the accumulation of information, variegated methods except scale can be adopted. Selection of sample can be accomplished with the intake of different city students, different state to ascertain in their Lifestyle and Happiness. To crow the research work, other method of selecting sample can be appropriated.

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MENTAL HEALTH ISSUES AND ITS INFLUENCING FACTORS IN INDIA DURING COVID -19

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ABSTRACT

On January 30, 2020, the World Health Organization declared that the COVID-19 outbreak was a public health emergency of international concern as it not only attacked the physiological system but also caused psychological harm to the general public. WHO also alarmed that the pandemic and the restrictive measures taken up by many countries might impact on people's mental well-being. On 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India. As the end of the first lockdown period approached, on 14 April, Prime Minister Narendra Modi extended the nationwide lockdown until 3 May, with a conditional relaxation after 20 April for the regions where the spread had been contained. On 3rd May, the Government of India extended the nationwide lockdown further by two weeks until 17 May. On 17 May, nationwide lockdown was further extended till 31 May by National Disaster Management Authority.
While the nation is fighting to contain the outbreak of Coronavirus, the lockdown has made people anxious in its ways. The pandemic has severely hit the business cycles and economy. The lockdown has made people live in constant fear of losing their businesses, jobs, earnings, savings or even basic resources which has raised the frustration, anxiety, distress level amongst them. In this paper an attempt has been made to reflect on the issues of mental health due to Covid -19 and its various influencing factors which includes the social and economic areas like mass unemployment, depleted social safety nets, starvation, increase in gender-based violence, homelessness, alcoholism, loan defaults and millions slipping into poverty. This post-Covid landscape will be a fertile breeding ground for an increase in chronic stress, anxiety, depression, alcohol dependence, and self-harm. Hence, this article addresses some of the necessary information regarding the challenges of mental health and the probable quick fixes, go-to points of contact, and other relevant information. It is imperative that every individual take care of their physical and mental health to stop the ongoing pandemic.

INTRODUCTION:

Corona Virus Disease 2019 (COVID-19) was first being identified in Wuhan province in December, 2020 and it quickly spread to other parts of China. Most of the countries in the world reported infected cases. On January 30, 2020, the World Health Organization declared that the COVID-19 outbreak was a public health emergency of international concern (World Health Organization, 2020). The COVID-19 not only attacked the virus carriers' immune system jeopardizing their physical health rapidly, but also caused psychological harm to the general public in various degrees according to their exposure to panic media reports (Garfin et al., 2020; Qiu et al., 2020). Moreover, in attempt to restrain COVID-19, Wuhan went into lockdown on January 23, 2020; on January 26, 2020, the rest of China had been taking measures such as traffic control, prohibition of gathering, and social isolation as person to person transmissions were confirmed both inside and outside of China (CCTV News, 2020). Some recent published studies showed that people experienced self-isolation during the period of COVID-19 outbreak were more likely to develop symptoms of anxiety, depression and psychiatric disorders, such as post-traumatic stress disorder (PTSD) (Li et al., 2020; Liu, Chen, et al., 2020; Wang et al., 2020).

On 24 March 2020, the Government of India under Prime Minister Narendra Modi ordered a nationwide lockdown for 21 days, limiting movement of the entire 1.3 billion population of India as a preventive measure against the COVID-19 pandemic in India. It was ordered after a 14-hour voluntary public curfew on 22 March, followed by enforcement of a series of regulations in the country's COVID-19 affected regions. The lockdown was placed when the number of confirmed positive coronavirus cases in India was approximately 500. Observers stated that the lockdown had slowed the growth rate of the pandemic by 6 April to a rate of doubling every six days, and by 18 April, to a rate of doubling every eight days.

As the end of the first lockdown period approached, state governments and other advisory committees recommended extending the lockdown. The governments of Odisha and Punjab extended the state lockdowns to 1 May. Maharashtra, Karnataka, West Bengal and Telangana followed suit. On 14 April, Prime Minister Narendra Modi extended the nationwide lockdown until 3 May, with a conditional relaxation after 20 April for the regions where the spread had been contained.

On 1 May, the Government of India extended the nationwide lockdown further by two weeks until 17 May. The Government has divided the entire nation into three zones—green, red and orange—with relaxations applied accordingly. On 17 May, nationwide lockdown was further extended till 31 May by National Disaster Management Authority. Now days we were more concerned about the mental health and psychological state of general population particularly due to the following reasons:

(1) COVID-19 was widely spread. The virus carriers or potential virus carriers were moving all around China with Spring Festival travel rush. COVID-19 can be transmitted from person to person, so people were aware that they can be infected and their lives were under threatened.

(2) Since the outbreak of COVID-19, all kinds of media were propagating the information about the COVID-19, including rumors. This could cause mass panic.

Researchers found that people with the highest exposure to media coverage of such kind of traumatic events had even more acute stress than people who were directly exposed to the trauma events (Giummarra et al., 2018). Since there has been a steep rise in patients with mental illness since the coronavirus outbreak in the country. In a recent survey conducted by the Indian Psychiatry Society, the sudden rise in those suffering from mental illness is up to 20 per cent. According to the survey, at least one out of every five Indians is suffering from mental illness.

This comes amid the coronavirus pandemic spreading across the world like a global disease thereby affecting the lifestyle and economy of the world. At a time when the world is fighting the outbreak of coronavirus, which has affected lakhs across the world, there is a massive spike in the patients suffering from mental illness. The survey reveals that an average increase of 15 per cent to 20 per cent in such patients has happened in just a week given the crisis which is likely one of the causes of the increase in people will mental disorders. Adding to this, is the lockdown that has made people live in fear of losing their businesses, jobs, earnings, savings or even basic resources?

In addition to various psychological problems like depression, anxiety, and panic disorder, the COVID-19 pandemic has caused severe threats to the lives and physical health of people around the globe. [Qiu et al., 2020]. In response to the problems posed by the pandemic, various public health strategies such as isolation of infected or at-risk persons, reduction of social contact, and simple hygiene like frequent hand wash, have been advised to reduce the risk of infection. Although isolation helps in achieving the goal of reducing infections, reduced access to family, friends, and other social support systems causes loneliness increasing mental issues like anxiety and depression. [Zhou et al., 2020].

The social and economic fissures exposed by the pandemic will result in mass unemployment, depleted social safety nets, starvation, increase in gender-based violence, homelessness, alcoholism, loan defaults and millions slipping into poverty. This post-Covid landscape will be a fertile breeding ground for an increase in chronic stress, anxiety, depression, alcohol dependence, and self-harm.

While the nation is fighting to contain the outbreak of Coronavirus, the lockdown has made people jittery in its ways. The pandemic has severely hit the business cycles and economy. People are under constant fear of losing their businesses, jobs, or savings which has spiked the frustration, anxiety, distress level amongst them.

WHO had earlier cautioned that the pandemic and the restrictive measures taken up by many countries might impact on people's mental well-being. Taking note of the situation, the Indian government has introduced helpline numbers for people who might face mental distress due to the ongoing situation in the country.

During such stressful situations, the concerned government, hospitals, educational institutions, organizations, and even individuals need to look into psychological intervention and adopt necessary measures. In addition to educating individuals to stay isolated, it is vital to educate and prepare them to face the mental health issues they may endure during the period. Hence, the following tips mentioned below help to overcome the impacts of lock-down on mental health [Banerjee, 2020; Dickerson, 2020; Zandifar & Badrfam, 2020].

As countries introduce measures to restrict movement as part of efforts to reduce the number of people infected with COVID-19, more and more of us are making huge changes to our daily routines.

The new realities of working from home, temporary unemployment, home-schooling of children, and lack of physical contact with other family members, friends and colleagues take time to get used to. Adapting to lifestyle changes such as these, and managing the fear of contracting the virus and worry about people close to us who are particularly vulnerable, are challenging for all of us. They can be particularly difficult for people with mental health conditions.

Fortunately, there are lots of things that we can do to look after our own mental health and to help others who may need some extra support and care.
Here are tips and advice that we hope you will find useful.

- **Keep informed.** Listen to advice and recommendations from your national and local authorities. Follow trusted news channels, such as local and national TV and radio, and keep up-to-date with the latest news from @WHO on social media.

- **Have a routine.** Keep up with daily routines as far as possible, or make new ones.
- Get up and go to bed at similar times every day.
- Keep up with personal hygiene.
- Eat healthy meals at regular times.
- Exercise regularly.
- Allocate time for working and time for resting.
- Make time for doing things you enjoy.
- **Minimize newsfeeds.** Try to reduce how much you watch, read or listen to news that makes you feel anxious or distressed. Seek the latest information at specific times of the day, once or twice a day if needed.
- **Social contact is important.** If your movements are restricted, keep in regular contact with people close to you by telephone and online channels.
- **Alcohol and drug use.** Limit the amount of alcohol you drink or don't drink alcohol at all. Don't start drinking alcohol if you have not drunk alcohol before. Avoid using alcohol and drugs as a way of dealing with fear, anxiety, boredom and social isolation.

There is no evidence of any protective effect of drinking alcohol for viral or other infections. In fact, the opposite is true as the harmful use of alcohol is associated with increased risk of infections and worse treatment outcomes.

And be aware that alcohol and drug use may prevent you from taking sufficient precautions to protect yourself again infection, such as compliance with hand hygiene.

- **Screen time.** Be aware of how much time you spend in front of a screen every day. Make sure that you take regular breaks from on-screen activities.
- **Video games.** While video games can be a way to relax, it can be tempting to spend much more time on them than usual when at home for long periods. Be sure to keep the right balance with off-line activities in your daily routine.
- **Social media.** Use your social media accounts to promote positive and hopeful stories. Correct misinformation wherever you see it.
- **Help others.** If you are able to, offer support to people in your community who may need it, such as helping them with food shopping.
- **Support health workers.** Take opportunities online or through your community to thank your country's health-care workers and all those working to respond to COVID-19.

DON'T DISCRIMINATE

Fear is a normal reaction in situations of uncertainty. But sometimes fear is expressed in ways which are hurtful to other people. Remember:

- Be kind. Don't discriminate against people because of your fears of the spread of COVID-19.
- Don't discriminate against people who you think may have coronavirus.
- Don't discriminate against health workers. Health workers deserve our respect and gratitude.
- COVID-19 has affected people from many countries. Don't attribute it to any specific group.

Mental health is a crucial aspect that needs to be addressed during this lock-down as all modes of communication revolve around the virus. Although every single citizen needs to contribute to this war against the virus by performing all the necessary measures, especially social distancing, the government of India has clearly understood that it cannot be fought alone. The government of India is performing on several fronts to preserve the mental health and morale of all the citizens. The central government has taken measures in this regard and has ensured the seepage of rules and measures to both state and local administration. The following are some of the measures, which directly or indirectly contribute to the mental health of the citizens of the country:

1. *Information sharing through website to reduce ambiguity and/or panic*

- The government-controlled COVID 19 website, 'https://www.mygov.in/covid-19/ ', provides all the necessary information related to the pandemic. This includes videos and readable material on the infection and the necessary measures to be undertaken.
- This website provides essential real-time information regarding the actual count of cases found to be positive, the number of recovered cases and the number of deaths. This helps citizens to know official information rather than panicking over false information.
- Further, to ensure that there is no ambiguity among citizens regarding any false/unverified information in social media, the website provides a section on 'Myth Busters.'
- Various helpline numbers have been shared through the website. The government has launched a central helpline number for corona-virus: - +91–11-23978046, for any inquiry about COVID 19.
- Also, very essentially, and in relevance to the topic of this article, a toll-free helpline number "+91–80-45110007" has been launched by the "National Institute of Mental Health and Neuro-Sciences" (NIMHANS), a Bengaluru based premier medical institution.

2. Training and development activities

- The Ministry of Health and Family Welfare, Govt. of India, has provided health advisories, videos, posters and even conducted webinars on handling mental health issues of individuals and children. More information on the same can be obtained at ' https://www.mohfw.gov.in/,' a government-administered website.

3. Measures to reduce financial strain

- The latest step to reduce the financial strain on citizens is an optional moratorium on EMIs of loans. In respect of all term loans (including agricultural term loans, retail and crop loans), all commercial banks (including regional rural banks, small finance banks, and local area banks), co-operative banks, all-India Financial Institutions, and NBFCs (including housing finance companies) ("lending institutions") are permitted to grant a moratorium of three months on payment of all instalments falling due between 1st March 2020 and 31st May 2020. The repayment schedule for such loans as also the residual tenor will be shifted across the board by three months after the moratorium period.
- In respect of working capital facilities sanctioned in the form of cash credit/overdraft ("CC/OD"), lending institutions are permitted to defer the recovery of interest applied in respect of all such facilities during the period from 1st March 2020 and 31st May 2020 ("deferment").

CONCLUSION:

The world is stressed. The novel strain of the Coronavirus, Covid-19, has brought to the table many questions not only around the disease itself but the way humans cope with it. Mental health illness is sometimes an overlooked "virus" that spreads across our society and kills million people every year, with the median reduction in life expectancy among those with mental illness . The coronavirus disease 2019 (COVID-19) pandemic may be stressful for people. Fear and anxiety about a new disease and what could happen can be overwhelming and cause strong emotions in adults and children. Public health actions, such as social distancing, can make people feel isolated and lonely and can increase stress and anxiety. However, these actions are necessary to reduce the spread of COVID-

19. **Coping with stress in a healthy way will make us, the people we care about, and our community stronger.** How we respond to the COVID-19 pandemic can depend on our background, our social support from family or friends, our financial situation, our health and emotional background, the community we live in, and many other factors. Mental health conditions (such as depression, anxiety, bipolar disorder, or schizophrenia) affect a person's thinking, feeling, mood or behavior in a way that influences their ability to relate to others and function each day. These conditions may be situational (short-term) or long-lasting (chronic). People with preexisting mental health conditions should continue with their treatment and be aware of new or worsening symptoms.

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ANEMPIRICAL STUDY ON VOLATILITY IN BSE SENSEX FOR THE YEAR 2019 WITH REFERENCE TO INTRA-DAY RISK AND RETURN

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ABSTRACT

The stock markets in India are playing vital role in growth of Indian economy. There has been enormous fluctuating in stock indexes since 1991. In the recent tenure, there have been discernments that volatility in the market has increased and inter and intra-day volatility witnessed the same. News items and some data shows to evidence this analysis. Indian stock marketprovides a very high rate of return and comparatively moderate volatility.

Volatility in stock return is an integral part of security market with the alternating bull and bear phases. In the bullish market, the share prices soar high and in the bearish market share prices fall down and these ups and downs determine the return and volatility of the stock market. Volatility is a symptom of a highly liquid stock market. Pricing of securities depends on volatility of each stock.An increase in stock market volatility brings a large stock price change of advances or declines. Investors interpret a raise in stock market volatility as an increase in the risk of equity investment and consequently they shift their funds to less risky stocks. It has an impact on business investment spending and economic growth through a number of channels. Changes in local or global economic and political environment influence the share price movements and show the state of stock market to the general public

This study evaluates intraday volatility - risk and return of BSE SENSEX and their listed companies. This study also examines the association relationships among BSE SENSEX and BSE SENSEX listed company volatilities. Here, Researcher has considered intraday volatility in BSE SENSEX for the year 2019.

Key words: BSE SENSEX, SENSEX listed 30 Companies, Intra-day Volatility, Risk and Return.

1. BSE SENSE at Glance

BSE SENSEX (Bombay Stock Exchange Sensitive Index) is value weighted index comprised of 30 companies share price. It consists of the 30 largest and most actively traded stocks, representative of various sectors, on the Bombay Stock Exchange. These companies account for around one-fifth of the market capitalization of the BSE.
At irregular intervals, the Bombay Stock Exchange (BSE) authorities review and modify its composition to make sure it reflects current market conditions. The index is calculated based on a free-float capitalization method; a variation of the market cap method. Instead of using a company's outstanding shares it uses its float, or shares that are readily available for trading. The free-float method, therefore, does not include restricted stocks, such as those held by company insiders.

2. Volatility

Volatility refers to a variable's degree of unpredictable change over time. It is typically expressed as the standard deviation of the change in value of a stock over a given period typically one year. Volatility therefore reflects the risk taken by someone with exposure to aid variable or stock. The more volatile the price of a stock, the stock will be riskier.

Volatility is however much more than the standard deviation of anstock's price over time. It is a critical input in valuing options and other derivative instruments. Intrinsically, measures of volatility - historical and prospective - impact the valuation and return of a wide range of financial instruments, from interest rates to future. It also acts as a barometer of investor sentiment: while high levels of volatility indicate investor nervousness, low volatility signals a stronger appetite for risk

Volatility, for understanding easily, can be examined in two ways, viz. inter-day volatility and intra-day-volatility. The former comprises of close to close volatility whereas the later comprises of open to close, high to low and open to open volatility. The present study covers the aforementioned aspects of volatility during the study period on BSE Sensex.

Open-close volatility: Open to close to volatility provides information on change of the prices during the day.

3. OBJECTIVE OF STUDY

1. To study the price volatility in BSE SENSEX and BSE SENSEX listed company's shares.
2. To examine intraday risk and return BSE SENSEX and BSE SENSEX listed company's shares.
3. To evaluate association relationship between shares price and BSE SENSEX 30
4. To find the most volatile share in BSE in respect of share price.
5. Study the movement of inter and intra-day volatility in BSE Sensex.

4. DATA COLLECTION

The present study is chastely based on secondary data. The data is collected from theOfficial website of BSEwww.BSEIndia.com. Research has used secondary data as Daily volatility in BSE SENSEX and BSE SENSEX listed companies.

5. PERIOD OF STUDY

Period of the study restricted and bounded to 12 monthsof year 2019. Researcher has used daily average BSE SENSEX and BSE SENSEX listed companies for each month January 2019 to December 2019.

6. SELECTION OF SAMPLE

Researcher has Selected BSE SENSEX and BSE SENSEX listed 30 companies share price for the purpose of study.

7. TOOLS AND TECHNIQUES

a. Descriptive statistical tools:Mean , SD, Kurtosis, Skewness, Range etc.
b. Correlation : Measure association relationship

8. Data Analysis

a. Intra-day Open-close volatility Analysis:

Open to close to volatility in BSE SENSEX and BSE SENSEX listed companies share price during the year 2019. Which are as follow

	Mean	SD	Kurtos	Skewn	Range	Mini	Maxi

			is	ess			
BSE SENSEX	**-14.59%**	**13.64%**	**302.52%**	**90.21%**	**57.35%**	**-39.24%**	**18.11%**
Asian Paints LTD.	-7.15%	30.38%	-139.78%	8.91%	87.98%	-47.32%	40.66%
Axis Bank LTD.	-15.46%	36.23%	256.10%	-124.95%	139.73%	-104.29%	35.44%
Bajaj - Auto LTD.	-2.33%	34.50%	-32.17%	9.64%	115.44%	-58.06%	57.38%
Bajaj Finance LTD.	-11.79%	36.15%	173.10%	96.27%	136.50%	-64.13%	72.36%
BhartiAirtel LTD.	2.21%	35.19%	148.05%	98.13%	125.03%	-40.94%	84.09%
HCL Technologies LTD.	-13.30%	27.19%	33.45%	72.15%	98.04%	-56.40%	41.64%
HDFC	-11.88%	28.83%	215.93%	-124.27%	103.70%	-81.93%	21.77%
HDFC Bank	-15.07%	25.57%	123.73%	68.43%	95.70%	-54.58%	41.12%
Hero Motocrop LTD.	-31.88%	38.17%	-16.26%	21.55%	133.03%	-97.62%	35.42%
Hindustan Unilever LTD.	-15.59%	28.77%	-89.99%	77.79%	80.63%	-43.50%	37.13%
ICICI Bank	1.25%	28.68%	55.02%	60.93%	105.35%	-42.82%	62.52%
Indusind Bank LTD.	-21.06%	52.89%	81.04%	119.39%	168.89%	-85.43%	83.46%
Infosys LTD.	-3.52%	18.57%	-7.68%	-60.42%	64.19%	-41.34%	22.85%
ITC LTD.	-37.07%	28.18%	35.24%	65.83%	100.37%	-78.87%	21.50%
Kotak Mahindra Bank LTD.	1.76%	30.58%	207.68%	133.43%	109.53%	-34.66%	74.87%
Larsen and Toubro LTD.	-26.21%	39.33%	-68.83%	57.47%	115.16%	-76.16%	39.00%

Mahindra and Mahindra LTD.	-46.35%	42.04%	-84.80%	-25.59%	138.05%	-120.26%	17.79%
Maruti Suzuki India LTD.	-11.87%	45.64%	-52.86%	-3.31%	139.53%	-86.70%	52.84%
Nestle India LTD.	-4.37%	25.33%	87.55%	2.25%	98.12%	-52.02%	46.10%
NTPC LTD.	-29.97%	30.94%	95.72%	35.82%	113.74%	-77.42%	36.33%
ONGC LTD.	-29.37%	41.13%	-23.31%	-80.19%	129.32%	-113.94%	15.38%
Power Grid Corporation LTD.	-17.96%	27.91%	5.91%	74.38%	95.64%	-59.85%	35.79%
Reliance Industries LTD.	-12.94%	30.78%	-43.26%	-40.28%	102.25%	-70.12%	32.13%
State Bank of India	-20.31%	48.34%	97.47%	-36.46%	188.32%	-121.99%	66.33%
Sun Pharmaceutical LTD.	-23.76%	35.83%	3.29%	-35.09%	128.56%	-92.46%	36.10%
Tata Steel LTD.	-11.22%	46.35%	-114.90%	-54.31%	134.10%	-84.87%	49.23%
Tata Consultancy Services LTD.	-11.57%	32.69%	10.50%	-74.61%	110.66%	-77.35%	33.31%
Tech Mahindra LTD.	-13.38%	32.08%	-157.15%	-34.76%	84.64%	-62.59%	22.05%
Titan Company Limited	-6.76%	40.00%	236.27%	-107.72%	159.69%	-100.17%	59.52%
Ultratech Cement LTD.	-20.36%	46.71%	-58.11%	46.22%	151.52%	-81.96%	69.57%

Above prepared table shows Intra-day open-closed average value of BSE SENSEX and BSE SENSEX listed company for the year 2019. There was negative average return 14.59% SENSEX of open-close almost negative throughout year. Highest return was 18.11% in March 2019, where as, lowest negative return was -39.24 % in the August 2019. BSE SENSEX has 13.64% Standard deviation which shows that SENSEX index volatile 13.64% up-down in intra-day trading. It is demonstration high volatility in index. Kurtosis and skewness indicates variability in trend. Range value 57.35% express up-down trend throughout this tenure

In SENSEX, BhartiAirtel LTD.Kotak Mahindra Bank LTD.ICICI Bank shares having positive average return during the year 2.21%, 1.76%, and 1.25% respectively. Where as, remain all companies share price having negative average return during year 2019.In negative return, Larsen and Toubro, Oil and Natural Gas Corporation, NTPC, Hero Motocrop, ITC, Mahindra and Mahindra have more than 25% average negative return during year 2019 which valued at -26.21%-29.37%-29.97%, -31.88%, -37.07%, -46.35%, respectively.

Throughout year 2019, Indus bank has highest value of SD 52.89% which indicates highest intra-day volatility. Infosys has lowest value of SD 18.57% nevertheless it also not so good indicator. Remaining all listed companies having high volatility. SBI has highest value of range 188.32% it shows uncertain volatility. Compare to overall BSE SENSEX intra-day volatility moderate compare to all listed companies.

b. Intra-day Open-close volatility Analysis: Association relationship between BSE SENSEX and BSE SENSEX listed companies

Correlation among BSE SENSEX and listed companies	**r - Value**
BSE SENSEX	1.00
High Degree Of Positive Correlation	
ICICI Bank	0.89
HDFC Bank	0.82
Reliance Industries LTD.	0.73
NTPC LTD.	0.70
Oil and Natural Gas Corporation LTD.	0.66
Titan Company Limited	0.64
Larsen and Toubro LTD.	0.61
State Bank of India	0.59
Axis Bank LTD.	0.57
ITC LTD.	0.55
Mahindra and Mahindra LTD.	0.54
Indusind Bank LTD.	0.50
High Degree Of Moderate Positive Correlation	
Power Grid Corporation of India LTD.	0.47
Tata Steel LTD.	0.47
Bajaj Finance LTD.	0.42
Maruti Suzuki India LTD.	0.41
Nestle India LTD.	0.40
Bajaj - Auto LTD.	0.34
Ultratech Cement LTD.	0.28
Low Degree Of Positive Correlation	
Sun Pharmaceutical Industries LTD.	0.22

Asian Paints LTD.	0.14
Kotak Mahindra Bank LTD.	0.14
Hindustan Unilever LTD.	0.13
HDFC	0.11
BhartiAirtel LTD.	0.08
Hero Motocrop LTD.	0.06
Moderate Negative Correlation	
Tata Consultancy Services LTD.	-0.14
Tech Mahindra LTD.	-0.14
HCL Technologies LTD.	-0.21
Infosys LTD.	-0.51

Above table shows correlation between BSE SENSEX and BSE SENSEX listed companies. Amidintra-day volatility measurement, there are four categories for measurement of correlation. There are 12 listed companies share price have more than 0.50 r value. It shows that they have high degree of positive correlation. ICICI bank has 0.9 r valued shows highest degree of association with BSE SENSEX. Volatility of these companies is day to day volatile with BSE SENSEX index. In table, Subsequent 14 listed companies have also positive correlation with BSE SENSEX. TCS, Tec Mahindra, HCL and Infosys have moderate negative correlation -0.14, -0.14, -0.21 and -0.51 respectively. This data shows volatility of BSE SENSEX and these listed companies have contradictory course.

9. FINDINGS AND CONCLUSION

Thoughtful stock market volatility, risk and return activities is vital for all nations investors but itis of more significant to developing countries, mainly, where the market involves of riskaverseinvestors as the prospects to invest and diversify the investment is not much. Duringthe year 2019 it is manifest that there is extraordinary growth in the Indian stock market in termscapitalisation, trading, turnover, number of investors, etc. during this period Indian stock markethas gone through rapid changes in all the aspects. It has seen all time ups and downs.

In this study, it is marked that daily average returns and daily average volatility across theBSE SENSEX and BSE SENSEX listed companies share price was varying over time and space. This study results revels that there were highly volatile trend during year 2019. Intra-day volatility of BSE SENSEX was not more than volatility in BSE SENSEX listed companies share price during this tenure. Most of share price volatility and BSE SENSEX volatility have moderate positive correlation. Standard deviation value shows that there were two phases in study period namely bull phase and bear phase during year 2019. This data isobvious that there is high volatility and deviation in average returns duringbull phase whereas low volatility in the bear phase. One can observed that during the studyperiod, first bull phase did not reap good returns to investors with high volatility while thesecond bull phase gave good returns with high moderate volatility.

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"PERFORMANCE EVALUATION OF SELECTED ELECTRONIC COMPANIES WITH SPECIAL REFERENCE TO BSE"

ZALA SANJAYSINH

ABSTRACT:
The main purpose of the study is to evaluate the Financialposition of selected Electronics Companies of India. The study undertaken is based on secondary data and the sampling method is purposive sampling which is Non probability sampling technique. As a sample, Havells, Honda Seil Power and Bharat Bijleeare taken as these are the leading Electroniccompany in India. The time period of the study is of five years i.e. from 2013-14 to 2017-18. Liquidity Ratios, Activity Ratios, Leveraged Ratio as well as profitability Ratios are taken into consideration for the study. It can be concluded that there is no significant difference among selected ratios of Selected Electronic Companies during the study period.

KEYWORDS:
Liquidity Analysis, Leveraged, Profitability, Activity

INTRODUCTION:
In today's competitive world it is necessary to evaluate the performance of the firm or industry on the regular basis to sustain in the market. With the help of evaluation of performance we can find out the efficient and inefficient units and can take several measures to turn inefficient unit into efficient unit.

For attaining self-evaluation method and improvement of accountability power, performance evaluation is considered as the useful step. Many scholars and experts have considered performance evaluation as a part of great emerging movement of accountability. Performance Evaluation of firms and factories act as a guideline that shows the only way for future decisions regarding investment, development and also control and supervision.

REVIEW OF LITERATURE:
1. **Zhao and Wang (2007)** in their study under the title of "Empirical Study on Chinese Mutual funds Performance" evaluated the performance of investment funds active in China via the DEA method. The sample under study included 24 institutions with open investment and 54 institutions with the closed investment in 20014 and 2005. Results of the study suggest that the majority of the investment funds working in China market are not efficient.
2. **Panayiotis (2004)** in a study entitled "Performance Evaluation of the Bond Mutual Funds Operating in Greece" evaluated the performance of 39 joint investment funds in financial markets in Greece within the time period of 15/03/1999 to 12/12/1999. The ranking of these investment funds was different in the average return of the investment and the overall risk of investment.
3. **Apoorva (2019)** Seven companies have been selected to check the efficiency and accuracy of this model. In conclusion it can be applied for Indian Companies but the same was not 100% accurate.
4. **RohiniSajjan (2016)** this study tries to apply the model to understand financial health of selected firms for the years 2011-2015 which are listed in BSE and NSE. Companies are selected from manufacturing and non manufacturing sector. It reveals

that none of the companies completely belongs to safe zone except for few years. Most of the firms are in distress zone.

RESEARCH METHODOLOGY

OBJECTIVES OF THE STUDY:

Behind every study there are some objectives. The main objectives of present study are:

1. To evaluate the Performance of selected Electronic Companies of India.
2. To know the overall scenario of Electronic Companies.
3. To know profitability of Selected Electronic Companies

BROAD HYPOTHESIS OF THE STUDY:

$H_0 =$ There is no significant difference in Liquidity ratio of selected Electronic Companies during the study period

$H_1 =$ There is significant difference in Liquidity ratio of selected Electronic Companies during the study period

$H_0 =$ There is no significant difference in Activity ratio of selected Electronic Companies during the study period

$H_1 =$ There is significant difference in Activity ratio of selected Electronic Companies during the study period

$H_0 =$ There is no significant difference in Leveraged ratio of selected Electronic Companies during the study period

$H_1 =$ There is significant difference in Leveraged ratio of selected Electronic Companies during the study period

$H_0 =$ There is no significant difference in Profitability ratio of selected Electronic Companies during the study period

$H_1 =$ There is significant difference in Profitability ratio of selected Electronic Companies during the study period

❖ **Selection of Sample:**

On the basis of Net Profit, top five Housing NBFCs were selected and the sampling technique is purposive sampling.

❖ **Source of Data:**

The study is based on secondary data for which the data was collected from annual reports of selected Electronic Companies.

❖ **Period of the Study:**

The period of the present study was for five years i.e. 2013-14 to 2017-18.

❖ **Tools of Analysis:**

Data Analysis is done with the help of Ratio and One way ANOVA.

DATA ANALYSIS AND INTERPRETATION

Current Ratio

Company	**2014**	**2015**	**2016**	**2017**	**2018**
Havells	1.421208	1.323585	1.815927	2.201746	1.369764
Honda Seil Power	2.945725	2.904393	3.312876	3.838057	4.053321
Bharat Bijlee	2.297673	2.527772	2.77306	2.901319	3.340817

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	***SS***	***Df***	***MS***	***F***	***P-value***	***F crit***
Between Groups	1.540356	4	0.385089	0.432844	0.782143	3.47805
Within Groups	8.896711	10	0.889671			
Total	10.4370	14				

	7					

Quick Ratio

Company	**2014**	**2015**	**2016**	**2017**	**2018**
Havells	0.807701	0.763443	1.235109	1.577952	0.767873
Honda Seil Power	1.780291	1.786963	2.504651	2.750877	3.309935
Bharat Bijlee	1.701543	2.073444	2.244481	2.32299	2.805936

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	***SS***	***df***	***MS***	***F***	***P-value***	***F crit***
Between Groups	1.844872	4	0.461218	0.682315	0.619988	3.47805
Within Groups	6.75961	10	0.675961			
Total	8.604483	14				

Working Capital Ratio:

Company	**2014**	**2015**	**2016**	**2017**	**2018**
Havells	10.06932	13.148	4.934275	3.430145	8.169287
Honda Seil Power	3.026161	3.128931	2.652722	2.224695	2.05966
Bharat Bijlee	3.026161	3.128931	2.652722	2.224695	2.05966

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	28.31638	4	7.079096	0.547426	0.705295	3.47805
Within Groups	129.316	10	12.9316			
Total	157.6323	14				

[Calculated from annual report of Selected Companies]

Debtor Turnover Ratio:

Company	**2014**	**2015**	**2016**	**2017**	**2018**
Havells	35.39856	38.94937	37.47505	31.77739	29.38642
Honda Seil Power	15.94081	16.14359	18.68398	23.38487	17.06601
Bharat Bijlee	2.807479	3.297652	2.931918	3.027934	2.97975

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	***SS***	***df***	***MS***	***F***	***P-value***	***F crit***
Between Groups	22.17464	4	5.543661	0.021535	0.998931	3.47805
Within Groups	2574.264	10	257.4264			
Total	2596.438	14				

Debt Ratio:

Company	**2014**	**2015**	**2016**	**2017**	**2018**

Havells	0.068022	0.017261	0	0.057048	0.028073
Honda Seil Power	0	0	0	0	0
Bharat Bijlee	0.191169	0.334545	0.382351	0.214229	0.2369

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	***SS***	***Df***	***MS***	***F***	***P-value***	***F crit***
Between Groups	0.004336	4	0.001084	0.044185	0.995681	3.47805
Within Groups	0.245327	10	0.024533			
Total	0.249663	14				

Return on Capital Employed:

Company	**2014**	**2015**	**2016**	**2017**	**2018**
Havells	45.23855	47.99023	42.8411	25.95432	27.9093
Honda Seil Power	9.884516	18.15997	20.637	20.81577	19.90877
Bharat Bijlee	-0.09194	-3.70921	6.455193	7.333795	16.80482

[Calculated from annual report of Selected Companies]

ANOVA:

Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	59.31101	4	14.82775	0.043546	0.9958	3.47805
Within Groups	3405.05	10	340.505			
Total	3464.361	14				

ANALYSIS RELATED TO ANOVA

Ratio	**Calculated Value**	**Table Value**	**H_0Accepted / Rejected**
Current Ratio	0.43	3.47	Accepted
Quick Ratio	0.68	3.47	Accepted
Working Capital Ratio	0.54	3.47	Accepted
Debtor Turnover Ratio	0.021	3.47	Accepted
Debt Ratio	0.044	3.47	Accepted
Return on Capital Employed Ratio	0.043	3.47	Accepted

LIMITATIONS OF THE STUDY

1. The study is limited for 5 years only.

2. The study is based on secondary data collected from annual reports and websites of the selected companies so it has its own limitations.

3. There are many approaches for evaluation out of which only ratios method is considered.

CONCLUSION:

It can be concluded that there is no significant difference among selected ratios of SelectedElectronic Companies during the study period.

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PUBLIC HEALTH INTERVENTION AGAINST COVID -19

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ABSTRACT:
The Corona Virus Disease (COVID-19) began with the Wuhan City of Chine somewhere in December 2019 and was declared global Pandemic by World Health Organisation in February, 2020. It is a highly infectious disease caused by a new virus and spreads primarily through contact with an infected person's cough or sneeze. It is unknown whether the public health intervention can improve the control over this outbreak. Through this paper the researcher has tried to evaluate the association of public health intervention with the epidemiological features of the COVID-19 the steps taken by them and its impact on NOVEL CORONA VIRUS PANDEMIC.

INTRODUCTION:
Kelkar and Shah (2019) describe public health as population scale initiatives that address externalities and provide public goods. These are usually preventive interventions, like vaccination and sanitation[1].

Healthcare consists of transactional services provided through doctors to individuals. There is a case for government intervention in both these components of health policy. However, the government is solely responsible for public health function as there is no market to provide it.

The Novel Coronavirus COVID -19 has generated increased anxiety across the globe. Four months since the first case of COVID -19 in Wuhan, China, the SARS-CoV-2 virus submerged the world and the number of confirmed cases worldwide at a staggering 303,594[2] of these, 315 confirmed cases from India the World's Largest democracy with a Population of 1.34 billion. The Protection of Public Health is a Key function of Government but at the same time it should be ethical, proportionate and subject to strong democratic accountability. India developed its own strategy of working with the infected and key populations who are vulnerable to the infection association with the public health intervention. It rapidly expanded surveillance, divided districts and states as per burden of infections, took up intensive targeted interventions among the high risk, decentralised and expanded testing and treatment manifold, and scaled up information campaigns.

CHALLENGES BEING FACED BY INDIA
India is unique,with reference to its size and population. The number of migrant labourers is largest in the world as people migrant one state to another for seeking the jobs in India. To Control and take care of this huge migrant population is a challenge

[1] https://www.financialexpress.com/economy/indias-covid-19-crisis-response-challenges-are-greater-gettingmoney-to-individuals-and-firms-is-not-as-easy/1917479/
[2] https://medium.com/@covind_19/predictions-and-role-of-interventions-for-covid-19-outbreak-in-india-52903e2544e6

before metro cities like Delhi, Mumbai etc.. on the other hand, social distancing is not the usual human behaviour so teach them this is again a time-consuming process. In Metro cities 40 to 50% population are known to live in urban slums, in unhygienic conditions[3].
The coronavirus outbreak in India has extracted gaping holes in our lack of thinking about health policy. The pandemic is a public health concern, even when it contains elements of healthcare. It is not a problem which can be solved by individuals going to their preferred healthcare providers and seeking treatment. There are various peculiar elements of the pandemic[4]:

1. It is highly contagious;
2. It has no known treatment;
3. It is idiosyncratic in the presentation of symptoms amongst people
4. Prevention, contact tracing, quarantine and lockdown are traditional public health measures being undertaken by the government to control the pandemic. However, testing and healthcare for symptomatic patients are inaccurately not being considered to be falling in the domain of public health, as seen by the government policies and the clarification order of the Supreme Court.
5. **The risk of considering COVID-19 as a healthcare problem**

The Global picture shows that Elderly people, above 60 years of age, who already suffering from one or the other diseases usually get more severely affected and have higher chances of death those compromised immune system such as HIV positive or those on immune-suppressants are at higher risk for severe disease. People working in the health care system in the facility and community are also at a higher risk.
Another challenge that the Indian public health system faces at is that the most severely sick people reach hospital facilities, so it is more difficult to save their lives, often leading to a higher death rate among hospital patients. This has to do with poor access, lack of resources and weak referral systems. In the case of COVID-19, it means that only the more severe cases will reach health facilities and several-fold milder will be missed. Due to ignorance, the milder cases will keep spreading the infection causing substantial loss of life.

PUBLIC HEALTH INTERVENTION:

Dr. Harsh Vardhan, Union Health & Family Welfare Minister launched the 'AYUSH Sanjivani' App and two AYUSH based studies related to COVID-19 situation. Highlighting the importance of harnessing technology for COVID-19 response, the Union Health Minister said "The 'AYUSH Sanjivani ' mobile app, which has been launched on 7th May, 2020 will help to generate data on acceptance and usage of AYUSH advocacies and measures among the population and its impact in prevention of COVID 19. It is developed by Ministry of AYUSH and MEITY and shall reach out to a target of 50 lakh people."

Central teams being deployed to districts with highest number of COVID19 cases[5] :
As many as twenty (20) Central Public Health Teams from the Ministry of Health & Family Welfare have been formed and are being sent to the 20 districts that are

[3] **Q & A ON COVID-19 WITH A PUBLIC HEALTH PERSPECTIVE: A CHAT WITH DR. AMRITA MISRA**

[4] https://medium.com/@covind_19/predictions-and-role-of-interventions-for-covid-19-outbreak-in-india-52903e2544e6

[5] https://pib.gov.in/PressReleasePage.aspx?PRID=1620761

reporting the maximum number of COVID-19 cases in the country. These teams will support the States in implementation of containment measures for COVID-19 in the affected areas within these districts/cities. The teams shall assist the State Governments.

