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ETHOS is a research journal of Rayat Shikshan Sanstha's Karmaveer Bhaurao Patil Institute of Management Studies and Research (KBPIMSR), Satara and is published in June and December every year. The prime object of this journal is to disseminate knowledge and information surfaced through fundamental and applied research in functional area of management and allied subjects viz. Organizational Behavior, Organizational Development, Business Communication Business Economics, Business Statistics, Information Technology and the like. Ethos is blind peer reviewed refined journal is an effort to provide a platform for exploration and articulation of knowledge of academicians, researchers, students, entrepreneurs, executive and consultants. ETHOS will publish original papers in the form of research articles and case studies. It will also publish book reviews and bibliography in said areas of management and allied subjects (Please refer Guidelines for Authors for details Authors can submit their contributions for possible publication in ETHOS.

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From the Desk of Editor ...

It is a moment of pride to place before you the first issue of eighth volume of Ethos. The journal has completed its seven years of publishing the research articles in e management and allied areas.

Present volume envelops four articles and a bibliography. Time and again Ethos is appealing its readers and contributors on non technical Section i.e. book review and case studies, but this section of publication is obviated by scholars. It is a high time that scholars should develop case studies based on local and regional entrepreneurs.

Indian agriculture is predominantly rain fed agriculture under dry farming and dry land agriculture. In dry land areas variation in amount and distribution of rainfall influence the crop production as well as socio-economic conditions of farmers. Agriculture productivity depends on rainfall, soil pattern, land use pattern and crop pattern. This issue is discussed by Dr. Anil K. Wavare and Mr. Ankush K. Ghadge. Dr. Nitin Mali discussed 'An Empirical analysis of sustainable Rural Agro Tourism marketing practices' which will help the farmers to develop agro tourism practices. Dr. Madhukar. K. Panchal discussed marketing strategies for Pilgrimage Tourism.

Dr. Pravin Mahamuni and Dr. Anand Jumle discussed Pre and post mergers and acquisition scenario of Metals & Metal Products sector and their respective selected firms are in better position in post-merger era as compared to pre-merger.

I hope that the articles contributed by research scholars and academicians would be immensely readable and beneficial to stakeholders. I look forward to your valuable feedback to enable us enthrall readers and ensure continuous improvement.

Dr. B. S. Sawant
Editor-in-Chief

Trends of Agriculture Production and Productivity of Dryland of Satara District

Anil K. Wavare, Ankush K. Ghadge

Abstract :

Indian agriculture is predominantly rainfed agriculture under dry farming and dryland agriculture. Nearly 70 percent (108 M.ha.) are rainfed. In dryland areas variation in amount and distribution of rainfall influence the crop production as well as socio-economic conditions of farmers. Agriculture productivity depends on rainfall, soil pattern, land use pattern and crop pattern. In dryland agriculture productivity is mainly depends on soil pattern and crop pattern. There are four tehsils out of eleven are under dry area of Satara district. Ten crops have been considered for studying the trend of agriculture productivity of major crops of dry zone area of Satara district. These trend of productivity, increase the fertility of soil and rainfall, water management. Present research paper intends to analyze the trend of agriculture production and productivity of dryland area of Satara district during the period of years 2001-02 to 2012-13.

Keywords : Dry Farming, Productivity, Rainfall, Land use Pattern, Soil Pattern.

Introduction:

Agriculture and its allied sectors are science of growing plants, crops, rising of animals. The main and important purpose of agricultural activity of men is producing food. Since, population increases by geometric process while requirements or needy things for that population are increases by algebraic process. All agricultural activities are based on various

parameters but most weighted parameters are water availability, soil pattern, land utilization and crop pattern. All over the world agriculture is divided in two parts i) Irrigated Agriculture and ii) Dryland Agriculture.

The agriculture without irrigation is called dryland farming. Dryland areas are those where the balance of moisture is always on the deficit side. The main problem of dryland farming is low and uncertain agricultural production. Agriculture sector of India plays an important role as a source of income and employment. A national commission on agriculture in 1976 predicted that even when the full irrigation potential is tapped by 2013, over 50 percent of arable land would remain under dryland agriculture in the future. These figures show the importance of dryland agriculture, because of dryland agriculture supports 40 percent population of India. The

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success of crop production in these areas depends on the amount and distribution of rain fall as these influences the stored soil moisture and moisture used by crops.

Dry farming depends upon storage of the moisture in the soil and types of the crops. The crops Bajara, Jowar, Gram, Pulses, Oilseeds, cotton etc. cultivated growing in dryland. The present study is taken on the account of trends of agricultural production and productivity in dryland tehsils of Satara district.

StudyArea : Satara district is situated in the Western part of Maharashtra state. Satara district is lies between North latitude 17^o41' and 18^o11', East longitude 73.33 and 74.54. District is bounded in the North by Pune district, on East by Solapur and on South by Sangli and Kolhapur district, on the west by Konkan region. There are eleven tehsil in Satara district. The total area of district is 10480 sq.km.. Satara district has typical landscapes due to variation in relief, climate and vegetation. The climate ranges from rainiest in the Mahableswar region which has an average annual of over 6000 mm to the driest in Man, Khatav, Phaltan, and Khandala tehsils where the average annual rainfall is about 500 mm. present study deals with geographical perspectives of agriculture production and productivity of drought prone tehsils of Satara district.

Research Methodology :

The objectives of this study are, to study trends of growth in area and productivity during the year 2001 to 2013, to study the interrelation between rainfall and agriculture production of drought prone tehsils of Satara district and to study the changes in cropping pattern.

This study is based on secondary data. The sources of secondary data are District Statistical Office, Department of Agriculture Z.P. Satara, Statistical Abstract of Maharashtra, Socio Economic Review of Satara District, Maharashtra State Gazetteers Satara District, Statistical Review of Satara District etc. The numerical data analyzed by statistical tools like Time Series, Correlation and Regression, Least Square Method to find the trends of area occupied by crops and productivity.

Scope of present study is drought prone area of Satara District of Maharashtra state. Eastern part of Satara district is under drought prone area. Four tehsils are there in that area viz. Khatav, Man, Phaltan, and Khandala. Agriculture productivity is depends on rainfall, use land utilization, soil pattern and crop pattern. In present study, trend of changing area under crops, trend of rainfall and trend of major crops are studied. Trends are calculated by using statistical tools like time series analysis, least square method, regression analysis etc.

The basic purpose of this research article is to determine trend of agricultural productivity of crops sown in dryland of Satara District. The study period is from 2001- 02 to 2012- 13. divided into two phases for examining and comparing productivity because of changes in land use pattern. From year 2001-02 to up to 2007- 08 it shows one pattern of land use and that of from year 2008-09 to 2012-13 there is change in the land use pattern. This shows major factor affecting on total production and average productivity of major crops.

Rain fall and Agriculture Production of

drought prone tehsils of Satara District :

Rainfall is the prime important factor for agricultural economy. Rainfall also determines the cropping pattern. An analysis shows that productivity of agricultural commodities goes down, whenever there is a reduction in rainfall. This is because of the fact that food grains and other crops are cultivated predominantly in those tehsils which receive relatively less normal rainfall.

From the Table No. 1 it can be seen that, average rainfall of the drought prone tehsils is 541.27 mm

during the study period 2001-02 to 2012-13. Average rainfall of these four tehsils are highest in the year 2010 -11(816.25 mm) and that of lowest in the year 2002-03 (273.75 mm), 2011-12 (343.25 mm) and 2012-13 (315.13 mm). Tehsil Khandala 605.42 mm, Tehsil Khatav 568.30 mm , Tehsil Phaltan 542.05 mm and Tehsil Man 495.55 mm.

Table: 1: Average rain fall and Agriculture Production of drought prone tehsil

Year	Average Rain Fall (mm)	Agriculture Production in '000 Tones
2001-02	425.5	96.45
2002-03	273.75	83.79
2003-04	180	37.55
2004-05	707.25	163.26
2005-06	615.5	104
2006-07	658.75	122.25
2007-08	649.5	135.37
2008-09	414	91.75
2009-10	607.25	93.81
2010-11	816.25	106.66
2011-12	343.25	66.32
2012-13	315.12	92.69

Source: (Compile from various annual Socio –Economic survey of Satara district)

Analysis shows that productivity of agricultural commodities goes down, whenever there is a reduction in rainfall. Mainly dryland agriculture farming is depends on rainfall. Average rain fall of drought prone tehsils of Satara district and agriculture production are presented in Table 1. From this table it can be seen that highest average rain fall is 816.25 mm in the year 2010-11 , that time agriculture production is 1,06,660 tones. In the year 2004-05, agriculture production was

1,63,260 tones and that time average rain fall is 707.25 mm. by comparing these two years with respect to agriculture production rain fall decreases by 109 mm but agriculture production increases by 56,600 tones.

Land Use Pattern : The land use pattern has got importance in the economy of the region. Human activity is depending on land use, socio-economic picture and the status of community indicates by

land use pattern. Crops are cultivated under drought prone area is need based. Net sown area has declined between study period –I and study Period –II by 24,795 ha while there is no significant changes in area under follow, land under cultivable waste, permanent pastures, land used for non-agricultural purpose and barren .

Total non-cultivated area in study period-I is 121,425 ha and in study period-II is 121548 ha it means 123 ha non-cultivated land is more in Period-II than Period –I. Also there is total follow land in Period-I is 118674 ha and that of in Period-II is 141875 ha. The follow area increased about 23,201 ha more than Period-I. It shows that year by year there is increasing trend in follow area. The last two columns in Table No-2 shows total cultivated area in ha and total cultivable area in hector.

The study region having 459881 hectares the total geographical area. In study period-I, the net sown

area is 64.37 percent of total geographical area of the region, where as 7.49 percent land is under forest, 11.47 percent land is not for available for cultivation. In study period-II, the net sown area is 53 percent, whereas forest land as remains same in study period-I as well as period-II The highest percent of cultivable waste land was found in Man tehsil. It is recorded 23.71 percent and it is higher than district average. The lowest percent of cultivable waste is recorded in Khatav tehsil is 5.80 percent, in Khandala tehsil is 10.51 percent. The third category of land is land not available for cultivation, such as land under settlements, roads, railways, rivers, canals, barren land and uncultivable land. This type of land has having 11.47 percent of total geographical area. It is observed that Khatav (14.66 %), Khandala (17.47 %), Man (16.75 %), Phaltan (11.50 %) have recorded high percent than the study region average.

Table : 2 :Land Utilization of dry land of Satara District area in hactor
Year 2001-02 to 2007-08 and Year 2008-09 to 2012-13.

Tehsil	Geog. Area (ha)	Forest Area (ha)	Total non-cultivated Area	Other than non-cultivated	Total Follow Area (ha)	Total cultivated area (ha)	Total cultivabl area (ha)
Khatav	136457	4121 (3.02)	11295 (8.28)	7923 (5.81)	20682 (15.16)	110335 (80.86)	121041 (88.70)
Man	150787	12954 (8.59)	25264 (16.75)	35757 (23.71)	18627 (12.35)	74077 (49.13)	112569 (74.65)
Phaltan	119029	10892 (9.15)	16784 (9.15)	15227 (12.79)	21883 (18.38)	77823 (65.38)	91353 (76.75)
Khandala	53608	6498 (12.12)	9369 (17.48)	5637 (10.52)	9514 (17.75)	33794 (63.04)	37741 (70.40)

Source: (Compile from various Socio Economic Survey of Satara District.)

Note: i) Figures in the bracket indicates percentage. ii) Bold figures are of the study period –II.

Table: 3: Trends of utilization of land in year 2013 as compared to year 2001

Figures in the bracket shows percentage

Sr.	Tehsil	Fallow Area in Ha	Total cultivated area Ha
1.	Khatav	- 9347 (-6.85)	26907 (19.72)
2.	Man	+ 1726 (+1.14)	- 18226 (-12.09)
3.	Phaltan	+ 1253 (+1.05)	- (13404 (-11.26)
4.	Khandala	+4517 (+8.43)	- 7109 (-13.26)

Source: (Compile from Socio Economic Survey of Satara District)

Note: +ve sign indicates increase in trend, -ve sign indicates decrease in trend.

The difference between the land utilization pattern in study Period-I and study Period-II are shown in Table No.3. Fallow area in all four tehsils are shown positive trend it indicate follow area increases. Cultivated area shows negative trend in Man ,Phaltan and Khandalatehsils however in Khatav tehsil it shows positive trend in study period- II as compare to study period –I. Also cultivated area shows negative trend in Man , Phaltan and Khandala tehsils , it means cultivated area decreases and in Khatav tehsil cultivated area increases in study Period-II as compare to study Period-I.

Trends in Area and Productivity of major crops:

The term 'productivity' is regarded as “A ratio of output to input in relation to land, labour, capital

and overall resources employed in agriculture”.

There are various definitions of term productivity

Bhatia (1967) agriculture efficiency as “*The aggregate performance of various crops in regard to their output per acre*”.

Singh defined agricultural productivity as “*The quality of return from arable land*”.

Present study is focus on computing crop productivity of drought prone tehsil of Satara district and area under the crops. Jowar ,Bajra, Wheat, Maize, Pulses, S.groundnut, Cotton , Soyabean, Sugarcane are the main crops are cultivated in these tehsils.

Crop production (P) is expressed as product of Area (A) and Production per unit i.e. yield (Y) i.e. $P = A * Y$.

Table: 4: Area and Productivity of Major crops of Study area:

Crop	Peri od	Khatav		Man		Phaltan		Khandala	
		A	P	A	P	A	P	A	P
Bajara	I	25482	393.6	19211	396.7	8202	1250.6	13918	729.3
	II	33700	467.8	14484	426.6	6489	1230	11499	1072

Jowar (R.)	I	13179	797	13505	494.9	9000	902.4	7036	798.4
	II	17429	692.8	10182	520.4	7450	874	5813	887.4
Wheat	I	3662	1268.4	1893	1552.2	4404	2336.6	2600	1488.4
	II	4315	1269.6	1427	1368.2	3645	2308.8	2148	1475
Gram	I	2337	481	1983	573.2	490	849.8	1483	563.1
	II	3091	551.8	1495	562.2	406	713	1225	659
S..Grounut	I	1579	1773.5	243	1905.7	412	2728.1	2741	3120.9
	II	2089	1382.4	183	1558.7	341	1784.8	2265	1634.8
Maize (R.)	I	180	4394	229	4175	1387	3001	787	1850
	II	238	2616	173	3471	1148	3882	650	370
Udid	I	918	481.4	417	263.5	NA	NA	363	578.1
	II	1214	535.2	314	541	NA	NA	300	564
Moog	I	507	451	638	285.2	320	601.3	375	582.4
	II	670	601.4	481	427	265	461.5	310	568
Cotton	I	727	388	456	451.1	882	551.1	798	655
	II	962	457.2	344	496.2	730	725.7	659	514
Sugarcane	I	2677	82.4	2291	80.2	4637	93.26	663	73.8
	II	3540	65.6	1727	85.4	3838	91	548	90.4
Soyabean	I	772	850	--	--	918	1918	--	--
	II	1021	889	--	--	760	1624	--	--

Source: 1) Various reports of district agriculture abstract.2) Statistics Abstract of Satara district.

Note: A= Area in hector, P= Productivity in kg / ha (Sugarcane in tonnes / ha) , Period-I : 2000-01 to 2007-08 , Period-II : 2008-09 to 2012-13.

Crop-Bajara: This crops is drought resistant hence Bajara crop is well adapted to production system characterized by low rainfall, low fertility and high temperature. It can be seen from Table No. 4 that area under the crop has decreased by 11940 hector in study Period-II as compare to Period-I. During Period-I and Period-II growth in area was negative, however productivity and production rate during Period-II was positive. The average productivity of crop Bajara in

Khatav and Man during Period-I is 393.6 kg/ha and 396.7 kg/ha, while in Phaltan tehsil it is 1250.6 kg/ha, it shows 3.5 times more than Khatav and Man tehsil , productivity of Khandala tehsil is two times than Khatav and Man tehsil.

Crop Jowar: Jowar is the main food grain crop.The average area under this crop was 45747 ha in 2001-02, which was decreased by 7903 ha in

2010-2011. The Productivity of Jowar crop in Man and Khandala tehsil shows increased while in Tehsil Khatav and Phaltan it shows decreased in Period-II as compare to Period-I. The growth rate of productivity in Man tehsil is increased in Period-II as compare to Period-I. While in Khatav and Phaltan tehsil productivity shows decreases.

Crop - Wheat : This crop required more water than other crops except sugarcane. Near about 5 to 6 times water is required in the life cycle of this crop. It can be seen from the Table No. 4 that productivity of crops remains near about constant in time Period-I and Period-II. Total average area under the crop Wheat during Period-I is 12760 hector and during Period –II is 10834 hector. It can be shown that area under the crop during Period-II is decreased by 1926 ha.

Crop-Maize: Maize is a source of large number of industrial products besides its uses as human food and animal feed. It can be seen from Table No. 4 that average productivity of crop Maize in tehsils Khatav, Man, Khandala shows lower in Period-II as compare to Period-I by 40.47 percent, 16.87 percent and 80 percent respectively. However in tehsil Phaltan the average productivity has increased by 29.39 percent in Period-II. Total average area in Period-I is 2504 ha and in Period-II is 2288 ha, it shows during Period-II area area under the crop Maize has decreased by 8.61 percent.

S. Groundnut : Groundnut is major oilseed crop sown in both Kharif and Rabbi Season. From the Table No.4 shows it can be seen that in all drought **Pulses :(Udid, Moog)** These crops are included in pulses sown in droughtprone tehsils of Satara district. They are grown as mixed as well as pure crops.