Government of India Ministry of Health & Family Welfare has issued Instructions for care-givers as well to the patients[6]:

- **Mask**:The caregiver should wear a triple layer medical mask appropriately when in the same room with the ill person. Front portion of the mask should not be touched or handled during use. If the mask gets wet or dirty with secretions, it must be changed immediately. Discard the mask after use and perform hand hygiene after disposal of the mask.
- He/she should avoid touching own face, nose or mouth
- Hand hygienemust be ensured following contact with ill person or his immediate environment.
- Hand hygiene should also be practiced before and after preparing food, before eating, after using the toilet, and whenever hands look dirty. Use soap and water for hand washing at least for 40 seconds. Alcohol-based hand rub can be used, if hands are not visibly soiled.
- Afterusing soap and water, use of disposable paper towels to dry hands is desirable. If not available, use dedicated clean cloth towels and replace them when they become wet.
- Exposure to patient:Avoid direct contact with body fluids of the patient, particularly oral or respiratory secretions. Use disposable gloves while handling the patient. Perform hand hygiene before and after removing gloves.
- Avoid exposure to potentially contaminated items in his immediate environment (e.g. avoid sharing cigarettes, eating utensils, dishes, drinks, used towels or bed linen).
- Food must be provided to the patient in his room
- Utensils and dishes used by the patient should be cleaned with soap/detergent and water wearing gloves. The utensils and dishes may be re-used. Clean hands after taking off gloves or handling used items.
- Use triple layer medical mask and disposable gloveswhile cleaning or handling surfaces, clothing or linen used by the patient. Perform hand hygiene before and after removing gloves.
- The care giver will make sure that the patient follows the prescribed treatment.
- The care giver and all close contact will self-monitor their health with daily temperature monitoring and report promptly if they develop any symptom suggestive of COVID-19 (fever/cough/difficulty in breathing)

Instructions for the patient

- Patient should at all times use triple layer medical mask. Discard mask after 8 hours of use or earlier if they become wet or visibly soiled.
- Mask should be discarded only after disinfecting it with 1% Sodium Hypo-chlorite.
- Patient must stay in the identified room and away from other people in home, especially elderlies and those with co-morbid conditions like hypertension, cardiovascular disease, renal disease etc.

[6]https://www.mohfw.gov.in/pdf/GuidelinesforHomeIsolationofverymildpresymptomaticCOVID19cases.pdf

- Patient must take rest and drink lot of fluids to maintain adequate hydration
- Follow respiratory etiquettes all the time.
- Hands must be washed often with soap and water for at least 40 seconds orclean with alcohol-based sanitizer.
- Don't share personal items with other people.
- Clean surfaces in the room that are touched often (tabletops, door knobs, handles, etc) with 1% hypochlorite solution.
- The patient must strictly follow the physician's instructions and medication advice.
- The patient will self-monitor his/her health with daily temperature monitoring and report promand report promptly if develops any deterioration of symptom as detailed below.

Pradhan Mantri Garib Kalyan Package: Insurance Scheme for Health workers fighting against COVID-19 (29th March, 2020) [7]

As per the announcement made under the Pradhan Mantri Garib Kalyan Package, the launch of 'Pradhan Mantri Garib Kalyan Package: Insurance Scheme for Health Workers Fighting COVID-19' has been approved with the following conditions:

i. It will provide an insurance cover of Rs. 50 lakhs for ninety (90) days to a total of around 22.12 lakh public healthcare providers, including community health workers, who may have to be in direct contact and care of COVID-19 patients and who may be at risk of being impacted by this. It will also include accidental loss of life on account of contracting COVID-19;

ii. On account of the unprecedented situation, private hospital staff/ retired/volunteer/ local urban bodies/contract/daily wage/ ad-hoc/outsourced staff requisitioned by States/ Central hospitals/autonomous hospitals of Central/States/UTs, AIIMS & INIs/ hospitals of Central Ministries can also be drafted for COVID-19 related responsibilities. These cases will also be covered subject to numbers indicated by Ministry of Health & Family Welfare;

iii. The insurance provided under this scheme would be over and above any other insurance cover being availed of by the beneficiary.

Government of India sanctions Rs. 15000 crores for India COVID-19 Emergency Response and Health System Preparedness Package(09 APR 2020)

Government of India (GoI) has announced significant investments to the tune of Rs.15000 crores for 'India COVID-19 Emergency Response and Health System Preparedness Package'. The funds sanctioned will be utilized for immediate COVID-19 Emergency Response (amount of Rs.7774 crores) and rest for medium-term support (1-4 years) to be provided under mission mode approach.

The key objectives of the package include mounting emergency response to slow and limit COVID-19 in India through the development of diagnostics and COVID-19 dedicated treatment facilities, centralized procurement of essential medical equipment and drugs required for treatment of infected patients, strengthen and build resilient National and State health systems to support prevention and preparedness for future disease outbreaks, setting up of laboratories and bolster surveillance activities, bio-security preparedness, pandemic research and proactively engage communities and conduct risk communication activities. These interventions and initiatives would be implemented under the overall umbrella of the Ministry of Health and Family Welfare.

[7] https://www.nhp.gov.in/whatsnew

PUBLIC HEALTH INTERVENTION ISSUES AND CHALLENGES[8]:

✓ First, almost every country has been slow to act to control the spread of the virus. Even China did not respond as quickly as it should have. But, by now, it seems that the dangers of being slow are much greater than those of overreacting, even allowing for the costs of economic disruption. India went for the national lockdown, not a day too soon. The first coronavirus case was detected in India on January 30. The number of cases kept rising through March. On March 18, Prime Minister Narendra Modi appeared on national television and urged Indians to observe a self-imposed “janata” or people’s curfew on March 22 to defeat the virus.On March 21, the entire rail network came to a halt. The messaging and the planning—again, observed from far away—seem to be less than optimal. Supplies of food and other basic commodities are disrupted, it led to chaos and other kinds of health problems.

✓ Testing is important to guide individuals and public authorities in targeting social isolation and allocation of health supplies. As the head of the World Health Organisation said, responding to the virus without adequate testing is like fighting a fire blindfolded. Most accounts suggest that India has been way behind the curve in scaling up testing. If testing is not increased rapidly, the lockdown could be longer, more widespread and worse than it needs to be.

✓ Third, ramping up the production of health supplies that are needed to treat coronavirus patients is critical, as the number of identified cases starts to jump—New York City is an example. One of the richest cities in one of the richest nations in the world is already finding it difficult to treat just over 20,000 patients.It is not entirely clear if the Indian government is doing enough on the front of manufacturing the health supplies the country may need over the next few weeks. And, this is in a situation where India is not as well-endowed with doctors and other medical professionals as are richer economies.

✓ It is difficult for people in India to understand the importance of isolation and quarantine, even though it is a response to a pandemic. The faith in the public health system cannot emerge immediately as a response to the pandemic. There have been repeated reports of people escaping hospitals or quarantine in the past week. One key issue is the trust deficit in the public health system in many parts of the country. Other important factors include fear of isolation and stigma attached to those who are being quarantined and isolated.Epidemiologists and public health experts say that increasing expenditure in the public health system is key to building trust. “[Escaping quarantine] is mostly out of fear and stigma, and wanting to be with one's family since it is for a prolonged time as well as lack of income.

✓ An overstretched public health-care system forces millions of Indians to turn to the unregulated private health-care sector. The Indian government's expenditure on health as a percentage of GDP still hovers around 1·5%, one of the lowest in the world. For around 52% of households in urban areas, and 44% of households in rural areas, the private sector is the main source of health care when they are sick, according to government data.

✓ Finally, the thinness of talent at the top (for example, the number of IAS officers relative to the population has not improved since colonial days, despite increased complexity and demands of governance, and vacancy rates are high), the geographic over-centralisation of decision-making, and the tendency to rely on relatively few loyalists for decision-making, make it difficult to marshal expertise for responding to the crisis, whether it is designing a lockdown that minimises suffering and economic harm to

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[8]**https://www.financialexpress.com/economy/indias-covid-19-crisis-response-challenges-are-greater-getting-money-to-individuals-and-firms-is-not-as-easy/1917479/**

the extent possible, figuring out monetary and fiscal policy responses, or organising the health sector to control the core problem of treating the illness. India is a poor country, it is deficient in human capital, and it does not use its human capital effectively.

CONCLUSION

"Infectious disease surveillance and in particular, the timely detection and early warning of disease outbreaks are a function of strength and capacity of the health system. This is the time to win the trust of people with a thoughtful approach. This can only be done by increasing the health expenditure by government as a percentage of GDP compared to what it is now and not just through health insurance. Creating a reliable system with a public health cadre will address these problems".

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REPRESENTATION OF FEMALE CHARACTERS IN SHAKESPEARE'S PLAYS HAMLET AND OTHELLO UNDER PATRIARCHAL DOMINANCE

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ABSTRACT:
This article aims to analyse patriarchal dominance over Elizabethan Women through Shakespeare's female characters from the plays Hamlet and Othello. Female characters are important or plays significant role in Shakespeare's plays for the dramatic turn. But still fact is that women characters are proved weak under patriarchal dominance or victimized by male characters at the end of the play. In Elizabethan era women of Shakespeare's plays had been restricted by masculine society. A woman had been the property of their fathers and after marriage given to their future husbands. Women of Elizabethan era had represented virtues like obedience, sexual chastity, silence, piety, humility, patience and constancy. In Shakespearian era, men were used to play role of the bread winner and role of women were for the housewives and mothers. Shakespearian female characters reflected the image and position of women from Elizabethan age in general.

Keywords: Patriarchal, Shakespeare, Hamlet, Othello, Ophelia, Desdemona, Gertrude

ROLE OF WOMEN IN HAMLET:
No doubt that Hamlet is exactly not based on women characters, yet both female characters plays significant role for the tragic effect in the play.

ROLE OF GERTRUDE:
Audience's first perception of Gertrude is included by Hamlet's response to knowing that she has married her brother- in- law after he has killing her husband. Hamlet shows anger and disillusionment toward her, as Hamlet believes that his mother should remain faithful and loyal to the memory of his father. Yet, there is no evidence or proof that she knows of the murdered Claudius has committed. It seems that she has allowed herself to be seduced by Claudius but once again there is no evidence that seduction has done before the death of King Hamlet or afterwards. Now Gertrude finds herself stirred positions where she is asked to play different roles for different men. She feels guilty that her son considered her sinner and also feels helpless that she is not able to solve her son's misunderstanding due to her relationship with Claudius. Claudius, her second husband also has his own expectations that she play according to his wish and disregarded her son Hamlet. Here can be find a fickle portrayal of Gertrude by Shakespeare who lacks her virtue. However, in the Act II, Scene IV she shows motherly care for Hamlet's welfare and makes situation to speak with Hamlet in her chamber. When Hamlet accuses her of lust, she does not make any excuses for her defense and openly admits her shortcoming. In the end of the play at the final Act, when Claudius pours the poisoned wine, Gertrude claims thirst and ask for to drink. Claudius warns her not to drink but she does knowing it was poured for Hamlet and she dies. She tells her son that the drink is poison for him. Here in her sacrifice for her son, there is regret and redemption for Gertrude's fickleness, lust and immaturity.

ROLE OF OPHELIA:

Daughter of Polonius, sister of Laertes, and lover of Hamlet, Along with Gertrude, Ophelia is too important female character in the play. Ophelia’s actions and trajectories are unfortunately defined by the men around her. Ophelia's character is a presented as a gentle, obedient, loyal and young woman who is meant to be love of Hamlet's life, even though reality is that he rarely considers her importance in his plans. Most of the time in the play Hamlet seems to be cruel to her, as if he is using her as pawn, as is so when she says her father that Hamlet appears doing acting and like a crazy mad man. It seems very clearly that he is using Ophelia as a part of his plan to get the word out that he is insane. Here Shakespeare portrayed daughterhood through the character of Ophelia. She is an example of a perfect or ideal daughter who obeys her father without argument. Even when she is asked to reject Hamlet whom she believes love of her life, she responds that she will obey, and meet with Hamlet to deceive him. Laertes and Polonius both warn Ophelia about Hamlet and forbid her to come near his presence as they think he is just using her for his sexual pleasure. Laertes and Polonius are both so ignorant of Ophelia’s true feelings towards Hamlet. Polonius also uses his daughter for his own reason as he tells to spy on Hamlet. This actually becomes turning point in the play. As Ophelia tries to return his gift, Hamlet became defensive refusing to accept the return and responds with " I never gave you aught" [1]. He continues to express his anger and disgust with the women as he tells her, "Get thee to a nunnery, why wouldst thou be a breeder of sinners? "[1]. This hurts Ophelia mentally. Through Ophelia, we witness Hamlet’s evolution and de-evolution into a man that has a firm belief that all women are ignorant and deceitful:
“I have heard of your paintings well enough; God hath given you one face, and you make yourselves another: you jig, you amble, and you lisp, you nickname God’s creatures, and make your wantonness your ignorance” (III. 1. 144-148).

As Kay Stanton argues in her essay Hamlet's Whores:
Perhaps it may be granted...that what makes a woman a whore in the Hamlets' estimation is her sexual use by not one man but by more than one man.... what seems to enrage [Hamlet] in the 'nunnery' interlude is that Ophelia has put her sense of love and duty for another man above her sense of love and duty for him, just as Gertrude put her sense of love and duty for her new husband above her sense of love and duty for her old. Gertrude chose a brother over a dead Hamlet; Ophelia chooses a father over a living Hamlet: both choices can be read as additionally sexually perverse in being, to Hamlet, 'incestuous' (Stanton, New Essays on Hamlet)[[1]].

Here in the play Ophelia's perfection also becomes her downfall, unfortunately she has no voice and can not found heroine qualities and there is a lack of any kind of desire to defend her. Ophelia's very dear Hamlet causes all her emotional pain throughout the play, and when his hate is responsible for her father's death, she has endured all that she is capable of enduring and goes insane. But even in her insanity she symbolizes, to everyone but Hamlet, incorruption and virtue. "In her wanderings we hear from time to time an undertone of the deepest sorrow, but never the agonized cry of fear or horror which makes madness dreadful or shocking. And the picture of her death, if our eyes grow dim in watching it, is still purely beautiful". (Bradley, Shakespearean Tragedy 132-3).

The patriarchal nature of the society reinforces and rewards the compliance of women. Ophelia dies because she lost her father, for her the source of both order and authority. Gertrude dies, because she was unwilling to bow to authority. She rejects her role as a woman, destroying herself. Women who adjust with the social order are lost without it; those who deft it can know no other opportunity than to be lost within it.

ROLE OF FEMALE CHARACTERS IN OTHELLO:

An analysis of the play Othello from women point of view, allows judging the different social values and status of women in the Elizabethan patriarchal marriages, suppression and restriction of feminity. Women were expected to be silent, chaste, and obedient to their husbands, fathers, brothers and all men in general. There are only three women in the play "Othello"; Desdemona, Emilia and Bianca. All three female characters are regarded by the male characters as persons who are owned by them.

Desdemona:

A young attractive white woman, who falls in love with a black man; She's strong from the inside, but she doesn't tend to show that side as much as she wants. She plays a peace-maker in her marriage and always tries to understand her husband, Othello. Throughout the play she feels difficulty to prove her loyalty and respect to her husband. Desdemona accepts his companionship. She is determined to "abandon her father and serve Othello." The term serve refers to the inferiority of the Desdemona. She is responsible for serving her husband despite being brave enough to deny her father. His character is moulded by society. According to Desdemona only man has the capacity to solve the crisis. She does not believe in her own knowledge. Her position as woman demeans her intelligence and capability to deal with the problems arising. As Marsh says, “In the distress she feels, she turns to a man (Iago) for help and advice. This suggests that she does not expect to understand for herself, but a man will be able to explain it to her”. (Marsh, 1998)

It is also evident in the following lines:

Oh good Iago,
What shall i do to win my lord again?
Good friend, go to him, for, by this light of heaven,
I know not how i lost him” (Act IV, Scene 2)

Apart from that Desdemona was often treated as a inferior by Othello. She was treated as a property presented through the marriage. Othello seems to possess the elements of patriarchy or male dominance. He oppresses Desdemona throughout the play. It occurs through the verbal comments. Degrading comments such as “strumpet” and “whore” are made towards her. Desdemona is a victim of sexism. She can be considered to be a victim of violence since Othello does not fulfil his duties as husband and hits her in public. Desdemona herself declares that " I am obedient", continuing to obey Othello's orders from the early happy phase of their relationship through to the later stage of his jealous ravings. Even when he orders Desdemona to go her bed towards the end of Act IV, she still replies with the submissive tone, "I will my lord". In her final breath she still remains true to her husband, saying " Commend me my kind lord", she appears to have completely accepted her role as subordinate and obedient wife.

EMILIA:

As a action progresses, Emilia reveals a sharp-eyed and self-conscious perspective on however ladies square measure usually susceptible to abuse at the hands of their husbands. She tells Desdemona that “they eat us hungerly, and when they are full / they belch us” (3.4.) and later explains to her mistress that “I do suppose it's their husbands’ faults / If wives do fall” (4.3.). Emilia also shows courage and self-assurance in chastising Othello for doubting his wife’s virtue, scolding him “If you're thinking that alternative / take away your thought” (4.2.). once she realizes Othello has killed Desdemona, Emilia like a shot lashes out at him, stating “Thou dost belie her and thousand art a devil” (5.2.). Even though she is in a highly dangerous scenario, alone with a person United Nations agency has simply tried himself capable of murder and may well kill her so as to hide his crime, Emilia intrepidly insists on transfer him to justice, explaining “I’ll create thee identified / tho' I lost twenty lives” (5.2.). Emilia also indicates that she is usually alert to her correct role in society. Once revealing Iago's plotting at the top of the play she states that " Tis correct I conform him, however not now". though happening to betray her husband, she still feels the need to explain why she is rebelling from the accepted behaviors

BIANCA:
Bianca is described in the play as a courtesan, essentially a prostitute. Under the best of circumstances, courtesans were kept women who were financially dependent upon and socially attached to the men they served. Bianca is Cassio's love interest in Othello. She expresses a similar sentiment, consoling herself when Cassio spurns her by arguing that " I must be circumstanced "; she feels compelled by the laws of society to be ' circumstanced' - to put up wit it ' implying that she has no other choice.

CONCLUSION:
All main feminine characters appear to own constant tragic component hooked up to them – particularly their early unnatural death. All ladies appear to own loaded guilt upon them before their death. Gertrude is guilty of remarrying thus quickly once her husband's death. however finding guilt in Desdemona and Ophelia looks rather arduous to manage. Desdemona is found guilty by her husband however the audience is aware of she isn't, whereas Ophelia could also be found guilty by the reader to own betrayed Hamlet by not requiting his love. Excluding guilt obedience looks to play a significant role within the context of the feminine characters. Othello needs his married person to be obedient and fears she isn't – freelance of whether or not he's gift or not – however once he's gift he uses force to form her obedient . Ophelia is additionally terribly obedient to her brother and her father, which constitutes the falsehood of her character and will thus play a significant role in Hamlet's development. Gertrude is obedient to her husband the way a married person is meant to be obedient . She doesn't ought to be reminded and simply blindly follows her husband in her words and deeds till the tip of the play. Elizabethan European nation would possibly had been dominated by a robust single woman however ladies at larger image were still expected to induce married and adapt their husbands.

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INTERNET OF MEDICAL THINGS + ARTIFICIAL INTELLIGENCE INTERNET OF THINGS [LOMT + LOMT]

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ABSTRACT:
The medical IoT (IoMT) is being amplified by the symbiotic growth of machine learning (ML) and artificial intelligence (AI). In processing large amounts of continuously streaming data from connected medical devices, doctors are able to reach actionable conclusions more quickly and reliably.**The usage of the** Internet of Things *(IoT)* **in healthcare** *(the industry, personal healthcare and healthcare payment applications)* **has sharply increased across various specific Internet of Things use cases. At the same time we see how other healthcare IoT use cases are picking up speed and the connected healthcare reality is accelerating, even if hurdles remain.**

Keywords: IoT (IoMT and (AI), Why combine IoT and Artificial Intelligence?,Categorizing Medical IoT Use Cases

INTRODUCTION
The rise of the Internet of Things and Artificial Intelligence is critical to the digital transformation of modern healthcare as far as healthcare monitoring and delivery are concerned. The pace and evolving changes in the segment of healthcare extend right across the spectrum – from the development of new treatments and medicines to the frontline delivery of innovative and paramount outpatient and emergency care. Surprisingly, it is at the frontline where the most amazing advancements are happening and where the advantages are registering in the biggest volumes. It is no surprise that healthcare providers across the world are among the most prolific data generators, from drug trials to patient records. Medical practitioners and their industry partners are now finding it extremely easy and convenient to leverage data for making more informed decisions, thanks to the digitization of data as part of the initiatives toward electronic patient records. Already, this data is used in a wide range of ways for understanding historic events. Furthermore, it also demonstrates usefulness to understand and predict current and future trends as far as the healthcare sector is concerned. This data, when paired with the latest Internet of Things and Artificial Intelligence algorithms, can be used for speeding up the otherwise complicated processes and functionalities of data. It can be used for driving reasoning and decision-making. It can be of great value to medical practitioners and support staff to get more informed insights on critical decisions such as what equipment to invest in and how to supplement medical strategies. Combining The IoT And AI In HealthcareThe rise of the Internet of Things and Artificial Intelligence is critical to the digital transformation of modern healthcare as far as healthcare monitoring and delivery are concerned. Healthcare IoT devices, which are an additional source of rich data, also allow for more remotely managed and connected healthcare equipment. This equipment can feed data directly not only into individual patient records and treatment plans, but also into larger healthcare analytics systems driven by artificial intelligence.

Remote Data And Accurate Assessment
Growing demand for out-patient and at-home care along with connectivity advancements are also driving the use of devices powered by the IoT and AI. Today, privately-based medical insurers are making use of two-way smartphone applications for smartly connecting general practitioners with customers when it comes to initial consultation and diagnosis.
This serves as a cost-efficient option for avoiding a probably unnecessary in-person consultation for a minor ailment. The next steps ahead for this is to accurately and completely share vitals with medical practitioners on a real-time basis. This will be beneficial to enable multi-faceted telehealth services by making the use of affordable devices for interfacing users together. It also proves useful for data transmission through connected devices like monitors, pacemakers, and other devices.
Keeping Control Of Inventory
Beyond the patient, the Internet of Things is at the forefront of enhancing inventory management. The amount on replacing reusable hardware can be drastically reduced by tracking the whereabouts of reusable and expensive medical equipment both in the homes of patients and in hospitals. Using the Radio-frequency identification (RFID) technology, equipment rental companies and hospitals can easily and accurately track and manage their medical equipment inventories.
It can also be used for tracking and managing other supplies like disposables and drugs. By doing this, inventory carrying costs can be dramatically reduced and there will be overall variable costs across different health bodies. This is primarily due to the fact that many misplaced or unreturned items just end up in the landfill.
The association between Artificial Intelligence, Healthcare, and the Internet of Things is promoting medical and other health bodies to benefit like never before. Great times are indeed ahead in the healthcare sector, thanks to this association. Find out how NetObjex platforms can assist you to drive the best of the Internet of Things and Artificial Intelligence for your healthcare requirements by contacting us now at 1 (855) 928-2283 or *info@netobjex.com*.
10 examples of the Internet of Things in healthcare

1. **Cancer treatment**

In June 2018, data was presented at the ASCO Annual Meeting from a randomised clinical trial of 357 patients receiving treatment for head and neck cancer. The trial used a Bluetooth-enabled weight scale and blood pressure cuff, together with a symptom-tracking app, to send updates to patients' physicians on symptoms and responses to treatment every weekday. The patients who used this smart monitoring system, known as CYCORE, experienced less severe symptoms related to both the cancer and its treatment when compared to a control group of patients who carried on with regular weekly physician visits (with no additional monitoring). Bruce E. Johnson, President of ASCO (the American Society of Clinical Oncology), said that the smart technology "helped simplify care for both patients and their care providers by enabling emerging side effects to be identified and addressed quickly and efficiently to ease the burden of treatment."

The study demonstrates the potential benefits of smart technology when it comes to improving patient contact with physicians, and monitoring of patients' conditions, in a way that causes minimal interference with their daily lives. As Richard Cooper, Head of Digital at AXA PPP Healthcare, told Econsultancy in an interview about the future of health tech, "Some of the developments we see have stopped people being tied to their house, or kept them from being regularly in hospital."They're solving what are in some cases quite simple problems, and giving people that quality of life back. … Technology makes your interaction with your medical professional much more powerful and useful, and puts you more in control."

2. Smart continuous glucose monitoring (CGM) and insulin pens

Diabetes has proven to be a fertile ground for the development of smart devices, as a condition that affects roughly one in ten adults, and one that requires continual monitoring and administration of treatment.

A Continuous Glucose Monitor (CGM) is a device that helps diabetics to continuously monitor their blood glucose levels for several days at a time, by taking readings at regular intervals. The first CGM system was approved by the US Food and Drug Administration (FDA) in 1999, and in recent years, a number of smart CGMs have hit the market.

Smart CGMs like Eversense and Freestyle Libre send data on blood glucose levels to an app on iPhone, Android or Apple Watch, allowing the wearer to easily check their information and detect trends. The FreeStyle LibreLink app also allows for remote monitoring by caregivers, which could include the parents of diabetic children or the relatives of elderly patients.

These devices are even starting to become available on the NHS: on World Diabetes Day 2018 (14th November), the NHS announced that it would be making the FreeStyle Libre smart CGM available on prescription to Type 1 Diabetes sufferers. It estimated that this would increase the percentage of diabetes patients who have access to smart CGM devices in England from 3-5% to 20-25%.

Another smart device currently improving the lives of diabetes patients is the smart insulin pen. Smart insulin pens – or pen caps – like Gocap, InPen and Esysta have the ability to automatically record the time, amount and type of insulin injected in a dose, and recommend the correct type of insulin injection at the right time.

The devices interact with a smartphone app that can store long-term data, help diabetes patients calculate their insulin dose, and even (in the case of the Gocap) allow patients to record their meals and blood sugar levels, to see how their food and insulin intake are affecting their blood sugar.

3. Closed-loop (automated) insulin delivery

One of the most fascinating areas in IoT medicine is the open-source initiative OpenAPS, which stands for Open Artificial Pancreas System. OpenAPS is a type of closed-loop insulin delivery system, which differs from a CGM in that as well as gauging the amount of glucose in a patient's bloodstream, it also delivers insulin – thus "closing the loop".

OpenAPS was started in 2015 by Dana Lewis and her husband Scott Leibrand, who hacked Dana's CGM and her insulin pump in order to automate the delivery of insulin into her system. Using the data feed from the CGM and a Raspberry Pi computer, their own software completes the loop and continuously alters the amount of insulin Dana's pump delivers.

Automating insulin delivery offers a number of benefits that can change the lives of diabetics. By monitoring an individual's blood glucose levels and automatically adjusting the amount of insulin delivered into their system, the APS helps to keep blood glucose within a safe range, preventing extreme highs and lows (otherwise known as hyperglycaemia – excessively high glucose – and hypoglycaemia – excessively low glucose).

The automatic delivery of insulin also allows diabetics to sleep through the night without the danger of their blood sugar dropping (also known as night-time hypoglycaemia).

Although OpenAPS is not an "out of the box" solution and requires people to be willing to build their own system, it is attracting a growing community of diabetics who are using its free and open-source technology to hack their insulin delivery. The OpenAPS website declares that, "As of January 15, 2018, there are more than (n=1)*1,078+ individuals around the world with various types of DIY closed loop implementations."

The OpenAPS community aren't the only ones to have had this idea. In 2013, Bryan Mazlish, a father with a wife and young son who both have Type 1 Diabetes, created the first automated and cloud-connected closed-loop artificial pancreas device. In 2014, he founded SmartLoop Labs – now known as Bigfoot Biomedical – to scale and commercialise the development of an automated insulin delivery system based on his invention.

The company is currently preparing for a pivotal trial of its solution, details of which are due to be announced in "late 2018 or early 2019". Bigfoot currently anticipates that its automated system will be launched commercially in 2020, pending FDA review and approval.

4. Connected inhalers

Like diabetes, asthma is a condition that impacts the lives of hundreds of millions of people across the world. Smart technology is beginning to give them increased insight into and control over their symptoms and treatment, thanks to connected inhalers.

The biggest producer of smart inhaler technology is Propeller Health. Rather than producing entire inhalers, Propeller has created a sensor that attaches to an inhaler or bluetooth spirometer. It connects up to an app and helps people with asthma and COPD (Chronic Obstructive Pulmonary Disease, which includes emphysema and chronic bronchitis) understand what might be causing their symptoms, track uses of rescue medication, and also provides allergen forecasts.

The company was founded in 2010, and in 2014 received FDA clearance for two sensors designed to work with inhalers from major pharma companies: GlaxoSmithKline's Diskus inhaler, and the Respimat inhaler from Boehringer Ingelheim. Since then, Propeller has continued to collaborate with a number of major producers of inhalers, and now says that its sensor "works with most inhalers and leading bluetooth spirometers".

One of the benefits of using a connected inhaler is improved adherence – in other words, medication is taken more consistently and more often. The Propeller sensor generates reports on inhaler use that can be shared with a patient's doctor, and show whether they are using it as often as is prescribed. For patients, this provides motivation and also clarity, showing how the use of their inhaler is directly improving their condition.

How AI is transforming healthcare

5. Ingestible sensors

Proteus Digital Health and its ingestible sensors are another example of how smart medicine can monitor adherence. According to a study by the World Health Organisation in 2003, 50% of medicines are not taken as directed.

Proteus' system is one effort to reduce this figure: the company has created pills that dissolve in the stomach and produce a small signal that is picked up by a sensor worn on the body. The data is then relayed to a smartphone app, confirming that the patient has taken their medication as directed.

Proteus has so far trialled the system with pills for treating uncontrolled hypertension and Type 2 Diabetes, and antipsychotic medication. In late 2017, ABILIFY MYCITE – an antipsychotic medication created by Proteus and Otsuka Pharmaceutical Co. – became the first FDA-approved drug with a digital tracking system.

As with connected inhalers, ingestible sensors can help to track and improve how regularly patients take their medication, as well as allowing them to have a more informed dialogue with their physician about treatment. While the idea of taking pills with a sensor might seem invasive, the system is opt-in on the part of patients, and they can discontinue sharing some types of information, or opt out of the program altogether, at any time.

6. Connected contact lenses

Medical smart contact lenses are an ambitious application of the Internet of Things in a healthcare context. While the concept has a great deal of potential, so far, the science hasn't always managed to live up to expectations.

In 2014, Google Life Sciences (now known as Verily, a subsidiary of Google's parent company Alphabet) announced it would be developing a smart contact lens that could measure tear glucose and provide an early warning system for diabetics to alert them when their blood glucose levels had dropped or risen beyond a certain threshold. It partnered with Alcon, the eyecare division of pharmaceutical company Novartis, for the project.

However, the project attracted a great deal of scepticism from researchers who believed that the idea of measuring blood glucose levels via tears wasn't scientifically sound – and ultimately, they were proven correct. After a lengthy period with no real news about project developments, in November 2018 Verily confirmed that the project was being shelved.

But other medical applications for smart contact lenses might prove more successful. Verily is still working on two smart lens programs with Alcon, which aim to treat presbyopia (long-sightedness caused by a loss of elasticity in the lens of an eye) and cataract surgery recovery.

Swiss company Sensimed has also developed a noninvasive smart contact lens called Triggerfish, which automatically records changes in eye dimensions that can lead to glaucoma. First developed in 2010, Triggerfish is now CE-marked and FDA-approved, meaning it is approved for marketing and sale in Europe and the U.S., and was approved for sale in Japan in September 2018.

7. The Apple Watch app that monitors depression

Wearable technology doesn't always have to be designed with a medical use in mind to have healthcare benefits. Takeda Pharmaceuticals U.S.A. and Cognition Kit Limited, a platform for measuring cognitive health, collaborated in 2017 to explore the use of an Apple Watch app for monitoring and assessing patients with Major Depressive Disorder (MDD).

The results from the exploratory study were presented in November 2017 at pharma and biotech conference CNS Summit.

The study found a very high level of compliance with the app, which participants used daily to monitor their mood and cognition. The app's daily assessments were also found to correspond with more in-depth and objective cognition tests and patient-reported outcomes, showing that cognitive tests delivered via an app can still be robust and reliable.

While the study was only an exploratory pilot, it has demonstrated the potential for wearable tech to be used to assess the effects of depression in real-time. Like other smart medical devices that gather data, the Apple Watch app could also give patients and healthcare professionals more insight into their condition, and enable more informed conversations about care.

8. Coagulation testing

In 2016, Roche launched a Bluetooth-enabled coagulation system that allows patients to check how quickly their blood clots.

This is the first device of its kind for anticoagulated patients, with self-testing shown to help patients stay within their therapeutic range and lower the risk of stroke or bleeding. Being able to transmit results to healthcare providers means fewer visits to the clinic. The device also allows patients to add comments to their results, reminds them to test, and flags the results in relation to the target range.

9. Apple's ResearchKit and Parkinson's Disease

In 2018, Apple added a new 'Movement Disorder API' to its open-source Research Kit API, which allows Apple Watches to monitor Parkinson's Disease symptoms.
Normally symptoms are monitored by a physician at a clinic via physical diagnostic tests, and patients are encouraged to keep a diary in order to give a broader insight into symptoms over time. The API aims to make that process automatic and continuous.
An app on a connected iPhone can present the data in a graph, giving daily and hourly breakdowns, as well as minute-by-minute symptom fluctuation.
Apple's ResearchKit has also been used in a number of different health studies, including an arthritis study carried out in partnership with GSK, and an epilepsy study that used sensors in the Apple Watch to detect the onset and duration of seizures.
Apple is keen to tout the potential for its apps to aid with medical research and care, and to that end, in 2017 it launched CareKit, an open-source framework designed to help developers to create apps for managing medical conditions. Unlike HealthKit, which is aimed more at general fitness and wellbeing, CareKit can be used to design apps with a specific medical purpose – so watch this space for more medical innovations that make use of iPhone and Apple Watch technology.

10. ADAMM Asthma Monitor

ADAMM is a wearable smart asthma monitor that purports to detect the symptoms of an asthma attack before its onset, allowing the wearer to manage it before the attack gets worse.
It vibrates to notify the person wearing it of an impending asthma attack, and can also send a text message to a designated carer at the same time. Other features of the device include inhaler detection – the device can detect and track inhaler use, if the patient can't remember whether they've used one – and voice journaling to record things like changes, feelings and behaviours.
It also has an algorithm technology that learns what 'normal' is for the wearer over time, allowing it to better understand when something has changed.
ADAMM works in conjunction with an app and web portal, helping asthma patients to set medication reminders, view data from the device, and remind themselves of their treatment plan.
The device was originally expected to achieve FDA clearance and be released for consumers at the end of 2017, but hasn't yet been cleared, showing that these devices can sometimes take a long time to come to market even once developed. However, a study on patient health monitoring platforms that incorporate IoT devices published in July 2018 mentions that ADAMM is "expected to receive FDA clearance soon".

2. Why combine IoT and Artificial Intelligence?

It works both ways — IoT and AI need each other. The Internet of things implies handling very large volumes of data which has to be made sense of and put to work. Thus, the IoT-related functions can and should be enhanced by AI algorithms to make the experiences truly meaningful for users and/or customers. Well, what kind of meaning does AI provide to IoT?Since IoT is a young technology that connects the gazillions of smart devices, it does have imperfections. For instance, such criteria as accuracy and speed of IoT data transmission are yet to be improved. Plus, an artificial intelligence system not only mimics the human way of performing tasks but it is also learning from what it patterns itself from. This mechanism of self-improvement is of the essence to AI. Speaking in general terms, Artificial Intelligence has much for IoT to take advantage of. In the narrow sense, it is applied as the AI software embedded within IoT devices and augmenting fog or edge computing solutions to bring intelligence to IoT. As a result, smart devices generate such a huge amount of rapidly analyzed sensor data that it cannot help but fuel Machine Learning increasing the intelligence of the physical things.

Artificial intelligence and IoT in healthcare

When it comes to combining AI and IoT in healthcare, chances are together they will improve operational efficiency in this field. Tracking (collecting), monitoring (analyzing), control, optimization (training), and automation (modeling, predicting) — these are the key steps that provide for the smart and efficient application of AI algorithms in IoT devices.

Acting in concert, they can reduce the burden of administrative work for clinical staff. Having clinical workflows improved, medical officers will be able to spend more time with the patients and the healthcare service-delivery is consequently bound to take a more patient-centric approach.

Therefore, the main use cases of AI-enabled IoT are the following:

Medical staff, patients, and inventory tracking

Chronic disease management

Drug management

Emergency room wait time reduction

Remote health control

IoT operational principles in the medical field

Longing to know what the outcome of such an innovative approach might be is reasonable, albeit non-essential. The best way to explain why one needs to use AI-enabled IoT in healthcare

2. RELATED WORKS:

Categorizing Medical IoT Use Cases1. DiagnosticsHow can medical IoT devices improve diagnostics? Devices that track bodily metrics that could indicate medical conditions like diabetes and atrial fibrillation are becoming increasingly available. Key medical parameters like blood chemistry, blood pressure, brain activity and pain levels can be gathered on a continuous basis.This can help detect early signs of disease onset or activity, improving responses. Causal indicators can be closely tracked with the right targeted sensors, once disease proclivity or risk factor have been identified. Even the most recent version of Apple Watch 4 has been declared as a class 2 medical device, because of features like heart rhythm monitoring and fall detection.

Image Credit: Apple

It must be said that most consumer-oriented devices have not gone through the FDA regulatory process to be qualified as a medical device.

2. Recuperation

Postoperative recovery time for patients is a significant part of the procedure cost, and minimizing that is an essential element of cost reduction. For instance, for a total knee replacement, hospitalization is about two days in the US compared to four to five days in National Health Services (NHS) in the U.K. Beyond the hospital, there is a need to reduce time at an SNF (Skilled Nursing Facility) and Physiotherapy. This can be accomplished by using wearable sensors that assist with exercise, compliance and remote monitoring for issues that might result in revisions if not dealt with timely.

Sensors can track various critical metrics and alert caregivers to respond in time. Sensors combined with telemedicine make it even easier to help speed up recovery. Knowing what patients are doing in between visits can help speed up the recovery time for post-surgical procedures. In fact, a collaboration between Geisinger System and Force Therapeutics over three years has resulted in significantly improved outcomes. That includes a 30 percent reduction in hospital length of stay, a 56 percent reduction in skilled nursing facility utilization, as well as an 18 percent reduction in readmissions, reports Greg Slabodkin in Health Data Management.

3. Chronic Care

Sensors that track bodily parameters are getting increasingly sophisticated with blood pressure, glucose levels, sweat and even tear analysis. The benefit is not only in terms of logistics but also in terms of the frequency of data capture as compared to standardized tests. Mobility sensors can help improve gait and form in case of chronic degenerative diseases like rheumatoid arthritis. Another category of IoMT device application is in the monitoring and response of patients to treatment compliance. In chronic care specifically, poor outcomes and extended recovery can be avoided by measurement and monitoring ideally suited to IoT devices.

4.METHODOLOGIES:

IoT operational principles in the medical field

Longing to know what the outcome of such an innovative approach might be is reasonable, albeit non-essential. The best way to explain why one needs to use AI-enabled IoT in healthcare is to provide a more detailed analysis of the IoT operational principles enabling a more nuanced understanding of potential fields of its application in the healthcare system.

1. **Devices with physical interfaces to/from the real world.**

Fundamentally, in healthcare, any service a client requests is related to the physical world. Besides, the use of services involves the physical interaction of caregivers, patients, and the devices as such. These connected devices as robotics in medicine interact with the physical environment through multiple physical interfaces. Developing intuitive physical interfaces with different communication technologies (i.e. Bluetooth, NFC, WiFi, USB) is thus bound to level up the quality of this interaction, lead to a better information flow among IoT robots and improved service representation and tracking for people. The reason is that, given an IoT-based solution, the physical interfaces can create wireless networks. Apparently, the IoT nodes that stand behind certain sensor devices are being grouped together in such a way to get devices easily connected to the Internet architecture and to get exchange processes well-established.

2. **Structured data input through sensors.**

IoT technology produces wireless sensor networks. As previously stated, these networks are successfully bridging the physical and digital worlds. What prevents the performance of the data exchange between these two worlds from becoming a mess is the structured information flow. Input data is collected by the sensor devices and sent to the data control center for further feedback. There might be several data channels involved in parallel, nevertheless, multiple sensor data collection is executed with minimal latency. Also, despite the fact that the number of data sources is typically enormously large, the data records remain small and well-structured due to the edge analytics while high dynamism of IoT devices allows deducing missing information from the neighboring gadgets to fill the gaps.

3. **Tiny input/output devices**

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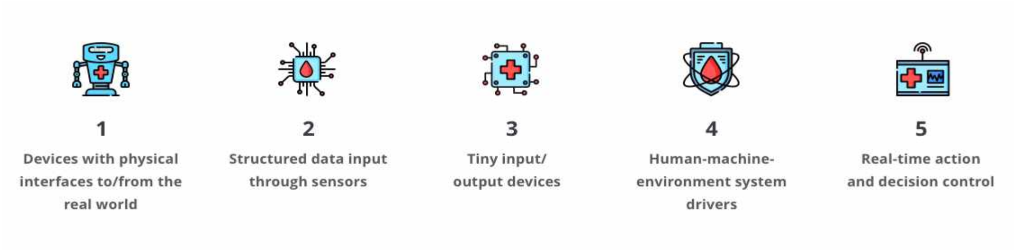
There are certain requirements for the appearance and size of the physical IO devices. Moreover, the requirements should be adjusted to the environmental conditions in which the device is operating. So, in contrast to human interfaces that need relatively big input/output devices, physical interfaces of IoT devices receive input through sensors (which are tiny due to the use of micro-electromechanical systems (MEMS) technology) and send data back to mobile/cloud computers through wired or wireless interfaces. Consequently, there is not only a need in, but there is also a real possibility of having the size of sensors as well as the IO devices reduced. Consider such instances as implanted heart-rhythm monitors and devices continuously measuring and monitoring biochemical data.



4. **Human-machine-environment system drivers**

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Evidently, human-machine interaction refers to the process of communication between people and automated systems. However, the Internet of things is built on the foundation of a more complex relationship among the human, machine, and environment. In healthcare, the environment is a highly important parameter that implies the sum of physical and social factors; and the real-time monitoring of the environmental factor is even more critical for this industry once the IoT technology is in operation.
IoT sensors, most of which are wireless, are connecting small communities of devices. But without considering all three factors, there is no sense in this connection. One should not then ignore the fact that IoT systems are made by people and for people to be applied in certain contexts. Therefore, the psychological and physiological states, emotions, actions, and intentions of a person — IoT data generated by multi-modal sensors — should be, consequently, used as inferrable information and made sense of relying on the powers of Artificial Intelligence.

5. **Real-time action and decision control.**

One of the main advantages the interoperability of AI and IoT is bringing is that there is a chance to keep track of what is going on and to react upon it on the spot. It means the shift toward active patient involvement, customized treatment plans real-time adjustment and a more intelligent approach to data management. Real-time analysis is only possible when a stream of data is continuous. However, it is hardly possible that a system doing complex processing can cope with the nearly continuous data stream from multiple sensors. It is a real-time AI system that can reduce the amount of data and enable intelligent data management.Eventually, embedded AI technology will be of paramount priority for IoT systems, especially in healthcare. Importantly, the desirable action here is making sense of the data at the edge, close to the device, with the edge and fog computing. Again, data analysis performed at the edge instead of a centralized location (i.e. a cloud server or a data center) enables a near real-time analysis right on the IoT devices. Generally speaking, AI algorithms' processing data from various IoT smart sensors on the edge suggests advancement of maintenance and monitoring. Healthcare cybersecurity challenges with IoTDespite all the evident benefits that the use of IoT is furnishing, the technology is also challenging the data security, which is an integral part of the healthcare infrastructure. The point here is that the unstructured data residing outside organized databases (i.e. electronic records and reports) is most

difficult to arrange with the help of traditional algorithms and therefore to protect. It is the powerful learning algorithms that are more than likely to contribute much to solving the problem with data analysis. Yet, having data organized does not mean having it protected from cyber threats.
Thus, the best measure one can take is to drive standards around IoT ecosystems. IoT devices and applications are usually programmed to access both private and sensitive data vulnerable before malware. In view of this, the privacy rule stated in the Health Insurance Portability and Accountability Act (HIPAA) will protect such health information and such regulations as the EU General Data Protection Regulation (GDPR) will obligate the offenders to carry financial penalties for data misuse. Handling multiple complex systems through AI-enabled IoT will no doubt generate advanced experiences for all involved in the healthcare system. Still, health care must be delivered in a safe way.

5. CONCLUSION:
Billions of connected devices are generating tons of health-related sensor data. Eventually, an improvement of data organizing processes is needed. The use of different forms of artificial intelligence as advanced predictive algorithms is bound to create smarter environments where human-machine interaction will become more efficient and safe. Incorporation of IoT into the process of management of healthcare organization everyday operations is the reality. Personalized client-oriented service-delivery equipped with the powers of the Internet of things, Artificial Intelligence, edge, and fog computing is the aim to be reached in the course of time.

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'A STUDY ON INVESTOR'S KNOWLEDGE OF; BANK EMPLOYEES: CASE STUDY OF RAJKOT CITY'

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ABSTRACT
The present study has been done with an aim to evaluate knowledge regarding investment of public and private sector bank employees in Rajkot city. A sample of 30 bank employees was selected as part of study. The study highlights the important investment objectives that the respondents consider while making investments. To measure knowledge regarding investment researcher used weighted average and ANOVA. The study revealed that large majority investors prefer safety of their funds while making an investments and investment objectives is significantly different from position of respondents in bank.

Key Words
Investments, Investment Knowledge

INTRODUCTION
Person received income that may be used for purchasing commodities or it may be saved for purchasing commodities that he may require in the near future. In other words, income means what one spent for current consumption or saved for the future consumption. Savings can be generated when a person save from present for a future. When person saved a part from his income he looks for temporary solution of savings till he required that money for future. This temporary solution resulted in investment.

LITERATURE REVIEW

- **Sharif Mohd. & O. P. Verma (2018),** in his paper he studied 'SAVING AND INVESTMENT PATTERN OF RURAL HOUSEHOLDS OF HIMACHAL PRADESH'. The present study explains various reasons of savings and investment, awareness level and association between demographic factor sand awareness levels among rural households of Chamba district. 100 samples were used to analyze. Investors have given less important for their old age requirements and unexpected contingencies and bank deposits still hold the higher priority among institutional investments in rural area are the major findings of the research.
- **Abhaykumar Gasti (2017),** his research based on 'SAVINGS AND INVESTMENT BEHAVIOUR OF RURAL HOUSEHOLD: AN ANALYTICAL STUDY OF HOUSEHOLDS OF DHARWAD DISTRICT OF KARNATAKA STATE'. The present study explains the various reasons of savings, awareness level and association between demographic factors and awareness level among rural households of Dharwad district. 450 randomly selected samples were used as sample to analyze the aim of the paper. Investors have given little importance for their old age requirements and unexpected contingencies and bank deposits till hold higher priority among institutional investments in rural area of the study area are the major findings of the research.

RESEARCH DESIGN

1. Title: The title of the present study is as under:
'A STUDY ON INVESTOR'S KNOWLEDGE OF; BANK EMPLOYYES: CASE STUDY OF RAJKOT CITY.'

2. Objectives of the study: The objectives of the present study are as under:

- To measure the investment knowledge and investment practices of bank employees.
- To make suggestions to improve knowledge of bank employees regarding investment.

3. Sample Design:
In this study, the 30 respondents of private and public banks have been taken as a part of sample. For selection of sample convenient sampling method has been used.

4.Data Collection:
This study is totally based on the **primary data** and data are collected by using **questionnaire.**

5.Period of Study:
The study period is only one year, i.e. 2020.

6. Tools & Technique:

- Weighted Average
- ANOVA

Data Analysis

1. Investment Attributes

Investment attributes means all that variable which affect decision regarding investments. Here researcher considers only investment objectives.

Table no 1.1
An opinion of respondents in relation to investment objective of safety with reference to position in bank.

Level of Opinion	No. of Respondents					Total score of Response			
	G1	G2	G3	G4	T	G1	G2	G3	G4
Strongly agree (5)	0	0	0	1	**1**	0	0	0	5
Agree (4)	0	0	0	0	**0**	0	0	0	0
Neutral (3)	3	1	0	0	**4**	9	3	0	0
Disagree (2)	3	5	3	3	**14**	6	10	6	6
Strongly disagree (1)	4	18	11	8	**41**	4	18	11	8
Total	**10**	**24**	**14**	**12**	**60**	**19**	**31**	**17**	**19**
Weighted average(15)						**1.27**	**2.07**	**1.13**	**1.27**

(Source: Computed from the questionnaire)

Table no 1.1 (2)
An opinion of respondents in relation to investment objective of liquidity with reference to position in bank.

Level of Opinion	No. of Respondents					Total score of Response			
	G1	G2	G3	G4	T	G1	G2	G3	G4
Strongly agree (5)	0	0	0	1	**1**	0	0	0	5
Agree (4)	0	0	0	2	**2**	0	0	0	8
Neutral (3)	0	0	5	9	**14**	0	0	15	27

Disagree (2)	0	11	9	0	**20**	0	22	18	0
Strongly disagree (1)	10	13	0	0	**23**	10	13	0	0
Total	**10**	**24**	**14**	**12**	**60**	**10**	**35**	**33**	**40**
Weighted average(15)						**0.67**	**2.33**	**2.2**	**2.67**

(Source: Computed from the questionnaire)

Table no 1.1 (3)
An opinion of respondents in relation to investment objective of return with reference to position in bank.

Level of Opinion	**No. of Respondents**					**Total score of Response**			
	G1	**G2**	**G3**	**G4**	**T**	**G1**	**G2**	**G3**	**G4**
Strongly agree (5)	0	0	0	0	**0**	0	0	0	0
Agree (4)	0	0	0	1	**1**	0	0	0	4
Neutral (3)	0	0	1	11	**12**	0	0	3	33
Disagree (2)	0	3	13	0	**16**	0	6	26	0
Strongly disagree (1)	10	21	0	0	**31**	10	21	0	0
Total	**10**	**24**	**14**	**12**	**60**	**10**	**27**	**29**	**37**
Weighted average(15)						**0.67**	**1.8**	**1.93**	**2.47**

(Source: Computed from the questionnaire)

Table no 1.1 (4)
An opinion of respondents in relation to investment objective of reliability with reference to position in bank.

Level of Opinion	**No. of Respondents**					**Total score of Response**			
	G1	**G2**	**G3**	**G4**	**T**	**G1**	**G2**	**G3**	**G4**
Strongly agree (5)	0	0	0	0	**0**	0	0	0	0
Agree (4)	0	0	0	6	**6**	0	0	0	24
Neutral (3)	0	0	8	6	**14**	0	0	24	18
Disagree (2)	0	18	6	0	**24**	0	36	12	0
Strongly disagree (1)	10	6	0	0	**16**	10	6	0	0
Total	**10**	**24**	**14**	**12**	**60**	**10**	**42**	**36**	**42**
Weighted average(15)						**0.67**	**2.8**	**2.4**	**2.8**

(Source: Computed from the questionnaire)

Table no 1.1 (5)
An opinion of respondents in relation to investment objective of low risk with reference to position in bank.

Level of Opinion	**No. of Respondents**					**Total score of Response**			
	G1	**G2**	**G3**	**G4**	**T**	**G1**	**G2**	**G3**	**G4**
Strongly agree (5)	0	0	0	8	**8**	0	0	0	40
Agree (4)	0	0	0	4	**4**	0	0	0	16
Neutral (3)	0	0	7	0	**7**	0	0	21	0

Disagree (2)	0	10	7	0	**17**	0	20	14	0
Strongly disagree (1)	10	14	0	0	**24**	10	14	0	0
Total	**10**	**24**	**14**	**12**	**60**	**10**	**34**	**35**	**56**
Weighted average(15)						**0.67**	**2.27**	**2.33**	**3.73**

(Source: Computed from the questionnaire)

Table no 1.1 (6)

An opinion of respondents in relation to investment objective of other factors with reference to position in bank.

Level of Opinion	**No. of Respondents**					**Total score of Response**			
	G1	**G2**	**G3**	**G4**	**T**	**G1**	**G2**	**G3**	**G4**
Strongly agree (5)	0	0	0	11	**11**	0	0	0	55
Agree (4)	0	0	10	2	**12**	0	0	20	8
Neutral (3)	0	15	4	0	**19**	0	45	12	0
Disagree (2)	2	9	0	0	**10**	4	18	0	0
Strongly disagree (1)	8	0	0	0	**8**	8	0	0	0
Total	**10**	**23**	**14**	**13**	**60**	**12**	**63**	**32**	**63**
Weighted average(15)						**0.8**	**4.2**	**2.13**	**4.2**

(Source: Computed from the questionnaire)

Null Hypothesis:

- There is no significance difference between satisfaction level of investment objective and position in bank.

Alternative Hypothesis:

- There is significance difference between satisfaction level of investment objective and position in bank.

Table No. 1.2 (1)

Particulars	**Branch Manager**	**Officer**	**Clerk**	**Others**
Question No	W.A.			
1	**1.27**	**2.07**	**1.13**	**1.27**
2	**0.67**	**2.33**	**2.2**	**2.67**
3	**0.67**	**1.8**	**1.93**	**2.47**
4	**0.67**	**2.8**	**2.4**	**2.8**
5	**0.67**	**2.27**	**2.33**	**3.73**
6	**0.8**	**4.2**	**2.13**	**4.2**

(Source: Computed from Questionnaire)

Table No. 1.2(2)

ANOVA					
Source of Variation	*SS*	*df*	*MS*	*F calculated value*	*F table value*
Between Groups	15.08163	3	5.027211	9.718643	3.098391
Within Groups	10.3455	20	0.517275		
Total	25.42713	23			

(Source: Computed from Questionnaire)

Interpretation:
The above table shows 'F' value 9.72 at 5% level of significance where as table value is 3.09. This shows table value is less than calculated value of 'F'. As such null hypothesis was rejected, which implies that there is significance difference between satisfaction level of investment objective and position in bank. Thus, the results are not as per expectations.

FINDINGS OF THE STUDY:

- In investment objectives out of 2 bank investor's majority choose safety as priority investment objective. It shows they looking for safety of their investments.
- From the test result in satisfaction level of investment objective null hypothesis is rejected which shows there is significant difference between satisfaction level of investment objective and position in bank.

CONCLUSION:
In present situation investment knowledge is very important to leave financial life. So, every individual must have knowledge. So, to improve knowledge researcher give some suggestions like investor should read news papers and financial institutions take care to increase awareness and must follow easy procedures.

LIMITATIONS OF THE STUDY:

✓ The study is limited to thirty bank employees.
✓ Time and resource are limited.
✓ The study is depends on various statistical tools which also have their own limitations which also applies to this study.

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STATISTICAL ANALYSIS TO FIND OUT CROSS CORRELATION BETWEEN CHANGE IN POPULATION WITH CHANGE IN PER CAPITA NET NATIONAL INCOME

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ABSTRACT:
An economy is an organization of the processes of production and exchange through which people earn their living. The national economy, thus, comprises all the farms and factories, the shops and markets, the banks and financial agencies, the offices and the other institutions: or in brief all the occupations where people work and produce either goods or services, and use the incomes thus earned, for consumption, saving and investment. Also there is a definite relation between population growth and the economy of a country. The current series of per capita net national income and population of India since 1955 till 2016 is taken under consideration. The per capita net national income taken here is at current price and in crores. This paper describes the relation between change in per capita net national income with change in population .

Key Words: Per capita net national income, population, YOY, cross correlation function

INTRODUCTION

- Net national income (NNI) is an economics term used in national income accounting. It can be defined as the net national product (NNP) minus indirect taxes. Net national income encompasses the income of households, businesses, and the government. Net national income is the difference between what is earned by nationals living inside and outside the country put together and non-nationals living in the country.
- It can be expressed as shown below;

NNI = C + I + G + (NX) + net foreign factor income - indirect taxes - manufactured capital depreciation,where: C = Consumption, I = Investments, G = Government spending, NX = net exports (exports minus imports) .

- ***Per capita income or average income*** measures the average income earned per person in a given area in a specified year. It is calculated by dividing the area's total income by its total population. If goods and services produced in a year are valued at *current prices,* we get national income at current prices means of that particular year. If goods and services produced in a year are valued at *fixed prices*(means price of base year) we get national income at constant prices. National income at constant price is called *real national income* whereas national income at current prices is called *nominal national income.*
- The current population of India contributes to 17% of the global population. Also, all these people are unevenly distributed across 3.28 million square kilometers of our geographical area. According to the 2001 Census, Uttar Pradesh is the highest populated state in India with a total number of 166 million people. While on the other hand, states like Sikkim and Lakshadweep have the lowest population of 0.5 million in Sikkim and only 60000 people in the island state of Lakshadweep.Furthermore, about half of the country's population is concentrated around five major states- Maharashtra, Uttar Pradesh, West Bengal, Bihar and Andhra Pradesh. Though Rajasthan is the largest state in size, its population contributes to only 5.5% of the total population of India.Population growth is determined by the annual growth rate, which is calculated in percent per annum. Like, if

there is an increase of two people per 100 people of the population, then the annual growth rate would be 2%.Another important aspect of population study is the change in population. This is largely influenced by three main factors like birth, death, and migration of people in a given year.*Birth rate: The number of children born per 1000 people in a year,Death rate: The number of people died per 1000 people in a year.*What is most noteworthy here that the birth rate in India is and has always been higher than the death rate, which is a major reason behind population growth.The third and one of the most important factors of population change is migration. Migration can be internal (between states) and international (between countries). While internal migration does not lead to population change, it does affect the population density in the migrated areas.

- **Statement of problem**

Here, our interest lies in finding out that is there any change in percapita net national income with change in population yearwise.

Note: Economic growth is largely the outcome of economic system. History of economic growth in general reveals the fact that opportunities of growth are found much less under the closed door economy while opening of an economy provides ample opportunities for acceleration, expansion and diversification of growth. It is however important to note that even under controlled economic operations U.S.S.R (United Socialist Soviet Russia) right from the inception (Nov,1917) till 1960's succeeded in performing growth operations however in general, free economy is found most conducive to boost the growth.

Indian economy in origin diverted the path from controlled to liberty in 1991-92 but the process of reforms in aggregate did not take place all at a stretch. It is also implemented phasewise . Accordingly, the financial sector of economy ,the most vibrant one was opened up in full swing after the 1995-96.Secondly, with the establishment of WTO (World Trade Organisation, 1st Jan,1995). India also became a founder member ,this resulted into global integration of Indian economy. Global dynamics of growth in turn is found to have more or less impact on national economy.

Considering this background of economy in statistical tabulation and analysis which follows the year for reform ,here in this study is taken into consideration 1994-95.

- **Importance and objectives of study**

India's business houses were regulated to a greater or lesser extent by the state depending on the amount of influence they could wield within the state. The period from 1947 to 1968 were years of moderate regulation by the state. In comparison, the years between 1969 and 1974 were characterized by stringent regulation of private and foreign companies. The inability of the state to meet the demands of an increasingly mobilized people in the context of low levels of growth and productivity led to a gradual process of liberalization of the economy favoring the private sector between 1975 and 1990. The substantial bias in favor of government ownership and economic self-reliance that remained needed the balance of payments crisis of 1991 for spurring further economic liberalization. In 1991, a technocracy convinced about the importance of globalization and private initiative exploited India's dependence on the IMF to direct policy attention towards the competitiveness of the Indian economy. So it is necessary to study the different scenario of Indian economy and also its statistical analysis.

- **Selection of variables**

The variables selected to measure and analyse the relation between per capita net national income and population of India since 1951 to 2016 .

- **Data collection**

Researcher used convenient sampling. From economic survey of 2016-17 year wise data from 1951 to 2016 of per capita net national income (in Rs crore) and data of population of India yearwise. The data is obtained from official website ***www.indiabudget.gov.in*** of economic survey 2016-17.

- **DATA**

YEAR	POPULATION	YOY	YEAR	PER CAPITA NNI	YOY
1960	450,547,679	9.921690486	1960	393	42.90909
1965	499,123,324	10.78146604	1965	563	43.257
1970	555,189,792	11.23298898	1970	823	46.18117
1975	623,102,897	12.23241241	1975	1321	60.51033
1980	698,952,844	12.17294084	1980	2041	54.50416
1985	784,360,008	12.21930274	1985	3483	70.65164
1990	873,277,798	11.33634926	1990	6270	80.01723
1995	963,922,588	10.37983448	1995	11861	89.17065
2000	1,056,575,549	9.612074886	2000	19115	61.15842
2005	1,147,609,927	8.615983787	2005	29869	56.25948
2010	1,234,281,170	7.552326009	2010	58534	95.96906
2015	1,310,152,403	6.146997527	2015	94130	60.81252
2016	1,324,517,249	1.096425574	2016	103219	9.655795

Data Analysis

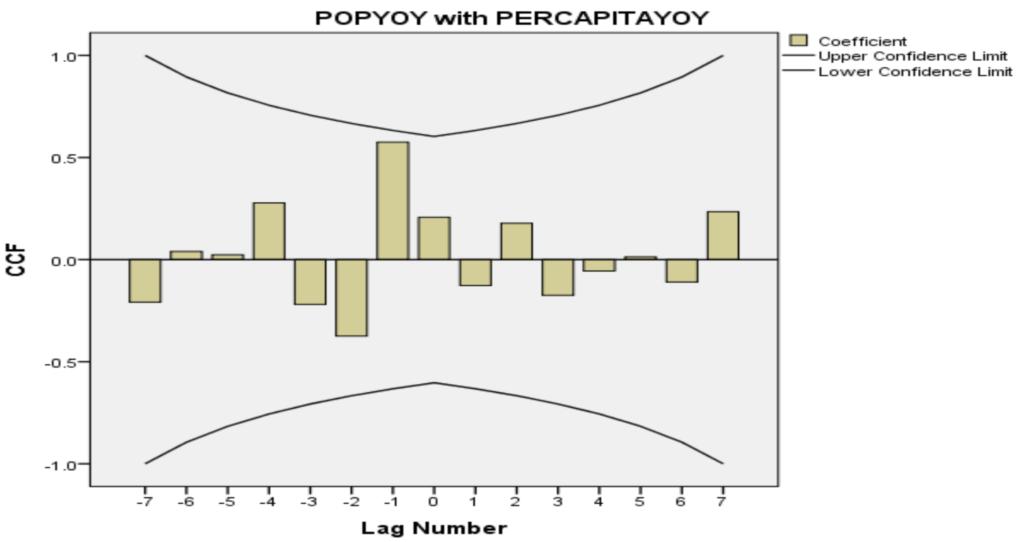
- **ANALYSIS OF POPYOY WITH PERCAPITAYOY**
- First step for the analysis was to make the time series stationary. It can be done in two ways by differencing and by log transformation. Here, the method of differencing at order of 2 is applied to make given time series stationary.
- The cross correlation function has been used of SPSS Software as it is a time series data.
- It calculates correlation depending on lags of time series. For example, here in this data is divided into 7 lags as total 15 years of time period is there.

Cross Correlations		
Series Pair: POPYOY with PERCAPITAYOY		
Lag	Cross Correlation	Std. Error[a]
-7	-.208	.500
-6	.040	.447
-5	.023	.408
-4	.278	.378
-3	-.219	.354
-2	-.375	.333
-1	.575	.316
0	.207	.302
1	-.127	.316
2	.178	.333
3	-.175	.354
4	-.056	.378
5	.013	.408
6	-.110	.447
7	.235	.500

a. Based on the assumption that the series are not cross correlated and that one of the series is white noise.

- From the above table , we can observe that value of cross correlation is positive for maximum number of lags.
- So, we reject our null hypothesis and accept the alternative and conclude that there is a positive cross correlation between change in population with change in per capita net national income.
- Thus, economically we can say that at the same rate at which population has changed during the given time period simultaneously the per capita net national income of country has changed at the same rate in same direction.

- It is interpreted in the way that more number of bars on either side of the X axis concludes positive and negative correlation accordingly.
- Also height of the bar represent correlation coefficient of each lag of the time series.

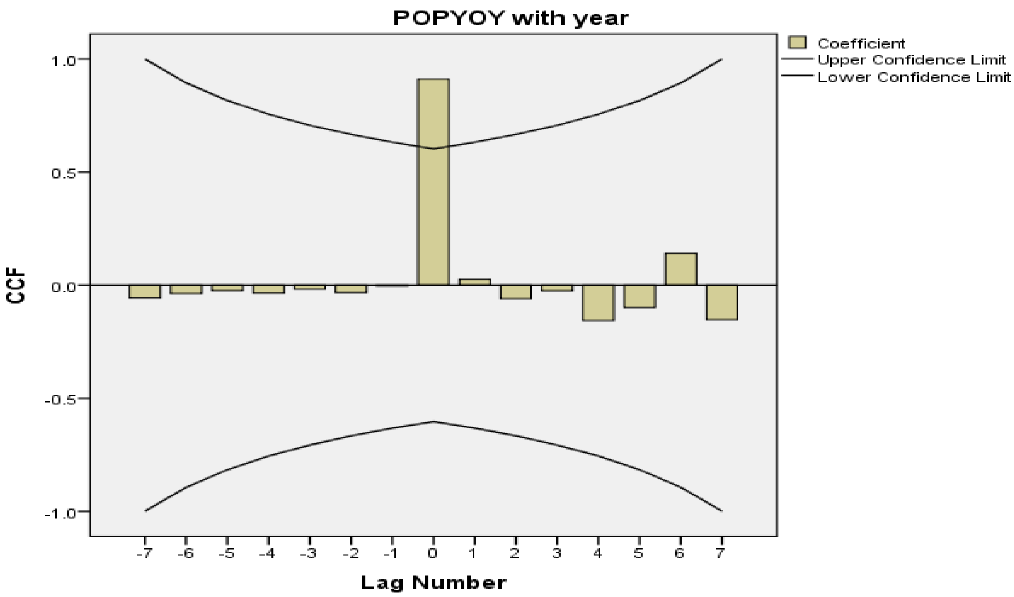


- Here, the height of the bar is maximum at lag number -1 which indicates the highest positive value of correlation coefficient.
- Also we can conclude from the graph that more number of bars can be seen in the positive direction which indicates positive cross correlation between change in population with respect to change in per capita net national income.

ANALYSIS OF POPYOY WITH YEAR

Cross Correlations		
Series Pair: POPYOY with year		
Lag	Cross Correlation	Std. Error[a]
-7	-.057	.500
-6	-.038	.447
-5	-.025	.408
-4	-.036	.378
-3	-.018	.354
-2	-.032	.333

-1	-.003	.316
0	.911	.302
1	.025	.316
2	-.060	.333
3	-.025	.354
4	-.156	.378
5	-.098	.408
6	.140	.447
7	-.153	.500
a. Based on the assumption that the series are not cross correlated and that one of the series is white noise.		

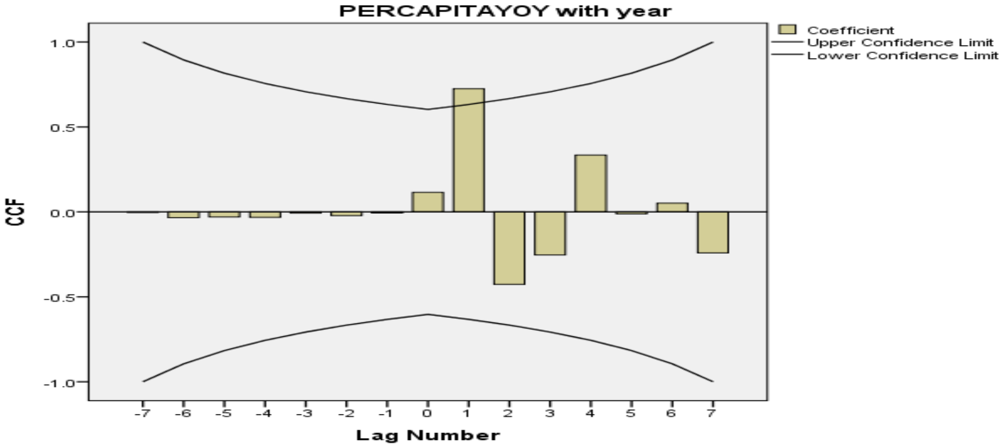


- Here, the height of the bar is maximum at lag number 0 which indicates the highest positive value of correlation coefficient.
- Also we can conclude from the graph that more number of bars can be seen in the negative direction which indicates negative cross correlation between change in population with respect to year. Also we notice here that year over year change in population has decreased with time.

ANALYSIS OF PERCAPITAYOY WITH YEAR

Cross Correlations		
Series Pair: PERCAPITAYOY with year		
Lag	Cross Correlation	Std. Error[a]
-7	-.004	.500
-6	-.034	.447
-5	-.030	.408
-4	-.032	.378
-3	-.007	.354
-2	-.022	.333
-1	-.007	.316

0	.115	.302
1	.725	.316
2	-.426	.333
3	-.253	.354
4	.335	.378
5	-.011	.408
6	.051	.447
7	-.241	.500
a. Based on the assumption that the series are not cross correlated and that one of the series is white noise.		



- Here, the height of the bar is maximum at lag number 1 which indicates the highest positive value of correlation coefficient.
- Also we can conclude from the graph that more number of bars can be seen in the negative direction which indicates negative cross correlation between change in percapita NNI with respect to year. Also we notice here that there is decrease in percapita NNI with time.

CONCLUSION:

- *Here , we conclude that the given time series is stationary at order of difference 2. So, we conclude that there is a positive cross correlation between change in population with change in per capita net national income. Thus, economically we can say that at the same rate at which population has changed during the given time period simultaneously the per capita net national income of country has changed at the same rate in same direction.*

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COMPARATIVE STUDY OF ARITHMETIC, GEOMETRIC AND CONTRA HARMONIC MEAN FILTERS INDENOISING GAUSSIAN AND SALT-PEPPER NOISES

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ABSTRACT

Noise Filters such as Arithmetic, Geometric and Contra Harmonic Mean Filters are used in Image Denoising. This paper makes a comparative study of these three filters in the presence of Gaussian and Salt & Pepper noises on a standard Lena gray scale image of size 256×256 pixels. The noise levels are varied from 10% to 50%. Arithmetic, Geometric and Contra Harmonic mean filters are applied to reduce the noise. After applying these filters, a comparative study is made to test which filter performs better for denoising both Gaussian and Salt-Pepper noises. Experimental results show that Contra Harmonic Mean filter Contra Harmonic Filter performs well on noise removal when compared to the other two filters.

Keywords:Gaussian Noise, Salt & Pepper noise, Arithmetic Filter, Geometric Filter, Contra Harmonic Filter

I. INTRODUCTION

Noise is any undesired information that contaminates an image. Noise appears in an image from variety of sources. To recover an image from noise, there exist many filtering techniques that are application oriented. The existing mean filtering technique takes one pixel at a time and a sub window is considered around the pixel. The mean is calculated using the pixel values of the sub window. Then the pixel is replaced with the mean value. Using this technique arithmetic, geometric and contra harmonic filters work. For removing noises in an image, image filters are used [4].

Filters are used to increase the brightness and contrast as well as to add a wide variety of special effects to an image. A comparative study of the mentioned filters are made by analyzing their performance in the presence of noises at different levels.

Noises are random fluctuations or variations in the brightness or color information in images which may be produced while capturing the image. It can be defined as a process which negatively affects the quality of captured image that is being not original image content [5]

Noises are random fluctuations or variations in the brightness or color information in images which may be produced while capturing the image. It can be defined as a process which negatively affects the quality of captured image that is being not original image content [5]

II. TYPES OF NOISES USED

Noises are random fluctuations or variations in the brightness or color information in imageswhich may be produced while capturing the image. It affects the quality of captured image that is not being the original image content [1].

A. GAUSSIAN NOISE

This is a statistical noise that has its probability density function equal to that of the normal distribution which is also known as Gaussian distribution. On other words, the values that the noise can take ON are Gaussian distributed [3].

B. SALT & PEPPER NOISE

This noise model, also known as spike noise,
impulsive noise or fat-tail distributed noise, will posses
dark pixels in places of bright pixels and bright pixels
in places of dark pixels, which will appears as black
and white dots in the image [18,19]. The sharp and
sudden changes ofimage signal introduces salt and
pepper noises, which introduce small corruptions on
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This noise model, also known as spike noise, impulsive noise or fat-tail distributed noise, will possess dark pixels in places of bright pixels and bright pixels in places of dark pixels, which will appears as black and white dots in the image. The sharp and sudden changes of image signal introduces salt and pepper noises, which introduce small corruptions on the image [3].

III. TYPES OF MEAN FILTERS USED

A. ARITHMETIC MEAN FILTER

This is the simplest of all mean filters. Let S_{xy}represent the set of coordinates in a rectangular sub image window of size m×n, centered at point (x,y). The arithmetic mean filter computes the average value of the corrupted image g(x,y) in the area defined by $S_{xy.}$ The value of the restored image f at point (x,y) is the arithmetic mean computed using the pixels in the region defined by $S_{xy.}$ In other words,

$$f(x,y)=\frac{1}{mn}\sum g(s,t) \text{where } (s,t)\epsilon\, S \quad \text{--- (1)}$$

This smoothens local variations in an image and noise is reduced as a result of blurring.

B. GEOMETRIC MEAN FILTER

An image restored using geometric mean filter is given by the expression

f(x,y)= [∩ Σ g(s, t)]pow1/mn --- (2)

where (s, t)ϵ S.

Here, each restored pixel is given by the product of the pixels in the sub image window, raised to the power 1/mn. Geometric mean filter achieves smoothing comparable to the arithmetic mean filter, but it tends to lose less image detail in the process.

C. CONTRA HARMONIC MEAN FILTER

An image using this filter is given by the expression

$$f(x,y)=\frac{\sum g(s,t)\text{pow}(Q+1)}{\sum g(s,t)\text{pow } Q} \quad \text{--- (3)}$$

where Q is called as the order of the filter. This filter is well suited for reducing the effects of salt and pepper noise. For positive values of Q, the filter eliminates pepper noise. For negative Q values, it eliminates salt noise.

IV. THE PROPOSED FILTERS

In the proposed work, a standard Lena gray scale image of size 256×256 pixels is taken for consideration. Gaussian and Salt-Pepper noises are added to the image. The noise levels are varied from10% to 50%. Arithmetic, Geometric and Contra Harmonic mean filters are applied to reduce the noise. After applying these filters, a comparative study is made to test which filter performs better for denoising both Gaussian and Salt-Pepper noises [2].

A. PROPOSED ARITHMETIC MEAN FILTER

A 3×3 sub image is taken from the original image. The intensity values in the sub image are added and their average is taken. Now the computed value is replaced in the center pixel of the sub image. The 3×3 sub image is slided over every row and column of the original image and the process is repeated. This filter produces different PSNR values for different noise levels from 10% to 50%. This filter eliminates Gaussian noise only to a certain level. When the noise percentage is low, this filter produces a good PSNR value. ie.,When 10% Gaussian noise is introduced, the PSNR value is 67.2965 and for 30% noise PSNR value is 58.8823. As the noise percentage increases, the PSNR value becomes low. In the presence of 10% Salt-Pepper noise, the PSNR value is 71.2758. For 30% Salt-Pepper noise, the PSNR value is 66.4851. For 50% Salt-Pepper noise, the PSNR value is 63.8600.This filter reduces Salt-Pepper noise to a considerable amount when compared to the removal of Gaussian noise. The results are shown in Table 1 and the denoised images are shown in Fig 1.

B. PROPOSED GEOMETRIC MEAN FILTER

A 3×3 sub image is taken from the original image. The intensity values in the sub image are multiplied and raised to the power 1/9, since there are 9 elements in the 3×3 sub image. The 3×3 sub image is slided over every row and column of the original image and the process is repeated. This filter produces different PSNR values for different noise levels from 10% to 50%. For 10% Gaussian noise, the PSNR value is 68.1092, for 30% Gaussian noise PSNR value is 59.0873 and for 50% Gaussian noise, PSNR value is 55.4678. For 10% Salt-Pepper noise, the PSNR value is 58.1596, for 30% Salt-Pepper noise PSNR value is 54.9849 and for 50%Salt-Pepper noise, PSNR value is 54.1723. When compared with the arithmetic filter, geometric filter is suited for eliminating Gaussian noise because the PSNR value is high. This filter is not suitable for eliminating Salt-Pepper noise because the PSNR value is low when compared with that of Arithmetic filter. The results and denoised images are shown in Table 2 and Fig 2.

C. PROPOSED CONTRA HARMONIC MEAN FILTER

A 3×3 sub image is taken from the original image. The intensity values in the sub image are added raised to the power Q+1 and divided by the sum of all pixels in the sub image raised to the power Q, where Q is the order of the filter. For different percentages of Gaussian noise, this filter is evaluated. It produces good results for 10% Gaussian noise with order Q= -4 and the PSNR value is 69.7018. For 10% Salt-Pepper noise, if Q= -1, the PSNR value is 74.9435 is the highest. For 30% Salt-Pepper noise and for Q= -3, the PSNR value is 71.7841. For 50% Salt-Pepper noise and for Q= -5, the PSNR value is 70.0134. The value of Q is taken from -5,-4,.....,3,4 and 5. As the order increases, the PSNR value decreases. The results are shown in Table 3 through Table 8 and the images are shown in Fig 3.

IV. QUALITY METRICS

To measure the image quality, we use Peak Signal to Noise Ratio(PSNR) for the denoised image. The error in the reconstructed image is computed by calculating the Mean Squared Error (MSE) which is given by:

$$\text{MSE}=\frac{1}{mn}\sum(P\,i,j - Qi,j) \qquad \text{--- (4)}$$

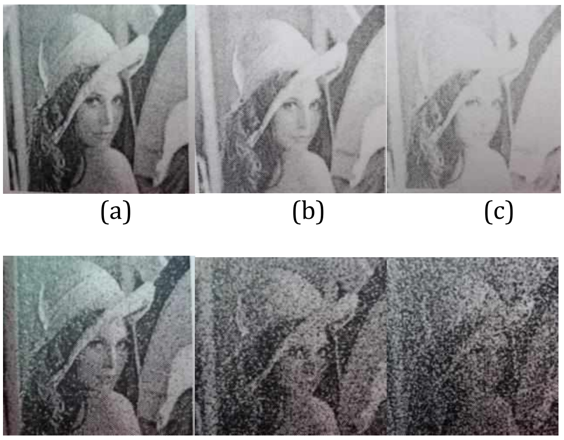
The quality of the gray scale image is measured using PSNR which is given by

$$\text{PSNR}= 10\log_{10}(255\text{pow}2/\text{MSE}) \qquad \text{--- (5)}$$

V. RESULTS AND DISCUSSIONS

In order to assess the performance of arithmetic, geometric and contra harmonic mean filters, experiments were performed with standard Lena image of size 256×256 pixels. Gaussian noise and Salt-Pepper noise for noise levels from 10% to 50% were added to the image. Then arithmetic, geometric and contra harmonic filters were applied for filtering the noises. Experiments are conducted using MATLAB R2014a. To estimate the comparative study of the proposed filters, quality parameters PSNR and MSE are computed. The best PSNR values for different noise levels are shown in Table 9 and Table 10.

For visual comparisons, the denoised images in the presence of Gaussian and Salt-Pepper noises for noise levels from 10% to 50% using Arithmetic Mean Filter are shown in Fig 1.