Udid- Table No.4 has been shows that Udid pulse grown in three drought prone Tehsil except Phaltan Tehsil. In Khatav and Man tehsil the production and productivity increases year to year. However in tehsil Khandala it decreases. Total average area of all study region in Period-I is 1931 ha, while in Period-II it shows decreases by 336 ha.

Moog: It is another important pulse, it grown in all four drought prone tehsils. It can be seen from the Table No. 4 that in tehsil Khatav and Man, average productivity shows increases by 33.35 percent and 49.65 percent respectively, while in Phaltan and Khandala tehsil it shown decreases trend by 23.25 percent and 2.37 percent respectively in Time Period-II as compare to Period-I.

Gram : This crop is drought resistant so it mainly sown in drought prone region of district. Gram is major crop of farmers of study area. The importance given by farmers for this crop is first after food grain crops i.e. after Jowar, Wheat and Bajara. Near about on an average 6789 ha area occupied by this crop in study Period-I and 5721 ha in study Period-II The productivity of Gram in Man and Phaltan tehsil shows decreases by 1.19 percent, 16.08 percnet in Period-II as compare to Period-I respectively, while in tehsil Khatavand Khandala the productivity shows increases in Period-II by 17.72 and 17.02 percent respectively than Period-I.

Cotton : This is commercial crop grown by farmers. The important of this crop is significantly in agricultural and industrial economy. It can be seen from Table No. 4 that area under crop Cotton is 2959 ha in Period-I and 2599 ha in Period-II. In tehsil Khatav, Man, Phaltan the

productivity showing increases by 17.85 percent, 9.99 percent, 31.67 percent during Period-II as compare to Period-I. while in Tehsil Khandala productivity showing decreases by 21.53 percent. Total average area under the crop in Period-I is 2959 ha and that of in Period-II is 2599 ha.

Sugarcane: Sugarcane crop consumes nearly 60 to 70 percent of available water. Keeping in view the availability of water in drought prone area of district, how the farmers grown this crop in their field. Table No. 4 shows area and productivity (Y) of this crop. Average area of this crop is nearly remaining constant throughout study period. Particularly area under this crop of tehsil Khatav shows decreased from 82.4 ha to 65.6 ha as in Period-II as compare to Period-I and remaining three tehsil i.e. Man, Phaltan, Khandala there is slight change in area. The total average area under this crop showing 11016 ha during the Period-I to and that of in Period-II it is 8905 ha. Area under this crop shows decreases by 19.16 percent in Period-II than Period-I.

Soyabean : It is commercial oilseed crop. Soyabean is a Kharif crop and it take a place of groundnut and bean (Rajama). The characteristic of crop Soyabean is it grown in rainy areas as well as drought prone areas Table No.4 shows that Soyabean crop grown in only Khatav and Phaltan tehsils. The average productivity has increased in Khatav tehsil by 39 kg/ha however in Phaltan tehsil it has decreased by 234.4 kg/ha. The total area under this crop in period-I is 1939 and it is in study period-II is 1532. It shows that area under this crop decreases in period-II as compare to period-I.

Trend values of productivity (Yield) :

On the basis of the past, one plan the future events by using reasonable estimate. One of the major elements of planning and specifically strategic planning of any business is accurately forecasting the future event that would have an impact on the operations of the organization (of the study). Previous performance must be studied so, as to forecast future activity. The quality of such forecasts is strongly related to the relevant information that can be extracted and used from past data. In that respect, least square method of time series time series can be used to determine the pattern in the data of the past over a period of time and generalize the data into the future. The underlying assumption in time series is that the same factor will continue to influence future pattern of economic activity in a similar as in the past.

The analysis can be used i) to control the process producing the series. For instance, it may suggest method to check inflationary forces before they raise their heads. ii) the past trends can be projected into future trends, to predict the changes which are likely to occur in the economic activity of trend cycle.

Study uses time series technique for predict the value in future, study is depend on duration of time period since it is time series data. Least square method of time series is most popular method for prediction the value in future. This study predict the productivity of the major crops. The time duration of the study is from year 2001-02 to 2012-13, so to predict the crop productivity for the year 2015-16.

Major crops of this study area are Bajara, Jowar,

Table: 5.1: Trend values of productivity (Yield) in Kg/ha for the major crops

Year	Bajara		Jowar		Wheat	
	Yield in Kg/ha	Trend Values	Yield in kg/ha	Trend values	Yield in kg/ha	Trend values
	1	2	3	4	5	6
2001-2002	585.25	617.5	663.7	635.1	1737	1487.4
2002-2003	600.50	633.2	381	652.3	1198	1508.9
2003-2004	287.50	648.8	250.8	669.5	971.7	1530.4
2004-2005	1156.2	664.5	1020.5	686.7	1786	1551.9
2005-2006	653.25	680.1	857.8	703.9	1845.7	1573.4
2006-2007	605.5	695.8	880.5	721.1	1737.2	1594.9
2007-2008	959.5	711.5	983.8	738.3	1965.7	1616.4
2008-2009	590.7	727.1	883.5	755.5	1408.2	1637.9
2009-2010	637.0	742.8	840.2	772.7	1544.7	1659.4
2010-2011	1010.0	758.5	712	789.9	1928.5	1680.9
2011-2012	626.0	774.1	484	807.1	1484.2	1702.4
2012-2013	732.5	789.8	798.5	824.2	1661.2	1723.9

Table: 5.2: Trend values of productivity (Yield) in Kg/ha for the major crops (Sugarcane in Tones /ha)

Year	Pulses		Sugarcane		S.Groundnut		Cotton	
	Yield	Trend values	Yield	Trend values	Yield	Trend values	Yield	Trend values
	7	8	9	10	11	12	13	14
2001-2002	1562.7	1152.1	65.5	59.13	2516	2529.4	538.7	511.2
2002-2003	1006	1181.1	77.25	62.4	2482.7	2422.8	550.5	496.8
2003-2004	461.7	1210.0	48	65.7	1651.5	2316.2	465.7	482.4
2004-2005	1545	1239	41.75	69.0	2530.7	2209.6	354.2	467.9
2005-2006	1215.8	1367.9	63.5	72.3	2212.2	2103	472.5	453.5
2006-2007	1164.2	1296.9	98.7	75.6	2071	1996.4	572	439.1
2007-2008	1678.2	1325.8	101	78.8	2290.2	1889.8	364.7	424.7
2008-2009	1441.5	1354.8	75.5	82.1	1959	1783.2	336.7	410.3
2009-2010	1468.8	1383.7	83.25	85.4	1984.2	1676.6	454.5	395.8
2010-2011	1765	1412.7	91.75	88.7	999.7	1570	210.5	381.4
2011-2012	1058	1441.6	91	92.0	717.2	1463.4	417	367.0
2012-2013	1370	1470.6	89.75	95.3	1901	1356.8	445.7	352.6

Foot note: Trend values calculate from least square method of time series analysis.

Forecasting of productivity (Yield) in Kg/ha for the major crop (Sugarcane in Tonnes /ha)

Forecasting or predictions of the major crops are estimated for the next three years i.e. for years 2013-2014, 2014-2015 and 2015-2016 by using time series techniques. However, productivity of

the crops in dryland is depends on rainfall, storage moistures in the soil, water management and crop pattern. Suppose all these things are in average then we estimate productivity in coming future years. Table No. 6 shows the productivity of major crops.

Table: 6: Forecasting of productivity (Yield) in Kg/ha (sugarcane in tonnes /ha) for the major crop

Crop	2013-2014	2014-2015	2015-16
Bajara	805.41	821.07	836.72
Jowar	840.97	858	875
Wheat	1720.94	1734.52	1748.1
Gram	644.84	649.72	854.59
S. Groundnut	1193.74	1054.24	914.73
Sugarcane	92	93.4	94.9
Cotton	565.36	571.3	577.40

Foot note: Values are predicted from time series analysis linear equation.

Conclusion:

Agriculture and its allied sectors of Dry land of Satara district:

Agriculture and its allied sectors of Satara district are not uniformly developed. Especially in drought prone area there is no facility of irrigation. Out of eleven tehsils, mostly four tehsils are situated in drought prone area. For development of agricultural activities there is need of irrigation facilities.

- a) The analysis of productivity of major drops sown in these drought prone tehsils shows huge variation.
- b) Land utilization of drought prone tehsils shows that total cultivated area goes decreases in Khatav, Man and Phaltan Tehsil, while in Khandala tehsil cultivated area

increases in study Period-II as compare to study period I.

- c) There is high correlation between rainfall and agriculture production. It indicates that in drought prone tehsils agriculture production is only depend upon rainfall.
- d) Agriculture productivity of major crops of Phaltan tehsil is high as compare to productivity of other three tehsils of study area.
- e) Sugarcane crop cultivated only in by those farmers who have the water availability. Cultivated area near NerDam ,Veralwadi Dam in Khatav Tehsil, Neera Dam and near about its canal in Phaltan Tehsil, near Andhali Dam in Man tehsil.

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Pre and Post Merger Financial Performance of Acquiring Firms of Indian Metals and Metal Products Firms

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Abstract :

This research is focused on mergers of Indian manufacturing industry with reference to selected Metals and Metal Products during 2005 to 2010. In simple words, this study is to find out whether merger & acquisition helps the organization in post merger period to improve their performance in the sense like; companies achieved liquidity, solvency and improve profitability after merger, companies expand their business activities after merger, is there any improvement in operating performance of merged manufacturing companies and also an attempts to fill this gap in knowledge about M&As in India.

Keywords : Mergers, Acquisitions, Financial Performance, Metal Products.

Introduction:

Motivation for this research has come from the gap identified in literature review. In number, very few studies are available in India on Morga and Acquation deals. Where as many studies are there on M&A deals in other countries like USA, Canada, UK; where such deals are common phenomena of corporate world.

Since 1991, Indian industries have been increasingly exposed to domestic and international competition and competitiveness.

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Hence, in recent times, companies have started restructuring their operations around core business activities through M & As. But M & A is an area of potential good as well as potential harm in corporate strategy. It is necessary that an analysis has to be made to compare financial performance of pre and post – merger. Therefore, the proposed research work is focused on mergers of Indian manufacturing industry with reference to selected Metals and Metal Products companies during 1st April 2005 to 31st March 2010. This paper comes data analysis of selected firms which merged between 1st April 2005 to 31st March 2008.

Review of Literature:

The following are the few existing studies reviewed which were conducted by researchers in the view of analyzing the financial performance during merger activity in different time periods.

Healy, Palepu, and Ruback examined post-acquisition performance for 50 largest U.S. mergers between 1979 and 1984 by measuring

cash flow performance, and concluded that operating performance of merging firms improved significantly following acquisitions, when compared to their respective industries.

Agarwal, Jaffe and Mandelkar (1992): studied post-merger performance of the companies with a different perspective. They adjusted data for size effect and beta weighted market return and found that shareholders of the acquiring firms experienced a wealth loss of about 10% over the period of five years following the merger completion.

Pawaskar analysed the pre-merger and post-merger operating performance of 36 acquiring firms during 1992-95, using ratios of profitability, growth, leverage, and liquidity. They found that the acquiring firms performed better than industry average in terms of profitability. Regression Analysis however, showed that there was no increase in the post-merger profits compared to main competitors of the acquiring firms.

Beena analysed the pre and post-merger performance of a sample of 115 acquiring firms in the manufacturing sector in India, between 1995-2000, using a set of financial ratios and t-test. The study could not find any evidence of improvement in the financial ratios during the post-merger period, as compared to the pre-Merger period, for the acquiring firms.

Ya-Hui Peng & Kehluh Wang (2004) study addresses on the cost efficiency, economies of scale and scope of the Taiwanese banking industry, specifically focusing on how bank mergers affect cost efficiency. Study reveals that bank merger activity is positively related to cost efficiency. Mergers can enhance cost efficiency, even though the number of bank employees does

not decline. The banks involved in mergers are generally small were established after the banking sector was deregulated.

Pramod Mantravadi & AVidyadhar Reddy (2008): “Post-Merger Performance of Acquiring Firms from Different Industries in India” This research study was aimed to study the impact of mergers on the operating performance of acquiring corporates in different industries. The results suggest mergers seem to have had a slightly positive impact on profitability of firms in the banking and finance industry, the pharmaceuticals, textiles and electrical equipment sectors saw a marginal negative impact on operating performance (in terms of profitability and returns on investment). For the Chemicals and Agri-products sectors, mergers had caused a significant decline, both in terms of profitability margins and returns on investment and assets.

Ahmad Ismail, Ian Davidson & Regina Frank (2009) concentrates on European banks and investigates post-merger operating performance and found that industry-adjusted mean cash flow return did not significantly change after merger but stayed positive. Also find that low profitability levels, conservative credit policies and good cost-efficiency status before merger are the main determinants of industry-adjusted cash flow returns and provide the source for improving these returns after merger.

Murugesan Selvam, Manivannan Babu, Gunasekaran Indhumathi, Bennet Ebenezer (2009): “Impact of mergers on the corporate performance of acquirer and target companies in India” This study is limited to a sample of companies which underwent merger in the same

industry during the period of 2002-2005 listed in one of the Indian stock exchange namely Bombay Stock Exchange. This study compare the liquidity performance of the thirteen sample acquirer and target companies before and after the period of mergers by using ratio analysis and t-test during the study period of three years. The study found that the shareholders of the acquirer companies increased their liquidity performance after the merger event.

Ting-Kun Liu (2010): "An Empirical Study of Firms' Merger Motivations and Synergy from Taiwanese Banking Industry": Results show that post-merger banks belonging to financial holding companies produced merger synergies. In further analysis of the top ten financial holding company banks and the top ten non-financial holding company banks, the top three banks in the top ten financial holding company banks started with banking and are associated with financial holding companies emphasizing banking, showing that post-merger financial holding companies have better overall operating performance if they have banking as a primary operating entity.

Dr. Neena Sinha, Dr. K. P. Kaushik & Ms. Timcy Chaudhary (2010): *Measuring Post Merger and Acquisition Performance: An Investigation of Selected Financial Sector Organizations in India*. This paper examines the impact of mergers and acquisitions on the financial efficiency of the selected financial institutions in India. The analysis consists of two stages. Firstly, by using the ratio analysis approach, they calculate the change in the position of the companies during the period 2000-2008. Secondly, examining the changes in the efficiency of the companies during the pre and post merger periods by using

nonparametric Wilcoxon signed rank test. While they found a significant change in the earnings of the shareholders, there is no significant change in liquidity position of the firms. The result of the study indicate that M&A cases in India show a significant correlation between financial performance and the M&A deal, in the long run, and the acquiring firms were able to generate value.

Katsuhiko Ikeda and Noriyuki Doi: studied the financial performances of 43 merging firms in Japanese manufacturing industry. They found that the rate of return on equity increased in more than half the cases, but rate of return on total assets was improved in about half the cases. However, both profit rates showed improvement in more than half the cases in the five-year test, suggesting that firm performances after mergers began to be improved along with the internal adjustment of the merging firms: there was a necessary gestation period during which merging firms learnt how to manage their new organizations.

Mahesh Kumar Tambi: "Impact of Merger and Amalgamation on the Performance of Indian Companies". He evaluate the impact of Mergers on Indian companies through a database of 40 Companies selected from CMIE's PROWESS, using paired t-test for mean difference for four parameters; Total performance improvement, Economies of scale, Operating Synergy and Financial Synergy. The study shows that Indian companies are no different than the companies in other part of the world and mergers were failed to contribute positively in the performance improvement.

Marina Martynova, Sjoerd Oosting and Luc

Renneboog: investigated the long-term profitability of corporate takeovers in Europe. They found that both acquiring and target companies significantly outperformed the median peers in their industry prior to the takeovers, but the profitability of the combined firm decreased significantly following the takeover. However, the decrease became insignificant after controlling for the performance of the control sample of peer companies.

Research Methodology:

It has been observed from review of literature, that each research paper studied on specific parameter, either liquidity or solvency or profitability. There is need to evaluate all these parameters to see acquired firm is able to expand their business activities after the merger or not. It was also observed that very few research papers on Indian manufacturing industry.

Study put to test hypotheses as, the merged manufacturing companies did not improve liquidity, solvency and profitability after merger and the merged manufacturing companies did not expand their business activities after merger.

Study has undertaken with the objectives, to evaluate financial performance of selected Indian Metals & Metal Products companies during pre and post mergers and to study the impact of merger on the financial performance of selected Indian Metals & Metal Products companies in short run. The study is based on **census survey**, 10 acquire firms from Metals & Metal Products. The justifications for selected firms are as under;

Step 1: All Metals & metal products companies listed in CMIE Prowess Database.

Step 2: Selected companies which does the merger & acquisition activities during the 2005 to

2010.

Step 3: Bifurcated these selected companies into listing in BSE & NSE.

Step 4: Selected those companies having listed in both BSE as well as NSE.

Step 5: Further, selected those companies which completed their merger activities during the 2005-06-07-08 because, data of post 3 years of selected acquires firms will available for study.

Data Analysis and Testing of Hypotheses:

With the help of above data collection instrument the secondary data are collected, obtained & filtered as per the requirements of this research study. Further it analyzed in following systematic way. To study the objectives & test the hypothesis, researcher has used following parameters;

Parameters for Testing of Hypotheses:

Present study tests the following null hypotheses. H₁ The merged manufacturing companies did not achieve liquidity, solvency and improve profitability after merger.