(a) (b) (c)

(d) (e) (f)

Fig 1: Denoised Lena Images using Arithmetic Mean Filter

a) Denoised image in the presence of 10% Gaussian Noise
b)Denoised image in the presence of 30% Gaussian Noise
c) Denoised image in the presence of 50% Gaussian Noise
d) Denoised image in the presence of 10% Salt-Pepper Noise
e) Denoised image in the presence of 30% Salt-Pepper Noise
f) Denoised image in the presence of 50% Salt-Pepper Noise

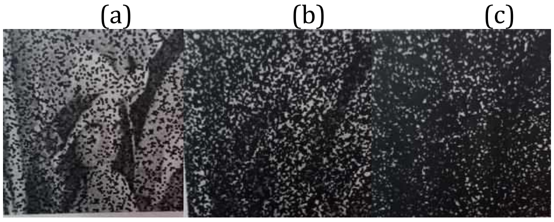
Table 1: MSE and PSNR values produced by Arithmetic Mean Filter

S. No	Noise Level	Gaussian Noise	Salt-Pepper Noise

		MSE	PSNR	MSE	PSNR
1	10%	0.0121	67.2965	0.0048	71.2758
2	30%	0.0841	58.8823	0.0146	66.4851
3	50%	0.1883	55.3825	0.0267	63.8600

For visual comparisons, the denoised images in the presence of Gaussian and Salt-Pepper noises for noise levels from 10% to 50% using Geometric Mean Filter are shown in Fig2.

(a) (b) (c)



(d) (e) (f)

Fig 2: Denoised Lena Images using Geometric Mean Filter
a) Denoised image in the presence of 10% Gaussian Noise
b)Denoised image in the presence of 30% Gaussian Noise
c) Denoised image in the presence of 50% Gaussian Noise
d) Denoised image in the presence of 10% Salt-Pepper Noise
e) Denoised image in the presence of 30% Salt-Pepper Noise
f) Denoised image in the presence of 50% Salt-Pepper Noise

Table 2: MSE and PSNR values produced by Geometric Mean Filter

S. No	Noise Level	Gaussian Noise		Salt-Pepper Noise	
		MSE	PSNR	MSE	PSNR
1	10%	0.0100	68.1092	0.0993	58.1596
2	30%	0.0802	59.0873	0.2063	54.9849
3	50%	0.1846	55.4678	0.2488	54.1723

For visual comparisons, the denoised images in the presence of Gaussian and Salt-Pepper noises for noise levels from 10% to 50% using Contra Harmonic Mean Filter are shown in Fig3.

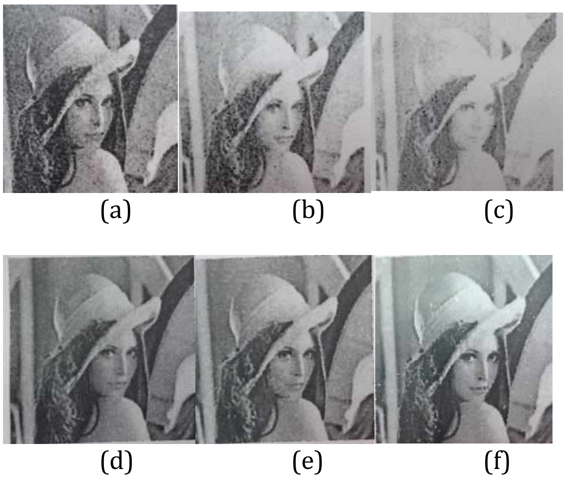


Fig 3: Denoised Lena Images using Contra Harmonic Mean Filter
a) Denoised image in the presence of 10% Gaussian Noise for Q= -4
b)Denoised image in the presence of 30% Gaussian Noise for Q= -5
c) Denoised image in the presence of 50% Gaussian Noise for Q= -5
d) Denoised image in the presence of 10% Salt-Pepper Noise for Q= -1
e) Denoised image in the presence of 30% Salt-Pepper Noise for Q= -2
f) Denoised image in the presence of 50% Salt-Pepper Noise for Q= -5

Table 3: MSE and PSNR values produced by Contra Harmonic Mean Filter for 10% Gaussian Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.0087	68.7516	Q=1	0.0171	65.7893
Q=-2	0.0071	69.6004	Q=2	0.0223	64.6500
Q=-3	0.0070	69.6865	Q=3	0.0280	63.6567
Q=-4	0.0070	69.7018	Q=4	0.0334	62.8888
Q=-5	0.0074	69.4145	Q=5	0.0334	62.8982

Table 4: MSE and PSNR values produced by Contra Harmonic Mean Filter for 30% Gaussian Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.0760	59.3235	Q=1	0.0919	58.4976
Q=-2	0.0689	59.7492	Q=2	0.1000	58.1316
Q=-3	0.0625	60.1689	Q=3	0.1070	57.8354

Q=-4	0.058 0	60.496 2	Q=4	0.114 1	57.559 8
Q=-5	0.052 7	60.908 6	Q=5	0.121 5	57.286 4

Table 5: MSE and PSNR values produced by Contra Harmonic Mean Filter for 50% Gaussian Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.181 3	55.547 8	Q=1	0.193 9	55.255 6
Q=-2	0.175 3	55.693 1	Q=2	0.199 7	55.127 7
Q=-3	0.169 1	55.849 5	Q=3	0.205 2	55.009 6
Q=-4	0.163 2	56.002 6	Q=4	0.210 3	54.902 5
Q=-5	0.157 8	56.151 1	Q=5	0.215 4	54.799 2

Table 6: MSE and PSNR values produced by Contra Harmonic Mean Filter for 10% Salt-Pepper Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.002 1	74.943 5	Q=1	0.015 7	66.178 3
Q=-2	0.002 5	74.161 0	Q=2	0.040 5	62.055 9
Q=-3	0.003 4	72.830 6	Q=3	0.066 3	59.917 0
Q=-4	0.004 2	71.950 0	Q=4	0.081 5	59.017 6
Q=-5	0.004 3	71.767 8	Q=5	0.093 8	58.406 7

Table 7: MSE and PSNR values produced by Contra Harmonic Mean Filter for 30% Salt-Pepper Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.005 9	70.438 2	Q=1	0.055 9	60.655 3
Q=-2	0.004 1	71.997 4	Q=2	0.112 4	57.624 4
Q=-3	0.004 3	71.784 1	Q=3	0.152 8	56.289 7
Q=-4	0.004 8	71.344 6	Q=4	0.181 2	55.548 8
Q=-5	0.005 1	71.056 2	Q=5	0.198 9	55.143 6

Table 8: MSE and PSNR values produced by Contra Harmonic Mean Filter for 50% Salt-Pepper Noise

Q -ve	MSE	PSNR	Q +ve	MSE	PSNR
Q=-1	0.0168	65.8881	Q=1	0.1085	57.7756
Q=-2	0.0088	68.6963	Q=2	0.1751	55.6971
Q=-3	0.0069	69.7722	Q=3	0.2144	54.8192
Q=-4	0.0065	69.9930	Q=4	0.2372	54.3791
Q=-5	0.0065	70.0134	Q=5	0.2508	54.1377

Table 9 shows the Best PSNR values for analyzing the comparative performance of Arithmetic, Geometric and Contra Harmonic mean filters for Gaussian noise from levels 10% to 50%. Results show that Contra Harmonic noise filter works better when compared to the other two filters.

Table 9: BEST PSNR VALUES IN DENOISING GAUSSIAN NOISE

Noise Level	PSNR by Arithmetic Filter	PSNR by Geometric Filter	PSNR by Contra Harmonic Filter
10%	67.2965	68.1092	69.7018(Q= -4)
30%	58.8823	59.0873	60.9086(Q= -5)
50%	55.3825	55.4678	56.1511(Q= -5)

Table 10 shows the Best PSNR values for analyzing the comparative performance of Arithmetic, Geometric and Contra Harmonic mean filters for Salt-Pepper noise from levels 10% to 50%. Results show that Contra Harmonic noise filter is better when compared to the other filters.

Table 10: BEST PSNR VALUES IN DENOISING SALT-PEPPER NOISE

Noise Level	PSNR by Arithmetic Filter	PSNR by Geometric Filter	PSNR by Contra Harmonic Filter
10%	71.2758	58.1596	74.9435(Q= -1)
30%	66.4851	54.9849	71.9974(Q= -2)

50%	63.8600	54.1723	70.0134(Q= -5)

VI CONCLUSION & FUTURE ENHANCEMENT

The errors and noises affected on mammogram images during acquisition process affect the entire image processing and diagnosis of disease. The removal of noises on the preprocessing stage is more challenging task. This paper used existing four different filtering approaches, WF, GF, AMF and HMF for the denoising of mammogram images. A comparative study is conducted by performance analysis of these filters on the basis of quality parameters PSNR and MSE. Experimental results revels that HMF performs well on noise removal of mammogram images
The errors and noises affected on mammogram images during acquisition process affect the entire image processing and diagnosis of disease. The removal of noises on the preprocessing stage is more challenging task. This paper used existing four different filtering approaches, WF, GF, AMF and HMF for the denoising of mammogram images. A comparative study is conducted by performance analysis of these filters on the basis of quality parameters PSNR and MSE. Experimental results revels that HMF performs well on noise removal of mammogram images
The errors and noises affect images during acquisition process. The removal of noises is more a challenging task. This paper compared existing three different mean filters namely arithmetic, geometric and contra harmonic in the presence of Gaussian and Salt-Pepper noise for noise levels from 10% to 50% fordenoising a standard Lena image of size 256×256 pixels. The comparative studyis conducted by analyzing the performance of these filters on the basis of quality parameters PSNR and MSE. Experimental results reveal that Contra Harmonic Filter performs well on noise removal when compared to the other two filters.

In future, this work can be extended for different images of different sizes with varying noise levels and various combinations of Q levels for achieving a good result.

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RIGHT TO EDUCATION

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ABSTRACT: -
The primary and most important need of society is education. Only with proper education is the development of a person or a society possible. Today's era is largely an era of formal education. It is necessary to be a sincere teacher to impart quality education to the students. The school administrator should be in charge of verifying the aptitude of the teachers, their duty towards the duty as well as the intervention of the government to some extent for the high-quality educational achievement as well as the excellent result of the institution. The work of promoting and accelerating education in India was generally done by our social reformers, educators, kingdoms and with all these the British who came to rule India. Our glorious heritage and history bears witness to the fact that we had gurus and monasteries for education there and even more proud of us was that we had monasteries even in ancient times and so better yet we have the world-famous Nalanda and There were two universities called Taxila. Where students from not only India but from all over the world come here to study Sanskrit, Philosophy, Logic, Jurisprudence, Political Science, Economics and many other subjects. But in spite of such a vast source of education there was a large number of illiterates and to some extent the caste system was responsible for it and education was the monopoly of the rich and the upper classes only.

Education is a basic need. If a person is not literate then the life of that person becomes extremely conflicted. The importance of education has increased a lot today, but whether human beings get the right to education or not is a big problem. 'Education means the education that is imparted by the teachers or the benefit of the education imparted by the universities and colleges to the person who cannot make a living. The right to education and human rights is the right of every human being and it is the biggest responsibility on the government. It has become a necessity of the present time for every human being to get free primary education and for every citizen to be aware of their human rights. The right to education is a fundamental human right. Earlier the right to education was in the instructional principle but after the case of Unnikrishnan the right to education was accepted as a fundamental right.

Keywords: -
Rights to Education, Children, free, compulsory

INTRODUCTION: -
Education is a unique quality of human beings. It is through education that human beings reach the pinnacle of progress. Education is also essential for fulfilling our personality and making this world completely happy and prosperous. Usually teachers, housewives, parents, farmers, administrators, traders, religious leaders, soldiers, artists, artisans, politicians define education differently. So, it is difficult to give an exact definition of education.

In the present times education is a basic need for the society, it is very useful for a person to live a good life. Changes over time have enshrined the right to education as a fundamental right, and laws have been enacted to make it free and compulsory for children.

OBJECT: -

1. Aims to awaken the people of the society by explaining the importance of education.

2. Aim to make citizens aware of the constitutional provisions on the right to education.

3. The aim is to make people aware of the provisions of the law on free and compulsory education.

HYPOTHESIS: -

1. Even today, the importance of education will be less in some backward people.

2. Awareness of the constitutional rights of education in the society will be seen to a great extent.

3. The provisions of the Free and Compulsory Education Act will be of little interest to the people.

RESEARCH METHODOLOGY: -

This research paper will be prepared using theoretical research methodology in which information will be obtained using secondary information i.e. books, current papers, website etc.

Various legal provisions regarding the right to education: -

The various legal provisions regarding the right of citizens to education can be divided into two main levels. Internationally and nationally which are elaborated as follows.

Provisions regarding the right to education at the international level

●Universal Declaration of Human Rights – 1948

Article- 26

(1) Everybody has the right to education. Keeping education in the primary field free. Make primary education compulsory and make technical and vocational education accessible to all. Everyone should get university education according to their level of intelligence.

(2) The purpose of education is to develop human beings as well as to respect human rights and fundamental freedoms. Human understanding through education should increase the friendship between nations as well as friendship between racial as well as religious organizations as well as tolerance and education should accelerate the UN's efforts to establish peace.

(3) Parents have the right to decide how to educate their child.

● International Declaration of Economic, Social and Cultural Rights – 1966

Article- 13 Right to education

(1) To provide a nation where everyone can get education. The goal of education is to spread the kind of education in which man understands his basic rights, respects the rights of others, understands the freedom of himself and others as well as develops a sense of human pride in his personal development. Every man participates in the development of the nation.

Education should build an independent society that is tolerant, united with all groups, and part of the UN's world peace efforts.

(2) Member States should make the following provisions to ensure that everyone has the right to education.

A) Making primary education free, universal and compulsory.

B) To make secondary education universal in its various forms such as technical and vocational training etc. Everyone should try to take advantage of this education.

C) Efforts should be made to make universal access to higher education available to all.

D) To make other provisions to provide this opportunity to all persons who have not taken primary education.

E) To make arrangements for school system, student support system as well as to increase the richness of teachers.

(3) According to the provision, every guardian has the freedom to impart religious and moral education for his child. In addition to this, the right to place him in any school, to teach him in any institution according to the standard of culture.

(4) As per the norms laid down in paragraph 1 for the institutions complying with the rules as per the norms of the State, every person has the right to avail it independently. So, this article refers to the freedom of the individual and the rights of the institution as well as the rules and regulations of the government.

●International Covenant on Civil and Political Rights 1966

Article- 18 (4)

According to the present provision, it is the freedom of every nation to give parents the freedom to raise their children and to teach their children the religion of their choice and ethics. Anyone who is a threat to national security can be deported. In such a case, the person can be deported by a competent judge with due diligence and due process of law.

● International Convention on the Elimination of All Forms of Racial Discrimination

Article -5

In compliance with the fundamental obligations laid down in article 2 of this Convention, States Parties undertake to prohibit and eliminate racial discrimination in all its forms and to guarantee the right of everyone, without distinction as to race, colour, or national or ethnic origin, to equality before the law, notably in the enjoyment of the following rights:

(v) Right to education and training

Provisions regarding the right to education at the national level

● Constitution of India

Part-3 Fundamental Rights

Article – 21(A) The state will provide free and compulsory primary education to children between the ages of 6 and 14.

Part-4 Guiding Principles of Politics

Article – 45 Provision of care and education during early childhood for children under 6 years of age

Part-4(A) Fundamental Duties

Article – 51(A) [K] Parents or guardians to provide educational opportunities to their children or children from the age of six to fourteen years.

● Highlights of the Right to Education Act, 2006

- The Right to Education Act states that every child has the right to complete free and compulsory primary education at the nearest school.
- "Compulsory" education means - the government is responsible for enrolling all children between the ages of 6 and 12, stabilizing them and completing primary education. "Free" means that no child will be charged any fees, fees or other charges for completing primary education, this education will be provided completely free of cost.
- To enrol out-of-school children in a class according to their age

- By this rule of government, local authority and guardianship; It introduces the duties and responsibilities for the implementation of the Right to Free and Compulsory Education Act and also clarifies the financial responsibilities between the State and Central Governments.
- Guidance is provided on the standard of determining the student-teacher ratio, the physical facilities required in the school, the working hours of the school and the working hours of the teacher.
- Rather than being satisfied with the mere maintenance of the average student-teacher ratio in a state or district or block, proper maintenance of student-teacher ratio in each school suggests that there is no discrepancy in filling the vacancies of teachers in urban and rural areas and no teachers are deployed. Is
- Teachers are prohibited from assigning tasks other than ten-year censuses, local bodies, assembly and Lok Sabha elections and other functions other than natural disasters.
- Emphasis is placed on hiring only properly trained teachers at the time of appointment of teachers; As such the teacher should have proper educational qualification.
- Among the things that the Right to Education Act prohibits are - no child shall be subjected to corporal punishment or mental harassment, no school or person shall charge any capitation fee when enrolling a child in school, the child or his mother - Parents / parents will not pass the examination or interview, no teacher will be able to do private tuition (tuition) or private tuition (tuition) activity, no school will be able to run without the approval of the government.
- A child-cantered curriculum should be designed keeping in mind the values established in the Constitution; So that the child can study in a stress-free environment; The curriculum should be such that it can be holistically developed, based on the knowledge of the child as well as designed to harness the strengths and talents of the child so that the children do not feel burdened to learn and enjoy it.

RELATED CASE

Mohini Jain V. Karnataka AIR 1992 S.C. 1858

In this case, a resident of Uttar Pradesh state challenged a notification issued by the Karnataka government that permitted private medical colleges to charge higher fees to students who were not allocated 'government seats'. The Supreme Court of India held that the charging of a 'capitation fee' by the private educational institutions violated the right to education, as implied from the right to life and human dignity, and the right to equal protection of the law. In the absence of an express constitutional right, the Court interpreted a right to education as a necessary condition for fulfilment of the right to life under Article 21 of the Indian Constitution. In addition, the Court held that private institutions, acting as agents of the State, have a duty to ensure equal access to, and non-discrimination the delivery of, higher education.

Unni Krishnan V. A.P. (1993) ISCC 645.

The case involved a challenge by certain private professional educational facilities to the constitutionality of state laws regulating capitation fees charged by such institutions.

The Supreme Court held that the right to basic education is implied by the fundamental right to life (Article 21) when read in conjunction with the directive principle on education (Article 41). The Court held that the parameters of the right must be understood in the context of the Directive Principles of State Policy, including Article 45 which provides that the state is to endeavour to provide, within a period of ten years from the commencement of the Constitution, for free and compulsory education for all children under the age of 14. The Court ruled that there is no fundamental right to education for a professional degree that flows from Article 21. It held, however, that the passage of 44 years since the enactment of the Constitution had effectively converted the non-justiciable right to education of children under 14 into one enforceable under the law. After reaching the age of fourteen, their right to education is subject to the limits of economic capacity and development of the state (as per Article 41). Quoting Article 13 of the International Covenant on Economic, Social and Cultural Rights, the Court stated that the state's obligation to provide higher education requires it to take steps to the maximum of its available resources with a view to achieving progressively the full realization of the right of education by all appropriate means.

SUGGESTIONS: -

1. Education is very important in the present times, so education should be given importance and priority by all.

2. Administrative efforts should be made for awareness of free and compulsory education law.

3. The Free and Compulsory Education Act should be studied in the society and used to the maximum.

UTILITY: -

The present research paper "Right to education" will be useful to the conscious citizens of the society, students, research students.

CONCLUSION: -

Education is the third eye of a person. An educated society is a valuable asset of the nation which contributes to the economic and social development of the nation. Children are the future of the nation so the future of the country can be brightened by imparting education and training to children. The administration should always make efforts to increase the literacy rate in the nation. Giving priority to the field of education becomes the sacred duty of every person in the society.

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VIEW OF SPACE : 2320-7620
An International Refereed Multidisciplinary Journal Of Applied Research

THE DELHI JUNCTION- A COZY PLACE FOR IMMIGRANTS WITH THE REFERENCE TO "CAN YOU HEAR THE NIGHTBIRD CALL?"

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ABSTRACT

With the impact of globalization many Indians started to migrate and become immigrant to Canada in search of joy and richness and take up different kinds jobs depending on their qualification. Once the immigrants settle in the adopted land, they know that they have to imbibe at least some of the aspects of new country. After all they suffering from mentally discontentment and longing for the nation. Here in this paper researcher has discussed over 'The Delhi Junction' with the reference to Anita Rau Badami's "Can you Hear the Nightbird Call?" this mentioned place is not a railway station, but it is a restaurant in Canada which always engaged with the immigrants like a railway junction. It is most crucial place in the novel, as it is not merely a restaurant but the place of getting rest for immigrants. In the novel author has woven the historical events and has presented that why Indians travel to Canada and what they feel about their home and politics. In the novel Anita Rau Badami has shown that Indian can never forget the fragrance of their mother land. Normally in Indian society, people are gathering at stall where they discussing about what is going on in the world. The same scenario is presented by Anita Rau Badami in her novel which is presented as a symbol of affection towards the Indians.

Key words- Globalization, Diaspora, The Delhi Junction

INTRODUCTION

Diasporic literature is a most favorite field for the expatriate writers. Through the writing skill, they try to expose the nude reality of immigrants in host land behind the mostly dazzled life style in homeland after returning from the host land. Most of the readers are aware about the history of diaspora which is more affiliated with the Jewish people. But nowadays, the taste of diaspora is changed with modernization in which people willingly accepts the sense of diaspora with having various reasons. Generally, the diasporic literature talks about the humiliation and plight condition of immigrants who feels restlessness on the host land.

Through the novel – Can You Hear the Nightbird Call?, Anita Rau Badami has tried to balance the Indian bloodshed history roundabout the murder of Indira Gandhi and Indian immigrants. Anita has created own unique identity as a diasporic writer through four novels. Anita Rau Badami has disclosed the origin roots of this novel during her interview as:

"It was autumn of 1984," Badami recalls, "just after Indira Gandhi was assassinated by two of her Sikh bodyguards. I'd been married two weeks. My husband and I were travelling back to Delhi after our honeymoon. From our bus window I saw a Sikh man set on fire, then thrown over a bridge." (Purohit)

Badami has impressively sketched the Indian scenario in her novels. As she is a writer of Indian origin, she raises her voice against the orthodox community to set up and tries to give broad viewpoint. She depicts the problems and psychological issues of the immigrants and their efforts to strike a balance between homeland and host land.

THE DELHI JUNCTION – A COZY PLACE FOR IMMIGRANTS

Anita Rau Badami's 'Can You Hear the Nightbird Call?' Spans a crucial sixty years of Indian history of the Sikh community of Punjab and its immigrants to Canada, commencing ten years before Independence and Partition and ending after the blow-up of Air India flight 182 headed to India from Toronto on June 23, 1985, killing all 329 people on board.

'Can You Hear the Nightbird Call?' is a story of three women, Sharanjeet Kaur better known as Bibiji, her neighbour Leela and her niece Nimmo. The novel describes how historical and political elements lead their life to tragedy. It is a story how destiny brings them together. The history as a backdrop of the story is an interesting aspect of the novel. The novel describes how past and present mingles and devastate the lives of these three women.

Bibiji is a strong, intelligent, dominant and interesting character of 'Can You Hear the Nightbird Call?' Bibiji is one of the tragic characters of the novel. Furthermore she is a very ambitious women, it was her idea to open an Indian restaurant. In the beginning she stole her sister's fate and second time she took away her niece Nimmo's elder son. Because of her greed, she lost everything at the end. Finally, Sharan goes to Vancouver. Her husband has grocery shop, she gives him idea to open an Indian restaurant. They both starts the restaurant 'The Delhi Junction'. In Vancouver Sharan known as Bibiji and her husband known as Paji. Now she is able to make house of lavender shop for which she yearning earlier. Her husband presents her bungalow as a birthday gift and name it Taj Mahal.

"Pa-ji chucked and pinched her cheek as if she were a little girl. "Why not? If that Shah Jahan could build a palace for his Mumtaz Begum to lie dead in, why can't I build one for my queen to live in?" (Badami 63)

Nineteen sixty-one was a momentous year for the world: the handsome young John F. Kennedy became the first Roman Catholic president of the United States, and a few months later a Russian named Yuri Gagarin became the first man in space. It was also a banner year for Pa-ji and Bibi-ji, who finally opened their restaurant, The Delhi Junction Cafe-realizing yet another of Bibi-ji's ambitions. The opening of 'The Delhi Junction' is as important as above-mentioned events. Bibiji suggests pa-ji to open an Indian restaurant. At the end, after lots of discussion they decided its name-'The Delhi Junction.' Pa-ji wanted to call the place as "Ana", a Punjabi word meaning ours. However, Bibi-ji felt that they needed to have a broader appeal, so they settled on The Delhi Junction Cafe, Hoping the little restaurant would live up to its name and one day host, if not exactly the multitude, then at least a semblance of the crowds that streamed through New Delhi's railway station daily.

Bibiji and Pa-ji decorate the restaurant to get the feeling of India. They decide the menu and exclude the beef and pork from their menu which shows their affection towards the India and immigrant Indians. On one wall she hung lithographic prints of the ten Sikh gurus, a highly coloured painting of the Golden Temple with a garland of flashing bulbs around it, map of India and Canada, pictures of Nehru, Gandhi, Bhagat Singh, Marilyn Monroe, Meena Kumari, Clark Gable and Dev in India, Pakistan (East and West), Vancouver, England, New York, Melbourne and Singapore. The clocks were Pa-ji's favourite items of decoration-at any given moment, he could see the time in the many countries that carried the offspring of Punjab in their bosoms. It pleased him to be reminded that Sikhs were scattered all over the world, like seeds that had exploded from a seed pod.

The Delhi Junction became the meeting place of Indo-Canadians. It was always full of people. It is difficult to find quiet moment. This all is because of Bibiji's efforts. Bibiji gives pleasant smile to her customers, she remembers their names and family member's name too. She surveys tables. She teaches hospitality to her waiters.

"That was six year ago. Now look at it, never a quiet moment. The Delhi Junction had become a ritual, a necessity, a habit for many of the city's growing population of desis who stopped by for a quick meal or afternoon tea." (Badami 59)

Discussing their lives, their families, cricket matches, their work and, most of all, the politics of their country of origin. A taut rope tied them all to "home," whether India or Pakistan. They saw their distant homes as if through a telescope, every small wound or scar or flare back there exaggerated, exciting their imagination and their emotions, bringing tears to their eyes. They were like obsessed stargazers, whose distance from the thing they observed made it all the brighter, all the more important.

At Delhi Junction, most of the customers are immigrants coming from different countries. They discuss what is happening around the world. The effects of political events influences the café's atmosphere.

"In 1965, when war broke out between India and Pakistan, the battle came to The Delhi Junction as well. The seating maps altered, and Hafeez and Alibhai moved defensively over to a separate table across the room from the Indian group." (Badami 67)

The immigrants come from different country and share common relation of immigrant. So Hafeez and Alibhai after war started to come to 'The Delhi Junction'.

"When the war ended a few months later, they reappeared as if nothing had occurred. A good meal, with familiar spices in a foreign country, means more than the enmities generated by distant homelands."(Badami 67)

The political events also affect The Delhi Junction. After the death of Pa-ji, it is difficult to run restaurant and Bibiji also loses the interest. It is very difficult for her to accept the death of Pa-ji. Indira Gandhi's assassination and anti-Sikh riots affect the atmosphere of The Delhi Junction, quarrel and fight frequently takes between Sikh and other Immigrant of India. At the end people stop to come to the restaurant.

CONCLUSION

Researcher observed that Anita Rau Badami's novel'Can You Hear the Nightbird call?' is a story of three women and their tragedy. Badami has depicted the reality of the immigrants. Generally, immigrants are seeking for company from the same nation in which they forget the religion. This homogeneous group of the immigrant providers lots of mental support which many times depicts in various movies. Here in this novel the immigrants appear eager to gather at restaurant and talk over the motherland. In real mean from the researcher's point of view, the Delhi junction is a symbol of happiness of immigrants.

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An International Refereed Multidisciplinary Journal Of Applied Research

PROFITABILITY ANALYSSIS PF RELIANCE INDUSTRY LIMITED

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ABSTRACT

The paper aimed to present of profitability analysis based on ratio method in order to evaluate the Profitability at RELIANCE INDUSTRY LIMITED. Based on the data collected from Balance Sheet and Profit and Loss Account at 2015 - 2016 to 2019 -20 , the following ratios have beendetermined: gross profit margin, operating profit margin and net profit margin, return on assets, return on equity and return on capital employed. There is a more fluctuating in the return on net worth of Reliance Industry Limited. But at the end the average ratio was satisfactory.Positive Net Profit Margin indicates that the firm is covering its financial expenses.

INTRODUCTION

Profitability analysis is the process of identifying the financial strengths and weaknesses of the firm by properly establishing the relationship between the items of balance sheet and profit and loss account. There are many tools to find Profitability of the company, one of the most useful tools is ratio and trend analysis. The financial analysis is done to find the firm's current position with that of market situation. This analysis is used by creditors, shareholders, board.

COMPANY PROFILE:

Reliance Industries is India's largest private sector company on all major financial parameters. In 2004, Reliance Industries (RIL) became the first Indian private sector organization to be listed in the Fortune Global 500 list. The company operates world-class manufacturing facilities across the country at Allahabad, Barabanki, Dahej, Hazira, Hoshiarpur, Jamnagar, Nagothane, Nagpur, Naroda, Patalganga, Silvassa and Vadodara.
Reliance Industries' activities span hydrocarbon exploration and production, petroleum refining and marketing, petrochemicals, retail and telecommunications. The petrochemicals segment includes production and marketing operations of petrochemical products. The refining segment includes production and marketing operations of the petroleum products. The oil and gas segment includes exploration, development and production of crude oil and natural gas. The other segment of the company includes textile, retail business and special economic zone (SEZ) development.

In the year 1966 the RIL was founded by ShriDhirubhaiH.Ambani, it was started as a small textile manufacturer unit. In May 8, 1973 RIL was incorporated and conformed their name as RIL in the year 1985. Over the years, the company has transformed their business from manufacturing of textiles products into a petrochemical major.

OBJECTIVES

The general objective of the study is to do Profitability Analysis of Reliance Industry Limited. The specific objectives include the following.
1. To examine Net Profit Margin of Reliance Industry Limitedduring the period of study.

2. To investigate into various profitability ratios relating to investment in Reliance Industry Limitedduring the period of study.
3. To offer suggestions for improvement of profitability of the Enterprise, if required

HYPOTHESES
H01: Net Profit Margin of Reliance Industry Limitedis uniform during the period of study.
H02: Return on networth (RONW) in Reliance Industry Limitedis uniform during the period of study.
H03: Return on Capital Employed (ROCE) in Reliance Industry Limitedis uniform during the period of study.

METHODOLOGY

The present study is mainly based on secondary data. The data is taken from the financial statements including balance sheet, trading account and profit and loss account of Reliance Industry Limited. The period of study is five years covering the financial years from 2015 – 16 to 2019 – 20.The data gathered is analyzed through the ratios relating to profitability of the enterprise. Profitability analysis was done through analyzing various profit margins, Profitability ratios relating to investments and Profitability ratios relating to various expenses. Profit margins covered include Net Profit Margin. Profitability ratios relating to investments include Return on net worth (RONW) and Return on Capital Employed (ROCE).

PROFITABILITY ANALYSIS WITH PROFIT MARGINS

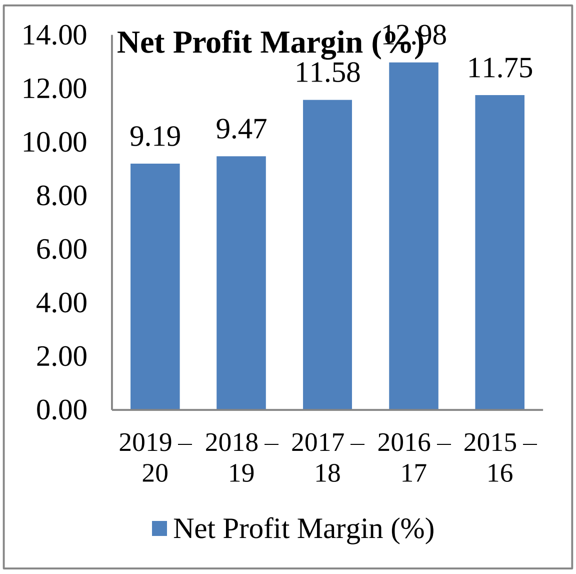
Profit Margins are based on the assumption that an Enterprise should earn sufficient profit on each Rupee of sales.

NET PROFIT MARGIN:
Net Profit Margin has varied between 9.19 and 12.98 during the period of study. A high Net Profit Margin is indicating that management is making good efforts in reducing cost of production. It is found in the significance test that Net Profit Margin is uniform during the period of study.

Table 1: Net Profit Margin Ratio (%)

Years	Net Profit Margin (%)
2019 – 20	9.19
2018 – 19	9.47
2017 – 18	11.58
2016 – 17	12.98
2015 – 16	11.75
Average	**10.99**
Minimum	9.19
Maximum	12.98
SD	**1.44**

Figure 1: Net Profit Margin



Source : Dion Global Solutions Limited

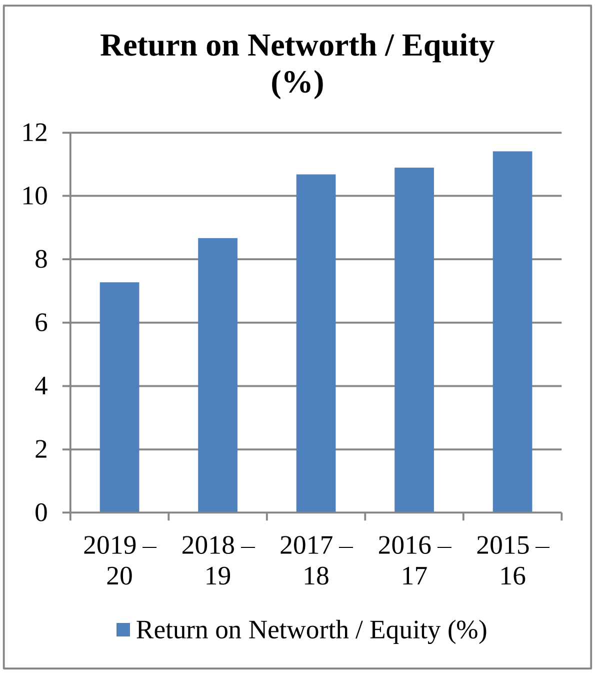
Interpretation: From the above figure, it is clearly showing that it is decreasing trend till 2019-20 and it increased in 2016-17.The net profit ratio of the company ranged from 9.19 percent in 2019-20 to 12.98 percent in 2016-17.the average of net profit ratio of Reliance Industry Limited was 10.99 percent. The standard deviation is 1.44. The ratio shows a bad profitability position of the company.

RETURN ON NET WORTH RATIO(RONW):
The Ratio of Return on owner's equity is a valuable amount for trying the profitability of a company. This Ratio helps the shareholders of a company to know the return on investment in terms of profits. Shareholders are always interested in knowing as to what return they earned on their invested capital. Anthony and Reece opine that this ratio "reflects that how much the firm has earned on the funds invested by the shareholders (Either directly or through retained earnings).

Table 2: RONW Ratio(%)

years	Return on Networth / Equity (%)
2019 – 20	7.27
2018 – 19	8.67
2017 – 18	10.68
2016 – 17	10.89
2015 – 16	11.41
Average	**9.78**
Minimum	7.27
Maximum	11.41
SD	**1.56**

Figure 2: Return on Networth / Equity (%)



Source : Dion Global Solutions Limited

Interpretation: The above table shows ratio of return on net worth of Reliance Industry Limited. The ratio showed a declining trend during the first three year of study period. The ratio was satisfactory in the base year of the study period but then itdeclined due to decrease in PAT (profit after tax) and increase in interest charges. The ratio roes from 7.27 percent in 2019-20 to 11.41 percent in 2015-16. The standard deviation is 1.56. It means there is a more fluctuating in the return on net worth of Reliance Industry Limited. But at the end the average ratio was satisfactory.

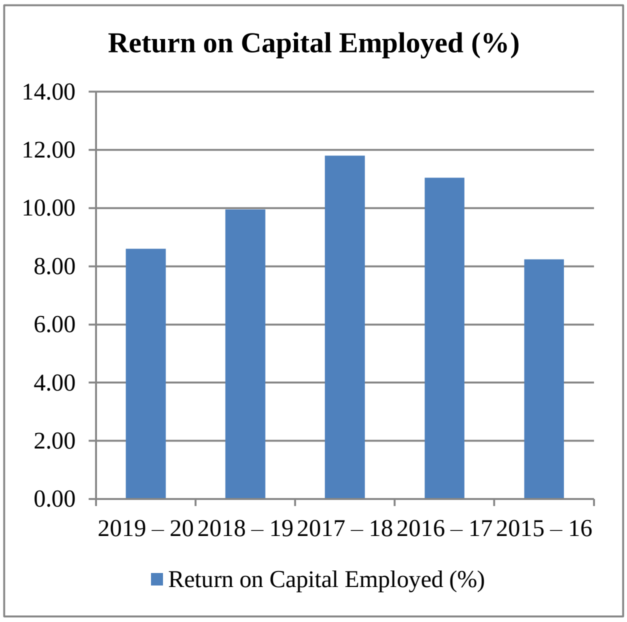
RETURN ON CAPITAL EMPLOYED (ROCE):
Return on capital employed has varied between 8.24 and 11.80 during the period of study. It is found in the significance test that Return on capital employed is not uniform during the period of study. Return on Capital Employed is less than 15 during the last

five years of the study which indicates that there is further scope for better profitability management during these five years.

Table 3: ROCE Ratio(%)

Years	Return on Capital Employed (%)
2019 – 20	8.60
2018 – 19	9.95
2017 – 18	11.80
2016 – 17	11.04
2015 – 16	8.24
Average	**9.93**
Minimum	8.24
Maximum	11.80
SD	**1.37**

Figure 3: Return on Capital Employed (%)



Interpretation: The above table shows ratio of return on capital employed of Reliance Industry Limited. The ratio showed a declining trend during the last three year of study period. The ratio roes from 8.24 percent in 2015-16 to 11.80 percent in 2017-18. The standard deviation is 1.37. It means there is a more fluctuating in the return on capital employed of Reliance Industry Limited. But at the end the average ratio was very fluctuant.

CONCLUSION:

Net Profit Margin, Return on Net Worth ratio and Return on Capital Employed Ratio are not uniform during the period of study. Positive Net Profit Margin indicates that the firm is covering its financial expenses. Return on Assets Ratio is less than 10 during five years of the study which indicates that there is further scope for better profitability management during these five years. Return on Capital Employed is less than 20 during the last five years of the study which indicates that there is further scope for better profitability management during these five years. Return on net worth is more than 10 during five years of the study which is good for owners. The management should make efforts to reduce its selling expenses.

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THE OBSTACLES OF INDIAN AGRIBUSINESS POST COVID 19

DR. NIKKITA CHETAN DOSHI

ABSTRACT

India is a service sector economy with 53.66% of total India's GVA. Still agriculture is the backbone of the economy. The primary sector provides jobs to around 53% population of India and contributes 13 per cent of India's exports. It is a major raw material supplier and thus supports industrial development. The ongoing restrictions on movements of people and vehicular traffic, migration of laborers to their native places , etc. are the negative implications of COVID19 pandemic on the farm economy. Preliminary reports show that the non-availability of migrant labor is interrupting some harvesting activities. There are disruptions in supply chains because of transportation problems and other issues In order to revive the Indian economy , Finance minister Smt. Nirmala Sitharaman has announced some major reforms to strengthen India's agriculture and allied activities sector. With the revival of agriculture , the business sector will witness a boom. The financial support in the primary sector will lead to Agri-innovations and will be a major step in making of Independent India.

Keywords: agriculture , COVID19 pandemic, disruptions in supply chains, Agri-innovations

AGRICULTURE & Its IMPORTANCE

The science and art of cultivating plants and livestock is agriculture. It was the main accelerator for the upcoming of human civilization. The farming of various local species caused increased supplies of food which further resulted in urbanization . Today besides farming, forestry, fruit cultivation, dairy, poultry, mushroom, bee keeping, etc are all included in agriculture. At present , modern agriculture comprises of marketing, processing, distribution of agricultural products etc. Thus, the production, processing, marketing and distribution of crops and livestock products is in totality agriculture.

One of the major sources of livelihood, almost throughout the world is agriculture. According to ILO 28.544% of the total male laborers are engaged in agriculture round the globe. The nation's food security can be achieved through agriculture development only. At present , in spite of high industrialization and rapid development of services many rely on agriculture for their income. At present the share of service sector is highest in India's GDP, still agriculture is very important with approx 16% contribution in Gross Value Added (GVA) at current prices. According to the World Bank collection of development indicators, employment in agriculture (% of total employment) in India was reported at 43.21 % in 2019.

IMPACT OF COVID-19 ON AGRICULTURE &ALLIED INDUSTRIES IN INDIA

The corona virus (COVID-19) pandemic is the defining global health crisis of our time and the greatest challenge we are facing in this century. The UN's Framework for the Immediate Socio-Economic Response to the COVID 19 Crisis warns that "The COVID-19 pandemic is far more than a health crisis: it is affecting societies and economies at their core. The pandemic impact will differ from country to country, it will most likely enhance poverty and inequalities at a global scale, making achievement of SDGs even more urgent. According to IMF, the global economy is expected to shrink by over 3 per cent in 2020 – the steepest slowdown since the Great Depression of the 1930s. The economic impact of the corona virus pandemic in India is highly disastourous. The World Bank and credit rating agencies are expecting India's growth for fiscal year 2021 with the lowest figures ,India has witnessed post India's economic liberalization . Some eminent economists believe that India should prepare for a negative growth rate in FY21. In a month's lockdown period, unemployment rose from 6.7% on 15 March to 26% on 19 April. More than 45% of households across the nation have reported an decrease in income as compared to the last year. India's large informal sector has been particularly hit hard. In 2017 - 18 , approx. 91%(422 million) were informal workers Out of the national total of 465 million workers. Lacking regular salaries or incomes, these agriculture, migrant, and other informal workers have been the hardest-hit during the lockdown period.

Closing down of factories , malls ,hotels , etc. during lockdowns, such as the present one, is relatively easy . But agriculture and animal husbandry have a different story as these sectors cannot stop production. It is the sole responsibility of the government to ensure that farmers are able to keep their animals alive and sell the crop that has been, or will be, harvested during the lockdown period. An active and urgent action plan has to be started to manage agriculture and livestock sectors . The rabi crops like wheat, gram, lentil, mustard, etc. were at harvestable stage when this corona tension crept in. It was the time of transport of the farm harvests to the **mandis** for assured procurement operations promised by the governments. Indian agriculture being labor oriented , the migration of workers to their native places has also triggered panic buttons, as they are crucial for both harvesting operations and post-harvest handling of produce in storage and marketing centers. Media reports show that the closure of hotels, restaurants, sweet shops, and tea shops during the lockdown has decreased milk sales. Meanwhile, poultry farmers have been badly hit due to misinformation, that chicken are the carriers of COVID-19.

In India fisheries are an important sector of food and nutritional security. It provides employment to over 14 million people and contributes to 1.1 per cent of the Indian GDP. Total lockdown in the harbors and the landing centers has badly affected the fisher-folks' day-to-day earnings in all coastal districts. The fruit and vegetable trade across India has gradually come to a standstill due to sealing of state and district borders, which has hit plying of trucks and other carriages to mandis throughout the country. Many exporters have estimated a 30-40 per cent decline in exports this season, as by the time r to agriculture ,as food is essential for human survival. During this time with minimum cross border transaction, we can't even depend on imports of food grains.

COVID-19 RELIEF PACKAGE : GOVERNMENT STIMULATION

The **third tranche** of the Rs. 20 lakh crore Atma Nirbhar Bharat Abhiyan relief package aims to push barrier-free inter-state trade and facilitate exports, which in turn would help farmers gain more through the parallel marketing route. Government has also earmarked Rs. 1 lakh crore towards aggregators, farmers producers organizations, agricultural startups, etc. for strengthening farm gate infrastructure. y NABARD will extend an additional Rs 30,000 crore of refinance support for Regional Rural Banks and

Rural Cooperative Banks. All PM-KISAN scheme beneficiaries with Kisan Credit Cards can avail concessional loans at low interest. A working capital limit of Rs 6,700 crore has also been sanctioned for state government entities involved in procurement of agricultural produce since March 2020.

Animal Husbandry Infrastructure Development Fund worth Rs 15,000 crore will be set up with the aim to support private investment in dairy processing, value addition and cattle feed infrastructure. Incentives to be extended for establishing plants for export of niche dairy products. Rs 500 crore have been sanctioned for Operation Green to prevent distress sale leading to a reduction in the price of perishable fruits and vegetables at the farm level. To promote herbal cultivation , government has launched a Rs 4,000 crore fund which will help generate Rs 5,000 crore income for farmers.

CONCLUSION:

These measures are targeted at making farming more competitive , create space for private players to have access to integrated markets. Also, more buyers would mean better prices for the farmers with a wider scope of getting higher returns globally. Government has concentrated on funding big-ticket reforms in the agricultural sector to revive the economic growth faster. they will also unleash the latent potential through opening up of production and marketing avenues. The move is likely to result in long-term gains for farmers, marketers and consumers. The move is visionary and will empower farmers, strengthen agri-processing linkages and enable demand-driven value added agriculture. It will also encourage investments in food processing.

Several countries are considering India for processed food, marine, meat, fruits and vegetables, tea, rice and other cereals as they are apprehensive to import edible products from China. We need to encash on such opportunities. It is unfair to expect one economic package to change all the issues in one instance. However, this was a package announced under unprecedented circumstances. So it is expected to at least lay the foundation for changing the environmental and economic factors that caused the human tragedy.

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SURFACING : STORY OF A WOMAN

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ABSTRACT :
Literature has witnessed the roles of women evolving through ages, but until recent times, most of the published writers were men and the portrayal of women in literature was without doubt biased. A lot of it has to be blamed on the fact that in the ancient world, literacy was strictly limited, and the majority of those who could write were male. When a woman want to write something she allows to write in the room.She can't be an author or writer she writes in diary style. When woman comes with pen she writes , what she face and suffer form this stereotype society. There are many women who never convert their feelings intowordsas well as such women who fight for their rights and write about haw they feel and expresses their feelings into words. Margaret Atwood is a Canadian writer best known for her prose fiction and for her feminist perspective. Role reversal and new beginnings are recurrent themes in her novels, all of them centred on women seeking their relationship to the world and the individuals around them.Atwood has written Surfacing, explore identity and social constructions of gender as they relate to topics such as nationhood and sexual politics.

INTRODUCTION :
Atwood's works encompass a variety of themes including gender and identity, religion and myth, the power of language, climate change, and "power politics".***Surfacing*** is a novel by Canadian author Margaret Atwood.Feminism, a theme in many of Atwood's novels, is explored through the perspective of the female narrative, exposing the ways women are marginalized in their professional and private lives. In Surfacing we observe how Atwood expose the condition of woman and identity crises of woman life through the unnamed protagonist of *Surfacing*. The narrator is reverential toward nature, intensely private, anti-American, and introspective. She works as a freelance artist. She searches for her missing father on a remote island in Quebec along with her boyfriend, Joe, and her friends, David and Anna. Socially alienated and distrustful of love, the narrator suffers a debilitating emotional numbness that eventually fixes itself through a grand psychological transformation. She eventually goes mad on the island. For a time she lives like an animal, but she eventually emerges as a more enlightened being. *Surfacing* is composed entirely of the narrator's unfiltered thoughts and observations.

Margaret Eleanor Atwood CC OOnt CH FRSC (born November 18, 1939) is a Canadian poet, novelist, literary critic, essayist, inventor, teacher, and environmental activist.Atwood has won numerous awards and honors for her writing, including the Booker Prize (twice), Arthur C. Clarke Award, Governor General's Award, Franz Kafka Prize, and the National Book Critics and PEN Center USA Lifetime Achievement Awards. A number of her works have been adapted for film and television, increasing her exposure.

Atwood avoids naming the narrator of Surfacing :

Atwood avoids naming the narrator of Surfacing in order to emphasize the universality of the narrator's feeling of alienation from society. The causes and effects of the narrator's psychological transformation remain somewhat mysterious. The narrator feels emotionally numb, isolated by the numerous roles she is supposed to play in her life. Part of the cause is grief, and part of it is due to spending too much time in the wilderness. But the narrator's madness also stems in large part from systematic social alienation. Atwood explores a woman's place in all of its facets: as a human, a wife, a religious person, a mother, and a sexual being. The narrator's madness seems to arise from her anger at all of the standard roles forced upon women. Her response to this alienation is to become an animal. She sees animals not as beasts without reason, but as graceful creatures that are better than humans at peacefully coexisting with nature. The result of the narrator's transformation is a greater understanding of her place in society. This understanding comes out of necessity, because the narrator realizes that complete withdrawal from society will result in her death. However, the narrator also reaches new conclusions about how she will cope with society's ills. She resolves to re-join society without succumbing to the pressures that once subdued her.

Surfacing story of a woman :

The book tells the story of a woman who returns to her hometown in Canada to find her missing father. Accompanied by her lover, Joe, and a married couple, Anna and David, the unnamed protagonist meets her past in her childhood house, recalling events and feelings, while trying to find clues to her father's mysterious disappearance. Little by little, the past overtakes her and drives her into the realm of wildness and madness.

Atwood uses the narrator's near-constant feeling of alienation to comment on the alienation of all women. The narrator feels abandoned by her parents because of the disappearance of her father and the detachment of her mother. She finds men especially alienating because of the way they control women through religion, marriage, birth control, sex, language, and birth. She depicts the way that men view relationships as a war, with women as the spoils. The narrator also describes her alienation as systematic, highlighting the way that children learn gender roles early on in life. The result of the narrator's alienation is madness and complete withdrawal. The narrator remains unnamed, making her a universal figure and suggesting that all women are in some way alienated. Throughout *Surfacing*, the narrator's feeling of powerlessness is coupled with an inability to use against his advances When she goes mad, she cannot understand David's words or speak out language. Similarly, when the search party comes for her, she cannot understand their speech, and her only defense from them is flight. Words betray her, as it is by yelling that the search party discovers her. The narrator maintains the false hope that she can reject human language just as she imagines she can reject human society. She admires how animals know the types of plants without naming them. When she goes mad, she vows not to teach her child language—yet eventually she conquers her alienation by embracing language.

The narrator mentions power several times before going mad and actively seeking "the power." In Chapter 4, she remembers thinking that seeds from a certain plant will make her all-powerful. In Chapter 9, she says that doctors pretend childbirth is their power and not the mother's. In Chapter 15, she remembers alternately pretending to be a helpless animal and an animal with power. The narrator's later quest for "the power" emphasizes her response to alienation. Ever since childhood, she has been isolated and emotionally numb, crippled by unsuitable religious ideals and gender roles. The narrator's psychotic search for "the power" represents the false hope that by withdrawing from society she can regain her humanity. Ultimately, the narrator gains power by resolving not to be powerless. She acknowledges that in order to function in society, she must learn to love and communicate. The narrator's quest for "the power" is similar to her anxiety over social alienation.

The narrator makes this remark in Chapter 27, after coming out of her madness. The phrase punctuates her attempt to completely withdraw from society and live like a natural animal, and it contains her cathartic conclusion to rejoin society. When she refers to being a victim, she refers to mental stumbling blocks that had once made her believe she was being oppressed by forces beyond her control, including religion, men, and marital conventions. Here, the narrator decides not to be a victim. The narrator's mention of powerlessness echoes her earlier search for "the power" during her madness. The narrator had searched for "the power" in her dead parents, the Indian gods, and in nature. Here, her resolution not to feel powerless marks the moment when she finally seeks refuge from her social isolation by internal (rather than external) means.

In this passage, the narrator comes to the conclusion that she possesses agency, and that her actions have consequences. Previously, emotional numbness had prevented her from believing that anything she did could affect others. She believed that her friends looked at her as a mirror of themselves, and that therefore she played no part in their lives. This opinion comes about when she asserts that Joe wants to marry an idea rather than a person. Here, the narrator concedes that because she will become an active member of society, her actions will have consequences. She relinquishes her emotional numbness by acknowledging that in possessing emotions, she will affect others' emotions.

CONCLUSION :

Surfacing is a work permeated with an aura of suspense, complex with layered meanings, and written in brilliant, diamond-sharp prose. Here is a rich mine of ideas from an extraordinary writer about contemporary life and nature, families and marriage, and about women fragmented...and becoming whole.In Surfacing we observe Atwood explains own experiences and knowledge of living in the Canadian Wilderness. Her take on the relationships even though written in the 80's is still the same for young adults today. After establishing herself as one of the leading 20th century poets in Canada, the publication of *Surfacing* in 1972 instantly confirmed Margaret Atwood's status as one the country's most important novelists. Atwood's unnamed heroine literally goes into the woods on a search for her missing father who may be mad and mad still be alive. The woods represent an entry into her own psychic past as issues of environmentalism, American imperialism and sexism are manifested in both literal and figurative imagery.

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"WORKINGCAPITAL MAGEMENT ANALYSIS : A COMPARATIVE STUDY OF FOOD PROCESSING INDUSTRY IN INDIA"

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ABSTRACT

Working capital management is a very important function of financial management. Each and every institution are need to maintain adequate amount of working capital. The necessary working capital are maintain in all types of organisation. Working capital is a "life blood of business" in every business organisation for long term and short term financing. Long term funds are required to purchase of fixed assets like plant and machinery, land and building etc. And short term funds are used in payment of wages and day to day financial transactions of organisation. These funds are also known as circulating capital or short term capital. The main objective of the study is to analyse the diffrent component of working capital and asses the impact on profitability. These study analyse and evaluate the liquidity position of the firm to analyse working capital.

Key words: Liquidity, profitability, Working capital

INTRODUCTION

Working capital management is concerned with the problems relating to current asset and current liabilities. Finance is a Hart of every business organisation. Working capital is very important aspect to understand current asset over current liabilities. Working capital of firm are able to repay its current liability and to conduct day to day business transactions. Working capital management is a management of current asset and current liability. The term working capital used for the requirement of capital for day to day business operations. Efficient management of working capital means management of various components like cash management, inventory management and receivable management.

To manage companies liquidity follow tight working capital policy, by which the extent of holding in respect of cash, account receivable and inventory is reduced to absolute minimum level; or relaxed policy by which no undue restrictions are put on the extent of this holding.

LITERATURE REVIEW

There is wide range of literature available on liquidity management in different companies and different sector. In the relation to the subject matter, we shall put into consideration the previous researches.

Satapathy, B and panda, S (2015), have analysed the study on working capital management in power sector. The researchers have used ratio analysis for this study is based on odisha power Transmission Corporation limited. The objective of the study is analyzing financial performance of the selected one single unit.

Harsh V.K. and Sukhdev S.(2013), have analyze capital efficiency in capital goods sector in india. The aim of the study is efficiency of working capital management and profitability also. The researchers have considered 14 companies in the year 2000-01 to

2009-10. This study is based on performance index, utilization index and efficiency index.

Napompech K. (2012), examined the effect of working capital management on the profitability of 255 companies listed in Thailand from 2007-09. Researcher has used the correlation and regression analysis. Researcher has found out the negative relationship between firm profitability and inventory conversion period and receivable conversion period. This study is based on secondary data from stock exchange of Thailand.

Das G. (2017), has analysed the liquidity in Hindustan unilever limited. Researcher has found out the declining trend in overall liquidity of the company during the study period. FMCG sector have also changed their business policy to face the challenges from the liberalization measures taken by the government of india.

K. and Rangasamy S. (2017), have measured the liquidity of food industries in india. This study covers 5 companies of this sector for the year 2010-11 to 2015-16. Present study used the correlation and t-Test for the relationship between liquidity analyses of the selected companies. Researcher have found out the better liquidity position in sample profile.

Durrah O., Rahman A., Syed A. and Ghafeer N., (2016), have reflect the position between liquidity ratios and other indicator ratios. This study is only 8 companies working in food sector. Present study reveals the no relationship between all liquidity ratioswith other indicators ratios.

Mehrotra S. (2013), has examined the trend of working capital and liquidity analysis of FMCG sector in india by selecting five companies namely HUL, Nestle, Britannia, P&G and ITC. The period of present study is five year and traditional method of data analysis and ratio analysis as tool of financial statement analysis for examine the degree of efficiency of working capital. In this study the company has good cash flow and negative working capital reflect the company.

OBJECTIVE OF THE STUDY

1. To efficiency of working capital impact on selected units
2. To analyze cash management.
3. To analyze receivable management.
4. To analyze inventory management.

SIGNIFICANCE OF THE STUDY

The study has been conducting to find out workingcapital impact of two listed food processing companies in India, through the use of current ratio, quick ratio and asset management ratio to measure the company's performance.

RESEARCH METHODOLOGY

The present study based on secondary data has been collected from annual reports of selected units. The present study covers for a period of five year from 2014-15 to 2018-19. In order analyze cash, receivable and inventory element with use of related ratios. Statistical tool such as average, percentage, correlation and coefficient of association, the data has been presented. Hypothesis has been tested by 5% level of significance by using student paired t-Test as per requirement of the study.

INDIAN FOOD PROCESSING INDUSTRY: AN OVERVIEW

Food processing is large sector that covers activities such as agriculture, horticulture, and fisheries. It also includes other industries that use agriculture inputs for manufacturing of edible products. World's first largest food processing industry is china, and then after second largest food producer is India. Indian food processing industry is biggest in world in terms of production, consumption, export and growth prospects. The total food production in India is likely to double in the next ten years. The total food production in India is likely to double in the next ten years. Indian food service industry is currently worth Rs 2,47,680 crore (US$ 41.39 billion) and is expected to grow at the rate of 11 per cent to touch Rs 4,08,040 crore (US$ 68.16 billion) by 2018, according to 'India Food Service Report 2013' by the National Restaurant Association of India (NRAI). With a huge agriculture sector, abundant livestock, and cost competitiveness, India is fast emerging as a sourcing hub of processed food. Moreover, India's market for organic food consumption has also been recognised as one with the largest potential worldwide, as per RNCOS research report titled, 'Indian Organic Food Market Analysis'.

The study based on only two food processing units is Britannia and ITC. Britannia industries limited are one of the leading food companies in india. Company started in 21st march 1918. Britannia is working Middle East through local manufacturing in UAE, OMAN and Nepal also. Today Britannia is leading food company in india with Rs. 6000 crores in revenues, products in over 5 categories through 3.5 million retail outlets to more than the half of the Indian population. ITS is an Indian public conglomerate company headquarter in Kolkata. ITC is outgoing market leader in its traditional business of hotels, paperboards, packing, Agri-exports, it is rapidly gaining market share is food and confectionery.

DATA ANALYSIS

In the present study attempts has been made to analyze and evaluate the workingcapital management through ratio analysis of some selected food processing companies in India for five years. The study used secondary data have been used from annual reports of the selected units. The firm's total investment is in current asset more than half of firms total investment is in current asset. In any industry undertaking major part of asset are cash, inventory and receivables.

Table 1.1 key financial ratios of selected food processing units

Year	Britannia limited					ITC limited				
	C.R.	Q.R.	Cash	Debt	Inven	C.R.	Q.R.	Cash	Debt	Inven.
2014-15	0.84	0.47	74.06	96.44	17.19	1.25	0.68	50.73	19.97	6.40
2015-16	1.00	0.70	71.30	115.12	21.24	1.45	0.87	52.01	18.78	6.43
2016-17	1.07	0.77	74.48	89.46	21.29	1.20	0.69	37.13	21.61	6.10
2017-18	1.59	1.16	75.27	52.16	15.78	1.94	1.06	51.74	20.59	7.05
2018-19	1.62	1.18	76.13	36.07	14.58	1.80	1.16	54.38	14.99	6.03

(Sources: published annual reports of selected units.)

The above table shows the different ratios of selected food processing companies for the year 2014-15 to 2018-19.

The current ratio expresses relationship between current asset and current liabilities. It is measure short-term financial strength of the business current asset should be twice the amount of current liabilities.

A table 1.1 shows the current ratio of Britannia ltd in 2018-19 is 1.62 is the increasing trend of current ratio is compare to 2014-15. The ITC ltd shows the fluctuating trend in study period. Comparatively the highest average current ratio was 7.64 in ITC in the study period.

The quick ratio is also known as liquid ratio. This ratio established the relationship between quick asset and current liabilities. It is measurement of firm's ability to convert its current asset quickly into cash in order to meet its current liabilities.

A table 1.1 shows the quick ratio of Britannia ltd in 2018-19 is 1.18 is the increasing trend of quick ratio is compare to 2014-15. ITC ltd also increasing trend in study period. Comparatively the highest average quick ratio was 4.46 in ITC.

The cash or super quick ratio considers only the absolute/liquidity available with the firm cash and bank balance are most liquid asset of a company. Cash ratio is equivalent to half of its liquid liabilities.

A table 1.1shows the cash ratio of Britannia ltd in the study period fluctuating trend and also same in ITC ltd. The highest average cash ratio was 371.24 in Britannia ltd as compare to ITC ltd.

Debtor's turnover ratio indicates how speedily receivables are turning into cash. This ratio shows the number of times the amount of credit sales is collected during the year. It shows the efficiency of collection.

A table 1.1 shows the debtor's turnover ratio of Britannia ltd in year 2015-16 is highest (115.12) in study period. Then next year to 2018-19 ratios was declining trend. ITC ltd was fluctuating trend in this study period. The highest debtor's turnover ratio was 389.25 in Britannia ltd.

Inventory turnover ratio shows the relationship between sales and inventory. This ratio indicates number of inventory has been turned over during the period and the efficiency with which a firm is able to manage its inventory.

A table 1.1 shows the inventory turnover ratio of Britannia ltd is increasing trend in year 2014-15 to 2016-17 then after declining trend shows in above data. ITC ltd have fluctuating trend in this study period.

HYPOTHESIS TESTING

Hypothesis means assumption or some supposition to be proved or disproved. Research hypothesis is predictive statement being tested by appropriate scientific methods. In the present study we have applied student paired t-Test.

Null hypothesis: There is no significant difference in the current ratio of selected food processing units.

Table 1.2 calculated value and table value of current ratio.

Unit name	Mean	S.D.	D.F.	C.V.	T.V.
Britannia	6.12	2.890	8	2.40	2.306
ITC	7.64				

In the t-Test of current ratio shows calculated value is higher than the table value so null hypothesis is accepted. So there is no significant difference in current ratio of selected units.

Null hypothesis: There is no significant difference in the quick ratio of selected food processing units.

Table 1.3 calculated value and table value of quick ratio.

Unit name	Mean	S.D.	D.F.	C.V	T.V

Britannia	3.28	2.063	8	1.86	2.306
ITC	4.46				

In the t-Test of quick ratio shows calculated value is lower than the table value so null hypothesis is rejected. So there is relationship between selected units.
Null hypothesis: There is no significant difference in the cash ratio of selected food processing units.
Table 1.4 calculated value and table value of cash ratio.

Unit name	Mean	S.D	D.F.	C.V.	T.V.
Britannia	371.24	3.95	8	390.89	2.306
ITC	245.99				

In the t-Test of cash ratio shows calculated value is higher than the table value so null hypothesis is accepted. So there is no significant relationship between selected units.
Null hypothesis: there is no significant difference in the debtor's turnover ratio of selected food processing units.
Table 1.5 calculated value and table value of debtor's turnover ratio.

Unit name	Mean	S.D	D.F.	C.V.	T.V.
Britannia	389.25	239.69	8	463.80	2.306
ITC	95.94				

In the t-Test of Debtors turnover ratio shows calculated value is higher than the table value so null hypothesis is accepted. So there is no significant difference in the debtor's turnover ratio between selected units.
Null hypothesis: There is no significant difference in the inventory turnover ratio of selected food processing units.

Unit name	Mean	S.D.	D.F.	C.V.	T.V.
Britannia	68.84	34.77	8	58.23	2.306
ITC	31.01				

In the t-Test of inventory turnover ratio shows calculated value is higher than the table value so null hypothesis is accepted. So there is no relationship between selected units.

CONCLUSION

Workingcapital play very important role for the management of short term debt and give other options to invest in different classes were company get more and more profit. The present paper is all about the workingcapital management of food processing industry. Its comparative study of Britannia and ITC limited. This comparative study judged by different ratios of liquidity and assets management. From liquidity aspect ITC limited is more efficient from Britannia limited. So far solvency position is concerned Britannia company is suffering from high debt burden in study period.

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ગુજરાત રાજ્યના સંદર્ભમાં મત્સ્ય ઉત્પાદનનો અભ્યાસ

પરમાર મિતલબેન ધીરજલાલ
અર્થશાસ્ત્ર ભવન સૌરાષ્ટ્ર યુનિવર્સીટી, રાજકોટ.

સારાંશ –

પ્રસ્તુત સંશોધન પેપરમાં ગુજરાત રાજ્યનાં સંદર્ભમાં મત્સ્ય ઉત્પાદન વિશે અભ્યાસ કરવામાં આવ્યો છે, ગુજરાત ૧૬૦૦ કિલોમીટર લાંબો દરિયો કિનારો ધરાવે છે. જે કેટલાક અખાત, ખાડીઓ, અને પાણીનાં ભરાવવાળી જમીનને ખંડિત થયેલ છે. માછીમારીની પ્રવૃત્તિ માટે કચ્છ જીલ્લાનાં લખપતથી વલસાડ જિલ્લનાં ઉમરગામ સુધીના વિસ્તાર સુધી લંબાયેલ જોવા મળે છે. મુખપ્રદેશ જ્યાં નદીનું તાજું પાણી અને દરિયાનું ચોખું પાણી ભેગું થાય છે. આ વાતાવરણ વિવિધ માછલીના વસવાટ ને ટેકો આપે છે.

ચાવીરૂપ શબ્દો –

- મત્સ્ય ઉત્પાદન.
- નિકાસ

પ્રસ્તાવના –

ભારતનાં પશ્ચિમ કિનારે આવેલ ગુજરાત રાજ્ય દેશનો ૧/૩ ભાગનો દરિયા કિનારાનો વિસ્તાર તેમજ ઇકોનોમિક એક્સકલઝીવ ઝોન ધરાવતો હોઈ, મત્સ્ય ઉદ્યોગ ક્ષેત્રે મોખરાનું સ્થાન ધરાવતું રાજ્ય છે. જે દેશનાં કુલ દરિયાઈ ઉત્પાદનમાં ૨૦ % જેટલો ફાળો આપે છે. વળી, ૬ મોટા જળાશયો તથા નાના મોટા જળાશયો તથા સરદાર સરોવરના કમાન્ડ એરિયાથી આંતરદેશીય મત્સ્ય ઉદ્યોગની વિપુલતા પણ ધરાવે છે.

- ૩.૭૬ લાખ હેક્ટર જેટલો ભાંભરા પાણીનો વિસ્તાર ધરાવતું રાજ્ય હોઈ વલસાડ, સુરત, ભરૂચ જેવા દરિયાઈ વિસ્તારના જીલ્લમાં ભાંભરા પાણી મત્સ્ય ઉદ્યોગના વિસ્તારની વિપુલ તકો ધરાવે છે, જેમાં જીંગા જેવી વધુ કીમત ધરાવતી માછલી મળે છે. માછલી માછીમારોને આર્થિક રીતે પગભર કરવામાં મદદરૂપ થઈ શકે તેમ છે. પશુધન ગણતરી ૨૦૦૭ મુજબ રાજ્યમાં ૧૦૫૮ મત્સ્ય ગામોમાં ૫.૫૯ લાખ માછીમારોની વસ્તીમાં ૨.૧૮ લાખ સક્રિય માછીમારો છે. વર્ષ ૨૦૧૭ – ૧૮ દરમિયાન ૨૫૬૧૨ યાંત્રિક હોળીઓ તથા ૯૯૨૦ બિનયાંત્રિક હોળીઓ મળી કુલ ૩૫૫૩૨ હોળીઓ સાથે મત્સ્ય પકડાશ દ્વારા દરિયાઈ મત્સ્ય ઉત્પાદન ૭.૦૧ લાખ મેટ્રિકટન તથા આંતરદેશીય મત્સ્ય ઉત્પાદન ૧.૩૮ લાખ મેટ્રિક ટન થયેલ છે, જેમાંથી ૩.૧૩ લાખ મેટ્રિક ટન પરદેશ નિકાસ કરી, ૫૦૭૧૦.૫ કરોડ વિદેશી હુંડીયામણ કમાવી દેશનાં આર્થિકવિકાસમાં મહત્વનો ફાળો આપેલ છે.
- **મત્સ્ય ઉદ્યોગ ખાતા દ્વારા ઘડવામાં આવેલ પોલીસી :**
- ગુજરાત મત્સ્ય ઉદ્યોગ અધિનિયમ - ૨૦૦૩ નાં નિયમો તારીખ ૧૫/૦૮/૨૦૦૩ થી રાજ્યમાં અમલમાં મુકવામાં આવ્યો હતો.
- જળાશયોમાં મત્સ્ય ઉદ્યોગ અંગે ૨૫/૦૨/૨૦૦૪ થી અદ્યતન ઈજારા નીતિ ત્યાર કરવામાં આવી, તમજ ગ્રામ્ય તળાવો માટે અલગ ઈજારા નીતિ તારીખ- ૧૫/૦૭/૨૦૦૩ થી બહાર પાડવામાં આવી.
- **મત્સ્ય ઉદ્યોગ પ્રવૃતિને મુખ્ય ત્રણ વિભાગમાં વહેચી શકાય.**

(૧) આંતરદેશીય મત્સ્ય ઉદ્યોગ (મીઠાપાણીનો મત્સ્ય ઉદ્યોગ)

(૨) ભાંભરા પાણીનો મત્સ્ય ઉદ્યોગ (ઝીંગા ઉછેર)

(3) દરિયાઈ મત્સ્ય ઉદ્યોગ

(૧) આંતરદેશીય મત્સ્ય ઉદ્યોગ :

- મત્સ્યબીજ ઉત્પાદન
- સ્થાનિક માછીમારી યુવાનો દ્વારા મત્સ્યબીજનો ઉછેર (ગ્રામ્ય રોજગારી)
- ગ્રામ્ય તળાવોમાં મત્સ્ય ઉદ્યોગ (મત્સ્ય ઉત્પાદન તથા ગ્રામ્ય રોજગારી)
- જળાશય મત્સ્ય ઉદ્યોગ (સ્થાનિક માછીમારોની રોજગારી)
- સ્થાનિકો દ્વારા છુટક મત્સ્ય વેચાણને પ્રોત્સાહન

(૨) ભાંભરા પાણીમાં મત્સ્ય ઉદ્યોગ:

- રાજ્ય સરકારની પોલીસી મુજબ રેવન્યુ ડીપાર્ટમેન્ટ મારફત જમીનની ફાળવણી.
- કોષ્ટલ એક્વાકલ્ચર ઓથોરીટી એકટ મુજબ એક્વાકલ્ચર ફાર્મનું રજીસ્ટ્રેશન.
- આનુસંગીક માળખાકીય સવલતો પૂરી પાડવી, જેવી કે રોડ, વિજલાઈન, પીવાનું પાણી વગેરે.
- ભાંભરાપાણી નાં મત્સ્ય ઉદ્યોગની તાલીમ.

(3) દરિયાઈ મત્સ્ય ઉદ્યોગ:

- પરંપરાગત માછીમારોને સહાય (પગડિયા માછીમારોને સહાય, નાની હોળીઓ માટે બહારના યંત્રો માટે સહાય, ગીલનેટની ખરીદી ઉપર સહાય.)
- સલામત અને નફાકારક મસ્ત્ય ઉદ્યોગ (લાઈફ સેવીંગનાં સાધનો તથા જી.પી.એસ ફીશ, ફાઈન્ડર જેવા આધુનીક સાધનો ઉપર સહાય.)
- માછીમારોને ડીઝલની ખરીદી ઉપર ચૂકવેલ વેટની રાહત.

➢ **૭ જુન ૨૦૧૯ કરંટઅફેર્સ :**

-સેન્ટ્રલ મરીન ફિશરીઝ રીસર્ચ ઇન્સ્ટીટયુટ (સી.એમ.એફ આર.આઈ) નાં જણાવ્યા અનુસાર વાર્ષિક ઉત્પાદનમાં ૮ લાખ ટન માછલી ઉત્પાદનમાં ગુજરાત દેશમાં ટોચ પર છે, ત્યારબાદ તમિલનાડુ ૭. ૦૨ લાખ ટન ઉત્પાદનમાં દ્વિતીય સ્થાને છે. ત્યાર પછી કેરળનું ઉત્પાદન ૬.૪૩ લાખ ટન છે.

➢ **ગુજરાતમાં જોવા મળતી માછલીની મુખ્ય જાતિઓ.**

Trad name	Scientific name
Sand lobster	Thenus orientalis
Rock lobster	Panulirus homarus
Silver pomfret	Pampus argentius
Black pomfret	Tarastromateus niger
Chinese pomfret	Pampus chinensis
Flower prawn	Panaeus semisulcatus
Jawala	Acetes nidicus
Squid	Loligu duvacelii
Ribbon fish	Leptracanthus savala
Ghol	Protonibea diacantus
Bombay duck	Harpodon nehereus
Indian salmon	Eleutheronema tetradactylum

સંદર્ભ સાહિત્યની સમીક્ષા –

(૧) જી મોહનરાજ, કે.વી.નાયર, પી.કે. અશોકન, શુભદીપ ઘોષ, એશિયન ફીસરીઝ સાયન્સ માં તેનાં દ્વારા કરાયેલ અભ્યાસમાં જાણાવ્યુ કે ગુજરાત લગભગ ૨૦ % સાથે દેશનાં દરીયાકાંઠાનાં ૧૬૦૦ કિમી ખંડોના 33

% વિસ્તાર (૧.૬૪.૦૦૦ચો. કિમી) અને ૨.૦૦,૦૦૦. ચોરસ કિમી થી વધુ દરિયાઈ માછલીના ઉત્પાદનમાં દરિયાઈ રાજ્યોમાં બીજા ક્રમે છે, તેઓ જણાવે છે, કે રાજ્યમાં દરિયાઈ માછલીના ઉત્પાદનમાં વર્ષ ૨૦૦૨ (૪,૬૮ લાખ ટન તેનું ઉત્પાદન હતુ) ૨૦૦૫ (૩,૫૬ લાખ ટન થયુ તેમાં ઘટાડો જોવાયો છે.

(૨) કે,એસ, સ્કરૈયા, વી.પી અનમ, સી.જે.પ્રસાદ, પી.ટી.મણી. સી.એમ.એફ.આર કોચી ૨૦૦૦ નાં વર્ષમાં અભ્યાસ કરવામાં આવ્યો હતો. ૧૯૮૫ – ૯૫ દરમિયાન ગુજરાતના દરિયાઈ માછલી ઉતરાણની ટૂંકી માહિતી આપવામાં આવી છે. આ કાગળ સી.પી.ઈ.યુ સાથે સાથે વિવિધ ગીયર્સનું પ્રદાન તેમજ રીઝનલવા ઈઝ તેમજ ગ્રેપવાઈઝ વિગતો પણ રજુ કરવામાં આવી છે. છેલ્લા દાયકાના ઉતરાણના ડેટાની સહાય થી દરિયાઈ મત્સ્ય ઉદ્યોગની સ્થિતિ અને સંભાવના વિશે ચર્ચા કરવામાં આવી છે.

(૩) સુજીતા થોમસ, સોબા જોઈ, કીજકુટાન, ભારતીય મત્સ્ય ઉદ્યોગ સૈફાલો પ્રોડકસની માછીમારી અને સૌરષ્ટ્ર ક્ષેત્રમાં વેરાવળ અને માંગરોળની ભારતીય વસ્તી ગતિશીલતાના કેટલાક પાસાઓનો અભ્યાસ ૧૯૯૬ નાં ગાળા દરમિયાન કરવામાં આવ્યો હતો.વેરાવળ અને માંગરોળમાં સરેરાશ વાર્ષિક ઉતરાણ અનુક્રમેં ૩૯૧૧ ટન અને ૧૦૩૦૩ અંદાજવામાં આવી હતી, જે વેરાવળ અને માંગરોળમાં કુલ માછલી ઉતરાણમાં ૮.૮ % અને ૭.૭ ટકા ફાળવવામાં આવી છે.

(૪) સોલંકી મીનીરમણ, મીનાકુમારી, આર,એમ,ત્રિવેદી અને એ નારાયણ દ્વારા મરીન અને જળ સંસાધન વિભાગ અવકાશ એપ્લીકેશન કેન્દ્ર (ઈસરો) અમદાવાદ ખાતે અભ્યાસ કરવામાં આવ્યો હતો, તે જણાવે છે, કે ભારત સમુદ્ર સપાટીના તાપમાન (એસ.એસ.ટી) પર વર્ણવેલ થર્મલ સુવિધાઓ સંભવિત માછીમારીનાં મેદાનો માટે અનુસરવામાં આવી હતી, આ કાગળ એસ,એસ.ટી છબીઓનું ઉત્પાદન સંભવિત જમીનઓની ઓળખ પ્રસાર અને મત્સ્ય ઉદ્યોગ ટર્મિનલ (એફ.ટી.ડી) વેરાવળ, ગુજરાત પાસે થી મળેલા કેટલાક ફિડબેક નાં મળેલા વિશ્લેષણનાં આધારે કેટલાક માછીમારીની આગાહીના સામેલ પગલાઓ સાથે સબંધિત છે.

સંસોધનનાં હેતુઓ.

- ગુજરાત રાજ્યના સંદર્ભમાં મત્સ્ય ઉત્પાદનનો અભ્યાસ કરવો.
- ગુજરાત રાજ્યમાં મત્સ્ય ઉત્પાદનનું પ્રમાણ જાણવું.
- ગુજરાતમાંથી થતી નિકાસનું પ્રમાણ જાણવું.

સંસોધન પદ્ધતિ.

પ્રસ્તુત સંસોધન વર્ણનાત્મક સંશોધન પદ્ધતિ પર આધારિત છે, મત્સ્ય ઉત્પાદન અને તેના નિકાસ માટેની માહિતી પ્રાપ્ત કરવા માટે દ્વિતીય કક્ષાની માહિતી સ્ત્રોતનો ઉપયોગ કરવામાં આવ્યો છે, જેમાંથી મત્સ્ય ઉત્પાદન સબંધિત પુસ્તકો, સંશોધન પત્રો, સામયિકો અને વેબસાઈટનો ઉપયોગ કરેલ છે. પ્રસ્તુત સંશોધનમાં ૨૦૧૪- ૧૫ થી ૨૦૧૮-૧૯ નાં વર્ષ દરમિયાન ગુજરાતમાં મત્સ્ય ઉત્પાદનનું કેટલું પ્રમાણ છે. અને તેની કેટલી નિકાસ છે. તેનો અભ્યાસ હાથ ધર્યો છે.

માહિતીનું પૃથ્થકરણ અને અર્થઘટન –

Fish production and value (marine and inland) of gujarat state.

Sr. no	year	Fish production in m.t.			Value in rs. Lakhs		
		marine	inland	Total	Marine	Inland	Total
1	2014-15	698450	111482	809932	473488.45	126133.65	599622.10
2	2015-16	697328	112232	809560	480877.37	128225.24	609102.61
3	2016-17	698832	116725	815557	484201.19	139188.03	623389.22

4	2017-18	700743	137685	838428	495088.22	181285.35	676373.57
5	2018-19	699230	142880	842110	506510.16	194004.23	700514.39

Source: commissioner of fisheries.government of Gujarat

અર્થઘટન :

- ઉપરોક્ત કોષ્ટકનો અભ્યાસ કરતા જણાય છે. કે ૨૦૧૪-૧૫ માં મત્સ્ય ઉત્પાદન દરિયાઈ વિસ્તારમાં ૮૬.૨૩ % જોવા મળે છે. અને આંતરદેશીય વિસ્તારમાં મત્સ્ય ઉત્પાદનનું પ્રમાણ ૧૩.૭૬ % જોવા મળે છે. આમ, વર્ષ ૨૦૧૪ -૧૫ થી ૨૦૧૭ – ૧૮ સુધી દરિયાઈ મત્સ્ય અને આંતરદેશીય મત્સ્યમાં સારો આવો વધારો જોવા મળે છે. ૨૦૧૮-૧૯ માં દરિયાઈ મત્સ્ય ઉત્પાદનમાં ૨૦૧૪- ૧૫ ની સરખામણીએ ૮૩.૩ % છે. જે ઘટાડો દર્શાવે છે. આંતરદેશીય વિસ્તારમાં ૨૦૧૪-૧૫ ની સરખામણી એ ૨૦૧૮ -૧૯ માં ૧૬.૯૬ % જે વધારો દર્શાવે છે.
- ૨૦૧૮ – ૧૯ માં દરિયાઈ મત્સ્ય ઉત્પાદનમાં ઘટાડો જોવા મળે છે. કારણ કે, દરિયાઈ વિસ્તારમાં કુદરતી આપતી જેવી કે દરિયાઈ તુફાનો તેમજ વાયુ વાવાઝોડું આવવાથી માછીમારોનાં ઉત્પાદનોમાં ઘટાડો જોવા મળે છે.