A. Liquidity Parameters: Current ratio, Quick ratio and Net working capital

B. Leverage Parameters: Total debt and equity to total assets, Total borrowings and equity to EBITD and Interest coverage ratio

C. Profitability and Other Parameters: Operating profit, Operating Profit Margin, Net profit, Net Profit Margin, Net worth, Return on Net worth, ROI, Return on Capital Employed and Debt-equity Ratio.

H₂ The merged manufacturing companies did not expand their business activities after merger.

Parameters: Capital Formation and Investment of Merged Manufacturing Companies.

Analysis Approach:

The financial data are collected from CMIE Prowees Database Software for selected companies. The data is separated as per different ratios as per requirement i.e. considering merger year as a base year which is denoted as 0, Pre merger year taken as -1,-2 & -3 & Post 1, 2, & 3. Further calculated the pre & post means of selected various ratios and these means are used

Data Analysis and Interpretation:

[A] Liquidity Parameters

Current Ratio

Table 01: Current Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	2.9133	1.9133	2.903	0.101
2.	J S W Steel Ltd.	0.9167	0.5	5.316	0.034
3.	Jai Balaji Industries Ltd.	1.2533	1.0867	11.471	0.008
4.	K E C International Ltd.	1.13	1.15	-0.25	0.844
5.	Mahindra Forgings Ltd.	0.9733	1.03	-0.188	0.868
6.	Om Metals Infraprojects Ltd.	0.9733	1.9267	-1.702	0.231
7.	Ramsarup Industries Ltd.	1.39	1.18	4.2	0.149
8.	Sarda Energy and Minerals Ltd.	2.14	1.99	0.271	0.812
9.	Steel Authority Of India Ltd.	1.0033	0.1933	-8.252	0.014
10.	Sujana Metal Products Ltd.	2.1133	1.3067	2.562	0.125

The results of comparison of Current Ratio of acquiring firms in pre-merger & post-merger have been presented in above Table 01. It is observed that, J S W Steel Ltd declined from 0.9167 in pre- merger period to 0.5 in post-merger period and difference in current ratio between two period is significant at 5% level (t-value = 5.316, $p < 0.05$). Similarly, for Jai Balaji Industries Ltd declined from 1.2533 in pre period to 1.0867 in post period, t-value = 11.471, $p < 0.05$, and also Steel Authority of India Ltd

for doing paired sample't' test.

The approach of analysis is based on the level of agreement to the statement of hypotheses. The **threshold of 50%** is considered to accept or refuse the hypothetical statement.

Ratio analysis and paired sample't' test has been used to analyze data.

declined from 1.0033 in pre period to 0.1933 in post period, t-value = -8.252, $p < 0.05$, between pre & post-merger differs significantly & it declined in the post- merger period. This significant decline in current ratio has revealed that these firms incurred debt after M&A. In simple words, the decreases in Current Ratio after the merger have been due to addition of current liabilities of acquired firms.

The other acquiring firms, Hindalco Industries

Ltd, K E C International Ltd, Mahindra Forgings Ltd, Om Metals Infraprojects Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd and Sujana Metal Products Ltd

obtained 't' value and are not significant at required probability level, which indicate that the increase/decrease in Current Ratio between pre & post-merger is quite negligible.

Quick Ratio : Table 02: Quick Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	0.7033	0.3633	2.934	0.099
2.	J S W Steel Ltd.	0.4367	0.1500	4.162	0.053
3.	Jai Balaji Industries Ltd.	0.7000	0.4433	0.776	0.519
4.	K E C International Ltd.	0.7000	0.7067	-0.359	0.754
5.	Mahindra Forgings Ltd.	0.5633	0.5267	0.188	0.875
6.	Om Metals Infraprojects Ltd.	0.5233	1.2567	-4.619	0.044
7.	Ramsarup Industries Ltd.	0.5000	0.6000	5.000	0.126
8.	Sarda Energy & Minerals Ltd.	1.000	0.9867	0.056	0.961
9.	Steel Authority Of India Ltd.	0.9267	2.3300	-34.260	0.001
10.	Sujana Metal Products Ltd.	1.6633	0.9100	3.433	0.075

The Quick Ratio of acquired firms during pre & post-merger period is given in Table 02. It is noted that Quick Ratio of Om Metals Infraprojects Ltd increased from 0.5233 in pre period to 1.2567 in post period and the difference in quick ratio between the two period is significant at 5% level (t-value = 4.619, $p < 0.05$). Similarly, the quick ratio of Steel Authority of India Ltd (pre-merger 0.9267 and post-merger 2.3300, t-value = -34.260 & $p < 0.05$) between pre & post differs significantly and it increased in post-merger period. The significant increase in quick ratio has further confirmed that these firms have not incurred debt after the M&A. Also these firms are in better position & showing good financial health, which indicate that these firms are having ability to pay their debts as they fall due. On the other

part it is inferred that there is decrease in quick ratio of J S W Steel Ltd from 0.4367 in pre period to 0.1500 in post period (t-value = 4.162 & $p > 0.05$). The decrease in quick ratio might have been due to addition of quick ratio of acquiring firm.

For the other acquiring firms (Hindalco Industries Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Mahindra Forgings Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd), obtained 't' values are not significant at required probability level, which indicate that the increase/decrease in Quick Ratio between pre & post-merger is quite negligible. In other words, it can be said that the increase/decrease quick ratio is not related to M&As.

Net Working Capital (Rs. Crore):

Table 03: Net Working Capital

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	2613.6133	1118.4700	1.688	0.233
2.	J S W Steel Ltd.	-183.826	-4718.27	13.036	0.006
3.	Jai Balaji Industries Ltd.	16.2967	61.0600	-0.761	0.526
4.	K E C International Ltd.	131.8350	367.9200	-6.886	0.092
5.	Mahindra Forgings Ltd.	20.1800	-4.7333	3.227	0.084
6.	Om Metals Infraprojects Ltd.	6.1167	101.0067	-6.393	0.024
7.	Ramsarup Industries Ltd.	106.0250	171.4850	-0.890	0.537
8.	Sarda Energy & Minerals Ltd.	46.4233	166.1833	-3.837	0.062
9.	Steel Authority Of India Ltd.	212.3267	13014.81	-10.904	0.008
10.	Sujana Metal Products Ltd.	245.7967	285.5067	-0.696	0.558

In the case of J S W Steel Ltd (from -183.826 in pre & -4718.27 in post period, t-value = 13.036, $p < 0.05$) which indicate that there is significant decrease in net working capital in post-merger period might have been due to addition of liabilities of acquired firm. Another side, in case of Steel Authority of India Ltd (from 212.3267 in pre & 13014.81 in post period, t-value = -10.904, $p < 0.05$) and Om Metals Infraprojects Ltd (from 6.1167 in pre & 101.0067 in post period, t-value = -6.393, $p < 0.05$). The increase in net working capital in post-merger period of these two firms might have been due to addition of assets of acquired firms. For other acquiring firms under the study i.e. Hindalco Industries Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Mahindra Forgings Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd, they obtained 't' values are not

significant at the required probability level, indicating that the increase and decrease in the net working capital between pre and post-merger is quite negligible. In other words, it can be said that the increase / decrease in assets as well as liabilities is not related to mergers and acquisitions.

The Table 03 illustrates net working capital of above sample firms during pre and post-merger periods. The average amount of net working capital of 10 sample merged firms during post-merger period is higher than that of pre-merger period. From the analysis, it is understood that the average net working capital of all sample firms had increased after the takeover by the new management. This means that all sample firms did have sufficient current assets to meet current liabilities, which is a sign of turnaround.

[B] Leverage Parameters :

Debt-Equity Ratio:

Table 04: Debt-Equity Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	0.5733	0.2733	4.437	0.047
2.	J S W Steel Ltd.	1.1867	1.1633	0.323	0.777
3.	Jai Balaji Industries Ltd.	1.3967	3.1733	-1.841	0.207
4.	K E C International Ltd.	1.7600	1.0350	3.085	0.200
5.	Mahindra Forgings Ltd.	0.5800	0.2400	0.971	0.434
6.	Om Metals Infraprojects Ltd.	0.5733	0.1967	6.717	0.021
7.	Ramsarup Industries Ltd.	1.4700	4.2500	-3.195	0.159
8.	Sarda Energy & Minerals Ltd.	1.2567	0.9233	1.666	0.238
9.	Steel Authority Of India Ltd.	2.9833	0.2133	1.545	0.262
10.	Sujana Metal Products Ltd.	1.1200	1.6267	-0.830	0.494

The result shown in the above Table 04 of Debt-Equity Ratio for pre & post-merger period of sample merged firms indicating that, Hindalco Industries Ltd (0.5733 in pre period & 0.2733 in post-merger period, t-value = 4.437 & $p < 0.05$) & Om Metals Infraprojects Ltd (0.5733 in pre period & 0.1967 in post-merger period, t-value = 6.717 & $p < 0.05$) debt equity ratio is significantly decreased in post-merger period as to pre-merger period & the decrease is statistically significant. It reveals that majority of assets are financed through debts rather than equity in post-merger period. It means due to merger activity these firms are getting more debts. For Jai Balaji Industries Ltd (1.3967 in pre & 3.1733 in post period) and Ramsarup

Industries Ltd (01.3967 in pre & 3.1733 in post period) indicating that they are able to builds a good reputation to the creditors in the sense that they have the ability to settle such obligation after the merger. Whereas the result of 't' test for remaining firms (J S W Steel Ltd, K E C International Ltd, Mahindra Forgings Ltd, Sarda Energy & Minerals Ltd, Steel Authority of India Ltd and Sujana Metal Products Ltd) are insignificant at the required probability level, indicating that the increase/decrease in the debt equity ratio between pre & post-merger is quite negligible. In other words, it can be said that the increase/decrease in debts equity ratio is not related to mergers and acquisitions.

Total Debts & Equity to Total Assets:

Table 05: Total Debts & Equity to Total Assets

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	0.2731	0.1841	2.619	0.120
2.	J S W Steel Ltd.	1.3126	3.2420	-2.194	0.160
3.	Jai Balaji Industries Ltd.	0.5167	0.6400	-1.229	0.344
4.	K E C International Ltd.	0.2510	0.2448	2.818	0.217
5.	Mahindra Forgings Ltd.	0.3298	0.2553	0.425	0.712
6.	Om Metals Infraprojects Ltd.	0.2682	0.1522	2.911	0.101
7.	Ramsarup Industries Ltd.	0.5405	0.4609	1.787	0.216
8.	Sarda Energy & Minerals Ltd.	3.0255	2.8550	0.526	0.652
9.	Steel Authority Of India Ltd.	0.5474	0.2057	3.003	0.095
10.	Sujana Metal Products Ltd.	0.4256	0.4816	-0.563	0.629

Total debt and equity to total assets of above merged firms during pre and post-merger period is exhibited in Table 05. The 't' test clearly shows that, all above firms achieved growth in the ratio of total debt and equity to total assets during the post-merger period than during the pre-merger period, except in the case of J S W Steel Ltd (1.3126 in pre-merger & 3.2420 in post-merger period), Jai Balaji Industries Ltd (0.5167 in pre-merger & 0.6400 in post-merger period), and Sujana Metal Products Ltd (0.4256 in pre-merger & 0.4816 in post-merger period) the ratio of total debt and equity to total assets is lower during pre-merger period than that of post-

merger period. The growth of debt and equity to total assets of merged firms is statistically insignificant in above all cases.

Fundamentally, this ratio should be less than one but in case of J S W Steel Ltd & Sarda Energy & Minerals Ltd is more than one in one in pre as well in post-merger period. Hence it clearly shows that these two firms are not able to cover their total debt and equity by total assets. But in case of Sarda Energy & Minerals Ltd, the growth is shown in this ratio i.e. 3.0255 in pre to 2.8550 in post-merger period whereas in case of J S W Steel Ltd the ratio declined in post-merger period as compared to pre-merger period.

Total Debts & Equity to PBDITA:

Table 06: Total Debts & Equity to PBDITA:

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	1.6875	2.1311	-2.656	0.117
2.	J S W Steel Ltd.	1.6727	3.2489	-1.779	0.217
3.	Jai Balaji Industries Ltd.	3.5801	7.2171	-3.153	0.088
4.	K E C International Ltd.	1.9440	2.3667	-0.818	0.563
5.	Mahindra Forgings Ltd.	36.1151	0.3083	0.961	0.513
6.	Om Metals Infraprojects Ltd.	0.2496	1.8598	1.811	0.212
7.	Ramsarup Industries Ltd.	-3.8054	-164.8223	1.040	0.487
8.	Sarda Energy & Minerals Ltd.	3.1592	3.6006	-0.726	0.543
9.	Steel Authority of India Ltd.	3.6443	0.7915	1.399	0.297
10.	Sujana Metal Products Ltd.	3.3346	4.3736	-0.985	0.428

Table 06 explains total debts and equity to PBDITA of above merged firms during pre and post-merger periods & it has been presented in the above Table. From the Table, it is inferred that, total debts and equity to PBDITA of Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Om Metals Infraprojects Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd shows increase in total debts & equity to PBDITA after merger. It might have been due to addition of assets to the acquiring firms. On the other hand in case of Mahindra Forgings Ltd,

Ramsarup Industries Ltd and Steel Authority of India Ltd are showing there is decline in the ratio, which reveals that these firms incurred more debt after mergers and acquisitions. Whereas the result of 't' test shows that, in above all sample firms are insignificant at the required probability level, indicating that the increase/decrease in total debts equity to PBDITA between pre and post-merger is quite negligible. In other words, it can be said that the increase/decrease in PBDITD as well as increase / decrease in total borrowings is not related to mergers and acquisitions.

Interest Coverage Ratio (In Times) :

Table 07: Interest Coverage Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	18.2633	12.0800	1.618	0.247
2.	J S W Steel Ltd.	4.9633	3.1467	2.589	0.124
3.	Jai Balaji Industries Ltd.	4.9833	1.4567	3.293	0.081
4.	K E C International Ltd.	2.9250	3.5050	-0.630	0.642
5.	Mahindra Forgings Ltd.	-0.5000	-0.8550	0.183	0.884
6.	Om Metals Infraprojects Ltd.	8.2800	6.9467	0.518	0.656
7.	Ramsarup Industries Ltd.	2.9500	0.6550	4.371	0.143
8.	Sarda Energy & Minerals Ltd.	6.7967	5.4833	0.586	0.619
9.	Steel Authority of India Ltd.	6.9000	39.0100	-4.634	0.044
10.	Sujana Metal Products Ltd.	3.1267	1.6067	1.101	0.386

The Interest Coverage Ratio of sample merged firms during pre and post-merger period is exhibited in Table 07. From the analysis of Interest Coverage Ratio (average for three years), it is observed that variation in the growth of Interest Coverage Ratio during post-merger period is lower than that of pre-merger period in the case of the acquired firms (Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, Mahindra Forgings Ltd, Om Metals Infraprojects Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd). In the case of other merged firms i.e. K E C International Ltd & Steel

Authority of India Ltd variation during pre-merger period is higher than that of post-merger period. But only in case of Steel Authority of India Ltd, the 't' test (t-value = -4.634 & p < 0.05) achieved statistically significant growth of interest coverage ratio after merger. But other firms obtained insignificant 't' value after merger. Hence it is indicating that only Steel Authority of India Ltd is very healthy in pre & post-merger period, and is capable to pay its interest on outstanding debts very easily & also affords to take more debts after the merger than other merged firms.

[C] Profitability Parameters : Operating Profit Ratio:

Table 08: Operating Profit Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	18.5000	12.7967	7.744	0.016
2.	J S W Steel Ltd.	25.0667	13.7700	3.069	0.092
3.	Jai Balaji Industries Ltd.	8.7367	10.6367	-0.879	0.472
4.	K E C International Ltd.	9.2450	8.7500	0.261	0.837
5.	Mahindra Forgings Ltd.	-0.9633	-8.0133	1.050	0.403
6.	Om Metals Infraprojects Ltd.	20.5767	28.0967	-0.886	0.469
7.	Ramsarup Industries Ltd.	4.9950	3.3750	0.425	0.744
8.	Sarda Energy & Minerals Ltd.	12.0667	13.9700	-0.550	0.638
9.	Steel Authority of India Ltd.	16.6333	22.5000	-0.648	0.583
10.	Sujana Metal Products Ltd.	6.6200	5.3300	1.152	0.368

The result shown in the above Table 08 of Operating Profit Ratio for pre & post-merger period of sample merged firms indicate that average amount of operating profit after merger is higher for Jai Balaji Industries, Om Metals Infraprojects Ltd, Sarda Energy & Minerals

Ltd, & Steel Authority of India Ltd, which shows that in post-merger period the average amount is increased in operating profit after meeting all operating expenses, and lower in case of other firms (Hindalco Industries Ltd, J S W Steel Ltd, K E C International Ltd,

Mahindra Forgings Ltd, Ramsarup Industries Ltd & Sujana Metal Products Ltd), which shows that in post-merger period the average amount is decreased in operating profit after meeting all operating expenses. But only in case of Hindalco Industries Ltd (18.5000 in pre period & 12.7967 in post period, t-value =

Net Profit Ratio:

Table 09: Net Profit Ratio

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post-Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	12.6367	9.4000	3.533	0.072
2.	J S W Steel Ltd.	12.5733	6.9733	2.533	0.127
3.	Jai Balaji Industries Ltd.	4.6800	3.0733	0.782	0.516
4.	K E C International Ltd.	3.9050	3.9750	-0.044	0.972
5.	Mahindra Forgings Ltd.	-3.3400	-14.9933	1.404	0.295
6.	Om Metals Infraprojects Ltd.	15.5133	17.5133	-0.293	0.797
7.	Ramsarup Industries Ltd.	1.7667	0.6700	0.477	0.680
8.	Sarda Energy & Minerals Ltd.	13.8600	17.7933	-2.288	0.149
9.	Steel Authority of India Ltd.	9.7667	14.3600	-0.623	0.597
10.	Sujana Metal Products Ltd.	3.4400	1.3500	1.050	0.404

7.744, $p < 0.05$) the variation is higher during pre-merger period & post-merger period, is statistically significant & in other the variation as well as growth of operating profit in post-merger period as compared to pre-merger period is statistically insignificant.