Fish and fish product export of Gujarat state			
s.r no.	**Year**	**Quantity in M.T.**	**Value in rs. crores**
1	2014-15	245434	3645.23
2	2015-16	208624	3567.24
3	2016-17	237442	4417.40
4	2017-18	312568	5071.05
5	2018-19	305226	5202.30

Source: commissioner of fisheries.government of Gujarat

અર્થઘટન –

ઉપરોક્ત કોષ્ટકનો અભ્યાસ કરતા જણાય છે,કે વર્ષ ૨૦૧૪ – ૧૫ થી ૨૦૧૮ – ૧૯ નાં મત્સ્ય ઉત્પાદનની કેટલી નિકાસ થઈ અને કેટલી કીમત મળી તેની આંકડાકીય માહિતીનો અભ્યાસ કરેલ છે. વર્ષ ૨૦૧૪ -૧૫ માં ૨૪૫૪૩૪ મેટ્રિક ટન ઉત્પાદન થયેલ છે, અને તેની કીમત ૩૬૪૫.૨૩ કરોડ મળેલ છે. વર્ષ ૨૦૧૪ -૧૫ થી વર્ષ ૨૦૧૭ – ૧૮ સુધી નિકાસમાં ઉતરોતર વધારો થયેલ જોવા મળે છે.તેની કિમતમાં પણ વધારો થયેલ જોવા મળે છે. ત્યારબાદ વર્ષ ૨૦૧૮ -૧૯ માં મત્સ્ય નિકાસ ૨૦૧૭ – ૧૮ ની સરખામણીએ ઘટાડો થયેલ જોવા મળે છે. કારણ કે વાવાઝોડાને લીધે અને દરિયાઈ તોફાનને લીધે માછીમારોના ઉત્પાદનમાં ઘટાડો જોવા મળે છે. ઉપરોક્ત કોસ્ટક નો અભ્યાસ કરતા જણાય છે, કે નિકાસનું પ્રમાણ ઉતરોતર વધતું જાય છે,અને તેની કિમત સારા પ્રમાણમાં વધુ મળતી જણાય છે.

૨૦૧૮-૧૯ માં ગુજરાતમાંથી મત્સ્ય નિકાસનો જથ્થો ૩૦૫૩૨૬ મેટ્રિકટન હતો.અને તેની કીમત ૫૨૦૨.૩૦ કરોડ મળેલ છે,જે ૨૦૧૭ – ૧૮ કરતા કિમતમાં વધારો જોવા મળે છે, કારણ કે ઝીંગા જેવી કીમતી માછલી મળેલ હોઈ તો કીમત વધારે મળે છે.

તારણો –

- પ્રસ્તુત સંશોધન પર થી તારણ કાઢી સકાઈ કે વર્ષ ૨૦૧૪ – ૧૫ દરિયાઈ વિસ્તારમાંથી અને આંતરદેશીય વિસ્તાર માંથી મત્સ્ય ઉત્પાદનમાં ૨૦૧૭ -૧૮ સુધી ઉતરોતર વધારો થયેલ જોવા મળેલ છે.
- ૨૦૧૮ -૧૯ માં દરિયાઈ વિસ્તારમાંથી થતા ઉત્પાદનના પ્રમાણમાં ઘટાડો જોવા મળે છે કારણ કે દરિયાઈ તુફાન અને વાવાઝોડાને હિસાબે માછીમારીનાં ઉત્પાદનમાં ઘટાડો થયેલ છે.

- વર્ષ ૨૦૧૪ -૧૫ માં ગુજરાતમાંથી મત્સ્ય નિકાસનો જથ્થો ૨૪૫૪૩૪ મેટ્રિક ટન હતો, અને તેની કીમત ૩૫૬૭.૩૪મળેલ છે. આમ, ૨૦૧૮ – ૧૯ માં મત્સ્ય જથ્થાની કીમત ૫૨૦૨.૩૦ કરોડ જે ઉતરોતર વધારો જોવા મળેલ છે.

સંદર્ભ સૂચી –

- **Commissioner of fisheries.government of Gujarat**
- **https: // cof.gujarat.gov.in**
- **જી.મોહનરાજ, કે.વી. નાયર, પી.કે. અશોકન. શુભદીપ ઘોષ. ૨૦૦૯**
- **કે.એસ.સ્કરૈયા, વી.પી.અનમ, સી.જે પ્રસાદ, પી.ટી.મણી ૨૦૦૨**
- **સુનીતા થોમસ ૧૯૯૬**
- **Https:wwwbest current affairs.com**

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ગુજરાત રાજ્યનાં સંદર્ભમાં આત્મા યોજનાનો અભ્યાસ

કણજારીયા ક્રિષ્ના એ.
અર્થશાસ્ત્ર ભવન. સૌરાષ્ટ્ર યુનિવર્સીટી, રાજકોટ

સારાંશ –

ભારત એ એક કૃષિપ્રધાન દેશ છે. તેથી કૃષિનો વિકાસએ દેશ માટે ખુબજ મહત્વ નો છે. કૃષિનાં વિકાસ માટે સરકારની ઘણી બધી યોજનાઓ કાર્યરત છે. તેમાંની એક યોજના એટલે આત્મા યોજના. પ્રસ્તુત સંશોધન પેપરમાં વિવિધ કૃષિ યોજનાઓ માંથી કૃષિ સાથે સંકળાયેલ એવી આત્મા યોજનાનો અભ્યાસ કરવામાં આવેલ છે. આ યોજનાનું ટુંકાક્ષરિ નામ આત્મા છે. જે તેના અંગ્રેજી મુળાક્ષરોનાં સંદર્ભમાં રજુ થાય છે. Agriculture Technology Management Agency નાં પ્રથમ ચાર મૂળાક્ષરો દ્વારા તે આત્માનાં નામે ઓળખાય છે. આ યોજના કેન્દ્ર સરકારની યોજના છે. જે ખેતી વાડીનાં ટેકનીકલ જ્ઞાનનાં વિસ્તરણ દ્વારા અને ખેડૂતો અદ્યતન ટેક્નોલોજીનાં ઉપયોગ દ્વારા કૃષિ પેદાશોની ઉત્પાદકતામાં વધારો કરી શકે તે માટેની આ યોજના છે.

ચાવીરૂપ શબ્દો –

- ATMA
- લેબ થી લેન્ડ

પ્રસ્તાવના –

ભારતીય અર્થતંત્ર હજી પણ કૃષિ અર્થતંત્ર તરીકે ઓળખાય છે. છ દાયકાના આયોજન કાળ બાદ પણ ભારતીય અર્થકારણમાં કૃષિક્ષેત્ર અતિ મહત્વનું સ્થાન ધરાવે છે. આમ, દેશનાં વિકાસ માટે પણ કૃષિનો વિકાસ ખુબ જરૂરી છે. તેથી કૃષિના વિકાસ માટે સરકારે અનેક યોજના બહાર પાડી છે. તેમાની આત્મા યોજના એ પણ કૃષિ વિકાસ માટેની એક યોજના છે. જે વર્લ્ડબેંકની સહાય થી નવેમ્બર ૧૯૯૮ થી શરૂ કરવામાં આવી છે. આત્મા યોજનાનો મુખ્ય ઉદેશ એગ્રીકલ્ચર યુનિવર્સીટી સંશોધન કેન્દ્રો લેબોરેટરી દ્વારા ખેતી વિષયક નવી નવી ટેક્નોલોજીનો વિકાસ થાય અને તેને વિસ્તરણ સેવા દ્વારા ખેડૂતોનાં ખેતર સુધી પહોચાડવામાં આવે છે. આથી આ યોજનાને ઌઌ લેબ થી લેન્ડ ઌઌ સુધી ઓળખવામાં આવે છે. આ યોજનાનો મુખ્ય ઉદેશ નિષ્ણાતોએ વિકસાવેલી વિવિધ કૃષિ ટેકનોલોજી અભણ અને અશિક્ષિત એવા ચીલા ચાલુ પદ્ધતિથી ખેતી કરતા ખેડૂતોને સરળ રીતે સમજાવી શકાય એવી પદ્ધતિથી આવી ટેક્નોલોજીનું પ્રદર્શન કરી તેઓ દ્વારા તેનો અમલ થાય અને તેનાં દ્વારા કૃષિ ઉત્પાદકતામાં વધારો થાય તથા ખેડૂતોની આર્થિક સ્થિતિમાં સુધારો થાય તે તેનો મુખ્ય ઉદેશ છે.

અર્થ –

ઌઌઆત્મા યોજના એ જીલ્લાકક્ષાએ કાર્યરત રજીસ્ટર્ડ સોસાયટી છે. જે જીલ્લાના ટકાવ કૃષિ વિકાસ માટે જીલ્લાની તમામ કૃષિ સંલગ્ન સંસ્થાઓને આયોજનને લઇ ને અમલ સુધીની ક્રિયામાં સામેલ રાખીને કાર્ય કરે છે.ઌઌ

ઌઌઆત્મા યોજનાએ કેન્દ્ર સરકાર દ્વારા સંચાલિત યોજના છે. આ યોજના દ્વારા સંચાલિત યોજના છે. આ યોજના દ્વારા ખેડૂતોને આધુનિક પદ્ધતિથી ખેતી કરવાની માહિતી આપી અને તેની આવક અને ઉત્પાદન વધારવા માટે કાર્યરત છે. ઌઌ

યોજના વિશે માહિતી –

આ યોજના કેન્દ્ર સરકારની છે, જે વર્લ્ડબેંકની સહાય થી નવેમ્બર ૧૯૯૮ થી શરૂ કરવામાં આવી છે. ગુજરાત રાજ્યમાં આ યોજના પ્રાયોગિક ધોરણે ૨૦૦૫ માં અમલમાં આવી હતી, વર્ષ ૨૦૦૭ – ૦૮ થી તમામ જીલ્લામાં અમલમાં આવેલ છે. આ યોજના માટે કેન્દ્ર સરકાર ૯૦% ગ્રાન્ટ આપે છે. જયારે રાજ્ય સરકારનો ફાળો ૧૦% હોય છે.

આત્મા યોજનાનાં ઘટકો –

તાલીમ –

આત્મા યોજના અંતર્ગત જોડાયેલા તમામ ખેડૂતોને કૃષિ સંલગ્ન વિષયો પર વૈજ્ઞાનિક તેમજ આધુનીક ખેતી પદ્ધતિ અંગે નું માર્ગદર્શન અને માહિતી મળી રહે છે. એ માટે તાલીમ કાર્યક્રમ યોજવામાં આવે છે. આ તાલીમ રાજ્યની બહાર, રાજ્યની અંદર, જીલ્લાની અંદર એમ ત્રણ પ્રકારે યોજવામાં આવે છે. રાજ્યની બહારની તાલીમની સમય મર્યાદા વધુમાં વધુ સાત દિવસની હોય છે. જેમાં ખેડૂત પ્રતિદિન રૂ.- ૧૨૫૦ સુધીનો ખર્ચ કરવાની જોગવાઈ છે.

નિદર્શન –

આત્મા યોજના સાથે જોડાયેલ ગ્રુપને કૃષિ યુનિવર્સીટી દ્વારા કરાયેલ નવીન સંશોધનથી બહાર પાડેલ જુદા જુદા પાકોની નવીન જાતો તેમજ પશુપાલન,મત્સ્યપાલન, મધમાખીઉછેર, મરઘાપાલન વગેરે વિષયો પર ખેડૂતનાં ખેતર અથવા પ્લોટની જગ્યાએ નિદર્શન ગોઠવવામાં આવે છે. આ નિદર્શન દ્વારા ખેડૂતને નવીન ટેક્નોલોજી અને ખેતીમાં વૈજ્ઞાનિક અભિગમ વિશે માહિતગાર કરવામાં આવે છે. પ્રતિ નિદર્શન રૂપિયા ૪૦૦૦ ની મર્યાદામાં ખેત સામગ્રી સહાય માટે આપવાની જોગવાઈ નક્કી કરવામાં આવી છે.

પ્રેરણાપ્રવાસ –

યોજનામાં જોડાયેલ ખેડૂત ભાઈ બહેનને ખેતીલક્ષી બહોળું જ્ઞાન મળી રહે તેમજ આધુનીક અને વૈજ્ઞાનિક ખેતી પદ્ધતિ અંગે માહિતી મળી રહે તે માટે પ્રેરણાપ્રવાસ યોજવામાં આવે છે, આ પ્રવાસ રાજ્યની અંદર, રાજ્યની બહાર, જીલ્લાની અંદર આમ ત્રણ પ્રકારે યોજવામાં આવે છે. પ્રવાસની સમય માર્યાદા સાત દિવસની હોય છે. જેમાં પ્રતિ ખેડૂત પ્રતિદિન રૂપિયા ૮૦૦ સુધીનો ખર્ચ કરવાની જોગવાઈ છે.

કિશાનગોષ્ઠી –

આત્મા યોજના સાથે જોડાયેલા ખેડૂતો દ્વારા કોઈ એક પ્રગતિશીલ ખેડૂતના ખેતર પર ભેગા થઈ ખેડૂત ખેડૂત વચ્ચે કિશાનગોષ્ઠી યોજવામાં આવે છે. ખેડૂતને મુંજવતા પ્રશ્નોનું નિરાકરણ કરવામાં આવે છે. કિશાનગોષ્ઠી તાલુકા કક્ષાએ વર્ષમાં બે વાર ગોઠવવામાં આવે છે. જે માટે પ્રતિ વર્ષ રૂપિયા ૩૦.૦૦૦ સુધીની જોગવાઈ છે.

કૃષિ મેળો –

ખેડૂતને જીલ્લા કક્ષાએ જ આધુનિક ખેતી પદ્ધતિ નવીન ટેકનોલોજી, નવીન પાકોની વેરાઈટી તેમજ ખેત સાધન સામગ્રી અંગે માર્ગદર્શન મળી રહે તે માટે કૃષિમેળો પ્રદર્શન યોજવામાં આવે છે. આત્મા યોજના દ્વારા દર વર્ષે આવા કૃષિમેળાનાં પ્રદર્શનનું આયોજન એક થી બે દિવસ માટે જીલ્લા કક્ષાએ કરવામાં આવે છે. જેમાં પ્રગતિશીલ ખેડૂતો, વૈજ્ઞાનિકો, કૃષિયુનિવર્સીટીનાં વૈજ્ઞાનિકો અને અધિકારીઓ, ખેતી ખાતાના અધિકારીઓ તેમજ આત્માનાં અધિકારીઓ કૃષિને લગતા વિવિધ વિષયો પર ખેડૂતોને માર્ગદર્શન પૂરું પાડે છે. ખેડૂતોને સરળતાથી માહિતી મળી રહે તે માટે સીડી, ડીવીડી, બુકલેટ જેવી માહિતી સભર સાહિત્ય પૂરૂ પાડવામાં આવે છે.આ પ્રકારનાં કૃષિમેળા પ્રદર્શન યોજવા માટે ૪,૦૦,૦૦૦ ની જોગવાઈ છે.

ફાર્મ સ્કુલ –

ઘણા ખેડૂતો પોતાની કોઠા સૂઝ તથા વૈજ્ઞાનિક અભિગમથી ઉતમ રીતે ખેતી કરતા હોઈ છે. જેથી તે વિસ્તારનાં ખેડૂતો આવા સિધ્ધહસ્ત પ્રગતિશીલ ખેડૂતોનાં ખેતરની વખતો વખત મુલકાત લઈને જરૂરી માર્ગ દર્શન મેળવે તો ખેડૂતો થી ખેડૂત સુધીની વહનની પ્રક્રિયા સરળતાથી થઈ શકે છે. આ ઉદેશને ધ્યાનમાં રાખીને આત્મા યોજનામાં ખેતર પર ચાલતી ખેતીની પાઠશાળા તરીકે ખેતરશાળા ફાર્મ સ્કુલની જોગવાઈ કરવામાં આવી છે. આ ખેતરશાળામાં ૨૦ થી ૨૫ ખેડૂતોનું ગ્રુપ ભાગ લઈ શકે છે. ફાર્મ સ્કુલનાં ખેડૂતને વાવણીથી લઈને કાપણી સુધીનો સંપૂર્ણ પ્રક્રિયાની માહિતી ખેતર પર પ્રત્યક્ષ આપવામાં આવે છે.

સંદર્ભસાહિત્યની સમિક્ષા –

- (1) પંકજ કુમાર મંડળ પોતાના સંસોધન આત્માનો આર્થિક સામાજિક પ્રોફાઈલનો અભ્યાસ ૨૦૧૮ માં જણાવે છે. આ કે આ અભ્યાસ જાતી, વય, વિતરણ, વ્યવસાય,શિક્ષણ, જમીન હોલ્ડીંગનું કદ, કુટુંબનું કદ, વાર્ષિકઆવક વિશે અભ્યાસ કરવામાં આવેલ હતો, તેને અભ્યાસમાં જણાવ્યુ કે પરમાણું કુટુંબ એકમાત્ર વ્યવસાય તરીકે ખેતીમાં રોકયેલ હોઈ છે અને કુટુંબનાં સભ્યનું નાનું કદ હોઈ છે. પુરુષ અને સ્ત્રીઓ કૃષિ પ્રવૃત્તિમાં સામેલ હોઈ છે.
- (2) ધીરજ કે સિહ, પ્રેમલતા સિહ, આર.એન.પાદરીયા તેના સંસોધન પેપર ત્રિમાસિક જર્નલ ૨૦૧૬ માં દર્શાવે છે કે, આત્મા યોજનાનાં વ્યુહાત્મક સંસોધન અને વિસ્તાર યોજનાનાં અમલીકરણનાં કારણે પાક પદ્ધતિની મર્યાદાને માપવા બિહારના પટના અને મુજફર જીલ્લાઓ પર સંસોધન કરેલ છે. આ માટે તેને ૧૬૦ લાભાર્થી પાસેથી પ્રાથમિક માળખાનો સારી રીતે સ્ટ્રક્ચર ઇન્ટરવ્યુ શેડ્યુલ નો ઉપયોગ કરી એકત્ર કરેલ છે. તેમાં જોવા મળ્યું છે, કે આત્મા પ્રોજેક્ટ લાગુ થયા પછી પાક વૈવિધ્યતામાં ૧૭. ૭૨ % નો વધારો થયો છે. શાકભાજી તેમજ તેલનાં બિયારણમાં તેમજ કઠોળ માં પણ નોંધપાત્ર વધારો જોવા મળ્યો હતો, આ રીતે આત્મા પ્રોજેક્ટ પાક વૈવિધ્યતા માટે સફળ હોવાનું જણાયું છે.
- (3) નિશા ચોહાણ, ચિત્રા હેન્રી, દિલીપકુમાર સોલંકી, ઇન્ડિયન જર્નલ ૨૦૧૩ દ્વારા રાજસ્થાન પશ્ચીમ વિસ્તારનાં આત્મા યોજના હેઠળ કૃષિ તકનીકી માહિતી મેળવવા ખેડૂતને પડતી મુશ્કેલીનો અભ્યાસ કરવામાં આવ્યો છે. જેમાં કૃષિ અને સંલગ્ન ક્ષેત્રોમાં પ્રમોશનનાં અવરોધો, માર્કેટિંગ અવરોધો, ઈકોલોજીકલ અવરોધો, સામાજિક, રાજકીય અવરોધ, અને તકનીકી અવરોધ આ ઉપરાંત ઘણા બધા અવરોધો ઉતરદાતા તરફ થી જણાવવામાં આવ્યા હતા. આ શોધ સૂચવે છે, કે સરકારની નીતિ ઘડનાર અને આયોજકોની અસરકારક નીતિ, વ્યૂહરચનાની રચના કરવી જરૂરી છે. જેથી આત્મા યોજનાનાં ફાઈદા મેળવવામાં ખેડૂતને આવતી મુશ્કેલીઓ દુર થાઈ.
- (4) ક્રિષ્ના એમ સિંધ, બર્ટન સ્વાનસન, એ.ઝા.મોહર ૨૦૧૨ માં પોતાના સંસોધનમાં દર્શાવે છે. કે વિશાળ જટિલ, રાષ્ટ્રીય વિસ્તરણ પ્રણાલીનું વિકેન્દ્રીકરણ કરવું સરળ નથી, પરંતુ ભારત સરકાર આ લાંબાગાળાનાલક્ષ્ય તરફ આગળ વહે છે, પરંતુ આત્મા મોડેલ વિસ્તારની ઘણી સમસ્યાઓ નિવારવામાં સફળ રહ્યુ છે. અને આત્માની અપવાદરૂપ અસરો પણ છે, તેથી હિતાવહ છે, કે ભારત જેવા દેશમાં વૈવિધ્યસભર સામાજિક,આર્થીક અને કૃષિ આબોહવાની પરિસ્થિતિ છે, તેથી આત્મા મોડેલને સંપૂર્ણ સાવચેતી થી અમલમાં મુકવામાં આવે.

સંસોધનનાં હેતુઓ. –

- કેન્દ્ર સરકારની કૃષિ માટેની આત્મા યોજનાનો અભ્યાસ કરવો.
- આત્મા યોજના શું છે, તેનાં ઐતીહાસીક માળખાનો અભ્યાસ કરવો .
- આત્મા યોજનાનો મુખ્ય ઉદેશ શું છે, તેનો અભ્યાસ કરવો.

સંસોધન પદ્ધતિ –

પ્રસ્તુત સંસોધન વર્ણનાત્મંક પદ્ધતિ પર આધારિત છે, ગુજરાતમાં આત્મા યોજનાનો અભ્યાસ કરવા માટે દ્વિતીય કક્ષાની માહિતીનો ઉપયોગ કરવામાં આવ્યો છે, જેમાં આત્મા યોજના સબંધિત પુસ્તક, સામાયિક, અખબાર, સંસોધનપત્ર, વેબસાઈટ માટેનો અભ્યાસ કરવામાં આવેલ છે.

માહિતીનું પૃથ્થકરણ અને અર્થઘટન –

આત્મા યોજના હેઠળ જીલ્લાનાં પ્રોજેક્ટ ડીરેક્ટરશ્રીની કચેરી મારફત ખેડૂત જૂથનું રજીસ્ટ્રેશન કરાવવાનું હોઈ છે. રજીસ્ટ્રેશન થયા બાદ આ રજીસ્ટર ફોર્મ ગ્રુપનાં સભ્યો તરફથી જ યોજનાકીય પ્રવૃત્તિઓ હાથ ધરવાની હોઈ છે.

ગુજરાતમાં ૨૦૦૭ – ૦૮ થી ૨૦૧૮ – ૧૯ સુધી રજીસ્ટ્રેશન ખેડૂત ગ્રુપની સંખ્યા.

વર્ષ	ગ્રુપની સંખ્યા
૨૦૦૭-૦૮	૮૧૩
૨૦૦૮-૦૯	૯૬૪
૨૦૦૯-૧૦	૨૨૨૫
૨૦૧૦-૧૧	૩૮૦૫
૨૦૧૧-૧૨	૬૭૭૨
૨૦૧૨-૧૩	૧૪૬૦૧
૨૦૧૩-૧૪	૭૩૭૦
૨૦૧૪-૧૫	૨૬૪૩
૨૦૧૫-૧૬	૩૫૭૮
૨૦૧૬-૧૭	૨૩૯૪
૨૦૧૭-૧૮	૨૬૫૩
૨૦૧૮-૧૯	૩૯૪૪

source:- https://www.atma.gujarat.gov.in

અર્થઘટન –

ઉપરોક્ત કોષ્ટકનો અભ**ahttps://www**યાસ કરતા જણાય છે.કે ગુજરાતમાં વર્ષ ૨૦૦૭ – ૦૮ માં ખેડૂતોના ગ્રુપની સંખ્યા ૮૩૧ હતી જે ૨૦૧૨ – ૨૦૧૩ માં સૌથી વધારે ૧૪૬૦૧ જોવ મળે છે. જે ૨૦૧૮ – ૧૯ માં ૩૯૪૪ સંખ્યા છે. આમ, ખેડૂતોનાં ગ્રુપની કુલ સંખ્યા ૫૧૭૬૨ છે. આમ, ગ્રુપની સંખ્યામાં ઉતરોતર વધરો થયેલો જોવા મળે છે.

ગુજરાતમાં વર્ષ ૨૦૦૭ – ૦૮ થી ૨૦૧૮ -૧૯ સુધીની રજીસ્ટ્રેશન ખેડૂતના કુલ સભ્યોની સંખ્યા-

વર્ષ	પુરુષ	સ્ત્રી	કુલસભ્ય સંખ્યા
૨૦૦૭-૦૮	૮૬૫૯	૩૩૮૪	૧૨૦૪૩
૨૦૦૮-૦૯	૧૦૩૮૧	૪૪૩૮	૧૪૮૧૯
૨૦૦૯-૧૦	૧૮૬૦૪	૧૪૭૫૪	૩૩૩૫૮
૨૦૧૦-૧૧	૩૬૪૫૪	૧૭૮૦૯	૫૪૨૬૩
૨૦૧૧-૧૨	૬૮૪૦૩	૨૪૮૭૬	૯૩૨૭૯
૨૦૧૨-૧૩	૧૪૪૭૪૭	૭૧૨૯૨	૨૧૬૦૩૯
૨૦૧૩-૧૪	૬૭૫૨૦	૩૨૮૭૯	૧૦૦૩૯૯

૨૦૧૪-૧૫	૨૭૬૦૫	૮૭૧૭	૩૬૩૨૨
૨૦૧૫-૧૬	૩૪૨૪૧	૧૪૭૪૩	૪૮૯૮૪
૨૦૧૬-૧૭	૨૨૬૫૨	૧૧૧૫૭	૩૩૮૦૯
૨૦૧૭-૧૮	૨૪૨૫૭	૧૧૯૩૧	૩૬૧૮૮
૨૦૧૮-૧૯	૩૭૭૬૭	૧૬૧૮૬	૫૩૯૫૩
કુલ	૫૦૧૨૯૦	૨૩૨૧૬૬	૭૩૩૪૫૬

Source:- https://www.atma.gujarat.gov.in

અર્થઘટન –

ઉપરોક્તકોષ્ટકનોઅભ્યાસકરતા જણાય છે, કે વર્ષ ૨૦૦૭ – ૦૮ માં પુરુષોની સંખ્યા ૮૬૫૯ હતી, જે વર્ષ ૨૦૧૨ – ૧૩ માં ૧૭૪૭૪૭ અને ૨૦૧૮ – ૧૯ માં ૩૭૭૬૭ જોવા મળે છે, એજ રીતે સ્ત્રીઓની સંખ્યા વર્ષ ૨૦૦૭ – ૦૮ માં ૩૩૮૪ હતી, જે ૨૦૧૨ – ૧૩ માં વધીને ૭૧૨૯૨ અને ૨૦૧૮-૧૯ માં ૧૬૧૮૬ જોવા મળે છે. આમ, તેમ ઉતરોતર વધારો થતો જોવા મળે છે. કુલ સભ્ય સંખ્યા ૨૦૦૭ – ૦૮ માં ૧૨૦૪૩ હતી જે વધી ને ૨૦૧૮ -૧૯ માં ૫૩૯૫૩ થયેલ છે. આમ, સભ્ય સંખ્યામાં ઉતરોતર વધારો જોવા મળે છે.

ગુજરાત માં ૨૦૦૭ – ૦૮ થી ૨૦૧૮ – ૧૯ સુધીની પુરૂષોની કુલ સંખ્યાનું ટકાવારી પ્રમાણ –

વર્ષ	પુરુષોની સંખ્યા	ટકાવારી	ફેરફાર
૨૦૦૭-૦૮	૮૬૫૯	૧૦૦ %	--
૨૦૦૮–૦૯	૧૦૩૮૧	૧૧૯.૮૪ %	૧૯.૮૪ +
૨૦૦૯-૧૦	૧૮૬૦૪	૨૧૪.૮૫ %	૧૧૪.૮૫ +
૨૦૧૦-૧૧	૩૬૪૫૪	૪.૨૧ %	૩૨૧ +
૨૦૧૧-૧૨	૬૮૪૦૩	૭૮૪.૯૬ %	૬૮૪.૯૬ +
૨૦૧૨-૧૩	૧૪૪૭૪૭	૧૬૭૧.૬૪ %	૧૫૭૧.૬૪ +
૨૦૧૩-૧૪	૬૭૫૨૦	૭૮૪.૭૬ %	૬૮૪.૭૬ +
૨૦૧૪-૧૫	૨૭૬૦૫	૩૧૮.૮૦ %	૨૧૮.૮૦ +
૨૦૧૫-૧૬	૩૪૨૧૪	૩૯૫.૪૪ %	૨૯૫.૪૪ +
૨૦૧૬-૧૭	૨૨૬૫૨	૨૬૧.૬ %	૧૬૧.૬ +
૨૦૧૭-૧૮	૨૪૨૫૭	૨૮૦.૧૪ %	૧૮૦.૧૪ +
૨૦૧૮-૧૯	૩૭૭૬૭	૪૩૬.૧૬ %	૩૩૬.૧૬

Source:- https://www.atma.gujarat.gov.in

અર્થઘટન –

ઉપરોક્ત કોષ્ટકનો અભ્યાસ કરતા જણાય છે, કે આત્મા યોજનમાં પુરુષોની સંખ્યામાં પણ ઉતરોતર વધારો થતો જોવા મળે છે. ૨૦૦૮-૦૯ માં તેનું ટકાવારી પ્રમાણ ૧૧૯.૮૪% હતું જે વધી ને ૨૦૧૨-૧૩ માં ૧૬૭૧.૬૪% જે સૌથી વધારે જોવા મળે છે. અને ૨૦૧૮.૧૯ માં ૪૩૬.૧૬ % રહેવા પામ્યું છે. આમ, પુરુષોની સંખ્યામાં ઉતરોતર વધારો રહેવા પામ્યો છે.

ગુજરાતમાં વર્ષ ૨૦૦૭ – ૦૮ થી વર્ષ ૨૦૧૮ – ૧૯ સુધીમાં સ્ત્રીઓની કુલ સંખ્યાનું ટકાવારી પ્રમાણ-

વર્ષ	સ્ત્રીઓની સંખ્યા	ટકાવારી	ફેરફાર
૨૦૦૭-૦૮	૩૩૮૪	૧૦૦ %	--

૨૦૦૮-૦૯	૪૪૩૮	૧૩૧.૧૪ %	૩૧.૧૪ +
૨૦૦૯-૧૦	૧૪૭૫૪	૪૪૧.૯૦ %	૩૪૧.૯૦ +
૨૦૧૦-૧૧	૧૭૮૦૯	૫૨૬.૨૭ %	૪૨૬.૨૭ +
૨૦૧૧-૧૨	૨૪૮૭૬	૭૩૫.૧૦ %	૬૩૫.૧૦ +
૨૦૧૨-૧૩	૭૧૨૯૨	૨૧૦૬.૭૪ %	૨૦૦૬.૭૪ +
૨૦૧૩-૧૪	૩૨૮૭૯	૯૭૧.૬૦ %	૮૭૧.૬૦ +
૨૦૧૪-૧૫	૮૭૧૭	૨૫૭.૫૯ %	૧૫૭.૫૯ +
૨૦૧૫-૧૬	૧૪૭૪૩	૪૩૫.૬૭ %	૩૩૫.૬૭ +
૨૦૧૬-૧૭	૧૧૧૫૭	૩૨૯.૬૭ %	૧૨૯.૭૦ +
૨૦૧૭-૧૮	૧૧૯૩૧	૩૨૯.૬૦ %	૨૫૨.૬૦ +
૨૦૧૮-૧૯	૧૬૧૮૬	૪૭૮.૩૧ %	૩૭૮.૩૭ +

Source:- https://www.atma.gujarat.gov.in

ઉપરોક્ત કોષ્ટકમાં આત્મા યોજનામાં વર્ષ ૨૦૦૭-૦૮ થી સ્ત્રીઓની સંખ્યામાં પણ ઉતરોતર વધારો થતો જોવા મળે છે. ૨૦૦૮ – ૦૯ માં સ્ત્રીઓનું ટકાવારી પ્રમાણ ૧૩૧.૧૪ % હતુ જે વધીને ૨૦૧૨ – ૧૩ માં ૨૧૦૬.૭૪ % જોવા મળે છે. અને ૨૦૧૮-૧૯ માં ૪૭૮.૩૧% જેટલો વધારો જોવા મળે છે. આમ, સ્ત્રીઓની સંખ્યામાં ઉતરોતર વધારો જોવા મળે છે.

ગુજરાતમાં વર્ષ ૨૦૦૭ – ૦૮ થી ૨૦૧૮-૧૯ સુધીની કુલ સભ્ય સંખ્યાનું ટકાવારી પ્રમાણ.

વર્ષ	કુલ સભ્ય સંખ્યા	ટકાવારી	ફેરફાર
૨૦૦૭-૦૮	૧૨૦૪૩	૧૦૦ %	--
૨૦૦૮-૦૯	૧૪૮૧૯	૧૨૩ %	૨૩ +
૨૦૦૯-૧૦	૩૩૩૫૮	૨૭૬.૯૯ %	૧૭૬.૯૯ +
૨૦૧૦-૧૧	૫૪૨૬૩	૪૫૦.૫૮ %	૩૫૦.૫૮ +
૨૦૧૧-૧૨	૯૩૨૭૯	૭૭૪.૫૫ %	૬૭૪.૫૫ +
૨૦૧૨-૧૩	૨૧૬૦૩૯	૧૭૯૩.૯૦ %	૧૬૯૩.૯૩ +
૨૦૧૩-૧૪	૧૦૦૩૯૯	૮૫૩.૬૭ %	૭૩૩.૬૭ +
૨૦૧૪-૧૫	૩૬૩૨૨	૩૦૧.૬૦ %	૨૦૧.૬૦ +
૨૦૧૫-૧૬	૪૮૯૮૪	૪૦૬.૭૪ %	૩૦૬.૭૪ +
૨૦૧૬-૧૭	૩૩૮૦૯	૨૮૦.૭૪ %	૧૮૦.૭૪ +
૨૦૧૭-૧૮	૩૬૧૮૮	૩૦૦.૫૦ %	૧૦૦.૫૦ +
૨૦૧૮-૧૯	૫૩૯૫૩	૪૪૮ %	૩૩૮ %

Source:- https://www.atma.gujarat.gov.in

અર્થઘટન –

ઉપરોક્ત કોષ્ટકનો અભ્યાસકરતા જણાય છે, કે વર્ષ ૨૦૦૭ – ૦૮ થી લઈ ને ૨૦૧૮ – ૧૯ સુધી આત્મા યોજનામાં કુલ સભ્યોની સંખ્યામાં પણ વધારો જોવા મળે છે. ૨૦૦૭ -૦૮ માં જે પ્રમાણ ૧૨૦૪૩ હતું તે વધીને ૨૦૧૨-૧૩ માં ૨૧૬૦૩૯ જોવા મળે છે. જે ૨૦૧૮ -૧૯ માં ૫૩૯૫૩ જોવા મળે છે. જે વધારો દર્શાવે છે.

ટકાવારી પ્રમાણ જોઈએ તો ૨૦૦૮-૦૯ માં ૧૨૩ % હતું જે વધીને ૨૦૧૨-૧૩ માં ૧૭૯૩.૯૦ % જોવા મળે છે. જે ૨૦૧૮ -૧૯ માં ૪૪૮% જોવા મળે છે. આમ, સભ્ય સંખ્યામાં ઉતરોતર વધારો જોવા મળે છે.

આત્મા યોજનામાં સરકારે કરેલ ખર્ચ –

વર્ષ	ખર્ચ (લાખમાં)
૨૦૧૩ – ૧૪	૫.၆૦.૮૦
૨૦૧૪ – ૧૫	૪૭૪૮.၆၆
૨૦૧૫ – ૧၆	૪૩૨૧.၆૮
૨૦၁၆ – ૧૭	૪૪૩૧.૧૯
૨૦૧૭ – ૧૮	૪૫૯૫.૫૧
૨૦૧૮ – ૧૯	૫૫၆૩.૭૪
૨૦૧૯ – ૨૦	၆.૯૩.૫૯૨

Source:- https://www.atma.gujarat.gov.in

અર્થઘટન –

આત્મા યોજનામાં સરકારે કરેલખર્ચ જોઈએ તો ૨૦૧૩-૧૪ માં ૫၆૦.૮૦ લાખ હતુ, જે ૨૦૧૯.૨૦ માં ၆૯૩.૫૯૨ લાખ ખર્ચ કરેલ છે. ખર્ચમાં પણ દર વર્ષે વધારો થતો જોવા મળે છે.

આત્મા યોજનાનું વહીવટી માળખું (રાજ્ય સ્તરીય)

બેસ્ટ આત્મા યોજના હેઠળ ફાર્મર એવોર્ડ

કક્ષા	એવોર્ડસંખ્યા	પ્રતિએવોર્ડ જોગવાઈ
રાજ્ય	૧૦	રૂપિયા – ૫૦.૦૦૦
જીલ્લા	૩૩૦	રૂપિયા – ૨૫.૦૦૦
	(જીલ્લાદીઠ ૧૦)	
	૧૨૩૦	રૂપિયા- ૧૦.૦૦૦
તાલુકા	(તાલુકાદીઠ ૫)	

Source:- https://www.atma.gujarat.gov.in

તારણો –

- ગુજરાતમાં આત્મા યોજનાકાર્યક્રમઅંતર્ગતકાર્ય કરવા માટે નક્કી કરેલા ધોરણો જેવા કે તાલીમ, નિદર્શન, પ્રેરણાપ્રવાસ, કિશાન ગોષ્ઠી, કૃષિમેળો, ફાર્મ સ્કુલમાં વર્ષ ૨૦૦૭ – ૦૮ થી લાભાર્થીઓની સંખ્યામાં ઉતરોતર વધારો જોવા મળે છે.
- યોજનામાં ખેડૂતોના ગ્રુપમાં પણ ઉતરોતર વધારો જોવા મળે છે.
- યોજનામાં જોડાયેલા પુરુષ સભ્ય અને સ્ત્રી સભ્યોની સંખ્યામાં પણ ઉતરોતર વધારો થયેલ જોવા મળે છે.
- આમ, યોજનામાં વર્ષે વર્ષે લાભાર્થી ઓની સંખ્યામાં ઉતરોતર વધારો જોવા મળે છે.

સંદર્ભસૂચી –

- **સરકારી યોજ્નાઓ (પ્રો. ડી.આર.પટેલ)**
- **https://www.atma.gujarat.gov.in**
- **સંસોધનપત્ર –**
- **પંકજ કુમાર મંડળ – ૨૦૧૮**
- **ધીરજ.કે.સિંહ , પ્રેમલતાસિંહ – ત્રિમાસિક જર્નલ.**
- **નિશા ચોહાણ, ચિત્રાહેન્રી - ઇન્ડિયન જર્નલ – ૨૦૧૩**
- **ક્રિષ્ના.એન.સિંધ, બર્ટનસ્વાનસન, - ૨૦૧૨**

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ગુજરાતમાં ડેરીઉદ્યોગનો ઉદ્‌ભવ અને વિકાસ

થાનકી પુનિતકુમાર વેણીલાલ
આર્થશાસ્ત્ર ભવન, સૌરાષ્ટ્ર યુનિવર્સિટિ, રાજકોટ.