The average Net Profit Ratio of sample merged firms during pre and post-merger period is displayed in Table 09. The analysis of the above Table indicates that the average Net Profit Ratio of sample merged firms after merger is higher for Om Metals Infraprojects Ltd, Sarda Energy & Minerals Ltd and Steel Authority of India Ltd & in other merged firms i.e. Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Mahindra Forgings Ltd,

Ramsarup Industries Ltd & Sujana Metal Products Ltd it has decreased. Also, all 10 cases of merged firms obtained 't' values are not significant at the required probability level & increase / decrease in ratio is not statistically significant. It seems that, the decrease / increase in Net Profit Ratio might have been due to increase / decrease in operating expenses in post-merger period as compared to post merger period in all 10 cases of merged firms

Operating Profit Margin:

Table 10: Operating Profit Margin

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	6.8133	6.2767	0.270	0.812
2.	J S W Steel Ltd.	21.2400	9.8300	1.981	0.186
3.	Jai Balaji Industries Ltd.	2.8300	2.0433	0.643	0.586
4.	K E C International Ltd.	10.2150	8.5250	0.579	0.666
5.	Mahindra Forgings Ltd.	-4.6867	-3.0867	-0.269	0.813
6.	Om Metals Infraprojects Ltd.	12.1500	16.7933	-1.113	0.382
7.	Ramsarup Industries Ltd.	2.0900	3.0600	-0.415	0.750
8.	Sarda Energy & Minerals Ltd.	2.3500	5.0233	-0.743	0.535
9.	Steel Authority Of India Ltd.	9.9800	4.4600	0.681	0.566
10.	Sujana Metal Products Ltd.	7.0900	2.8800	1.238	0.341

From the analysis of above Table 10, it is noted that the Om Metals Infraprojects Ltd (from 12.1500 in pre period to 16.7933 in post-merger period), Ramsarup Industries Ltd (from 2.0900 in pre period to 3.0600 in post-merger period), and Sarda Energy & Minerals Ltd (from 2.3500 in pre period to 5.0233 in post-merger period) of these firms mean of Operating Profit Margin is increasing in post-merger period. It means that these firms are able to keep costs under control

and also sales are increasing faster than costs, and is in a relatively liquid position after following the merger. Other sample firms (Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Mahindra Forgings Ltd, Steel Authority of India Ltd and Sujana Metal Products Ltd) are indicating that there is decline in mean of Operating Profit margin after following the merger.

Net Profit Margin:

Table 11: Net Profit Margin

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	12.9533	9.8667	3.420	0.076
2.	J S W Steel Ltd.	12.9533	7.1567	2.796	0.108
3.	Jai Balaji Industries Ltd.	4.7200	3.1767	0.729	0.542
4.	K E C International Ltd.	3.9150	3.9950	-0.054	0.966
5.	Mahindra Forgings Ltd.	-3.4167	-15.1267	1.401	0.296
6.	Om Metals Infraprojects Ltd.	16.7600	19.8567	-0.359	0.754
7.	Ramsarup Industries Ltd.	2.6733	-9.8500	1.304	0.322
8.	Sarda Energy & Minerals Ltd.	7.5833	9.4900	-0.538	0.645
9.	Steel Authority Of India Ltd.	10.0400	14.9700	-0.652	0.581
10.	Sujana Metal Products Ltd.	3.5167	1.3600	1.059	0.401

The Net Profit Margin of acquired firms during pre & post-merger period is given in above Table 11. In case of K E C International Ltd (3.9150 in pre & 3.9950 in post period), Om Metals Infraprojects Ltd (16.7600 in pre & 19.8567 in post period), Sarda Energy & Minerals Ltd (7.5833 in pre & 9.4900 in post period), Steel Authority of India Ltd (10.0400 in pre & 14.9700 in post period) are showing improvement of mean of Net Profit Margin ratio indicating that these firms are more efficient at converting sales into actual profit but the

Networth (Rs. Crore):

Table 12: Net worth (Rs. Crore)

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	9896.9633	27123.13	-26.939	0.001
2.	J S W Steel Ltd.	4366.6633	11453.83	-3.520	0.072
3.	Jai Balaji Industries Ltd.	46.9133	536.6167	-2.809	0.107
4.	K E C International Ltd.	229.5950	816.2950	-92.832	0.007
5.	Mahindra Forgings Ltd.	98.5600	748.9200	-32.657	0.001
6.	Om Metals Infraprojects Ltd.	32.9867	351.4567	-35.317	0.001
7.	Ramsarup Industries Ltd.	121.9300	463.8700	-3.131	0.197
8.	Sarda Energy & Minerals Ltd.	112.9767	590.5700	-37.211	0.001
9.	Steel Authority of India Ltd.	5956.5200	22841.65	-16.082	0.004
10.	Sujana Metal Products Ltd.	178.1867	479.2433	-5.140	0.036

The Net Worth of sample merged companies during pre and post-merger period is furnished in Table 12. It is noted that the average amount of Net Worth of all 10 sample firms after merger is higher than that of pre-merger period. Among all sample firms have registered positive Net worth after merger. In other words, most of the firms improved their net worth after merger. The variation in amount of Net worth is higher after

increase is not significant at required probability level. On the other hand the remaining all sample merged firms (Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, Mahindra Forgings Ltd, Ramsarup Industries Ltd and Sujana Metal Products Ltd) it is noted that the firms mean of net profit margin are declined in post-merger period, the decline is not significant at required probability level which reveals that increase / decrease in net margin ratio between pre & post-merger period is quite negligible.

the merger & subsequently it is found to be statistically significant in case of Hindalco Industries Ltd (9896.9633 in pre & 27123.13 in post period, t-value = -26.939 & p < 0.05), K E C International Ltd (229.5950 in pre & 816.2950 in post period, t-value = -92.832 & p < 0.05), Mahindra Forgings Ltd (98.5600 in pre & 748.9200 in post period, t-value = -32.657 & p < 0.05), Om Metals

Infraprojects Ltd (32.9867 in pre & 351.4567 in post period, t-value = -35.317 & $p < 0.05$), Sarda Energy & Minerals Ltd (112.9767 in pre & 590.5700 in post period, t-value = -37.211 & $p < 0.05$), Steel Authority of India Ltd

(5956.5200 in pre & 22841.65 in post period, t-value = -16.082 & $p < 0.05$), Sujana Metal Products Ltd (178.1867 in pre & 479.2433 in post period, t-value = -5.140 & $p < 0.05$).

Return on Net worth:

Table 13: Return on Net Worth

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	20.2700	8.5567	4.836	0.040
2.	J S W Steel Ltd.	36.1733	15.0000	1.650	0.241
3.	Jai Balaji Industries Ltd.	33.4267	1.7500	1.179	0.360
4.	*K E C International Ltd.				
5.	Mahindra Forgings Ltd.	-14.1250	-6.6300	-3.511	0.177
6.	Om Metals Infraprojects Ltd.	30.9733	7.1133	1.609	0.249
7.	Ramsarup Industries Ltd.	24.4000	-5.3650	1.946	.302
8.	Sarda Energy & Minerals Ltd.	27.8700	15.5200	2.302	0.148
9.	Steel Authority of India Ltd.	51.3833	34.5300	0.448	0.698
10.	Sujana Metal Products Ltd.	16.2367	8.1567	0.877	0.473

* K E C International Ltd data is insufficient for analysis of this parameter.

The average Return Net worth of sample merged companies during pre and post-merger period is given in Table 13. It is noted that only in case of Hindalco Industries Ltd (20.2700 in pre & 8.5567 in post period, t-value = 4.836 & $p < 0.05$), variation in average return on net worth is statistically significant. But in all sample of

merged firms' variation in average returns on net worth is lower in post-merger period as compared to pre merge period. Hence we can conclude that due to merger & acquisition the amount of net worth is significantly increased but then merged firms were not able to get required returns on net worth after the merger.

Returns on Investment:

Table 14: Returns on Investment

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	10.4667	5.4633	4.962	0.038
2.	J S W Steel Ltd.	9.8667	4.7400	2.417	0.137
3.	Jai Balaji Industries Ltd.	8.7533	2.7767	2.242	0.154
4.	*K E C International Ltd.				
5.	Mahindra Forgings Ltd.	-5.9050	-4.8400	-0.359	0.780
6.	Om Metals Infraprojects Ltd.	10.8900	4.9067	1.592	0.252
7.	Ramsarup Industries Ltd.	5.4950	-0.8600	4.690	0.134
8.	Sarda Energy & Minerals Ltd.	10.9700	7.2033	1.527	0.266
9.	Steel Authority of India Ltd.	11.9033	16.9933	-0.518	0.656
10.	Sujana Metal Products Ltd.	5.8933	2.6333	0.882	0.471

* K E C International Ltd data is insufficient for analysis of this parameter.

Table 14 portrays Returns on Investment of sample merged firms during pre and post-merger periods. It has been observed from the analysis that only Steel Authority of India Ltd earned higher Returns on Investment during post-merger period than during pre-merger period. But other sample firms did not earn higher profit during post-merger period. The analysis indicates that majority of sample companies had lesser and not better ROI after merger. Also in case of J S W Steel Ltd, Jai Balaji Industries Ltd,

Mahindra Forgings Ltd, Om Metals Infraprojects Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, Steel Authority of India Ltd and Sujana Metal Products Ltd, greater variation is recorded during pre-merger period. The variation, according to 't' test, is statistically significant in the case of only Hindalco Industries Ltd (10.4667 in pre period & 5.4633 in post period, t-value = 4.962 & p < 0.05) when compared to other sample firms.

Returns on Capital Employed

Table 15: Returns on Capital Employed

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	13.4900	6.4933	6.136	0.026
2.	J S W Steel Ltd.	13.5300	6.8700	2.371	0.141
3.	Jai Balaji Industries Ltd.	14.4233	3.3467	3.067	0.092
4.	* K E C International Ltd.				
5.	Mahindra Forgings Ltd.	-7.4850	-5.2500	-0.803	0.569
6.	Om Metals Infraprojects Ltd.	19.6500	5.9233	1.539	0.264
7.	Ramsarup Industries Ltd.	8.6050	-1.2050	6.170	0.102
8.	Sarda Energy & Minerals Ltd.	13.1733	8.0800	1.939	0.192
9.	Steel Authority Of India Ltd.	20.8733	28.1233	-0.402	0.727
10.	Sujana Metal Products Ltd.	3.9300	3.3767	0.950	0.442

* K E C International Ltd data is insufficient for analysis of this parameter.

The Return on Capital Employed of sample merged firms during pre and post-merger period is exhibited in Table 15. From the analysis of above table it is observed that, average return on capital employed of sample firms has declined in post-merger period as compared to pre-merger period. In case of Hindalco Industries Ltd (from 13.4900 in pre period to 6.4933 in post period, t-value = 6.136, & p < 0.05) is showing decrease in return on capital employed after the merger & the decline is statistically significant. It seems that this firm after the merger has shown

inefficiency in using its funds & also reveals that management has shown inefficiency in using the investment and creditors into the business. In similar cases (J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Mahindra Forgings Ltd, Om Metals Infraprojects Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, Steel Authority of India Ltd and Sujana Metal Products Ltd) firms obtained 't' values are not significant at the required probability level & increase / decrease in ratio is not statistically significant.

[D] Other Parameters

Capital Formation (Rs. Crore)

Table 16: Capital Formation (Rs. Crore)

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	10059.32	13616.64	-9.123	0.012
2.	J S W Steel Ltd.	7820.82	19943.44	-5.436	0.032
3.	Jai Balaji Industries Ltd.	108.63	1499.93	-12.492	0.006
4.	K E C International Ltd.	553.06	919.70	-35.910	0.018
5.	Mahindra Forgings Ltd.	160.53	234.58	-9.661	0.066
6.	Om Metals Infraprojects Ltd.	42.92	187.11	-19.248	0.003
7.	Ramsarup Industries Ltd.	214.53	802.82	-2.847	0.215
8.	Sarda Energy & Minerals Ltd.	164.20	658.25	-4.969	0.038
9.	Steel Authority of India Ltd.	16881.33	19689.33	-1.804	0.213
10.	Sujana Metal Products Ltd.	211.00	565.00	-12.305	0.007

Table 16 gives capital formation of merged firms during pre and post-merger period. The remarkable feature is that the average amount of capital formation by merged firms in all cases is higher during post-merger period as compared to their pre-merger period. But only in case of Mahindra Forgings Ltd, Ramsarup Industries Ltd, and Steel Authority of India Ltd, the

increased in capital formation is not significant at required probability level. The comparison of capital formation of Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Om Metals Infraprojects Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd during pre and post-merger period reveals the fact that they obtain 't' vaule at

required probability level i.e. $p < 0.05$ which shows significant increase in their capital formation after merger. This is a good sign

because sample companies after merger improved their capacity.

Increased Investment In Fixed Assets (Rs. Crore)

Table 17: Increased Investment in Fixed Assets (Rs. Crore)

Sr.	Name of the Companies	Pre- Mean (3 years before)	Post- Mean (3 years after)	't' value	'p' value (0.05)
1.	Hindalco Industries Ltd.	10591.60	37919.92	-5.400	0.033
2.	J S W Steel Ltd.	185.20	4342.46	-2.397	0.139
3.	Jai Balaji Industries Ltd.	0.09	61.57	-5.966	0.027
4.	K E C International Ltd.	41.12	6.62	12.234	0.052
5.	Mahindra Forgings Ltd.	8.34	1549.04	-52.440	0.012
6.	Om Metals Infraprojects Ltd.	0.94	62.69	-4.896	0.039
7.	*Ramsarup Industries Ltd.				
8.	Sarda Energy & Minerals Ltd.	16.96	124.87	-3.033	0.203
9.	Steel Authority of India Ltd.	973.88	589.06	2.271	0.151
10.	Sujana Metal Products Ltd.	21.45	7.36	26.911	0.001

*Ramsarup Industries Ltd data is insufficient for analysis of this parameter.

The increased investment in fixed assets by merged firms is provided in above Table 17. From the analysis, it is inferred that, the average amount of increased investment in fixed assets by merged firms is greater during post-merger period than that of pre-merger period. But in case of K E C International Ltd (41.12 in pre period & 6.62 in post period) & Sujana Metal Products Ltd (21.45 in pre period & 7.36 in post period, t-value = 26.911 & $p < 0.05$) are showing significant decline in the average amount of increased investment in fixed assets. The Hindalco Industries Ltd (t-value = -5.4000 & $p < 0.05$), Jai Balaji Industries Ltd (t-value = -5.966

& $p < 0.05$), Mahindra Forgings Ltd (t-value = -52.440 & $p < 0.05$), and Om Metals Infraprojects Ltd (t-value = -4.896 & $p < 0.05$) are obtaining t-value at required probability level & increase in post-merger period is significant. It is a clear proof that, those firms have undertaken expansion or modernization through increasing their investment in fixed assets and further their attempt after merger turn around positively. But in case of J S W Steel Ltd, K E C International Ltd, Sarda Energy & Minerals Ltd, & Steel Authority Of India Ltd have not obtained t-value at required probability level.

Testing Of Hypotheses Of Metals & Metal Products Sample Acquire Firm

H1: The merged manufacturing companies did not improve liquidity, solvency and improve profitability after merger.

[a] Liquidity Parameters: Current Ratio (Table No. 01), Quick Ratio (Table No. 02), and Net Working Capital (Table No. 03).

The following Table No.18 shows the increase or decrease in post-merger period.

Table.18: Increased or Decreased in Post-merger period in Liquidity Parameters

Sr.	Name of the Companies	CR	QR	NWC
1.	Hindalco Industries Ltd.	↓	↓	↓
2.	J S W Steel Ltd.	↓	↓	↓
3.	Jai Balaji Industries Ltd.	↓	↓	↑
4.	K E C International Ltd.	↑	↑	↑
5.	Mahindra Forgings Ltd.	↑	↓	↓
6.	Om Metals Infraprojects Ltd.	↑	↑	↑
7.	Ramsarup Industries Ltd.	↓	↑	↑
8.	Sarda Energy & Minerals Ltd.	↓	↓	↑
9.	Steel Authority of India Ltd.	↓	↑	↑
10.	Sujana Metal Products Ltd.	↓	↓	↑

It is evidenced from the analysis that the null hypothesis– “The merged manufacturing companies did not improve liquidity after merger” is accepted because of the 07 out of 10 sample firms (Hindalco Industries Ltd, J S W Steel Ltd, K E C International Ltd, Mahindra Forgings Ltd, Ramsarup Industries Ltd, Sarda Energy & Minerals Ltd, and Sujana Metal Products Ltd) did not achieve better liquidity in post-merger period as compared to pre-merger period in all respects. On the other hand, remaining three sample firms i.e. Jai Balaji Industries Ltd, Om Metals Infraprojects Ltd, and Steel Authority of India Ltd improve better liquidity in post-merger period as compared to pre-merger period in all respects.