૧.પ્રસ્તાવના:

ડેરી ઉદ્યોગ પશુપાલન વ્યવસાય પર આધાર રાખે છે. પશુપાલનએ ભારતનો સૌથી પ્રાચીન પરંપરાગત વ્યવસાય છે. કારણ કે ભારત કૃષિ અને ગ્રામીણ અર્થવ્યવસ્થા પર નિર્ભર છે. પશુપાલનએ ગ્રામીણ ભારતમાં કૃષિક્ષેત્ર પછી મોટા પૂરક વ્યવસાય તરીકે જોવા મળે છે. ભારતમાં પશુપાલન પ્રાચીન અને વંશપરંપરાગત વ્યવસાય છે. પશુપાલન વ્યવસાયમાં કોઈ વિશિષ્ટ તાલીમ કે શિક્ષણની જરૂરિયાત પડતી નથી. ઓછી આવડત તને ઓછા કુશળ લોકો પણ આ વ્યવસાય કરી શકે છે. વળી ભારતમાં કૃષિ પર વસ્તીનું વધારે ભારણ પણ જોવા મળે છે. નાના અને સીમાંત ખેડૂતોનું પ્રમાણ વધારે છે કે જેના પાસે ખેતીની ઓછી જમીન છે. તેવો કૃષિ સાથે પશુપાલન કરે છે. અપૂરતા વરસાદ, વધારે વરસાદ, રોગ-જીવાત, દુષ્કાળ વગેરેના કારણે ખેડૂતોને કૃષિમાંથી ઓછી અને અનિયમિત આવક મળે છે. તેથી ખેડૂતોની આર્થિક સ્થિતિ ભારતમાં ખરાબ છે. ભારતના ખેડૂતોના સંદર્ભમાં એક કહેવત છે કે,

" ખેડૂત દેવામાં જન્મે છે દેવામાં જીવે છે
અને દેવાના બોજ નીચે મૃત્યુ પામે છે."

આમ કૃષિમાંથી ખેડૂતોને અનિયમિત અને ઓછી આવક મળવાના કારણે કૃષિ સાથે પૂરક વ્યવસાય તરીકે પશુપાલન કરતો થયો છે. ભૂતકાળમાં દરેક કુટુંબ પોતાની જરૂરિયાતો પુરી પાડવા માટે ગાયોને પાળતો હતો. ધંધો કરવાના કે નફો કરવાના હેતુથી તે પશુપાલન કરતા ન હતા. પરંતુ હવે વર્તમાન સમયમાં નફાકારકતા ઈષ્ટ સ્થાને રાખીને પશુપાલન વ્યવસાય કરવામાં આવે છે. આ માટે પશુની જાત, ઘાસચારો, પશુ રહેઠાણ, પશુ ચિકિત્સા વગેરેમાં પણ ઉચ્ચ સ્તર સતત વિકસી રહ્યું છે.

૨.ડેરી ઉદ્યોગનો ખ્યાલ:

ડેરી શબ્દ દૂધ સાથે સંકળાયેલ છે. તેથી દૂધ સંબંધી સંપૂર્ણ વિજ્ઞાનનો તેમાં સમાવેશ થાય છે. ડેરી શબ્દ પ્રાચીન અંગ્રેજી ડીરી (Deyeri e) ઉપરથી આવેલો છે. આ શબ્દ ડી (Dey) નું રૂપાંતરણ છે. ડી નો અર્થ સ્ત્રી નોકર એવો થાય છે. પ્રાચીન સમયમાં જાનવરોની દેખભાળ સ્ત્રી નોકરો દ્વારા કરવામાં આવતી હતી.

સામાન્ય રીતે ડેરી એટલે એવું સ્થળ કે જ્યાં દૂધ સંગ્રહિત કરવામાં આવે છે, તેના પર પ્રક્રિયા કરવામાં આવે છે, દૂધમાંથી જુદા જુદા ઉત્પાદન બનાવવામાં આવે છે જેમ કે માખણ, ચીઝ , ઘી વગેરે અને તેનું વેચાણ કરવામાં આવે છે.

૩.ગુજરાતમાં ડેરી ઉદ્યોગનો ઉદ્‌ભવ અને વિકાસ:

ગુજરાતને ભારતનું ડેરી ઉદ્યોગનું ડેન્માર્ક કહેવામાં આવે છે. ગુજરાતમાં છેક ઓગણીસમી સદીથી નાની નાની દૂધ ખાનગી ડેરીઓની શરૂઆત થયેલી જોવા મળે છે. દૂધનું બજારતંત્ર શોષણ સિવાય બીજુ કાંઈ કામ કરતું ન હતું. ખાનગીક્ષેત્ર દ્વારા ખેડૂતોનું મોટાપાયે શોષણ કરવામાં આવતું હતું. આથી ગુજરાત રાજ્યમાં સહકારી ડેરી ઉદ્યોગનો વિકાસ કરવામાં આવ્યો અને વર્તમાન સમયમાં ગુજરાત રાજ્યમાં ડેરી ઉદ્યોગ સહકારી ધોરણે ખૂબ વિકાસ પામી રહ્યો છે. પ્રથમ સહકારી મંડળીની સ્થાપના ૧૯૪૬માં ખેડા જિલ્લામાં થઈ અને અમૂલનો પાયો નંખાયો. ભારતમાં ડેરી ઉદ્યોગનો વિકાસ ગુજરાત, પંજાબ, હરિયાણા, વગેરે સિવાય અન્ય રાજ્યોમાં જોઈતા પ્રમાણમાં થયો નથી. ગુજરાત રાજ્યનું દેશના દૂધ ઉત્પાદનમાં ખૂબ જ મહત્વનું યોગદાન છે. ગુજરાત રાજ્યનું દૂધ ઉત્પાદન ૨૦૧૮-૧૯ માં ૧૪૪૯૩ (હજાર ટન) છે અને તેનો પાંચમો નંબર છે

ગુજરાતમાં દૂધનું ઉત્પાદન

કોષ્ટક: ૧

ગુજરાતમાં દૂધનું ઉત્પાદન દર્શાવતું કોષ્ટક

વર્ષ	કુલ ઉત્પાદન હજાર) ટન(	માથાદીઠ પ્રાપ્યતા ગ્રામ)/દિવસ(
૨૦૦૧-૦૨	૫૮૬૨	૩૧૭
૨૦૦૨૦૩-	૬૦૮૯	૩૨૧
૨૦૦૩૦૪-	૬૪૨૧	૩૩૦
૨૦૦૪૦૫-	૬૭૪૫	૩૪૪
૨૦૦૫૦૬-	૬૯૬૦	૩૪૯
૨૦૦૬૦૭-	૭૫૩૩	૩૭૨
૨૦૦૭૦૮-	૭૯૧૧	૩૮૫
૨૦૦૮૦૯-	૮૩૮૬	૪૦૨
૨૦૦૯૧૦-	૮૮૪૪	૪૧૮
૨૦૧૦૧૧-	૯૩૨૧	૪૩૫
૨૦૧૧૧૨-	૯૮૧૭	૪૪૫
૨૦૧૨૧૩-	૧૦૩૧૫	૪૭૬
૨૦૧૩૧૪-	૧૧૧૧૨	૫૦૬
૨૦૧૪૧૫-	૧૧૬૯૧	૫૨૭
૨૦૧૫૧૬-	૧૨૨૬૨	૫૪૫
૨૦૧૬૧૭-	૧૨૭૮૪	૫૬૩

૨૦૧૭૧૮-	૧૩૫૬૯	૫૯૨
૨૦૦૧૮૧૯-	૧૪૪૯૩	૬૨૬

Source :- www.nddb.coop

અર્થઘટન

- ઉપરોક્ત કોષ્ટકમાં ૨૦૦૧-૦૨ થી ૨૦૧૮-૧૯ સુધીમાં ગુજરાતનું કુલ દૂધનું ઉત્પાદનનું પ્રમાણ અને માથાદીઠ પ્રાપ્યતાનું પ્રમાણ દર્શાવેલ છે.
- ૨૦૦૧-૦૨ થી ૨૦૧૮-૧૯ સુધીમાં દૂધના ઉત્પાદનમાં સતત વધારો થયેલો જોવા મળે છે.
- ૨૦૦૧-૦૨માં કુલ દૂધનું ઉત્પાદન ૫૮૬૨) હજાર ટન (હતું .જે વધીને ૨૦૧૮-૧૯ માં ૧૪૪૯૩)હજાર ટન (થયું છે.
- ૨૦૦૧-૦૨ થી ૨૦૧૮-૧૯ સુધીમાં માથાદીઠ દૂધ પ્રાપ્યતામાં સતત વધારો થયેલો જોવા મળે છે .૨૦૦૧-૦૨ માં માથાદીઠ દૂધની પ્રાપ્યતા ૩૧૭) ગ્રામ/દિવસ (હતી. જે વધીને ૨૦૧૮-૧૯માં ૬૨૬) ગ્રામ/દિવસ (થઈ છે.
- આમ ઉપરોક્ત કોષ્ટક જોતા સ્પષ્ટ થાય છે કે ગુજરાતમાં માથાદીઠ દૂધ પ્રાપ્યતા અને દૂધના કુલ ઉત્પાદનમાં વધારો થયેલો જોવા મળે છે.

ગુજરાતના જુદા જુદા જિલ્લાઓનું દૂધનું ઉત્પાદન અને ક્રમ

કોષ્ટક: ૨

ગુજરાતના જુદા જુદા જિલ્લાઓનું દૂધનું ઉત્પાદન અને ક્રમ દર્શાવતું કોષ્ટક (૨૦૧૮૧૯-)

જિલ્લા	દૂધનુ ઉત્પાદન)હજાર ટન (	ક્રમ
અમદાવાદ	૪૭૦૪૭.	૧૫
અમરેલી	૩૮૯૭૯.	૧૮
આણંદ	૬૮૨૨૨.	૮
બનાસકાંઠા	૨૦૨૭૯૫.	૧
ભરુચ	૧૮૨૦૦.	૨૩
ભાવનગર	૫૬૬૦૧.	૧૦
દાહોદ	૩૫૫૨૩.	૧૯
ડાંગ	૩૪૬૭.	૨૬
ગાંધીનગર	૪૮૫૨૦.	૧૪
જામનગર	૪૬૮૯૧.	૧૬
જુનાગાઢ	૭૦૧૮૭.	૬
કચ્છ	૫૯૧૦૧.	૯

ખેડા	૮૨૯૮૦.	૪
મહેસાણા	૯૧૪૪૨.	૩
નર્મદા	૯૫૨૪.	૨૫
નવસારી	૩૧૬૭૪.	૨૦
પંચમહાલ	૭૨૬૪૪.	૫
પાટણ	૪૫૬૬૭.	૧૭
પોરબંદર	૧૭૦૯૭.	૨૪
રાજકોટ	૬૮૪૯૩.	૭
સાબરકાંઠા	૧૨૮૪૩૭.	૨
સુરત	૫૧૬૮૭.	૧૨
સુરેન્દ્રનગર	૫૦૯૪૧.	૧૩
તાપી	૫૩૯૪૧.	૧૧
વડોદરા	૨૦૪૨૮.	૨૨
વલસાડ	૨૮૭૫૬.	૨૧

Source :- doah.dujarat.gov.in
Bulletin Of Animal Husbandry And Dairying Statistics 2018-19

અર્થઘટન

- ઉપરોક્ત કોષ્ટકમાં ગુજરાતનાં જુદા જુદા જિલ્લાઓનું ૨૦૧૮-૧૯ ના વર્ષ દૂધનું ઉત્પાદન અને ક્રમ દર્શાવવામાં આવ્યા છે.
- બનાસકાંઠા જિલ્લો દૂધના ઉત્પાદનમાં પ્રથમ સ્થાન ધરાવે છે .જેનું દૂધનું ઉત્પાદન ૨૦૨૭.૯૫) હજાર ટન (છે.
- સાબરકાંઠા જિલ્લો દૂધના ઉત્પાદનમાં બીજો ક્રમ ધરાવે છે .જેનું દૂધનું ઉત્પાદન ૧૨૮૪.૩૭)હજાર ટન (છે.
- મહેસાણા જિલ્લો દૂધના ઉત્પાદનમાં ત્રીજો ક્રમ ધરાવે છે .જેનું દૂધનું ઉત્પાદન ૯૧૪.૪૩)હજાર ટન (છે.
- જ્યારે સૌથી ઓછું દૂધનું ઉત્પાદન ડાંગ જિલ્લામાં થાય છે .જેનું દૂધનું ઉત્પાદન ૩૪.૬૮)હજાર ટન (છે.

ગુજરાતના જુદા જુદા જિલ્લાઓમાં માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ

કોષ્ટક: 3

ગુજરાતના જુદા જુદા જિલ્લાઓમાં માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ દર્શાવતું કોષ્ટક(દિવસ/ગ્રામ)

જિલ્લા	૨૦૦૭૦૮-	૨૦૦૮-૦૯	૨૦૦૯૧૦-	૨૦૧૦૧૧-	૨૦૧૧૧૨-	૨૦૧૨૧૩-
અમદાવાદ	૧૧૪	૧૧૮	૧૨૬	૧૩૨	૧૩૨	૧૩૩
અમરેલી	૪૧૫	૪૪૧	૪૫૬	૪૭૦	૫૦૩	૫૭૬
આણંદ	૪૭૩	૪૮૧	૫૦૮	૫૪૯	૫૭૩	૬૪૫
બનાસકાંઠા	૮૧૦	૮૬૧	૮૮૪	૯૧૩	૯૭૯	૧૦૬૦
ભરુચ	૨૨૨	૨૩૯	૨૫૭	૨૬૪	૨૬૦	૨૭૩
ભાવનગર	૩૪૦	૩૫૭	૩૬૫	૩૭૪	૩૬૮	૩૯૪
દાહોદ	૨૧૫	૨૧૯	૨૩૨	૨૫૩	૨૫૭	૨૯૭
ગાંધીનગર	૬૪૨	૬૭૪	૭૨૪	૭૬૨	૭૯૨	૮૫૧
જામનગર	૩૫૭	૩૬૨	૩૭૦	૩૮૬	૩૮૮	૪૨૦
જુનાગઢ	૪૦૦	૪૧૩	૪૩૧	૪૬૨	૪૮૨	૫૩૦
કચ્છ	૪૧૨	૪૪૯	૪૪૧	૪૬૨	૪૭૩	૫૦૧
ખેડા	૫૦૭	૫૧૩	૫૫૪	૬૦૨	૬૨૫	૬૬૧
મહેસાણા	૮૮૩	૯૨૧	૯૮૨	૧૦૨૬	૧૦૬૧	૧૦૫૯
નર્મદા	૩૦૦	૨૯૭	૩૨૧	૩૩૧	૩૩૪	૩૦૮
નવસારી	૩૮૬	૩૮૯	૪૦૧	૪૦૮	૪૨૧	૪૫૯
પંચમહાલ	૪૩૬	૪૮૨	૪૭૬	૪૯૫	૫૧૪	૫૫૧
પાટણ	૬૫૩	૬૭૪	૭૦૦	૭૨૫	૮૧૩	૭૪૪
પોરબંદર	૫૩૪	૫૩૮	૫૫૧	૫૫૯	૫૮૮	૬૩૯
રાજકોટ	૩૦૫	૩૧૪	૩૧૯	૩૨૧	૩૨૭	૩૪૭
સાબરકાંઠા	૮૬૩	૯૦૧	૯૩૫	૯૪૮	૯૭૫	૧૦૪૧
સુરત	૨૪૩	૧૫૭	૧૫૬	૧૫૮	૧૬૦	૧૬૯
સુરેન્દ્રનગર	૪૨૧	૪૫૬	૫૦૩	૫૧૬	૫૪૫	૫૮૮
તાપી	-	૫૮૩	૫૯૯	૬૨૫	૬૫૨	૬૩૭
ડાંગ	૨૦૫	૨૨૬	૨૫૩	૨૬૮	૨૮૧	૨૭૧
વડોદરા	૨૩૨	૨૫૦	૨૫૭	૨૫૨	૨૫૬	૨૬૭
વલસાડ	૨૪૩	૨૫૮	૨૫૪	૨૬૮	૨૭૪	૨૭૧

Source :- Dairying In Gujarat A Statistical Profile 2013

અર્થઘટન

- ઉપરોક્ત કોષ્ટકમાં ગુજરાત રાજ્યનાં જુદા જુદા જિલ્લાઓનું ૨૦૦૭ થી ૨૦૧૩ સુધીનું માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ દર્શાવેલ છે.

- ૨૦૦૭-૦૮ ની તુલનાએ ૨૦૧૨-૧૩માં ગુજરાતના સુરત સિવાય બીજા બધા જિલ્લાઓમાં માથાદીઠ દૂધ પ્રાપ્યતાના પ્રમાણમાં વધારો થયેલો જોવા મળે છે.
- ૨૦૦૭-૦૮ નાં વર્ષમાં સૌથી વધુ માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ સાબરકાંઠા જિલ્લામાં ૮૬૩)ગ્રામ/દિવસ (હતું.
- જ્યારે સૌથી ઓછું માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ અમદાવાદ જિલ્લામાં ૧૧૪)ગ્રામ/દિવસ (હતું.
- ૨૦૧૨-૧૩ નાં વર્ષમાં પણ સૌથી વધુ માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ બનાસકાંઠા જિલ્લામાં ૧૦૬૦) ગ્રામ/દિવસ (હતું.
- જ્યારે સૌથી ઓછું માથાદીઠ દૂધ પ્રાપ્યતાનું પ્રમાણ અમદાવાદ જિલ્લામાં ૧૩૩)ગ્રામ/દિવસ (હતું.

૪.સમાપન :

ઉપર્રોક્ત પ્રકરણમાં ડેરી ઉદ્યોગ વિષેની વિગતે ચર્ચા કરવામાં આવી છે.તેના પરથી જાણકારી મળે છે કે પ્રાચીન સમયથી આ ઉદ્યોગ કરવામાં આવે છે ને દિવસેને દિવસે તેનો ખૂબ ઝડપથી વિકાસ થઈ રહ્યો છે. અને તેમાં પણ વિશ્વના દેશોની તુલનાએ ભારતનો ડેરી ઉદ્યોગમાં વધારે વિકાસ થયેલો જોવા મળે છે ભારતમાં કુલ દૂધના ઉત્પાદન અને માથાદીઠ પ્રાપ્યતા બંનેમાં વધારો થયેલો જોવા મળે છે. તે ઉપરાંત સહકારી ડેરી ઉદ્યોગનું ઘણું મહત્વ રહેલ છે અને તેની સામે અનેક પડકારો /સમસ્યા છે.

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SHIFT FROM HUMANITIES TO DIGITAL HUMANITIES

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Introduction

Humanities can be best described as the study of human condition and their achievement, and alternatively, a study of what makes life worth living. Digital humanities is an area of scholarly activity at the intersection of digital technologies and the disciplines of the humanities. Digital Humanities can be defined as new ways of doing scholarship which involve collaborative, transdisciplinary, and computationally engaged research, teaching, and publishing articles and research paper, thus it includes the systematic use of digital resources in the field of humanities. Digital Humanities is a field where printed words are no longer only the medium for the production and distribution of knowledge. With the advancement of Digital Humanities, a new kind of teaching and research is being possible, which has impacted cultural heritage and digital culture. Thus it shows the cultivation of a two-way relationship between the digital and humanities, thus technology helps in the pursuit and identification of humanities subjects and research. Thus the interrogation, questioning and answering happens often simultaneously

"Digital Humanities is work at the intersection of digital technology and humanities disciplines".

-Joanna Drucker. "Introduction to Digital Humanities".

"At its core digital humanities is more akin to a common methodological outlook than an investment in any one specific set of texts or even technologies.... Yet digital humanities is also a social undertaking. It harbours networks of people who have been working together, sharing research, arguing, competing, and collaborating for many years.... a culture that values collaboration, openness, non-hierarchical relations, and agility"

- Matthew G. Kirschenbaum in his article "What Is Digital Humanities and What's It Doing in English Departments?"

"The phrase Digital Humanities… describes not just a collective singular but also the humanities in the plural, able to address and engage disparate subject matters across media, language, location, and history. But, however heterogeneous, the Digital Humanities is unified by its emphasis on making, connecting, interpreting, and collaborating"

- Anne Burdick, Johanna Drucker, Peter Lunenfeld, Todd Presner, Jeffrey Schnapp

Digital Humanities operates and develops alliances generally at the junction of cultural identity, individual accomplishment and cognitive sciences, pursuing new fields that were historically impossible.

The history and civilization in India date back to 2300–1750 B.C. When the civilisation of the Indus Valley, also known as the Harappa culture, was discovered in modern-day Punjab, Sind and Rajasthan and Kathiawar areas. This cultural heritage has undergone massive changes over a period of time; its preservation and conservation has acquired the utmost importance in the modern context.

Throughout Indian literature, cultural representation has its own significance, with common words used for various Indian languages. India's past literary heritage is in the form of available manuscripts in palm leaves, cotton, silk, wood, bamboo, and copper plates. Many initiatives are taken by the Indian government to introduce the National Manuscript Mission is the right step towards preserving these culturally important works. Thus the digitization and digital Preservation of Indian Cultural Heritage including literature, artefacts, music records, paintings and sculpture.

The National Mission for Manuscripts (NAMAMI) (https://namami.gov.in/) is an autonomous organisation under Ministry of Culture, Government of India, which locate and conserve Indian manuscripts with the goal of building a national manuscript resources which can be accessed and which can be used for educational purposes.

Thus through this a researcher or a reader will have a faster access of our manuscript, which can be acceded from any part of the world. Archiving is the important aspects for preserving our culture and heritage because this gives our own identity. These have been preserved as in originality, which were written on leaf, brittle book or even on stones.

One special aspect of the Kalanidhi's Reprography Unit is the reprographic selection of lost manuscripts from private and public libraries in Indian and international collections. A ground breaking effort has been made to put isolated, fractured, unavailable or worse, the primary origins of Indian culture lying in danger of extinction under one roof. The library currently holds more than ten million folios of unpublished manuscripts in the Sanskrit, Pali, Persian and Arabic. Over 20,000 microfilm rolls of microfilms holding 2.5 manuscripts. Thus this type of evidences can be used in combination with existing approaches in order to pursue humanistic work in richer, more inclusive ways.

As an individual and as in academic we too can preserve these artefacts. As Matthew Kirschenbaum says that Computers should not be black boxes but rather understood as engines for creating powerful and persuasive models of the world around us. The world around us is something we in the humanities have

been interested in for a very long time. I believe that, increasingly, an appreciation of how complex ideas can be imagined and expressed as a set of formal procedures – rules, models, algorithms – in the virtual space of a computer will be an essential element of a humanities education.
(Kirschenbaum, 2009)

As python programming helps in reading and writing electronic text, thus there are colleges where python programming is regularly offered it is introduced in many courses for artists and humanists. Ben Fry and Casey Reas which helps the designers' scholars to learn programming, which is ideal for developing collaborative sketches. Thus this program helps to think in a new perspective, offers in understanding of culture in effective way and it is also useful in improving the society.

In addition, one of the major developments in humanities science in recent decades is the current availability of increasingly vast portions of the human record in electronic form, making texts accessible not so much for reading (sheer volume makes this impossible) but for examining patterns that can be observed and then examined in greater depth. Mass digitization projects have generated vast information troves, typically by depending on 'optical character recognition' (OCR), an automated software for converting a digital scan or photographic image into electronic text that can be read on machine as an electric text. The problem for humanists is more compounded by the fact that OCR had no success in translating handwritten records into accessible electronic texts; therefore, much of the textual record of the history is ignored in the attempts of data-mining. Thus if there are many errors then it this should put open to access for everyone, where there can be an improvement which can be aided by user feedback and contributions. Thus if everyone may participate then it can be highly effective.

The first major wave of critical interaction with electronic literature centred mainly on hypertext fiction and poetry, while an engaged author and readership audience have embraced interactive fiction – the text-parser-oriented type built on the theme of text-adventure games common during the early days of home computing. In the 1990s, hypertext saw its heyday, first in privately published works on floppy disks and CD-ROM, and later on the Internet. Thus during 1990s multimedia poetry were most prominent.

Electronic literature is an umbrella term used to describe different types of literary activity that take advantage of contemporary computer's electronic graphical and networked properties in creating narrative or artistic multi-media which works unique to its context. Many of the modern literature formats and genres include hypertext prose, dynamic immersive poetry, interactive prose, generative poetry and fiction, digital drama and film, web narratives, local narratives, network "models" focused on current writing techniques common to networked networking technology, and text-driven new media art Systems.

The artistic development of this kind of work itself can be understood as a method of digital humanities which exercises in developing new ways that are native to the modern world. Both "electronic literature" and "digital humanities" are loosely defined by a general observational interacted with the contemporary technological system not by their attachment to a historical period or genre. Electronic literature is an area that investigates the impact of electronic technology and the network on literary practice, while digital humanities is a wider area focused mainly on study arising from digital approaches in existing literature, history, and other humanistic disciplines.

Electronic literature has emerged in its own right as a distinctive field of digital humanities, with conferences, festivals, newspapers, e-journals and a growing collection of dissertations, monographs and edited collections addressing the subject. As a field of digital humanities, electronic literature functions at a number of different levels, having its own defining characteristics. Which includes creating digital medias, new understanding of contemporary literature, theoretical work and analysis and publishing scholarly articles, research papers and visualization research.

The Brown University CAVE project Screen developed a narrative experience within an immersive 3D environment. A dramatic meditation on human memory, oblivion and death, the work practically immerses the viewer in imagery that peels off the walls and swirls around the articulated sensory environment. In this case, expression was not simply representational but an empirical correlative materialized in a tangible space were expressed in it.

Although artistic practice is fundamental to the life of the electronic literature sector, it is also a busy centre for vital action and for the advancement of research infrastructure. As in the digital humanities more generally are building platforms to expand on, mostly on an open-source model, which includes their own research and of others. The study of electronic literature offers frameworks for interpreting developments in popular culture and textually and for the creation of modern humanities research and knowing social structures. Throughout its study spectrum the critical field of electronic literature is effective and productive. Thus this study of an electronic literature is just as a studding and evaluating in a post-structuralism way.

Katherine Hayles' work in electronic literature provides one example of a humanities scholar were in her analytical study, she analyses and uses electronic literature works as ' “tutor texts’ to explore, explain or extend the meaning of a theoretical theory she has built during her career, namely known as the post-human structure.

Thus the Digital Humanities helps in a collaborative practice. As different scholars from different field can work together on single project. Thus there would be different ideas and concepts on particular text. It also helps to understand a particular culture from different angles and different perspective by the application of different methodology. The organization's conferences interweave creative production – presentations, performances, and exhibitions of new works – with papers and panel discussions. The opportunities these conferences provide for in-person contact between critics, theorists, developers, writers, and artists working in electronic literature have been essential to its development as a transdisciplinary field.

Digital collections and anthologies have been vital to the growth of the field over the past decade, but perhaps even more essential for its long-term survival is the existence of databases, directories, and archives, each of which address the challenges of documenting and preserving digital literature in a different way.

The distinctive aspect of the 2010 ELMCIP Electronic Literature Knowledge Base offers an information on the infrastructure for documenting electronic literature works in a critical ecology which involves comprehensive critical writing reporting, writers, publishers, organisations, events, databases, and teaching tools. The ELMCIP objective is to record and make accessible for analysis the relationships between the various artefacts and actors that characterize the field by recording cross-references between the same artefacts that automatically maintain the other documents they link to.

The Committee for Electronic Literature's creation and collective research is perhaps the most promising large-scale development in digital humanities in the area of electronic literature. This entity was created to bring international actors in the field, especially organizations and projects developing research databases and archives, into direct ties with each other, not only to promote better communication in the field, but also to develop machine-level interaction between participating databases and archival records.

The collaboration developed as a first step a collection of core bibliographic fields for the classification of electronic literature works. A collaborative search engine will be used in upcoming projects, which will enable users to search from all of the applications across any of the participating repositories. Together, these activities will help raise awareness of work being done in other cultural contexts within foreign research groups, minimize duplication of effort, and ensure the protection of the knowledge produced by all of the participating projects.

The first is the production of publicly available multimedia collections created by museums, libraries, archives, and universities as a result of large-scale innovation over the past 20 years in digital content production. These efforts have gradually made literature, history, linguistics, classics, musicology, performance studies and related disciplines accessible as the primary source materials for research. Primary resources are the foundation of the scholarship, and quick access to their remote surrogates has resulted in the easy availability around digital approaches to the humanities.

After that the creation of digital tools and approaches focused on the Internet, making data work easier to construct, interpret and distribute. Specifically, Web 2.0 technologies, and the transition from static web pages to creating an online environment that promotes greater interactivity with digital content, as well as handling and recording this engagement, which have transformed the way the World Wide Web is used, particularly through social media, into a participatory culture. This has resulted in the broadest distribution of research incorporating primary sources and digital approaches.

The another factor leading from this is the increasing recognition of the value of interdisciplinary scholarship, where the disciplines of humanities, science and engineering can collaborate and add value to research among themselves. For example, in the UK, from 2005 to 2008, the Arts and Humanities e-science project conducted work on collective approaches to solving emerging scientific issues (http:/www.ahessc.ac.uk). This explosion and accessibility of multimedia information and greater interdisciplinary cooperation has contributed to the flourishing of the "Digital Humanities." thus this types of projects helps in: discovery, annotation, comparison, reference, sampling, depiction and representation.

Visualization refers to methods used for visually summarizing, displaying and enacting rich materials and it is becoming increasingly important as an integral part of humanities study processes. Visualization includes different forms of connectivity (e.g., sensor technology), techniques (including high-resolution and multiple displays), as well as resources such as geographic maps, pictures, 3D models, diagrams, charts, networks, and archival content. Technology and the methods of study will also enhance humanities science. These technologies must however be used critically, especially in areas rich in ambiguity and complexity.

The visual elements are used for both description and interpretation of multimedia environments. They put together academic research approaches like archaeology, literature, classics, knowledge sciences, architecture, and history. The field contains methods for data selection, data capture, modelling and representation, data search and querying, and visual representation. This involve 3D modelling and 3D animation, and motion capture to produce three-dimensional reconstructions of cultural heritage artefacts or material culture. As visualization can lead to precise depictions (e.g. architectural models, or archaeological models produced by 3D laser scanning, e.g. the Archaeology in Saxony project [http:/www.archaeologie. sachsen.de/951.htm]), reconstructions based on incomplete or scattered details (e.g. reconstructions of historical buildings from descriptions or old maps), and visualizations of historical buildings from descriptions or old maps).

Using ICT methods requires good practice at all stages of the digital life cycle to ensure that data is used effectively and reused for research. Building digital data collections for research involves considering the subsequent use and reuse for scholarship of these collections, using a variety of digital methods and tools. Researchers' ultimate use of digital resources is a factor that impacts decisions taken at any point of this life cycle: long-term collection, digitization, classification, structuring, curation, storage, and, most significantly, longevity and access.

It may be unpredictable at the beginning how digital tools end up being used; or they may have significance for specific cultures and disciplines than originally intended. As methods currently being explored in the development of digital content include encoding, which includes digitally encoding or enriching digital artifacts with metadata and markup, like categorizing terms or details regarding the defined item. This is typically done using XML, or TEI, or an open data encoding scheme RDF / linked and the results can be seen in projects such as the Haskala Republic of Letters (www.jnul.huji.ac.il/eng/smw.html) or the Controversia et Confessio project (www.controversia-et-confessio.adwmainz.de).

Similarly, in linguistic, theological or historical studies have refined corpora methods to create large-scale collections of texts including the British National Corpus (www.natcorp.ox.ac.uk), the Digitale Bibliotek or TextGrid (http:/www.textgrid.de), and Monsaterium (www.monasterium.net)
Digital tools and techniques like data collection and extraction methods (including topic modelling, text and data mining, and quantitative models) can reveal new insights from existing quantities of textual data, which extract hidden patterns by analysing the results and summarizing them in a meaningful form. It helps understanding how approaches are used in digital humanities it clarifies the methodology and reach of digital humanities, explaining how they are informed, its affects and influence, methodological progress and growth through scholarly disciplines, which also includes those who are outside the humanities.
It would also help digital humanities move from being a distinct organization of unfamiliar language and traditions to being part of the agreed set of academic activities open to academics, and just part of doing good science rather than computational study.

Text may be less flashy and glamorous than other forms of communication such as sound, image and video but it remains the dominant way in which information is communicated, discovered, and processed. It is estimated that around 200 billion emails are sent every day and about 5 billion Google search queries are performed which are almost all of them are text based. The hundreds of hours of video posted per minute to YouTube will remain completely unavailable if not for title, definition, and other metadata text-based searches. Even if we hesitate to join the poststructuralist theorists in saying that all is text, we can surely agree that text is everywhere.

We are relentlessly bombarded by text in our lives and we have access to unbelievable quantities of other texts. For some, however, the problem is the opposite a shortage of readily accessible and reliable digital texts, whether for legal reasons (such as copyright or privacy), technical challenges (such as the difficulty of automatically recognizing characters in handwritten documents), or rewriting them. As a result, the availability of digital texts has a significant inequality, one that has a profound effect on the kinds of work that scholars can pursue.

There can be so much of it when text is available that we naturally seek ways to represent significant features of it more compactly and more efficiently, often through visualisation. Visualizations are text transformations that tend to reduce the amount of information presented but at the same time serve to draw attention to some important aspect.

Word clouds have become widespread in material such as ads, posters, and exhibits, that is, representations of data extracted from modern text analysis methods have become generic, they are not the preserve of an obscure branch of humanities or computer science. Word clouds are especially appealing to wider markets because they are fairly clear and intuitive – the bigger the term, the more likely it occurs.

If there were a reliable set of text visualizations that were guaranteed to produce new insights, it would be convenient, but interpretation is never that formulaic. Often the relative simplicity and sparseness of a word cloud is helpful for providing a text summary, often a graphical 3D image of term clusters in a correlation-plot graph displaying effects of communication analysis is an interesting way to analyse a subject.

Indian society is no longer isolated from the larger global developments, and the digital world has made deep inroads into Indian society in the form of smartphones. social media. gaming online education, and e-commerce. Hence the studies of humanities cannot afford to stay isolated from the global developments. While traditional humanities in India has been around only for one and half centuries compared to seven to eight centuries in the west, the four decades-old digital humanities in India has not really taken root. The massive quantitative growth of humanities academics has not resulted in significant qualitative growth, as the system is beset with corruption. lethargy and apathy. The larger academic world of humanities in India is rather underdeveloped in terms of critical thinking, methodological rigour, and sheer honest hard work. It is far more lacking in terms of its expertise in computing. However, some organizations are doing commendable job trying to bring about convergences between the analogue and digital humanities some organizations and institutions associated with DH are: School of Cultural Texts and Records, Jadavpur University, The Centre for Internet Studies, Koti Women's College. Hyderabad, Shrishti University Bangalore will offer an MA with Digital Humanities.

Conclusion

There is no doubt that Arts and Humanities is shifting towards Digital Humanities. As a researcher we can interlink digital text, media files, images timelines and visualization having both quantitative and qualitative data base. Thus we can see the patterns, map, outlines which would uncover new themes and different key learnings. Through Digital Humanities new way of communication can be thru such as animated film, audio files and gaming. Digital Humanities provides quicker access to information, which means more people can review, evaluate and learn from the project. We can easily search for the data which we are looking for within a fraction of time. With the help of hyperlink, we manage to find the correct resources. Digital Humanities enhance teaching by helping the students by being showing more, experience more. This Digital resources provides a common platform for the development of humanities project by collaboration of group-sourcing of local, regional and global participants and researcher. This projects gets extended beyond the academia where the mass can have its access. Thus Digital Humanities makes an impact on public spear which shows the significance of Humanities.

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ભારતીય પશુપાલનમાં ઘેટાં બકરાનો અભ્યાસ

વાઘેલા મિત એમ
અર્થશાસ્ત્ર ભવન,સૌરાષ્ટ્ર યુનિવર્સિટી રાજકોટ

સારાંશ

પશુપાલન એ જીવનનિર્વાહ માટે માણસો દ્વારા કરવામાં આવતી પ્રવૃત્તિ છે. જેમાં ગાય, ભેંસ, બકરાનો, ઘેટાં, ઘોડા, મરઘાં-બતકા જેવા પ્રાણીઓને ઉછેરી તેમને વેચીને અથવા તેમના દ્વારા મળતાં ઉત્પાદનો જેવા કે દુધ, દહીં, દૂધની બનાવટો ઈત્યાદિના વેચાણમાંથી આવક મેળવી પોતાનું ગુજરાન ચલાવવામાં આવે છે. પશુપાલન ખેતીના વ્યવસાય કરનારાઓ માટે પૂરક વ્યવસાય છે. ગુજરાતના અર્થતંત્રમાં પશુપાલનનો ફાળો મહત્વનો રહ્યો છે. પ્રસ્તુત અભ્યાસમાં ભારતના પશુપાલનમાં ઘેટાં અને બકરાઓની સંખ્યાનો અભ્યાસ હાથ ધર્યો છે. ઉપરાંત તેમાં ગુજરાતના આંકડાઓનો પણ અભ્યાસ કરવામાં આવ્યો છે.

ચાવીરૂપ શબ્દો

પશુપાલન, ઘેટાં, બકરાં

પ્રસ્તાવના

ભારતમાં પશુસંપતિનુ આર્થિક મહત્વ ઘણું છે. ખેતીપ્રધાન ભારતમાં હજી આજે પણ ખેતપદ્ધતિમા યાત્રીકરણ વ્યાપક બન્યુ નથી. મોટાભાગના ખેડૂતો આજેપણ ખેતીમાં પોતાના પશુઓનો ઉપયોગ કરે છે. ભારતીય પ્રજાજનોમાં ખોરાકમાં દૂધનું સ્થાન મહત્વનું છે. દૂધ અને તેની બનાવટોનો વપરાશ વધારે છે. આથી ડેરી ઉદ્યોગ મોટાપાયા પર વિકાસ પામ્યો છે.

ભારતમાં પાલતું પ્રાણીઓની સંખ્યા સૌથી વધુ જોવા મળે છે. પ્રાણીઓની વધુ સંખ્યા ઉત્તરપ્રદેશ, પંજાબ, હરિયાણા, રાજસ્થાન, ગુજરાત, મધ્યપ્રદેશ, તમિલનાડુ તથા પશ્ચિમ બંગાળમાં છે. દૂધાળા પશુઓનો ઉછેર મુખ્યત્વે દૂધ ઉત્પાદન, માંસ, ઊન કે વાળ માટે કરવામાં આવે છે. હિમાલયના ઢોળાવો, રાજસ્થાન, ગુજરાત અને મહારાષ્ટ્રના ઉપશુષ્ક વિસ્તારોમાં ઘેટાં નો ઉછેર વ્યાપક રીતે કરવામાં આવે છે. કાશ્મીરનું પશ્મિનો ઘેટું તેના મુલાયમ ઈન માટે જાણીતું છે.

સંશોધનના હેતુઓ

૧ ભારતીય પશુપાલનમાં ઘેટાં બકરાંની સંખ્યાની જાણકારી મેળવવી.
૨ ઘેટાં બકરાંની સંખ્યામાં થયેલા પરિવર્તનોનો આંકડાકીય રીતે અભ્યાસ કરવો.
3 ઘેટાં બકરાંના સંવર્ધન માટેની જોગવાઈઓની જાણકારી મેળવવી.

સંશોધન પદ્ધતિ

પ્રસ્તુત સંશોધનમાં દ્વિતીય કક્ષાના માહિતી સ્ત્રોતનો ઉપયોગ કરવામાં આવ્યો છે. સંશોધન માટે ૨003 થી ૨૦૧૯ સુધીના આંકડાઓનો અભ્યાસ કરવામાં આવ્યો છે. માહિતીની પ્રાપ્યતા માટે વિવિધ સંશોધનનો, સામાયિકો અને વેબસાઈટોનો ઉપયોગ કરવામાં આવ્યો છે.