[b] Solvency (Leverage) Parameters: Total Debt and Equity to Total Assets (Table No. 05), Total Debts and Equity of PBITDA (Table No. 06) and Interest Coverage Ratio (Table No. 07).

It is evidenced from the analysis that the null hypothesis – “The merged companies did not improve better solvency after merger” is accepted.

Only in the case of K E C International Ltd. & Steel Authority of India Ltd achieved better solvency in all respects in post-merger period. But all other sample firms did not improve better solvency in post-merger period.

The following Table No.19 shows the increase or decrease in post-merger period.

Table 19: Increased or Decreased in Post-merger period in Solvency Parameters

Sr.	Name of the Companies	TDETA	TDEPBITDA	ICR
1.	Hindalco Industries Ltd.	↑	↑	↓
2.	J S W Steel Ltd.	↓	↑	↓
3.	Jai Balaji Industries Ltd.	↓	↑	↓
4.	K E C International Ltd.	↑	↑	↑
5.	Mahindra Forgings Ltd.	↑	↓	↓
6.	Om Metals Infraprojects Ltd.	↑	↑	↓
7.	Ramsarup Industries Ltd.	↑	↓	↓
8.	Sarda Energy & Minerals Ltd.	↑	↑	↓
9.	Steel Authority Of India Ltd.	↑	↓	↑
10.	Sujana Metal Products Ltd.	↓	↑	↓

[c]Profitability Parameters: Operating profit (Table 08), Operating Profit Margin (Table 10), Net profit (Table. 09), Net Profit Margin (Table 11), Net worth (Table 12), Return on

Net worth (Table 13), ROI (Table 014), Return on Capital Employed (Table 15) and Debt-equity Ratio (Table 04).

The following Table 20 shows the increase or decrease in post-merger period.

Sr.	Name of the Companies	OPR	OPM	NPR	NPM	NW	RONW	ROI	ROCE	DER
1.	Hindalco Industries Ltd.	↓	↓	↓	↓	↑	↓	↓	↓	↓
2.	J S W Steel Ltd.	↓	↓	↓	↓	↑	↓	↓	↓	↓
3.	Jai Balaji Industries Ltd.	↑	↓	↓	↓	↑	↓	↓	↓	↑
4.	K E C International Ltd.	↓	↓	↑	↑	↑	-	-	-	↓
5.	Mahindra Forgings Ltd.	↓	↑	↓	↓	↑	↑	↑	↑	↓
6.	Om Metals Infraprojects Ltd.	↑	↑	↑	↑	↑	↓	↓	↓	↓
7.	Ramsarup Industries Ltd.	↓	↑	↓	↓	↑	↓	↓	↓	↑
8.	Sarda Energy & Minerals Ltd.	↑	↑	↑	↑	↑	↓	↓	↓	↓
9.	Steel Authority Of India Ltd.	↑	↓	↑	↑	↑	↓	↑	↑	↓
10.	Sujana Metal Products Ltd.	↓	↓	↓	↓	↑	↓	↓	↓	↑

It is evidenced from the analysis that the null hypothesis – “The merged manufacturing companies did not improve profitability after merger” is accepted (06 out of 10 sample firms) by Hindalco Industries Ltd, J S W Steel Ltd, Jai Balaji Industries Ltd, K E C International Ltd, Ramsarup Industries Ltd, and Sujana Metal Products Ltd due to they are failed to achieve better and improved profitability after merger. Whereas, the firms like Mahindra Forgings Ltd, Om Metals Infraprojects Ltd, Sarda Energy & Minerals Ltd, and Steel Authority of India Ltd had achieved better and improved profitability after merger.

H2: The merged manufacturing companies did not expand their business activities after merger.
Parameters: Capital Formation (Table 16) & Increased Investment in Fixed Asset (Table 17).

From the above analysis of ratio of capital formation and increased investment in fixed assets, it is evident that, this hypothesis, ‘The merged companies did not expand their business activities after merger’ is rejected. Because the average amount of capital formation as well as the average amount of increased investment in fixed assets by merged firms is greater during post-merger period than that of pre-merger period. It is a clear proof that, there is good sign of improvement in their capacity; for this reason those firms have undertaken expansion or modernization through increasing their investment in fixed assets, further their attempt after merger turn around positively.

The following Table 21 shows the increase or decrease in post-merger period.

Table 21: Increased or Decreased in Post-merger period In CF & IIFA

Sr.	Name of the Companies	CF	IIFA
1.	Hindalco Industries Ltd.	↑	↑
2.	J S W Steel Ltd.	↑	↑
3.	Jai Balaji Industries Ltd.	↑	↑
4.	K E C International Ltd.	↑	↓
5.	Mahindra Forgings Ltd.	↑	↑
6.	Om Metals Infraprojects Ltd.	↑	↑
7.	Ramsarup Industries Ltd.	↑	-
8.	Sarda Energy & Minerals Ltd.	↑	↑
9.	Steel Authority Of India Ltd.	↑	↓
10.	Sujana Metal Products Ltd.	↑	↓

Findings:

Liquidity Position

- ✓ From the analysis of Current Ratio of selected sample acquire firms, 07 out of 10 sample firms Current Ratio has declined in post-merger era. The average mean of all these sample firms' are declined as compared to pre-merger period i.e. 1.4422 to 1.3591. Ideally it will be greater than 1 & in this case it was more than 1 in pre & post-merger period, which indicates that there are sufficient assets available to pay liabilities after the merger, still it decreased in post-merger period. Hence it confirms that after the merger firms have incurred more debts. Also this ratio will be reflected in the Working Capital position of the firms, are indicating the ability of firms to pay their short-term creditors from the realization of its current assets and without having to resort to selling their fixed assets to do so.
- ✓ Normally figure of Quick Ratio is always lower as compared to Current Ratio. It is noted that, 06 out of 10 sample firms ratio was decreased & the average mean of Quick Ratio marginally increased in the post-merger compared to pre-merger period i.e. 0.7846 to 0.8074. Ideally this ratio for manufacturing Industry is considered as better when it is in between 0.7 to 1.1. Hence in this case the ratio is in better position & it shows the good financial health of the sample firms, which

indicate that the merged firms are having ability to pay their debts as they fall due.

- ✓ From the analysis, it is noted that 09 out of 10 sample firms Net Working Capital was highly increased in after the takeover by the new management in post-merger period. This means that all sample firms did have sufficient current assets to meet current liabilities, which is a sign of turnaround. Therefore, from the analysis it is observed that, the liquidity position of the Metals & metal products firms is declined after the merger but it can be said that, it is in better position in post-merger period when it is compared to standard norms.

Solvency Position:

- ✓ It is observed from the analysis of Total Debt and Equity to Total Assets, 08 out of 10 sample firms' ratio is higher after the merger as of pre period but on the other side metals & metal products sector average mean of all sample acquire firms is lower i.e. 0.7406 in pre to 0.8712 in post-merger which normally happens after the merger. Fundamentally this ratio should be less than one which is there. This means Total Debt both short term & long term and Total equity capital is equal to Total Assets. Which shows proportion of assets is financed by Total Debts as well as Total Equity in post-merger period by this sectors sample firms.

Total Debts and Equity to PBITDA is the combination of Debt & Equity and Profit before Depreciation, Interests, Taxes & Amortization. After examining the result of this ratio, 07 out of 10 sample firms average ratio is found to be increased after the merger whereas average mean of metals & metal products sector is declined i.e. 4.1268 in pre period to -5.5250 in post-merger period. It indicates there was increment shown in total debt & equity but the PBDITA was not increased rather it was significantly declined in post merger period.

- ✓ In case of Interest Coverage Ratio, it is found that 02 out of 10 firm's average ratio is highly increased in post-merger period. Also in case of overall sector of metals & metal products, average mean is increased from 5.8147 in pre to 7.2988 in post-merger period. Identically this ratio should be at least 1.5 or more & it is observed that, 07 out of 10 firms are able to maintain the higher ratio after the merger as compared to standard. Therefore it suggests that sample firms are capable to pay its interest on outstanding debts very easily & also afford to take more debts after the merger.

Thus, it has been concluding that, these firms are not achieved better solvency after the merger. In simple words their solvency condition is declined as compared to pre-merger period but it is in good/average when compared to standard norms.

Profitability Position:

- ✓ Operating Profit Ratio, 04 out of 10 sample firms' ratio is increased in post-

merger period and same with Operating Profit Margin. Whereas it is observed that the mean of operating profit of metals & metal products all sample firm is 10.9845% in post-merger period, indicating that average operating margin of Rs.10.98 was earned on sale of Rs.100 in post-merger period. This amount of Rs.10.98 is available for meeting non-operating expenses. In the other words operating profit ratio 10.9845% means that 10.9845% of net sales remains as operating profit after meeting all operating expenses.

- ✓ Net Profit Ratio & Net Profit Margin, 04 out of 10 sample firm's average amount is increased in post-merger period as compared to pre period. Hence, from the result it found that the mean of net profit of metals & metal products all sample firms is decreased in post-merger period as like Operating Profit Ratio. It confirms that increased in operating expenses in post-merger period i.e. in pre-merger period it was 4.54 [OPR 11.89 (-) NPR 7.35] & in post-merger period it is 5 [OPR 10.98 (-) NPR 5.98]. Finally it may be conclude that, due merger & acquisition activity the operating expenses has increased & it reflects on decreased net profits of the sample firms in post-merger period.

- ✓ From the result of Debt-Equity Ratio, 07 out of 10 sample firms ratio is decreased after the merger as well as in case of average mean of metals & metal products sector is also marginally decreased from 1.231 in pre to 1.170 in post-merger period. Thus it is noted that majority of assets are financed through equity in post-merger period.
- ✓ In case of Net worth & Return on Net Worth, it is observed that all sample firms net worth is significantly increased whereas none of them are able to increase return of net worth in post-merger period as of pre period. Hence it is said that the increased in net worth will help to increase in credit worthiness of them in post period. Further it is concluded that due to merger & acquisition the amount of net worth is significantly increased but then merged firms were not able to get required returns on net worth after the merger.
- ✓ Return on Investment, 07 out of 09 sample firms' ratio is declined in post-merger period. In case of the average mean return of investment of metals & metal products all sample firms is decreased (7.3136 in pre & 4.4020 in post-merger period). Therefore, it is said that the leverages the investment is decreased in post-merger period. Also the operating as well net profit is decline in post-merger period is one of the reasons for the declined in this ratio.

- ✓ Return on Capital Employed, 07 out of 09 firms is decreased in post merger period. Also same with the average mean return of capital employed of metals & metal products all sample firms is decreased (11.376 in pre & 6.699 in post-merger period). It seems that these firms after the merger showed inefficiency in using their funds & also reveals that management has shown inefficiency in using the investment and creditors into the business.

It is concluded that the performance of profitability parameters are unsatisfied in post-merger period as of pre period. Hence it can be noted that since merger were found to negatively impact on the performance in terms of profitability as well as in returns.

Business Expansion Activities:

All sample firms average mean of Capital Formation is increased during the post-merger period. It reveals that, a good sign because sample companies after merger improved their capacity. Whereas in case of Increased Investment in Fixed Assets, 07 out of 09 sample firms average amount of increased investment in fixed assets by merged firms is greater during post-merger period than that of pre-merger period.

It is a clear proof that, metals & metal products sectors firms have undertaken expansion or modernization through increasing their attempt investment in fixed assets and further their after merger turn around positively.

Conclusion:

This research is carried out with statistical analyses of financial data pertaining to 25 acquire firms which including 10 acquire firms from Metals & Metal Products firms and these mergers took place in the period 2005 to 2010. While selecting firms the researcher has used census survey method for determining & selection of firms for this study. The financial data are collected from CMIE Prowees Database Software for selected firms. The data is separated as per the various ratios as per requirement i.e. considering merger year as a base year which is denoted as 0, Pre merger year taken as -1,-2 &-3 & Post 1, 2, & 3. For analysis & evaluation of the collected data, tools like Ratio Analysis, Mean, Standard Deviation & paired sample 't'-test are used.

The result of this study found that the liquidity position of Metals & Metal Products sector and

their respective selected firms are in better position in post-merger era as compared to pre-merger. It clearly proved the Metals & Metal Products sector and selected firms have not achieved solvency in post-merger period. Also it is noted that, mergers were found to negatively impact on the performance in terms of profitability as well as in returns in case of Metals & Metal Products sector and selected firms. The selected merged firms from Metals & Metal Products sector have undertaken expansion or modernization of their business activities after the merger. It is concluded that, for the acquiring firms in the population showed that there is a differential impact of mergers on selected parameters for the study, for Metals & metal products companies in India.

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An Empirical Analysis of Sustainable Rural Agro Tourism Marketing Practices in Kolhapur District

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Abstract:

This paper aims to study agro tourism development as an opportunity to farmers in Kolhapur district. The purpose of this article is to study types of agro tourism activities that can be offered in different places in Kolhapur district to help marginalized farmers to get rid of poverty. To explore the benefits of rich culture, tradition, economic, non-economic, Sociocultural and environmental aspects. Agro tourism is concept where farmers can practice activities while working on their farm with the purpose to attract tourists.

Kolhapur is nationally and internationally well known for its ancient temples, religious importance and sacredness. It is also known as Dakshin Kashi (South Kashi) and it is one of the three important holy paces (Shaktipeeth). Variety of agriculture techniques like organic farming, green house, are used in Kolhapur District. Along with such techniques and experiments, innovative techniques, production processes, processing, storage techniques can be used as a potential for developing agro tourism. Sugarcane farming and processing techniques, sowing methods, fertiliser management, bamboo farming, water shade management, cropping patterns, horticulture, etc can attract tourists. Many places can be identified with the help of agriculture department for agro tourism. It is possible to connect agro tourism with village life and food, nature tourism, folk art.

Keywords : Agro Tourism, Organic Farming, Sugarcane Farming, Water Shade Management, Cropping Patterns.

Introduction:

Agro tourism is important activity for rural communities as well as for urban areas. It can provide several advantages: income, employment, use accommodation, activities, natural resource conservation, recreation and education. One of the main problems for many countries is the low level of farm income to obtain

higher standards of living for rural communities especially through increased income for people who work in agriculture. In many countries, agricultural farm income is almost equal to the average.

Sustainable agro tourism is a process having economic, social, cultural and environmental – ecological dimensions. In most of the developing countries rural population is gradually diminishing, notwithstanding the agricultural lands that are losing productivity are increasing. Resulting in rural backwardness. It also causes problems such as deforestation, erosion and productivity loss with the misuse of resources.

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On the other hand, damaging the natural resources emerge problems such as migration, poverty and hunger. These problems primarily affect rural people. Most affected ones by these problems are women and children. Overcoming these problems would be possible by sustainable planning and management of rural tourism areas in accordance with their resource potential.

Agro tourism is more than just a tourist leisure product as it includes many services. It is a way of understanding the rural community and their culture. It attracts tourist families especially from urban area those intend to respect rural customs and seek information about architectural and cultural heritage, food, landscapes and environment. Get medical treatment, enjoy with family together, entertain, and feel relaxed from the busy urban life. This certainly brings benefit to the farmers in the rural area where the land holding is also very marginal. The traditional farming if done wisely will generate profits i.e. "off farm" and "on farm" activities if managed effectively and planned properly agro tourism can be used as strategy for implementation of sustainable rural development for future ready smart villages especially in Kolhapur district hence the study entitled.

Literature Review:

After having extant literature review on rural agro tourism it can be concluded that agro tourism contribute to agriculture development and at the same time provide opportunity to tourist from across the world to study farming activities.

(Wilkinson, and Pratiwi 1995; Stevens, 1993; Hatton, 1999; Smith, 1994; Langoya and Long 1997; Saul 1999) observed that increased employment opportunities and social

independence for women is possible by implementing rural agro tourism practices in well planned manner. (Borman, 1999; Bartsch 2000) found that Income to individual members and households within the community from accommodation, selling of traditional crafts etc. can be generated due to rural tourism there is great Job opportunities for village members.

(Smith 1994; Echtner 1999; Stevens, 1993; Robinson, 1994; Langoya and Long 1997) opined that increased Opportunities for rural youth to remain in the village due to tourism generated income. And (Michaud, Maranda et al. 1994; Borman 1999) further observed that there is increased interest by youth in traditional village activities.

Eight studies (Alexander 1999) (Campbell 1999) (Michaud 1997) (Robinson 1994) (Stevens 1993) (Long and Wall 1996) and (Hatton 1999a) highlight that tourism in these communities has been incorporated into the villagers economic base without disrupting the predominant form of economic livelihood of the community. In these cases tourism has provided an additional form of income for the villages without destroying or completely replacing the original economic base of the community.

(Hatton 1999) like (Michaud 1997) paints a fascinating picture of how tourism has been incorporated into the economic base of the Song up Folk village on Cheju Island, Korea. In this case the subsistence base of the community has not been threatened as women control and organizes tourism in the village thus allowing men to continue their traditional roles as agricultural producers

(Hitchcock 1997, Christ 1998) (Edington and

Edington 1997; Alexander 1999, Matzke) observed that there is Conservation of landscapes and wildlife and Increasing villagers understanding of the benefits of conserving the landscape and wildlife surrounding their communities and Infrastructure improvements linking village communities to more developed areas.

Research Methodology:

Present research put to test two null hypotheses i.e. there is no relation between Age of respondents and choice of tourism activities and there is no relation between gender of respondents and choice of tourism activities

Study has undertaken with an objectives, to study the factors responsible for sustainable rural tourism in Kolhapur district, to know the customer expectations from rural tourism, to know the problems involved in rural tourism, to analyze various tourist activities conducted by tourism center and to provide suitable suggestions if any to improve the sustainable rural tourism

Researcher has conducted a survey of 120 tourists in Kolhapur district in Kaneri village Sidhagiri gram Jeevan museum where agro tourism practices are conducted to capture the tourist

Data Presentation and Analysis:

Table: 1: Gender wise classification

Sr.	Particulars	No. of Respondents	Percentage
1	Male	79	66
2	Female	41	34
	Total	120	100

Source: (Field data)

experiences. After pilot survey, in the selected unit researcher has collected responses. In addition to that in the proposed research work sustainability of agro tourism for smart village is tested. The questionnaire was administered by personally visiting to the concerned Sidhagiri gram Jeevan tourist center in the village Kaneri in Kolhapur district. While preparing the questionnaire care was taken to develop likerts five point scale for certain questions and with the use of appropriate hypothesis testing method has interpreted the results and outcomes for managerial implications.

The researcher has selected overall 120 customers of selected unit in Kolhapur district as a sample size for its study by convenient quota sampling technique.

The Region selected in this research is the area of Kolhapur district comprises of rich agricultural belt well-known for sugarcane belt its cooperative movement religious places like Mahalaxmi temple and historic fort Panhala. Surrounded by rich green environment conducive for tourism destination.

Criteria for selection :

- 1) Largest in its operation-Total No. of customers visiting in a month
- 2) Ease in access: those are accessible were selected.

Table 1 represents gender response rate of survey and it is found that 79(66%) respondents are males and 41(34%) are females. It seems that less number of females is actively involved in tourism .Gender issues needs significant attention to improve tourism center attention.

Table: 2: Age wise classification

Sr.	Particulars	No. of Respondents	Percentage
1	20-40 yrs	70	58
2	40-60 yrs	41	34
3	60 yrs and above	9	8
	Total	120	100

Source: (Field data)

Aforesaid table 2 brings out the information about age wise classification of the respondents. Age is an important influencing factor. And from the study it is understood that majority of the respondents i.e. 70(58%) are young respondents followed by 41(34%) belong to middle age. Remaining 9(8%) of the respondents belong to the age group of above 60 including the senior citizens. In terms of age it is further revealed that most of the respondents are youngsters.

Table: 3: Educational Qualification of Samples

Sr.	Particulars	No. of Respondents	Percentage
1	Matriculation	27	23
2	Higher secondary school	24	20
3	Graduate	52	43
4	Post graduate	17	14
	Total	120	100

Source: (Field data)

From table 3 it is evident that 27 (23%) respondents are matriculate. similarly 24(20%) respondents are HSC .Followed by 52(43%) are graduates and 17(14%) are post graduates.

It seems that respondents preferring tourism center are graduates and post graduates dominating the less educated.

From table 3 it is evident that 27 (23%) respondents are matriculate. similarly 24(20%) respondents are HSC .Followed by 52(43%) are graduates and 17(14%) are post graduates.

It seems that respondents preferring tourism center are graduates and post graduates dominating the less educated.

Table: 4: Occupation wise classification of Samples

Sr.	Particulars	No. of Respondents	Percentage
1	Student	19	16
2	Farmer	17	14
3	Service	51	43
4	Business	12	10
6	Housewife	21	17
	Total	120	100

Source: (Field data)

From table 4 it is evident that 51 (43%) respondents occupation is service. similarly 21(17%) respondents are Housewives .Followed by 19(16%) are students and 17(14%) are farmers. And remaining 12(10%) respondents are businessmen.

It seems that income and occupation are closely interrelated in preferring various tourism services. Service class customers i.e. employees dominate the business group.

Table 5: Rural Urban divide

Sr.	Particulars	No. of Respondents	percentage
1	Rural	45	37
2	Urban	75	63
	Total	120	100

Source: (Field data)

From table 5 it is evident that 75 (63%) respondents reside in urban area. similarly 45(37%) respondents reside in rural area.

It seems those urban tourists prefer various rural tourism services as compared to rural tourist.

Table 6: Income wise classification

Sr.	Particulars	No. of Respondents	Percentage
1	Below 1 Lakh	53	44
2	1 Lakh – 3 Lakh	36	30
3	3 Lakh-5 Lakh	24	20
4	5 Lakh and Above	7	6
	Total	120	100

Source: (Field data)

Aforesaid table 6 brings out information pertaining to income level of the respondents and it is evident from the fact that majority of respondents i.e. 53(44%) belong to income group below 1-lakhs. Followed by 36(30%) belong to income range of 1-3 lakh. Further it is observed that 24(20%) belong to 1 income group 3-5 lakh. Remaining 7(6%) respondents are in the range of above 5 lakhs annual income category. Results of study indicate that most of the tourist visiting tourism center belongs to low income category.

Table 7: Family Size of samples belongs to

Sr.	Particulars	No. of Respondents	Percentage
1	1-2 persons	10	8
2	3-4 persons	64	54
3	5 and Above	46	38
	Total	120	100

Source: (Field data)

Aforesaid table 7 brings out information pertaining to family size of the respondents and it is evident from the fact that majority of respondents i.e. 64(54%) have 3-4 persons in family. Followed by 46(38%) have 5 and above persons in family i.e. joint family. Further it is observed that 10(8%) have small family size i.e 1-2 persons. The results of study indicate that tourist preferring services have larger family size.

Table 8: Awareness about agro-tourism center

Sr.	Particulars	No. of Respondents	Percentage
1	Word Of Mouth	97	81
2	Newspaper	14	12
3	Hoarding	9	7
	Total	120	100

Source: (Field data)

From above table 8 it is inferred that great majority of respondents i.e. 97(81%) of respondents opined that word of mouth was reason for their awareness regarding tourism center. Whereas 14(12%) said newspaper as medium they were aware about the place. Followed by 9(7%) respondents were aware due to hoarding advertisement.

Hence, it is clear that majority of the respondents are aware of the services due to word of mouth.

Table 9: Staying Visit

Sr.	Particulars	No. of Respondents	Percentage
1	One Day	89	74
2	2-3 Days	31	26
	Total	120	100

Source: (Field data)

From above table it is inferred that great majority of respondents i.e. 89(74%) of the tourists prefer one day visit. Whereas 31(26%) prefer to stay for two and more days. Significantly it is found that tourists prefer one day visit.

Table 10: Plan for visiting other places nearby

Sr.	Particulars	No. of Respondents	Percentage
1	Mahalaxmi Temple	63	52
2	Jotiba Temple	27	22
3	Panahala Hill Station	33	27
4	Narsinhawadi	3	3
5	None of the Places	45	38

Source: (Field data)

Above table 10 shows that out of total 120 Tourist preferring to visit nearby place in Kolhapur district are categorized as follows

63(52%) of respondents prefer to visit Mahalaxmi temple. Again it is seen that 27(22%) of the respondents preferred to visit Jyotiba temple. Very few i.e. 3(3%) of the respondents preferred the nearest temple Narshnwadi. Rest 33(27%) of the respondents preferred to visit the hill station Panahala.

Interestingly it is observed that different perceptual factors like religious, influence of Medias, outing advantage are some of the important criteria for selecting the choice of tourist places.

Table 11: Frequency of visiting agro-tourism center

Sr.	Particulars	No. of Respondents	percentage
1	Every weekend	0	
2	Once in a month	5	4
3	Once in six months	41	34
4	Once in year	74	62
	Total	120	100

Source: (Field data)

From above table 11 it is inferred that great majority of respondents i.e. 74(62%) tourists visit the place once in a year. Whereas 41(34%) prefer to visit once in six months. Followed by 5(4%) respondents prefer to visit once in a month.

Significantly none of the tourist were found to visit the place in a weekend. Hence it is clear that majority of the tourist are not frequent visitors.

Table 12: Availability of Reception center for information

Sr.	Particulars	No. of Respondents	Percentage
1	Yes	48	40
2	No	72	60
		120	100

Source: (Field data)

From the above table 12 it is found that majority of the respondent's i.e. 72 (60%) of the respondents opined that there is no reception center to provide information regarding the tourist place. Whereas very few 48(40%) of the respondents said reception center was available which provided the information. It seems there is lack of proper information and guidance regarding the tourist place.

Table 13: Availability of Tourist Guide

Sr.	Particulars	No. of Respondents	percentage
1	Yes	21	17
2	No	99	83
		120	100

Source: (Field data)

From above table 13 it is inferred that great majority of respondents i.e. 99(83%) of respondents opined that there is no availability of guide to provide the information. Rest 21(17 %) of respondents said that guide is available to provide the information on call.

Hence it is clear that majority of the respondents are not satisfied regarding the information they get at the tourism center.

Table 14: Awareness about tourist activities conducted by center:

Sr.	Particulars	No. of Respondents	Percentage
1	AJola research center	33	27
2	Cow Shed	94	78
3	Jaggery production center	51	42
4	Organic Farming	55	46
5	Bio-gas Plant	60	50
6	Green House	74	62
7	Free Meals(Prasadam)	72	60

Source: (Field data)

From above table 14 it is inferred that great majority of respondents i.e. 94(78%) of respondents are aware about cowshed. Whereas 74(62%) are aware regarding green house. Followed by 60(50%) respondents are aware about the biogas plant.

Significantly it is found that 55(46%) and 51(42%) of the tourist are aware regarding organic farming and jaggery production center. Very few i.e. 33(27%) of the respondents are aware regarding ajola research center. Hence it is clear that majority of respondents are not aware about various tourist activities conducted by center.

Table 15: Factors attracting at Sidhagiri Museum:

Sr.	Particulars	Highly Disagree	Disagree	Neither Disagree nor agree	Agree	Highly Agree	Mean Score	Perce ntile	Rank
1.	Relegious Temple Visit	9	12	22	41	36	3.69	72%	Good
2.	Cultural and Natural Heritage visit	0	2	10	62	46	4.2	84	Excelent
3.	Surrounding Nature	0	2	10	62	46	4.2	84	Excelent
4.	Agricultural information	7	19	22	39	33	3.6	72%	Good
5.	Experience Rural lifestyle	5	5	26	55	29	3.8	76%	Good

Source: (Compiled by researcher)

Table 15 depicts Tourists attracting factors at Sidhagiri museum and it is observed as follows.

Cultural Natural Heritage, surrounding nature and rural lifestyle: It is observed that the tourism center has received satisfactory mean score by respondents of 4.2(84) 4.17(83.4%) and 3.8(76%) respectively.

Religious temple and agricultural information: The tourism center has received the moderate range of preference 3.69(72%) for both factors. One can conclude from the fact that rich cultural heritage and surrounding is prime criteria of attraction for tourists.

Table 16: Overall expectations from Sidhagiri Museum:

Sr.	Particulars	Highly Disagree	Disagree	Neither disagree nor Agree	Agree	Highly Agree	Mean Score	Percentage	Rank
1	Courtesy And proper guidance	6	8	39	38	29	3.63	72.6 %	Good
2	Informative Rural life museum	2	15	36	34	33	4.4	88%	Excellent
3	Cleanliness and satisfaction	22	27	17	24	30	2.3	46%	Very poor
4	Food facilities	10	29	17	37	27	3.3	66%	Fair
5	Entry fees	38	19	33	15	15	2.4	48%	Very Poor

Source: (Compiled by researcher)

From the above table 16 reveals tourist's expectation at Sidhagiri museum as follows.

Informative Rural life museum and Courteous proper guidance: It is observed that the tourism center has received satisfactory mean score by respondents of 3.63(72%) 4.4(88%) and 3.3(66%) respectively. Entry fees and Cleanliness: The tourism center has received moderate range of preference 2.4(48%) and 2.3(46%) for both factors. One can conclude from the fact that tourists need special attention paid on sanitation and reconsideration of entry fees charged.

Hypothesis Testing:

Ho: There is no relation between Age of the respondents and choice of tourism activities

H1: There is close association between age of the respondents and choice of tourism activities

Table 17: Hypothesis Testing –I Individuals Age influence on Tourism Activities

Age	Tourism Activities			
	Museum Visit	Temple Visit	Agricultural & Horticulture visit	Total
20yr. to 40 yr.	47	11	14	72
40yr to 60yr.	30	12	6	48
Total	77	23	20	120
Chi-square value: 2.11 Degrees of freedom: 2 level of significance:5 % P Value=0.31				

Source: (Filed data)

Table – Individuals Age influence on Tourism Activities

AGE	Tourism Activities			
	Museum Visit	Temple Visit	Agricultural & Horticulture visit	Total
20yr. to 40 yr.	46.2	13.8	12	72
40yr to 60yr.	30.8	9.2	8	48
Total	77	23	20	120
Chi-square value: 2.11 Degrees of freedom: 2 level of significance:5 % P Value=0.31				

Source: (Compiled by researcher)

It is divulged from Table 17 that calculated chi-square value is greater the result is significant at 5 % level. Hence, the null Hypothesis is rejected and alternative hypothesis is accepted, it is concluded that there is association between age of the respondents and choice of tourism activities.

Second Hypothesis was put to test is.

Ho: There is no relation between gender of the respondents and choice of tourism activities

H1: There is close association between gender of the respondents and choice of tourism activities

Table 18: Hypothesis testing –II

Table 18 – Individuals Gender influence on Tourism Activities				
Gender	Tourism Activities			
	Museum Visit	Temple Visit	Agricultural & Horticulture visit	Total
Male	52	13	13	78
Female	24	09	09	42
Total	76	22	22	120
Chi-square value:1.06 Degrees of freedom: 2 level of significance:5 % P Value=0.58				

Source: (Filed survey)

Table – Individuals Gender influence on Tourism Activities				
Gender	Tourism Activities			
	Museum Visit	Temple Visit	Agricultural & Horticulture visit	Total
Male	49.4	14.3	14.3	78
Female	26.6	7.7	7.7	42
Total	76	22	22	120
Chi-square value: 1.06 Degrees of freedom: 2 level of significance:5 % P Value=0.58				

Source: (Compiled by researcher)

It is divulged from table 18 that calculated chi-square value is greater, the result is significant at 5 % level. Hence, the null Hypothesis is rejected and the alternative hypothesis is accepted, it is concluded that there is close association between gender of respondents and choice of tourism activities.

Managerial Implications:

It is analyzed that gender issues need significant attention to improve tourism center attentions more males are active and lack of female involvement in tourism activities. Furthermore in terms of age it is revealed that most of the respondents are younger. It is also found that

respondents preferring tourism center are graduates and post graduates dominating the less educated (Table-1-4)

It is found that income and occupation are closely interrelated in preferring various tourism services. Service class customers i.e. employees dominate business group. It has found that urban

tourists prefer various rural tourism services as compared to rural tourist. The results of study indicate that tourist visiting the tourism center belongs to low income category and have larger family size. (Table- 5-7)

It is observed that majority of the respondents are aware of services due to word of mouth. Significantly it is found that tourists prefer one day visit. Interestingly it is inferred that Mahalaxmi temple is preferred destination. Different perceptual factors like religious, influence of Medias, outing advantage are some of the important criteria for selecting the choice of tourist places. (Table- 8-10)

Significantly it is revealed that none of the tourist were found to visit the place in a weekend. Hence it can be said that majority of the tourist are not frequent visitors. Again it is seen that there is lack of proper information and guidance regarding the tourist place. Hence, it is clear that majority of the respondents are not satisfied regarding the information they get at tourism center. (Table 11-13)

It is found that respondents are not aware about various tourist activities conducted by center. Subsequently it is revealed that rich cultural heritage and surrounding is prime criteria of attraction for tourists. Furthermore there is need to provide special attention on sanitation and reconsideration of entry fees charged. (Table-14-16)

Suggestions:

Engaging all age groups of tourist actively is very important looking to the interest of women they like to pick up the fruits; vegetables plant some varieties in their kitchen garden. Hence, the Sidhagiri gram Jeevan needs to conduct these activities in the center. As most of the youngsters

are found to be actively involved in tourism activity center should try to educate the youths regarding organic farming, new cultivation techniques, and dairy management through involving them through the cowshed.

As the urban tourists are more attracted towards the rural tourism they wish to experience rural lifestyle, bullock cart ride, the rural food, culture is fascinating them. Center should try to connect and provide these facilities to the urbanite tourists. It is suggested that conducting various occasions and events displaying rural culture and festivals, melas would attract both rural and urban tourists. For this understanding food style of urban and rural people again in terms of shopping habits and tourist activities need to be understood and provide according to these occasions.

Promoting the tourism center around the preferred destinations from where tourists generally visit the Sidhagiri museum is Mahalaxmi temple. Hence, transportation facilities can be provided from these destinations and advertise around these places, attractive information Hoarding can be displayed around these places.

Many senior citizen tourists have suggested that there is no provision for old age visitors travel facility as the tourist place is on hilly area. Hence it is brought to the notice of the tourism center to take proper care of this age group.

It is suggested that many of the tourist are unaware about the meals provided by center. There is need to make these tourists aware and arrange for convenient public transport. Some of the tourists have suggested to permit the photography as it is restricted. If the separate space is created to take the photographs in some area then tourists can take the benefit of same.

Many tourists are unaware about various centers present in museum to provide information about various tourist activities signage, banners short film can be arranged similarly fees charged are very high. It is suggested that as many of the tourist belong to low income category there should be differential pricing for diverse group. For example children and senior citizen, some concession be provided, special benefits can be considered for disabled people handicapped.