સંદર્ભ સાહિત્યની સમીક્ષા

૧ સી.રવિશંકર, જી.કૃષ્ણન નાયર, એમ.મીની, વી.જયપ્રકાશન (૨૦૦૫) દ્વારા પોતાના સંશોધનમાં કેરળ રાજ્યના જિલ્લાઓના સંદર્ભમાં અભ્યાસ કરવામાં આવ્યો છે. સંશોધનમાં રજૂ કરેલા પરિણામોમાં કેરળ રાજ્યના ઘેટાં અને બકરાઓમા બલ્યુટેન્ગયુ વાયરસ સામે એન્ટીબોડીની હાજરીની પુષ્ટિ કરવામાં આવી છે. કેરળ રાજ્યના ૧૪ જીલ્લાઓનુ સર્વેક્ષણ કરવામાં આવેલ છે. સર્વેક્ષણ મુજબ ૧૪ જીલ્લાઓમાથી ૧૨ જીલ્લામાં બીટીવી એન્ટીબોડીનો વ્યાપ મળી આવ્યો હતો.

૨ નીલકંઠ રથ (૧૯૯૨) દ્વારા પોતાના સંશોધનમાં ભારતના મહારાષ્ટ્ર રાજ્યના વિવિધ જીલ્લાઓનો અભ્યાસ કરવામાં આવ્યો છે. તેમના મતે મહારાષ્ટ્ર રાજ્યના પશુધનમા મુખ્યત્વે નાના ઘેટાં અને બકરાં વધુ મહત્વના છે. ૧૯૫૧ માં રાજ્યમાં ઘેટાં અને બકરાઓની કુલ સંખ્યા ૫૮.૨૨ લાખ હતી. પશુઓ, ભેંસ તેમજ ઘેટા-બકરા સહિત નાના અને મોટા પશુઓની સંખ્યા ૨૧૯.૯૧ લાખ હતી. આ કુલ વસ્તીમાં ઘેટાં અને બકરાઓની સંખ્યા ૨૬.૪૭% છે. તેમના મતે ૧૯૫૧-૮૭ ના સમયગાળા દરમિયાન પશુઓની સંખ્યા સરેરાશ વાર્ષિક 0.૬% ના દરે વૃદ્ધિ પામી હતી, જેમાં બકરીઓ અને ઘેટાં ૨.૦૫% ના દરે વધવા પામ્યા હતા.

3 આર.પી.સિંઘ, પી.સીવારામન, બી.પી.શ્રીનિવાસન, આર.કે.સિંઘ અને એસ.કે.બંધિપાધ્યાય (૨૦૦૪); દ્વારા પોતાના સંશોધનમાં પેસ્ટને ડેરા પિટીટસ રૂમિનન્ટસ (પી.પી.આર) વાઈરસનો ઘેટાં અને બકરાઓમા વ્યાપનો ઉલ્લેખ કરવામાં આવ્યો છે. તેમના મતે ભારતમાં ઘેટાં અને બકરાઓનુ પ્રમાણ આશરે ૨:૧ છે. કેરળ રાજ્યને બાદ કરતાં ભારતના તમામ દક્ષિણ રાજ્યોમાં આનું પ્રમાણ વધુ જોવા મળેલ હતું. બકરામા રોગની તીવ્રતાનુ કારણ પી.પી.આર.વી ના ચેપમા બકરીની વસ્તીની વધુ સંવેદનશીલતા હોઈ શકે છે. ભારતમાં દર ત્રણ નાના રૂમિન્ટસમાથી સરેરાશ એકને અગાઉ પી.પી.આર.વી નો ચેપ લાગ્યો હતો અને ત્યારબાદ તે રોગમાંથી બહાર આવેલ હતા.

૪ ૧૯મી વસ્તી ગણતરી ૨૦૧૨ અનુસાર ગુજરાતમાં ૧૭.૦૮ લાખ ઘેટાની વસ્તી હતી. રાજ્યમાં ૭૦% થી વધારે ઘેટાં અને બકરાં નાના/ સીમાંત ખેડૂતો અને ખેતમજૂરો દ્વારા પાળવામાં આવે છે. રાજ્યમાં ઘેટાની સંખ્યા મોટાભાગે સૌરાષ્ટ્ર અને ઉત્તર ગુજરાત વિસ્તારમાં જોવા મળે છે.

૫ ૨૦૧૮ માં શરૂ થયેલ ૨૦મી પશુધન ગણતરીના તારણો ૧૭ ઓક્ટોબર ૨૦૧૯ના રોજ બહાર પાડવામાં આવ્યા હતા. તેના તારણો દર્શાવે છે કે ભારતીય પશુધનની સંખ્યામાં વધારો થયો છે. ૨૦૦૯ માં પશુધનની સંખ્યા ૫૨૮.૬૯ મિલિયન હતી જે ઘટીને ૨૦૧૨ માં ૫૧૨ મિલિયન થવા પામી હતી જે વધીને ૨૦૧૮ માં ૫૩૫.૭૮ મિલિયન થી ગઈ હતી.

ઘેટાં બકરાના વિકાસ માટેની વિવિધ સહાય

૧ ઘેટાં બકરાની તંદુરસ્તી જળવાય તે માટે ગ્રામ્ય કક્ષાએ ડ્રેસિંગ અને રસીકરણ કેમ્પોનુ આયોજન કરવામાં આવે છે.

૨ ઉચ્ચ કક્ષાનું ઊન ઉત્પાદન કરી શકાય તે માટે સારી ઓલાદના નરબચ્ચા ઉત્પન્ન કરી સંવર્ધન માટે ઘેટાં બકરાં પાલકોને નજીવી કિંમતે પુરા પાડવામાં આવે છે.

૩ વધુ નફાકારક ઘેટાં બકરાં પાલન અંગેની તાલીમ શિબિરોનું આયોજન કરવામાં આવે છે.

૪ રાજ્યના બકરાં પાલન કરી પોતાનું ગુજરાન ચલાવી આર્થિક રીતે સદ્ધર થાય તે માટેની વ્યક્તિલક્ષી સહાયકારી યોજના અમલમાં છે.

માહિતીનું પૃથ્થકરણ અને અર્થઘટન

કોષ્ટક નં ૧

ભારતમાં ઘેટાનુ પ્રમાણ દર્શાવતું કોષ્ટક (લાખમાં)

વર્ષ	ઘેટાં નું પ્રમાણ	ટકાવારી	ફેરફાર
૨૦૦૩	૬૧.૪૭	૧૦૦%	૦૦
૨૦૦૭	૭૧.૫૬	૧૧૬.૪૧%	૧૬.૪૧(+)
૨૦૧૨	૬૫.૦૭	૧૦૫.૮૫%	૫.૮૫(+)
૨૦૧૯	૭૪.૨૬	૧૨૦.૮૦%	૨૦.૮૦(+)

Source: Basic Animal Husbandry Statistics 2019

અર્થઘટન

કોષ્ટક નં ૧ માં વર્ષ ૨૦૦૩ થી ૨૦૧૯ સુધીના ઘેટાની સંખ્યા દર્શાવવામાં આવી છે. ૨૦૦૩ ના આંકડાઓને આધારરૂપ ગણી અન્ય વર્ષોના આંકડાઓ સાથે તેની તુલના કરવામાં આવી છે. કોષ્ટક પરથી જોઈ શકાય છે કે ભારતમાં ઘેટાઓની સંખ્યામાં સતત વધારો થતો જોવા મળેલ છે. ૨૦૦૭ થી ૨૦૧૨ ના સમયગાળા દરમિયાન તેમાં નજીવો ઘટાડો જોવા મળ્યો હતો. છતાં એ ૨૦૦૩ ના આંકડાઓના પ્રમાણમાં વધુ જોવા મળે છે. ૨૦૧૯ના વર્ષમાં ઘેટાઓની સંખ્યામાં ૨૦૦૩ની તુલનાએ ૨૦.૮૦% નો વધારો જોવા મળ્યો છે.

કોષ્ટક નં ૨

ભારતમાં બકરાંની સંખ્યા દર્શાવતું કોષ્ટક (લાખમાં)

વર્ષ	બકરા ઓનું પ્રમાણ	ટકાવારી	ફેરફાર
૨૦૦૩	૧૨૪.૩૬	૧૦૦%	૦૦
૨૦૦૭	૧૪૦.૫૪	૧૧૩.૦૧%	૧૩.૦૧(+)
૨૦૧૨	૧૩૫.૧૭	૧૦૮.૭૦%	૮.૭૦(+)
૨૦૧૯	૧૪૮.૮૮	૧૧૯.૭૧%	૧૯.૭૧(+)

Source: Basic Animal Husbandry Statistics 2019

અર્થઘટન

કોષ્ટક નં ૨ માં ભારતમાં બકરાના પ્રમાણનો અભ્યાસ કરવામાં આવેલ છે. વર્ષ ૨૦૦૩ના આંકડાઓને આધારરૂપ ગણી અન્ય વર્ષોના આંકડાઓ સાથે તેની તુલના કરવામાં આવી છે. કોષ્ટક પરથી જોઈ શકાય છે કે ભારતમાં બકરાઓની સંખ્યામાં સતત વધારો નોંધાયો છે. ૨૦૦૭ થી ૨૦૧૨

ના સમયગાળા દરમિયાન અમુક અંશે તેમાં ઘટાડો જોવા મળ્યો હતો ત્યારબાદ તેમાં સારા એવા પ્રમાણમાં વધારો થયો. ૨૦૧૯ ના વર્ષમાં બકરાઓની સંખ્યામાં ૨૦૦૩ના આંકડાઓની તુલનાએ ૧૯.૭૧% નો વધારો જોવા મળ્યો હતો.

કોષ્ટક નં ૩

ગુજરાતમાં ઘેટાની સંખ્યા દર્શાવતું કોષ્ટક (હજારમાં)

વર્ષ	ઘેટાની સંખ્યા	ટકાવારી	ફેરફાર
૨૦૦૩	૨૦૬૨	૧૦૦%	૦૦
૨૦૦૭	૨૦૦૧.૫૬	૯૭.૦૭%	૨.૯૩(-)
૨૦૧૨	૧૭૦૫.૭૫	૮૨.૭૨%	૧૭.૨૮(-)
૨૦૧૯	૧૭૮૭.૨૬	૮૬.૬૮%	૧૩.૩૨(-)

Source: Basic Animal Husbandry Statistics 2019

અર્થઘટન

કોષ્ટક નં ૩ માં ગુજરાતમાં વર્ષ ૨૦૦૩ થી ૨૦૧૯ના સમયગાળા દરમિયાન ઘેટાઓની સંખ્યામાં થયેલા ફેરફારો દર્શાવવામાં આવ્યા છે. ૨૦૦૩ ના આંકડાઓને આધારરૂપ ગણી અન્ય વર્ષોના આંકડાઓ સાથે તેની તુલના કરવામાં આવી છે. કોષ્ટક પરથી જોઈ શકાય છે કે વર્ષ ૨૦૦૩ બાદ ગુજરાતમાં ઘેટાઓની સંખ્યામાં સતત ઘટાડો જોવા મળ્યો હતો. વર્ષ ૨૦૦૭ થી ૨૦૧૨ ના સમયગાળા દરમિયાન તેમાં સારા એવા પ્રમાણમાં ઘટાડો જોવા મળ્યો છે વર્ષ ૨૦૦૩ ની તુલનાએ ૧૭.૨૮% નો ઘટાડો દર્શાવે છે જે સૌથી વધુ જોવા મળે છે.

કોષ્ટક નં ૪

ગુજરાતમાં બકરાંની સંખ્યા દર્શાવતું કોષ્ટક (હજારમાં)

વર્ષ	બકરાંની સંખ્યા	ટકાવારી	ફેરફાર
૨૦૦૩	૪૫૪૧	૧૦૦%	૦૦
૨૦૦૭	૪૬૪૦.૪૦	૧૦૨.૧૯%	૨.૧૯(+)
૨૦૧૨	૪૮૬૭.૭૪	૧૦૭.૨૦%	૭.૨૦(+)
૨૦૧૯	૪૯૫૮.૯૭	૧૦૯.૨૦%	૯.૨૦(+)

Source: Basic Animal Husbandry Statistics 2019

અર્થઘટન

કોષ્ટક નં ૪ માં વર્ષ ૨૦૦૩ થી ૨૦૧૯ ના સમયગાળા દરમિયાન ગુજરાતમાં બકરાઓની સંખ્યામાં થયેલા પરિવર્તનો દર્શાવવામાં આવ્યા છે. ૨૦૦૩ના વર્ષને આધારરૂપ ગણી અન્ય વર્ષોના આંકડાઓ સાથે તેની તુલના કરવામાં આવી છે. કોષ્ટક પરથી જોઈ શકાય છે કે વર્ષ ૨૦૦૩ બાદ ગુજરાતમાં બકરાઓની સંખ્યામાં સતત વધારો જોવા મળ્યો છે. ૨૦૧૯ ના આંકડાઓ જોતાં જણાય છે કે તે ૨૦૦૩ ના આંકડાઓની તુલનાએ ૯.૨૦% નો વધારો દર્શાવે છે.

તારણો

૧ સંશોધન પરથી તારણ કાઢી શકાય છે કે ભારતમાં ઘેટાં બકરાઓની સંખ્યામાં સારા એવા પ્રમાણમાં વધારો જોવા મળ્યો છે. ૨૦૦૭ થી ૨૦૧૨ ના સમયગાળા દરમિયાન તેમાં ઘટાડો જોવા મળ્યો ત્યારબાદ તેની સંખ્યામાં સારો એવો વધારો જોવા મળ્યો હતો.

૨ સંશોધન પરથી જોઈ શકાય છે કે ગુજરાતમાં ઘેટાની સંખ્યામાં સતત ઘટાડો જોવા મળેલ છે. પરંતુ ૨૦૧૨ થી ૨૦૧૯ ના સમયગાળા દરમિયાન તેમાં વધારો જોવા મળ્યો હતો.

3 સંશોધન પરથી માલુમ પડે છે કે ગુજરાતમાં બકરાઓની સંખ્યામાં સતત વધારો જોવા મળે છે.

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ANALYSIS OF CRIME TREND IN GUJARAT

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ABSTRACT
Gujarat is very safe state in terms of crime. Gujarat is at 11th position in 2016 report of 'Crime in India' published by NCRB. In this we do deep analysis about crime in Gujarat.
KEYWORDS: Districts, Trends, IPC, Crime

INTRODUCTION

What is crime? The definition of crime given by Oxford dictionary is an action or omission which constitutes an offence and is punishable by law. Thus the common and widely accepted definition of crime by most of the modern states refers to an act or omission that is defined by the validly passed laws of the nation states in which it occurred so that punishment should follow from the behavior.

Time Series Analysis:

Time series is a series of data points indexed in time order. Most commonly, a time series is a sequence taken at successive equally spaced points in time. Thus it is a sequence of discrete time data. Time series analysis comprises methods for analyzing time series data in order to extract meaningful statistics and other characteristics of the data. Time series consist four components: (1) Seasonal variation (2) Trend variation (3) cyclic variation (4) Random variation.

Trend Analysis:

Trend analysis is a technique used in technical analysis that attempts to predict the future value based on recently observed data. Trend analysis quantifies and explains trends and patterns in a data over time. A trend is an upward or downward shift in a data set over time.

Indian Penal Code (IPC):

Indian Penal Code is a code intended to cover all substantive aspects of criminal law.

Cognisable crime:

Cognisable offense means a police officer has the authority to make an arrest without a warrant and to start an investigation with or without the permission of a court. For example, murder, rape, kidnapping, theft etc.

I. DATA COLLECTION:

In the study of crime trend of Gujarat there are both qualitative and quantitative methods have been used for analyzing and examining the data. The data have also been examined through graphs and visual presentation.

The Government of India created National Crime Record Bureau (NCRB) in 1986 to provide statistics and the various crime occurring in our nation. Our data is secondary type data.

II. METHODOLOGY :

Data on crime and their sub categories for the period under discussion are collected from the "Crime in India" reports published by National Crime Record Bureau (NCRB).

The number of crime in districts have been taken from the Open Government Data (OGD) platform India. It is to be noted that while referring to crime rates in this study it would be measured as number of cases registered per 100,000 population.

BENEFITS OF TREND ANALYSIS:

Trend analysis has been widely accepted as one of the important steps in looking at the effectiveness of cutting edge policing techniques and strategies like problem oriented policing, crime mapping, hotspot identification etc. When measuring crime trend over time, it is essential to ensure that the periods analyzed are long enough. If it is measured over a short period it may not provide the actual picture rather it may mislead the policy planners by highlighting random increase or decrease.

Analyzing how the levels and patterns of crime change over time and across space is highly significant in devising policy prescriptions for better crime management in any society, though crime control activities constitute social phenomena closely associated with other social forces outside criminal justice agencies.

This process of doing crime study to see the distribution and patterns of crime would throw light on potential policy prescriptions to go for proper preventive policies by the authorities in the state.

This would also help in proper resource allocation in terms of deployment of police personnel, mobilization of tools and equipment's in the districts for crime prevention and management.

It may be said that unlike other important economic and sociological parameters such as health, education, housing etc. in India there is not much emphasis on comprehensive and extensive research on trends and patterns of various crimes and their relationship with other macroeconomic and sociological variables.

PROFILE OF THE STATE:

However before detailed discussion is made on the crime trends in the state of Gujarat, it would be worthwhile to look at the profile of the state in brief. Gujarat is the western most state of India. Gujarat is bounded by the Arabian Sea in the west, share its border with Madhya Pradesh in the east, by Rajasthan in the north and northeast and by Maharashtra in the south and southeast. Gujarat was formed in the year 1960; carved out of the 17 northern districts of Bombay state. Gujarat has an area of 196,030 sq. km which constitute 5.96% of the country's geographical area. The population of Gujarat forms 4.99% of India in 2011.

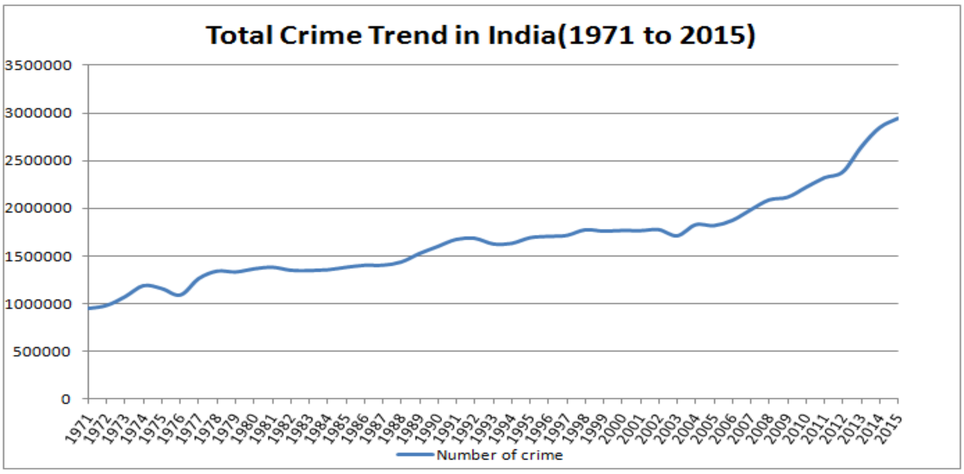
There are 33 districts in Gujarat which are subdivided into 252 talukas and 18192 villages. The following table shows the socio demographic indicators of the state.

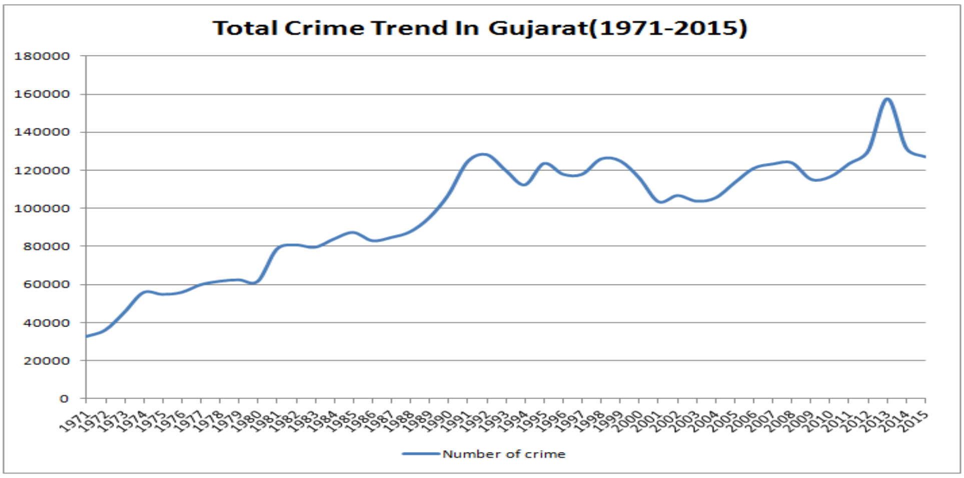
Description	2011	2001
Population	60,439,692	50,671,017
Male	31,491,260	26,385,577
Female	28,948,432	24,285,440
Population Growth	19.28%	22.48%
Percentage of total population	4.99%	4.93%
Sex ratio	919	920
Child sex ratio	890	883
Density/km^2	308	258
Area(km^2)	196,244	196,024
Literacy	78.03%	69.14%
Total literate	41,093,358	29,827,750

TREND IN TOTAL IPC CRIME:

Here, time series data have four basic components viz. Trend, seasonal, cyclic and random components. We use trend analysis for time series data, so, time series data of crimes recorded for the period 1971-2015 are taken to look at the trends of crime in the state of Gujarat.

The two graphs below are presented to compare the long term movement of crimes in Gujarat as well as in the country for the comparable period of time. The broad trends are obvious and these would allow one to observe the ups and downs in the criminal behavior at the state and national level.



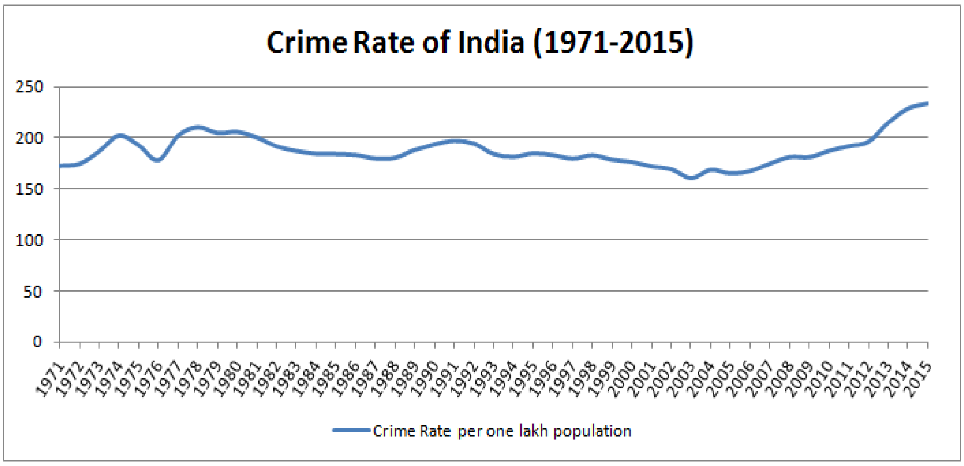


As we can see in above graphs the total number of crime in India as well as in Gujarat has increase constantly in the given period of time. In India, the number of in the year 2015 has increased by 109.62% to the number of crime in the year 1971.

While in Gujarat the number of crime in the year has increased by 287.62% to the number of crime in the year 1971. In this time period Gujarat has the most number of crime is 157,435 in the year 2013.

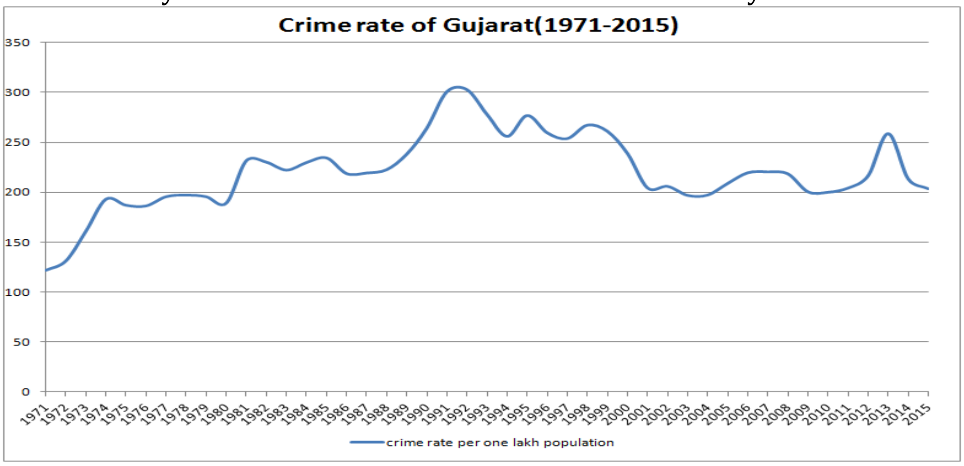
TREND IN CRIME RATE:

The crime rate in terms of IPC crime per one lakh population needs to be looked at so that one has idea about the criminal behaviour by neutralizing the population effect.



In India the crime rate is between 150 and 200 in the most of the years in the given time period. In 45 years, there are only 7 years when the crime rate was greater than 200.

The population of India is strictly increase in the time period 1971 to 2015, but in total IPC crime there is fluctuation. So, the crime rate was greater than 200 in some years. The maximum crime rate is 234.2 in the year 2015.



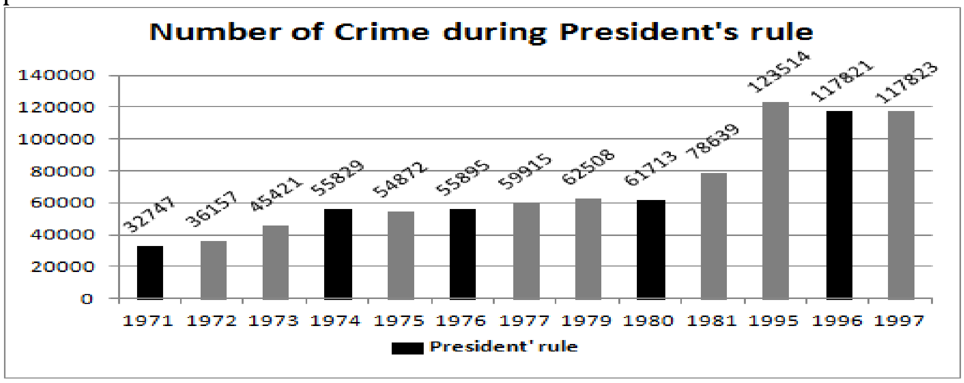
The crime rate of Gujarat has very much fluctuation in the given time period. Maximum crime rate is 302.8 in the year 1992. In the decade 1990 to 1999, the crime rate of Gujarat is greater than 250 but the crime rate has been decreased near to 200 after the year 2000.

The crime rate of Gujarat in the year 2015 is increased by 66.96% than the crime rate in the year 1971. The below table shows descriptive statistics for the crime rate in the five years intervals.

YEAR	S.D.	MEAN	MAX	MIN
1971-1975	32.00926475	158.864	193.1	121.94
1976-1980	4.739409246	192.82	197.3	186.4
1981-1985	4.559385924	229.66	234.5	222.2

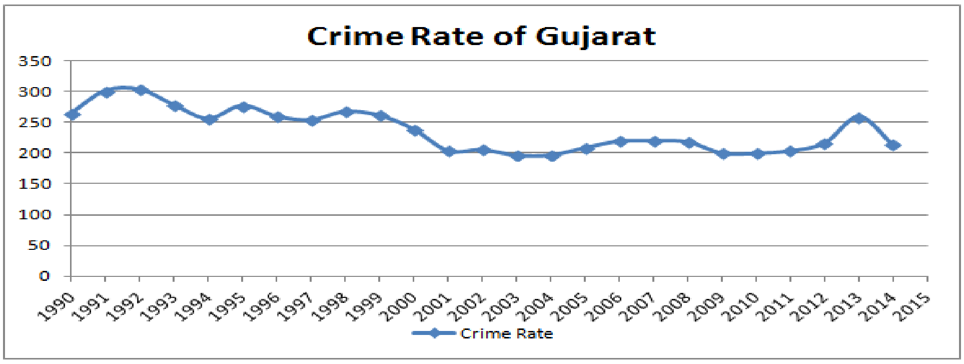
1986-1990	19.36504583	232.7	264.3	218.8
1991-1995	19.36517493	282.9	302.8	256
1996-2000	10.76814747	256.14	267.3	238.9
2001-2005	5.364513025	202.74	209	197
2006-2010	10.55926134	211.84	220.5	200.1
2011-2015	22.77623762	219.32	258.8	203.6

The president's rule has been imposed 5 times in Gujarat during the time period 1971 to 2015. The years in which the president's rule has been imposed are 1971,1974,1976,1980 and 1996. If we see the number of crime during the president's rule, it is less than the number of crime in the year around the president's rule.



In the decade 1990 to 1999, the crime rate is greater than 250 which is very high in the crime rate of 45 years. In 2001, Mr. Narendra Modi became the chief minister of Gujarat then the crime rate of Gujarat decreased around 200.

He was the chief minister of Gujarat since 2014. During 2001 to 2014, the crime rate is around 200 except the year 2013. So, we can say that Mr. Narendra Modi had done very good work to decrease the crime rate in the state of Gujarat.



III. ANALYSIS OF CRIME IN DISTRICTS OF GUJARAT

INTRODUCTION:

There are 33 districts in Gujarat in the present year. But we analysis the data for the time period 2001 to 2006. In this time period there are 25 districts in Gujarat. The data for Banaskantha and Sabarkantha districts are not available for this time period. So, we have neglect these two districts.

In this study, we take the data of districts for the time period 2001 to 2006. Data is taken from Open Government Data (OGD) Platform. We give the rank to the districts of Gujarat which has high number of crimes.

ANALYSIS OF DATA OF DISTRICTS:

DISTRICTS	**MEAN**	**S.D.**	**d^2**	**$(S.D.)^2$**
AHMEDABAD	19124.5	2395.4	219888280.6	5737940
AMRELI	2372	627.1022	3701274.104	393257.2
ANAND	3432.666667	375.4617	745119.2441	140971.5
BHARUCH	2830.666667	194.0017	2146819.534	37636.67
BHAVNAGAR	6072.166667	1544.057	3155231.393	2384113
DAHOD	1667.333333	107.461	6909202.722	11547.87
DANG	161.8333333	62.0916	17090255.57	3855.367
GANDHINAGAR	3066.666667	359.3748	1510939.766	129150.3
JAMNAGAR	3705.333333	264.5424	348733.0412	69982.67
JUNAGADH	5038.5	407.0154	551499.9627	165661.5
KHEDA	3922.666667	338.4758	139280.4035	114565.9
KACHCHH	4050.666667	1040.986	60124.46146	1083652
MEHSANA	4845.666667	251.5946	302276.8528	63299.87
NARMADA	665.1666667	203.2293	13182003.54	41302.17
NAVSARI	1297	102.3015	8993218.669	10465.6
PANCHMAHAL	2688.166667	520.1275	2584708.61	270532.6
PATAN	2450.666667	185.9728	3404773.737	34585.87
PORBANDAR	1072.333333	119.6172	10391185.84	14308.27
RAJKOT	8706.166667	571.5311	19450720.52	326647.8
SURAT	7306.5	1912.723	9063895.615	3658510
SURENDRANAGAR	3070.833333	270.8191	1500713.769	73342.97
VADODARA	8814	870.0864	20413502.63	757050.4
VALSAD	2443.5	500.9634	3431273.006	250964.3

POPULATION MEAN	4295.87
POPULATION S.D.	3982.234

CALCULATION OF Z-SCORE:

DISTRICTS	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
AHMEDABAD	2.849187	3.253232	3.6515004	4.035456	4.042236	4.510566
AMRELI	-0.52856	-0.613944	-0.591595	-0.51626	-0.180268	-0.468046

ANAND	-0.10468	-0.109705	-0.196842	-0.27117	-0.306077	-0.312104
BHARUCH	-0.31235	-0.303817	-0.377394	-0.38894	-0.403761	-0.421339
BHAVNAGAR	0.198916	0.213481	0.1303616	0.262448	0.826202	1.044924
DAHOD	-0.64759	-0.641065	-0.692794	-0.63705	-0.69631	-0.645585
DANG	-1.04184	-1.036069	-1.052643	-1.04762	-1.042096	-1.008446
GANDHINAGAR	-0.20538	-0.250329	-0.229989	-0.38668	-0.414308	-0.36534
JAMNAGAR	-0.11021	-0.182026	-0.268912	-0.12603	-0.103929	-0.098656
JUNAGADH	0.223525	0.171796	0.1346306	0.117555	0.374195	0.097214
KHEDA	-0.11171	-0.107445	-0.167963	-0.16395	-0.075051	0.063816
KACHCHH	-0.23627	-0.171981	-0.257109	-0.1652	0.031422	0.429691
MEHSANA	0.220763	0.206952	0.1238326	0.063565	0.124586	0.088676
NARMADA	-0.94416	-0.903982	-0.958977	-0.9306	-0.815339	-0.917291
NAVSARI	-0.72619	-0.738748	-0.726695	-0.77767	-0.765869	-0.783196
PANCHMAHAL	-0.44218	-0.472064	-0.528314	-0.49969	-0.260374	-0.219693
PATAN	-0.46428	-0.478844	-0.48688	-0.52982	-0.414308	-0.406021
PORBANDAR	-0.77365	-0.774156	-0.83819	-0.82563	-0.806047	-0.839195
RAJKOT	1.224973	1.187808	1.2116641	1.05999	1.116743	0.84378
SURAT	0.367917	0.486192	0.5678045	0.615014	0.809377	1.689788
SURENDRANAGAR	-0.29704	-0.29101	-0.312606	-0.36308	-0.193326	-0.388694
VADODARA	0.976369	1.556194	1.1629477	1.104187	1.005247	1.002485
VALSAD	-0.29804	-0.389196	-0.455742	-0.43465	-0.653369	-0.559954

CALCULATION OF SCORE VALUE:

These standard score are converted into the score value on a ten point scale obtained from deciles of standard normal distribution:

Standard score	Scale value	Standard score	Scale value
≤ -1.28	1	0 to 0.25	6
(-1.28)to(-0.84)	2	(0.25)to(0.52)	7
(-0.84)to(-0.52)	3	(0.52)to(0.84)	8

(-0.52)to(-0.25)	4	(0.84)to(1.28)	9
(-0.25) to 0	5	≥ 1.28	10

Also give the score value in scale value as under.

Score value	**Scale value**
$\leq (X - 0.425\sigma)$	1
$(X - 0.425\sigma)$ to $(X + 0.425\sigma)$	2
$\geq (X + 0.425\sigma)$	3

DISTRICTS	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**
AHMEDABAD	10	10	10	10	10	10
AMRELI	3	3	3	4	5	4
ANAND	5	5	5	4	4	4
BHARUCH	4	4	4	4	4	4
BHAVNAGAR	6	6	6	7	8	9
DAHOD	3	3	3	3	3	3
DANG	2	2	2	2	2	2
GANDHINAGAR	5	4	5	4	4	4
JAMNAGAR	5	5	4	5	5	5
JUNAGADH	6	6	6	6	7	6
KHEDA	5	5	5	5	5	6
KACHCHH	5	5	4	5	6	7
MEHSANA	6	6	6	6	6	6
NARMADA	2	2	2	2	3	2
NAVSARI	3	3	3	3	3	3
PANCHMAHAL	4	4	3	4	4	5
PATAN	4	4	4	3	4	4
PORBANDAR	3	3	3	3	3	3
RAJKOT	9	9	9	9	9	9
SURAT	7	7	8	8	8	10
SURENDRANAGAR	4	4	4	4	5	4
VADODARA	9	10	9	9	9	9
VALSAD	4	4	4	4	3	3

Now we convert the score value into the scale value as under:

DISTRICTS	**MEAN**	**S.D.**	**d^2**	**$(S.D.)^2$**	**SCALE VALUE**	**C.V.**
AHMEDABAD	10	0	24.5671	0	3	0
AMRELI	3.66667	0.8165	1.89561	0.66667	1	22.26809
ANAND	4.5	0.54772	0.29537	0.3	2	12.17161
BHARUCH	4	0	1.08885	0	1	0
BHAVNAGAR	7	1.26491	3.82798	1.6	3	18.07016

DAHOD	3	0	4.1758	0	1	0
DANG	2	0	9.26276	0	1	0
GANDHINAGAR	4.33333	0.5164	0.50431	0.26667	2	11.91687
JAMNAGAR	4.83333	0.40825	0.04416	0.16667	2	8.446516
JUNAGADH	6.16667	0.40825	1.26155	0.16667	3	6.620243
KHEDA	5.16667	0.40825	0.01518	0.16667	2	7.90158
KACHCHH	5.33333	1.0328	0.08402	1.06667	2	19.36492
MEHSANA	6	0	0.91493	0	2	0
NARMADA	2.16667	0.40825	8.27604	0.16667	1	18.84223
NAVSARI	3	0	4.1758	0	1	0
PANCHMAHAL	4	0.63246	1.08885	0.4	1	15.81139
PATAN	3.83333	0.40825	1.46445	0.16667	1	10.64996
PORBANDAR	3	0	4.1758	0	1	0
RAJKOT	9	0	15.6541	0	3	0
SURAT	8	1.09545	8.74102	1.2	3	13.69306
SURENDRANAGAR	4.16667	0.40825	0.7688	0.16667	2	9.797959
VADODARA	9.16667	0.40825	17.0007	0.16667	3	4.453618
VALSAD	3.66667	0.5164	1.89561	0.26667	1	14.08358

POPULATION MEAN	5.043478
POPULATION S.D.	2.266122

Mean	**Scale Value**
≤ 4.080376524	1
4.080376524 to 6.006579997	2
≥ 6.006579997	3

CLASSIFICATION OF DISTRICTS BASED ON SCALE VALUE:

1) High number of crime (Scale value-3):-

DISTRICTS	**SCALE VALUE**	**C.V.**
AHMEDABAD	3	0
BHAVNAGAR	3	18.07016
JUNAGADH	3	6.620243
RAJKOT	3	0
SURAT	3	13.69306
VADODARA	3	4.453618

2) Medium number of crime (scale value-2):-

DISTRICTS	**SCALE VALUE**	**C.V.**

ANAND	2	12.1716
GANDHINAGAR	2	11.9169
JAMNAGAR	2	8.44652
KHEDA	2	7.90158
KACHCHH	2	19.3649
MEHSANA	2	0
SURENDRANAGAR	2	9.79796

3) Low number of crime (Scale value-1):-

DISTRICTS	SCALE VALUE	C.V.
AMRELI	1	22.2681
BHARUCH	1	0
DAHOD	1	0
DANG	1	0
NARMADA	1	18.8422
NAVSARI	1	0
PANCHMAHAL	1	15.8114
PATAN	1	10.65
PORBANDAR	1	0
VALSAD	1	14.0836

RANKING OF DISTRICTS:

HIGH CRIME		MEDIUM CRIME		LOW CRIME	
Rank	Districts	Rank	Districts	Rank	Districts
1	Ahmedabad	6	Mehsana	13	Bharuch
1	Rajkot	7	Kheda	13	Dahod
2	Vadodara	8	Jamnagar	13	Dang
3	Junagadh	9	Surendranagar	13	Navsari
4	Surat	10	Gandhinagar	13	Porbandar
5	Bhavnagar	11	Anand	14	Patan
		12	Kachchh	15	Valsad
				16	Panchmahal
				17	Narmada
				18	Amreli

IV. CONCLUSION:

From above table we show that original value convert into three point scale value. On the basis of that we classified all the districts of Gujarat in three groups High, Medium, Low number of crime. Also we find the rank of districts by its scale value and using coefficient of variance tools. So we get three districts which are considered as danger districts are as follows:

1) Ahmedabad, Rajkot
2) Vadodara
3) Junagadh

Also there are three districts which are considered as safe districts are as follows:

1) Amreli
2) Narmada
3) Panchmahal

V. REFERENCES:

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