Involvement of local people around the village may be considered as tourist guides. Because they can truly explain the rural culture heritage history and language. This will truly give rural lifestyle experience. There is very dissatisfaction among the tourist regarding sanitation and cleanliness. Which is utmost important. Adequate amount of washrooms, regular cleaning

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Marketing Strategy for Pilgrimage Tourism with reference to Retail Services at Pandharpur

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Abstract:

Pilgrimage tourism is a form that is motivated for religious reasons. The short term religious tourism is distinguished by excursions to nearby pilgrimage centers or religious conferences. The long term describes visit of several days or weeks to national and international pilgrimage sites. A tourist directly spends money on shopping there by creating and supporting a variety of part-time, full time and seasonal trading jobs. As shopping at a tourist destination is like any other economic activity involving an exchange process between buyers and sellers of goods. At any destination area, promotion and proper functioning of shopping yields economic benefits and satisfies customers. It also helps the development of pilgrimage area. This paper investigates Marketing Strategy for Pilgrimage Tourism with Special Reference to Retail Services at Pandharpur. The data for this study were collected from pilgrims which engaged in pilgrimage tourism activities Marketing strategy were identified as a key factor in pilgrimage .This research is mainly on first had data micro level secondary data was collected in form of questionnaire..

Keywords : Pilgrimage Tourism, Marketing Strategy, Shopping, Retail Services, Other Retail Services, Souvenirs.

Introduction:

An important feature of tourism marketing is selling a destination as a product to a tourist involving quantitative and qualitative assessment of customer profile and needs. Modern pilgrim's social background specific time for pilgrimage and their economic constraints determine the need for transport, accommodation, food catering and shopping (Siever-1987). Thus the pilgrimage destination and religious centers ought to have all such not only meet the pilgrim's religious and

spiritual need but also keep generating desire in them to visit the destination time and again with an increase in the average length of their stay ,(Tewari-1994). Traditionally a tourist was categorized as 'guest' and the locals as 'host's 'but the increase in density of tourism has developed the concept of commercial outlets, i.e. shops thereby, changing the earlier relation to that of a 'seller –customer 'type in such a less friendly relation if the tourist feels cheated, it will lead to dissatisfaction and resentment. (Bryden-1973) Shopping has become now an essential sport and a recreational pursuit which is based upon tourist consumption and frivolous spending in India approximately 10% domestic tourist budget and 30 % foreign tourist budget is every year earmarked for

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shopping and entertainment etc.,(Subramana 1995). The expenditure for shopping varies from place to place depending upon the financial status and social standing of the shoppers. This service is responsible for transferring huge amount of money from tourist generating area to the tourist receiving area. (Tewari 1994). A tourist directly spends money on shopping there by creating and supporting a variety of part-time, full time and seasonal trading jobs. As shopping at a tourist destination is like any other economic activity involving an exchange process between buyers and sellers of goods. At any destination area, promotion and proper functioning of shopping yields economic benefits and satisfies customers. It also helps the development of pilgrimage area.

A Profile of Pandharpur

Solapur district is one of the holy districts in Maharashtra. Thousands of people from the different parts of country used to visit “LORD VITTHAL” for spiritual satisfaction of soul. Lord Vitthal of Pandharpur is famous god in India. The pilgrim who visited Lord Vitthalis called Warkari because they visit the holy place of lord Vitthal in every month on Ekadashi Day (Eleven day of Marathi month) regularly. Their gathering is called Wari. There are four famous waries which are named as “ASHADHI, KARTIKI, MAGHI, CHAITRA”. Every year number of European student, historians and social workers visited to Pandharpur. The number of pilgrim increases day by day. The number increased up to nine to twenty lakhs.

Table: 1: Pilgrim visit to Pandharpur from 1992 to 2012.

Sr.	Year	Pandharpur	Sr.	Year	Pandharpur	Sr.	Year	Pandharpur
1	1992	927912	10	2001	1132980	19	2010	1866030
2	1993	893795	11	2002	1178676	20	2011	1898501
3	1994	1222922	12	2003	1245560	21	2012	1911810
4	1995	1250825	13	2004	1306494	22	2007	2030550
5	1996	1014755	14	2005	1460608	23	2008	1967644
6	1997	1088480	15	2006	1485980	24	2009	1998884
7	1998	1254988	16	2007	1488058	25	2010	2001000
8	1999	1066730	17	2008	1583209	26	2011	2010000
9	2000	1094248	18	2009	1787712	27	2012	1925000

The holy town Pandharpur is situated at 17° 40' North latitude and 75°23' East longitudes on the height of 462.12 meters (1526 feet) above mean sea level; has general slope from west to east. The town has 12.07 sqkms area and located on right bank of meandering Bhima River, a

tributary of Krishna. The railway line passes through the town in north –south direction dividing the town in two parts .According to 2001 census the total population of the town above one lakh.

Research Methodology:

Present paper put to test Hypothesis that, Inspire of sizeable growth in tourist's services always experiences various difficulties in view of their socio-economic.

Major objectives have been laid down for conducting the study is to measure the satisfaction level regarding retail services availed during the pilgrimage and to give observation and suggestions on the basis of study. This study is based on primary data. The data was collected through interview with the help of a structured questionnaire. 240 samples were selected by adopting convenience sampling method. The sample comprised of Solapur district and Maharashtra. Primary data was collected from the respondents through questionnaire technique. The secondary data was collected from various books, journals, published materials and website. The sampling method used for the survey was the convenience sampling method. The marketing effectiveness has been measured separately in terms of arithmetic mean. The relationship between overall satisfaction about particular services (dependent variable) and different marketing mix variable (independent variables) was estimated with help of multiple regressions. For determining various dimensions of scale generating for pilgrimage tourism services

marketing, the SPSS package with special focus on the principal axis procedure of factor analysis has been used along with varimax rotation to simplify the data by reducing large number of variables to a small meaningful number for analysis. This techniques has been used for scale purification of data in retail services

Sample size Pandharpur

Total 19, 25,000 person visits every year to Pandharpur pilgrim centre.

19, 25,000 of 2% = 38500 Devotee arrived.

7 to 8 persons groups (per group 1 person)

Total groups 4812.

5% of the group = Total groups = $4812 \times 5\%$
= 240.6

Hence, the final sample size is 240 i.e. (5% of 4812 groups)

Measurement of customer satisfaction – An index of marketing Effectiveness.

For measuring the effectiveness of retail services available in terms of customer satisfaction, visitors have been classified into different demographic groups for determining segment wise level of satisfaction and strategically developing retail services package for future.

Table 2: Satisfaction among Local-Male and Female Pilgrims at Pandharpur:
(Mean Statics of Retail Services)

		Male (12)					Female (9)				
Variables	Age	Age Group-(9)(Male)				AgeGr2 (3)(M)	Age Gr.-1 (4)(F)		AgeGr. -2(3)F	AgGr 3 (2)F	(21)
	Income	Inc1 (3)	Inc-2 (2)	Inc-3 (4)		Inc-1 (3)	Inc1 (2)	Inc2 (2)	Inc3 (3)	Inc- 3	(21)
	Education	E2	E1	E1	E2	E1	E2	E1	E2	E1	X
Retail Service		(3)	(2)	(2)	(2)	(3)	(2)	(2)	(2)	(2)	(20)
Enjoyable Shopping		2.8	3.2	3.1	3.8	3.4	4.0	3.8	3.5	4.0	3.5
Co-op Shopkeepers		3.5	2.8	3.2	3.3	3.5	2.0	3.2	2.5	2.6	3.0
Fair Shopping		3.6	2.6	2.5	3.1	3.3	4.0	2.6	3.1	3.1	3.0
X1		3.3	2.9	2.9	3.4	3.4	3.3	3.2	3.0	3.2	3.1
Otherretail Services											
Fixed price		2.6	2.9	3.7	4.1	3.5	3.5	4.1	2.5	3.2	3.3
Quality of Souvenirs		3.1	2.6	2.0	2.0	2.6	2.6	2.4	3.4	3.1	2.8
satisfactory Shopping		2.3	3.2	4.0	2.8	3.1	3.0	3.0	3.1	2.9	3.1
X2		2.7	2.9	3.2	3.0	3.1	3.0	3.2	3.0	3.1	3.1
X12		3.0	4.4	3.1	3.2	3.2	3.2	3.2	3.0	3.1	3.1

Source: (Field Data)

An overall average level of 3.1 satisfactions (Table 2) observed by local male pilgrims with respect to retail services available at Pandharpur. The male pilgrims show average level of effectiveness regarding such services. The highly educated old aged male with a high level of income are more satisfied at 3.1 levels. This segment showed much higher satisfaction at 3.3 score with respect to retail services, other retail services 3.1 level of satisfaction. The less educated youngsters with an average level of

income are satisfied at 3.1 level. The segment followed by retail services at 3.1 and other retail services 3.1. The middle aged with low education with a middle income level at 3.3 score of satisfaction. Taking all these segments together it is only the enjoyable shopping which makes them highly satisfied at 3.5 score. The whole group of local male pilgrims shows 3.3 for fixed price, 3.1 for satisfactory shopping & 3.0 for fair shopping. The entire group of local male and female above average satisfied.

Table 3: Satisfaction among Non-Local Male Pilgrims at Pandharpur:
(Mean Statistics of Retail Services)

Variables	Age	AgeGr.1(9)		Age-Gr.-2(8)			Age Gr.-3(11)			(28)	
	Income	Inc1 (5)	Inc3 (4)	Inc1 (3)	Inc2 (3)	Inc3 (2)	Inc-1 (6)	Inc2 (2)	Inc33	(28)	
	Education	E1	E1	E2	E1	E1	E1	E2	E2	E1	X
Retail Services		(5)	(4)	(3)	(3)	(2)	(4)	(2)	(2)	(3)	(28)
Enjoyable Shopping		3.1	3.3	2.6	3.1	3.6	3.6	3.1	3.5	3.4	3.3

Cooperative Shopkeepers	2.6	3.1	3.8	2.6	3.0	3.5	2.5	2.4	3.1	3.0
Fair Shopping	2.2	3.4	2.2	2.8	2.8	2.3	2.2	3.1	2.4	2.6
X1	2.6	3.3	2.9	2.8	3.2	3.1	2.6	3.0	3.0	2.9
Other retail services										
Fixed price	3.2	2.4	3.3	3.1	3.1	2.4	3.3	3.7	3.2	3.1
Quality of Souvenirs	3.4	2.2	3.1	2.4	3.6	3.1	2.6	2.6	2.5	2.8
satisfactory shopping	3.8	3.1	2.6	2.8	3.2	2.5	3.1	3.4	2.2	3.0
X2	3.5	2.6	3.0	2.8	3.3	2.7	3.0	3.2	2.6	3.0
X12	3.1	2.6	3.2	3.0	3.1	2.6	3.1	3.5	3.0	3.0

Source: (Field Data)

An overall average level of 3.0 satisfactions (Table. .3) observed by non- local male pilgrims with respect to retail services available at Pandharpur. The male pilgrims show average level of effectiveness regarding such services. The highly educated old aged male with an average level of income are more satisfied at 3.5 levels. This segment showed much higher satisfaction at 3.0 score in respect to retail

services, other retail services 3.2 level of satisfaction. The less educated youngsters with an average level of income are satisfied at 3.1 level. This segment followed by retail services at 3.3 and other retail services 2.6. The middle aged with highly educated with a low income level at 3.0 score of satisfaction. Taking all these segments together it is only the enjoyable shopping which makes them highly satisfied at 3.3 score.

Table 4: Satisfaction among Non-Local Pilgrims Female at Pandharpur. (Mean Statistics of Retail Services)

Variables	Age	Age-Gr.1(9)			Age-Gr.2(8)			Age-Gr.3(8)			(25)	
	Inc.	Inc1 (3)	In2 (3)	Inc3 (3)	Inc-1(2)	Inc-2(4)		Inc-3(2)	Inc-1(4)	Inc-2(2)	Inc-3(2)	(25)
	Edu.	E2	E2	E1	E1	E1	E2	E2	E1	E2	E1	X
Retail Services		(3)	(3)	(3)	(2)	(2)	(2)	(2)	(4)	(2)	(2)	(25)
Enjoyable Shopping		3.7	4.3	4.2	3.6	3.8	3.2	4.0	3.5	3.4	3.8	3.6
Cooperative shopkeepers		3.8	3.5	3.8	3.5	3.5	4.1	3.0	3.4	3.1	3.5	3.6
Fair Shopping		3.3	3.1	3.1	3.5	4.1	3.6	2.6	3.6	4.1	3.0	3.5
X1		3.6	3.6	3.7	3.5	3.8	3.6	3.2	3.5	3.5	3.4	3.6
Other retail Services												
Fixed price		3.0	3.5	3.3	3.0	3.3	3.6	3.4	3.6	3.2	3.0	3.4
Quality of Souvenirs		3.1	3.7	3.5	3.3	3.9	3.8	3.2	4.1	3.8	3.6	3.5
satisfactory shopping		3.6	4.1	4.1	3.4	3.2	3.9	2.4	3.5	3.9	4.1	3.6
X2		3.2	3.8	3.6	3.2	3.5	3.8	3.0	3.7	3.6	3.6	3.5
X12		3.4	3.7	3.7	3.4	3.7	3.7	3.7	3.6	3.6	3.5	3.6

Source: (Field Data)

The whole group of non-local female pilgrim visitors has observed an average of 3.0 for overall retail services during the trips. The highest score of 3.3 has been observed by less educated youngsters' female with an average (low) income level. This segment has observed 3.4 score for other retail services. The lowest score of 2.6 has been observed by highly educated middle aged

female with a high income level. All the non – local female visitors have expressed the highest of 3.6 for retail services and 3.5 for other retail services. They also reflect an above average of 3.6 co-operative shopkeepers, satisfactory shopping. Good quality of souvenirs 3.5 are purchased during the trip.(Table .4)

Table .5: Satisfaction among Non-Local Non- Male Pilgrims at Pandharpur. (Mean Statistics of Retail Services)

Variables	Age	Age Group-1(34)					Age Group -2(27)				Age Group -3(26)					87	
	Inc.	Inc 1(7)	Inc-2 (14)		Inc-3 (13)		Inc 1(8)	Inc 2(6)	Inc-3 (13)		Inc-1 (9)		Inc2 (11)		Inc-3 (9)		(87)
	Ed	E1	E1	E2	E1	E2	E1	E1	E1	E2	E1	E2	E1	E2	E1	E2	X
Retail services		(7)	(8)	(6)	(6)	(7)	(8)	(6)	(7)	(6)	(4)	(5)	(6)	(5)	(4)	(5)	(87)
Enjoyable shopping		3.8	3.4	3.0	4.0	3.0	2.5	3.2	3.1	3.3	3.2	2.6	3.5	2.9	3.0	3.2	3.2
Cooperative shopkeepers		3.2	3.6	3.5	3.1	2.2	4.0	2.6	2.6	2.6	3.4	3.1	3.8	3.6	1.5	3.3	3.1
Fair		2.6	2.8	2.4	3.5	2.5	2.0	3.1	3.1	3.1	2.0	2.5	2.8	3.7	2.5	2.8	2.8
X1		3.2	3.3	3.0	3.5	2.6	2.8	3.0	2.9	3.0	2.9	2.7	3.4	3.4	2.3	3.1	3.0
Other retail services																	
Fixed price		3.0	2.5	3.5	3.5	3.2	3.1	3.1	3.2	3.5	3.3	3.4	3.8	2.5	3.0	3.1	3.2
Quality of souvenirs		3.5	3.6	3.2	3.2	2.8	3.5	2.6	2.8	2.8	2.6	3.1	3.1	2.8	2.5	3.5	3.0
satisfactory shopping		3.3	3.5	2.0	2.6	3.0	3.2	3.2	2.9	3.6	3.4	3.3	2.8	3.4	3.5	3.1	3.1
X2		3.3	3.2	2.9	3.1	3.0	3.3	3.0	3.0	3.3	3.1	3.3	3.2	2.9	3.0	3.2	3.1
X12		3.2	3.2	2.9	3.2	2.9	3.2	3.0	3.0	3.2	3.0	3.1	3.3	3.0	2.8	3.2	3.1

Source: (Field Data)

The whole group of non-local non-pilgrims male visitors have observed above average of 3.1 for overall retail services. The highest score of 3.3 has been observed by low educated old aged males with a middle income level. This segment has observed 3.4 score for retail services, 3.2 for other retail services. The low educated, youngster with a low income level shows 3.2 score of

satisfaction. The lowest score of 2.8 has observed by low educated old aged males with a high income level. All the non- local non-pilgrim male visitors have expressed the above average 3.2 for overall enjoyable shopping, this segment shows 3.1 co-operative shopkeeper, 3.2 for fixed price. Other hand fair shopping 2.8 has acquired lower level satisfaction. (Table 5)

Table 6: Satisfaction among Non-local Female Non Pilgrims at Pandharpur:
(Mean Statistics of Retail Services)

Variables	Agee	Age Gr.1(33)					Age Gr.2(23)				Age Gr.-3 (24)					79
	Inc.	Inc-1(14)		Inc2(6)	Inc-3 (15)		Inc 2(9)	Inc-3 (14)		Inc1 (5)	Inc-2 (11)		Inc-3 (8)			
	Ed	E1	E2	E1	E1	E2	E2	E1	E2	E1	E2	E1	E1	E2	X	
Retail services Pandharpur		(8)	(6)	(6)	(8)	(7)	(9)	(7)	(7)	(5)	(5)	(6)	(5)	(3)		
Enjoyable shopping		3.1	3.5	3.5	3.6	4.0	3.6	3.1	3.1	3.0	2.8	3.6	3.5	3.9	3.4	
Cooperative shopkeepers		2.8	2.6	4.0	2.8	2.9	2.8	2.7	4.0	2.9	3.4	3.8	2.7	3.5	3.1	
Fair Shopping		4.0	4.0	3.1	3.5	3.1	3.1	3.2	2.5	3.0	4.1	2.9	3.1	3.6	3.3	
X1		3.3	3.4	3.5	3.3	3.3	3.2	3.0	3.2	3.0	3.4	3.4	3.1	3.7	3.3	
Other retail services																
Fixed price		3.8	3.8	4.1	3.1	4.0	4.5	3.5	3.0	3.5	4.1	3.0	3.2	3.2	3.6	
Quality of souvenirs		3.1	2.9	2.9	3.5	4.0	4.0	2.9	3.5	3.4	2.5	3.3	2.5	2.8	3.2	
satisfactory shopping		2.6	3.3	3.6	3.0	2.6	2.8	3.6	4.0	2.8	3.1	4.0	2.9	2.5	3.1	
X2		3.2	3.3	3.5	3.2	3.5	3.8	3.3	3.5	3.2	3.2	3.4	2.9	2.8	3.3	
X12		3.2	3.4	3.5	3.3	3.4	3.5	3.2	3.4	3.1	3.3	3.4	3.0	3.3	3.3	

Source: (Field Data)

The overall above average level (Table .6) observed by non –local female non-pilgrim visitors show 3.3 score. The highest score of highly educated middle aged females with a middle income level show 3.2 for retail services, 3.5 for other retail services. The four segments of female visitors express 3.4 score of satisfaction i.e.(1)-high educated youngsters with low income group.(2)-high educated middle aged

female with low income group.(3)- high educated middle aged with high income group.(4) old aged with an middle income female visitors high educated express the score 3.4 of satisfaction . The highest score of 3.7 for retail services, the old aged high educated with high income group. All the female visitors are highly satisfied. They express their experience 3.6 for fixed price, 3.4 for enjoyable shopping

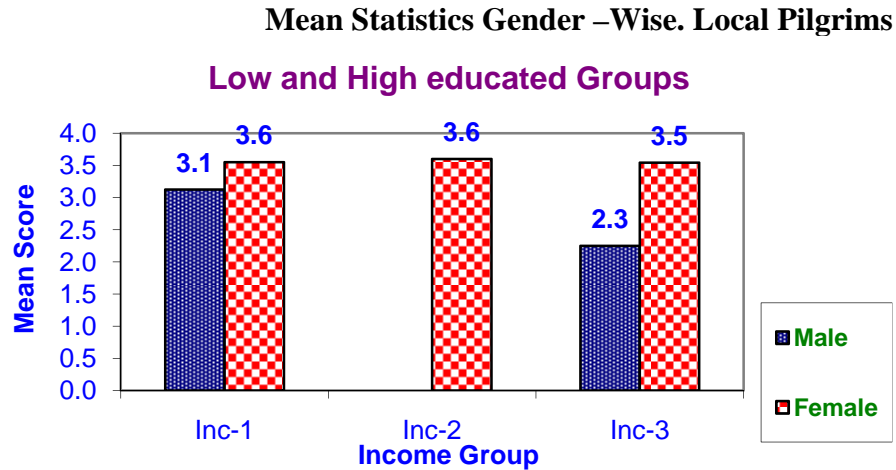
Table 7: Overall Responses regarding Retail Services at Pandharpur
(Mean Statistics Gender –Wise. Local Pilgrims)

Gender	Income	Low Education			High Education			Overall Mean		
		A	B	X	A	B	X	A	B	X
	Inc-1	2.5	4.0	3.3	2.5	3.5	3.0	2.5	3.8	3.1
Male	Inc-2									

	Inc-3				2.3	2.3	2.3	2.3	2.3	2.3
	x1	2.5	4.0	3.3	2.4	2.9	2.6	2.4	3.0	2.7
	Inc-1	3.5	3.6	3.6				3.5	3.6	3.6
Female	Inc-2	4.0	4.0	4.0				3.2	4.0	3.6
	Inc-3	2.0	3.7	2.8	4.0	4.5	4.3	3.0	4.1	3.5
	x2	3.2	3.8	3.5	4.0	4.5	4.3	3.2	3.9	3.6
	x12	2.8	3.9	3.4	3.2	3.7	3.4	2.8	3.4	3.1

Source: (Field Data)

Chart -1



Overall the male & female pilgrims shows 3.1 score of satisfaction. They show 2.9, 3.2 score for retail & other retail services. Overall low income male show 3.1 female 3.0 & 3.5 score of above average. Middle income males show 3.0 points, females show above average level 3.3 score for retail & other retail services. High income male pilgrims indicate 2.9 nearby average score of satisfaction. The high income female pilgrims show 3.0 average score for retail services.

Male pilgrims show 3.1 above average score for retail services. They show 2.9 for other retail services. The low income pilgrims show 3.1 above average score of satisfaction. The low income females show 3.0 above average score of satisfaction. The low income female show

3.0&3.5 above average score. Middle income female show 3.1 above average score. Middle income female show 3.1 above average score for both services counter parts of males show 3.2 for retail & 2.8 for other retail services. They complain about quality of souvenirs. The high income males show 3.0 points for retail services, 2.8 for other retail services. They show below average score for quality of souvenirs. The females show 2.5 for retail services. They are unsatisfied for enjoyable shopping. Male show score of satisfaction 3.0& 2.8 for these services. The male & female shows above average score for enjoyable shopping, Quality souvenirs. They fill the shopkeepers cheat them.

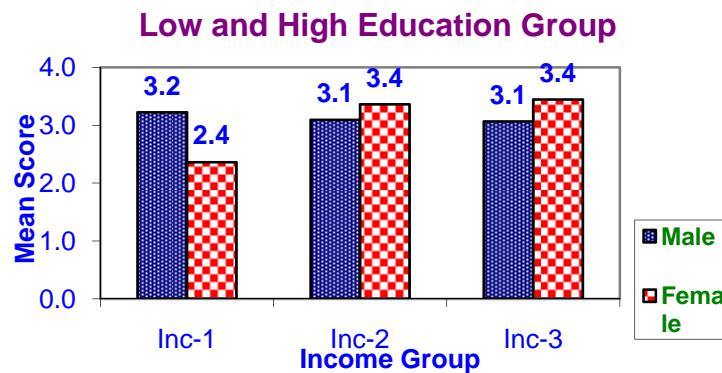
Table 8: Overall Responses regarding Retail Services at Pandharpur

(Mean Statistics Gender –Wise. Non-Local –Non -Pilgrims)

Gender	Income	Low Education			High Education			Overall Mean		
		A	B	X	A	B	X	A	B	X
	Inc-1	2.6	3.2	2.9	3.7	3.3	3.5	3.1	3.3	<u>3.2</u>
Male	Inc-2	3.3	2.5	2.9	3.0	3.5	3.3	3.2	3.0	<u>3.1</u>
	Inc-3	2.8	3.0	2.9	3.1	3.3	3.2	3.0	3.2	<u>3.1</u>
	x1	2.9	2.9	2.9	3.3	3.4	3.3	3.1	3.1	3.1
	Inc-1	2.5	3.0	2.8	2.0	2.1	2.1	2.3	2.6	<u>2.4</u>
Female	Inc-2	3.1	2.9	3.0	3.6	3.7	3.7	3.4	3.3	<u>3.4</u>
	Inc-3	3.0	3.5	3.3	3.2	4.0	3.6	3.1	3.8	<u>3.4</u>
	x2	2.9	3.1	3.0	2.9	3.3	3.1	2.9	3.2	3.1

Source: (Field Data)

Chart. 2: Mean Statistics Gender –Wise Non Local Non Pilgrims



Over all the high and low educated male and female show 3.1 level of satisfaction .The low income male show 3.2 score for retail services , female pilgrims show lowest score 2.4 for retail services .The middle income male show 3.1 and female show 3.4level of satisfaction .The high income , pilgrims show 3.1 score,females show

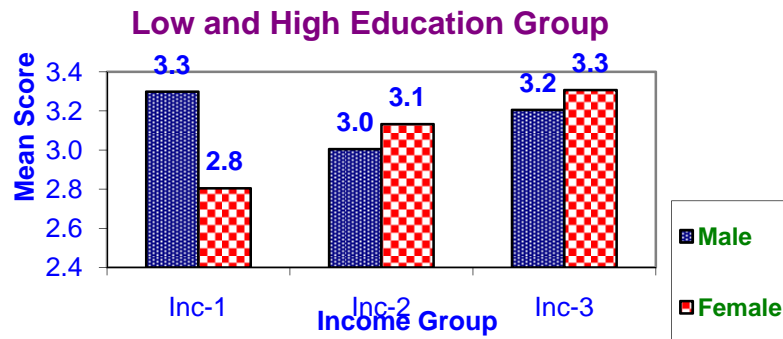
3.4 above average level of satisfaction for retail and other retail services. The non local non pilgrim satisfied above average level for retail and other retail services at Pandharpur.The low income group female pilgrims indicate low satisfaction for retail services provided to them by retailers.

Table 9: Overall Responses regarding Retail Services at Pandharpur
(Mean Statistics Gender –Wise. Non-Local -Pilgrims)

	Low Education			High Education			Overall Mean			
Gender	Income	A	B	X	A	B	X	A	B	X
	Inc-1	2.1	3.1	2.6	3.8	3.9	3.9	3.0	3.5	<u>3.3</u>
Male	Inc-2	2.2	3.2	2.7	3.5	3.0	3.3	2.9	3.1	3.0
	Inc-3	2.5	3.1	2.8	3.4	3.6	3.5	3.0	3.4	3.2
	x1	2.3	3.2	2.7	3.6	3.5	3.5	2.9	3.3	3.2
	Inc-1	3.6	3.4	3.5	2.0	2.5	2.3	2.8	3.0	2.8
Female	Inc-2	3.3	3.3	3.3	2.5	3.5	3.0	2.9	3.4	<u>3.1</u>
	Inc-3	3.1	3.6	3.3	3.6	2.9	3.3	3.4	3.3	3.3
	x2	3.3	3.4	3.4	2.7	3.0	2.8	3.0	3.2	3.1

Source: (Field Data)

Chart. 3: Mean Statistics Gender –Wise Non Local Pilgrims



The non-local male & female pilgrims show 3.1 above average score of satisfaction level. The low income males & females show 3.3 & 3.1 above average score of satisfaction level. Middle income males show 3.2, female segments show 3.4 above average score for retail services provided to them. High income male show 3.2, females show 3.5 above average score of satisfaction level.

Low income male show 3.3 score for retail & other retail services, female show 3.4, 3.0 score of satisfaction level. Middle income males show 3.2 score, females show 3.4 & 3.3 score of satisfaction. High income males & females are also highly satisfied of services of retail provided by the retailers.

All pilgrims are satisfied with average & above average score level.

Testing of Hypotheses Retail Services at Pandharpur

Hypothesis. 1. In spite of sizeable growth in tourist's services the pilgrim always experiences various difficulties in view of their socio-economic background.

The overall value of customer satisfaction reference to the mean value calculated from directly obtained response from each respondent. The relationship between the groups cum variable wise customer satisfaction of retail services with overall satisfaction has been identified with the help of three linear equations.

Three Linear Equations at Solapur

SR..	GROUPS	THREE LINEARTEQUATIONS
1	Local Pilgrims	$2.515+0.133A+0.332B$
2	Local Non- Pilgrims	$2.008+0.09A+0.294B$
3	Non-Local Non- Pilgrim	$1.301+0.253A+0.325B$

Source: (Compiled by researcher)

Note: 1A= Enjoyable Shopping

B= Co-operation of Retailers

Y= Other Retail service

Note -2- For Retail services = r (coefficient of .B)
B.

The underlying of regression null hypothesis is there is no liner Association among the Other Retail Services (A)and Enjoyable Shopping (B) on Co-operation of Retailer(Y)

i.e. - Hypothesis

HO: There is no linear association among the independent variable and dependent variables

The results show that the pilgrims whether they are local or non-local show both positive and negative association. The significance has been shown by variable 'B' (cooperation of retailers) of retail services at Pandharpur, and other retail

services at Pandharpur .i.e. enjoyable shopping for which local pilgrim groups have shown a negative association with their overall satisfaction. Non-local and non-local pilgrim groups are linearly positive associated respectively. The relative coefficient of multiple determinations R² as shown in the table 5.148

'F' Test Criteria

1. Null Hypothesis is –If 'F' calculated is greater than 'F' tabulated, and then rejects the null hypothesis with 95% of level of confidence. Thus we say that there is significant influence on various services.
2. If 'F' calculated is less than 'F' tabulated then we accept the null hypothesis. So we conclude that there is no significant influence on various services .

Table 10: Testing of Hypotheses Retail Services at Pandharpur

	Pilgrims	Non-Pilgrims	
Values	Local	Local	Non-local
R	0.475	0.428	0.533
R ²	0.226	0.184	0.284
Df(V1,V2)	2,22	2,167	2,39
Fcal	3.205	18.77	7.742
F tabulated	3.4434	3.0501	3.2381

Source: (Compiled by researcher)

The table 10 explains a reasonable level of 0.184 % and 0.226 % 0.284 of variations in satisfaction score for local non- pilgrims and local pilgrims respectively. The multiple correlations 'R' between depend and independent variables also identify positive and higher degree of association at 0.475, 0.428 & 0.523 only for local non-pilgrims and local pilgrims respectively. Since the calculated values of 'F' at 5 percent level of significance is higher in case of three groups viz 18.77 (local pilgrims), 7.742 (non-local pilgrims) and 3.205 (non local non-pilgrims) than the table value of 3.0501, 3.24 and 3.4434 at d1 v2 of 2.167, 2.39 and 2.22 respectively, which indicates that with a confidence level of percentage the variables under study do not have equal impact on the satisfaction of customers from retail services. They show varying effect on the overall customer satisfaction and marketing effectiveness. The only group of local non-pilgrims which show a 184% percent variation in satisfaction scores has the calculated value of 'F' at 5 percent confidence level (3.205) less than its table value (3.44) at (2.22) d.f. This states that with a confidence level of 95 percent, the three variables under study show an equal impact on the satisfaction of this group from retail services during the trip. Marketing orientation and customer satisfaction which arrived at Pandharpur.

Findings about Retail Trade Practices

Shopping is the most important pastimes of visitors, in our country such as. It is often the single most important activity of the visitors. In our county shopping was found to be third important area of interest.

1. Pilgrimage destinations receive large number of tourists in India and at every such destination tourist want to purchase souvenirs, pieces of art and craft, pictures or idols of deity. It is observed that, the local male and female pilgrims who belongs to old aged and other pilgrims show below average for retail and other retail services
2. It is observed that, all the non-local male pilgrims segments show the highest of 3.0 average score for satisfactory shopping. The lowest score 2.6 qualities of souvenirs, co-operative shopkeepers 2.7.
3. It is observed that, Devotional goods, articles, musical instruments, religious books, etc are very much important which satisfy need of devotee pilgrim. Retailers are using dual pricing system.
4. It is observed that, pilgrims the 44.8% pilgrims and 34.6% non-pilgrims show average and below average satisfaction
5. It is observed that, 61.2% pilgrims show average and below average score for retail services and 74.% non-pilgrims show below average and average score for retail services)

Suggestions about Retail Trade Practices:

1. The customers or tourists should be segmented and classified so that targeted services marketing approach can be applied effectively and there should be better understanding of the needs of the tourist
2. It is strongly recommended that, the devasthanⁱ is required to open adequate number of shops selling holy articles, souvenirs and gift items at reasonable price.
3. It is suggested that, concerning authorities should from time to time evaluate /monitor the working of different private agencies providing various services with the help of government body pass a legislation against profiteers and cheaters so that the visitors do not have any bad experience during their visit .
4. The facilities and attractions here pull down the tourists to stay here for long period thus earning from tourism will also increase.
5. It is suggested that, the various private agencies should form an association so that they all work under the guidance of some set rules and regulations.
6. It is also recommended that, medium sized garbage bin must be placed in the market area and local residents and shop keepers be motivated to use them. In addition to this special drives may be carried out by the local administration every week to keep the riverside clean.

It is suggested that, the retailers association should fix some award for those providing best services and penalty for defaulters because marketing of pilgrimage tourism services ought not to be carried on exclusively with commercial interest but within the parameters of commercial viability, concern religious code of conduct.

The second type of strategy requires constant improvement in the present level of marketing culture about all those services where both pilgrim and non-pilgrim groups obtain an average level of satisfaction 3.9, pilgrims and 3.6 non-pilgrims score average level of satisfaction.

The third type of strategy draws immediate attention of policy maker's administration and operators of such retail services towards those aspects of marketing efforts. Which scored below average level of satisfaction regarding these retail services 2.9 pilgrims show a below average satisfaction in shopping by 1.5 pilgrim 2.5 non-pilgrims

Conclusion:

The various pilgrimage tourism retail services studied through customer satisfaction approach indicate wide range of mismanagement, lack of quality service and overall supervisory effectiveness, the weak areas identified under retail services need to understand pilgrim requirements in terms of pilgrim profile and pilgrimage significance rather than just market potential. In fact market potential of services also increases if the providers continue to maintain the

quality and relevance of the services to the pilgrimage purpose.

It may be concluded that the below average score of satisfaction reduces the overall satisfaction to a

great extent. Thus a sound strategy for such services is required for improvement and converting dissatisfied customers into satisfied ones.

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