

# SAGAR

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## **Study on the Changing Dimension of Central Government Expenditure: Evidential Approach**

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### **Abstract**

Central government expenditure refers to central government budget expenditure as reported in the final central government accounts. It does not include unincorporated state enterprises or extra-budgetary funds belonging to the state sector, but it does include transfers into them. Government expenditure in India, as per the provision in the Constitution of India, is divided into two type viz. revenue expenditure and capital expenditure. Total expenditure of central government has increased from Rs 56.24 billion during 1970-71 to Rs 1052.98 billion during 1990-91 which further increased to Rs 3255.92 billion during 2000-01 reaching high level of Rs 19780.6 billion during 2016-17. The evident from the data that on one hand capital expenditure shows declining trend, while on the other hand revenue expenditure of the central government has been increasing over a period of time. This is not the good sign for country like India where development expenditure in creating assets are utmost important. Share of developmental expenditure has remained higher than that of non developmental expenditure in India till 1993-94. After 1993-94 the share of non developmental expenditure has remained higher than that of non developmental expenditure till 2008-09.



## **Study on the Changing Dimension of Central Government Expenditure: Evidential Approach**

### **Introduction**

Central government expenditure refers to central government budget expenditure as reported in the final central government accounts. It does not include unincorporated state enterprises or extra-budgetary funds belonging to the state sector, but it does include transfers into them. Government expenditure in India, as per the provision in the Constitution of India, is divided into two type viz. revenue expenditure and capital expenditure. Public expenditure is an intrinsic instrument of the fiscal system of a federal nation. The size, pattern and efficiency of such expenditures results in reduction of economic disparity, leading to growth and development of the country. The study of public spending was neglected till 1920s by classical economists like Adam Smith, J B Say, David Ricardo who considered it as a waste and adversely affecting the private capital formation. Disagreeing to the classical school of thinking, Keynes considered public expenditure as an exogenous factor to be utilized as a policy instrument to stimulate economic growth. According to the Keynesian economists, private sector decisions sometimes lead to incompetent macroeconomic outcomes requiring intervention by the government (through fiscal policy instruments) and the central bank (via monetary policy instruments) to stabilize output. Economists such as John Taylor, R.A. Musgrave, to name a few, also opined in favor of government spending.<sup>1</sup>

With the adoption of economic planning, emphasize has been shifted from capital expenditure and revenue expenditure to plan and non plan expenditure. The share of Non-Plan expenditure has remained close to 70% and that of Plan at 30% all these years.<sup>2</sup> The Planning Commission, in the 11th Plan (2007-12) document prepared in 2007, had proposed abolition of this “illogical and dysfunctional” distinction citing several issues. A high-level committee on Efficient Management of Public Expenditure, was then, constituted by the Planning Commission which recommended that the usual distinction made in the government budget between Plan expenditure and Non-Plan expenditure be done away with<sup>3</sup>.

Classification of central government expenditure in India is important because different categories of expenditure explain the inter-relationship between the government and the rest of the economy. Expenditure pattern of central government also reveals the relative size of various government activities in the economy. The

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<sup>1</sup> Raja A N (2013) Expenditure Pattern of the Central Government, Economic Research and Surveillance Department, CCIL

<sup>2</sup> <https://www.ccilindia.com/Documents/Rakshitra/2013/aug/Article.pdf>

<sup>3</sup> <https://www.ccilindia.com/Documents/Rakshitra/2013/aug/Article.pdf>



Constitution of India provides for the separation of expenditure into revenue and capital through Article 112(2) as well as Article 202. The classification of total expenditure into plan expenditure and non-plan expenditure has evolved with the planning process.

There is the basis of classification between revenue expenditure and capital expenditure. Central government expenditure that neither creates assets nor reduces a liability is categorized as revenue expenditure. On the other hand if expenditure creates and asset or reduces liabilities, it is categorized as capital expenditure.

Government of India has adopted the strategy of economic planning through Five Year Plan for economic development purpose. The expenditure incurred by central government on the items relating to five year plans is termed as plan expenditure which is estimated after discussions between concerned ministries and the planning commission. Plan expenditure of the central government include spending on creation of productive asset through centrally sponsored programmes and flagship schemes. It include all kinds of government expenditure like, school buildings, hospital buildings, roads and bridges as well as those on revenue heads, like, salaries of staff, wages of workers, textbooks and medicines etc. On the other hand, non-plan expenditure includes all central government expenditure that is outside the purview of the five year plan which included expenditure item such as expenditure on defence services, interest payments and those on the running of existing government institutions in different sectors etc.

### **Total Expenditure of Central Government**

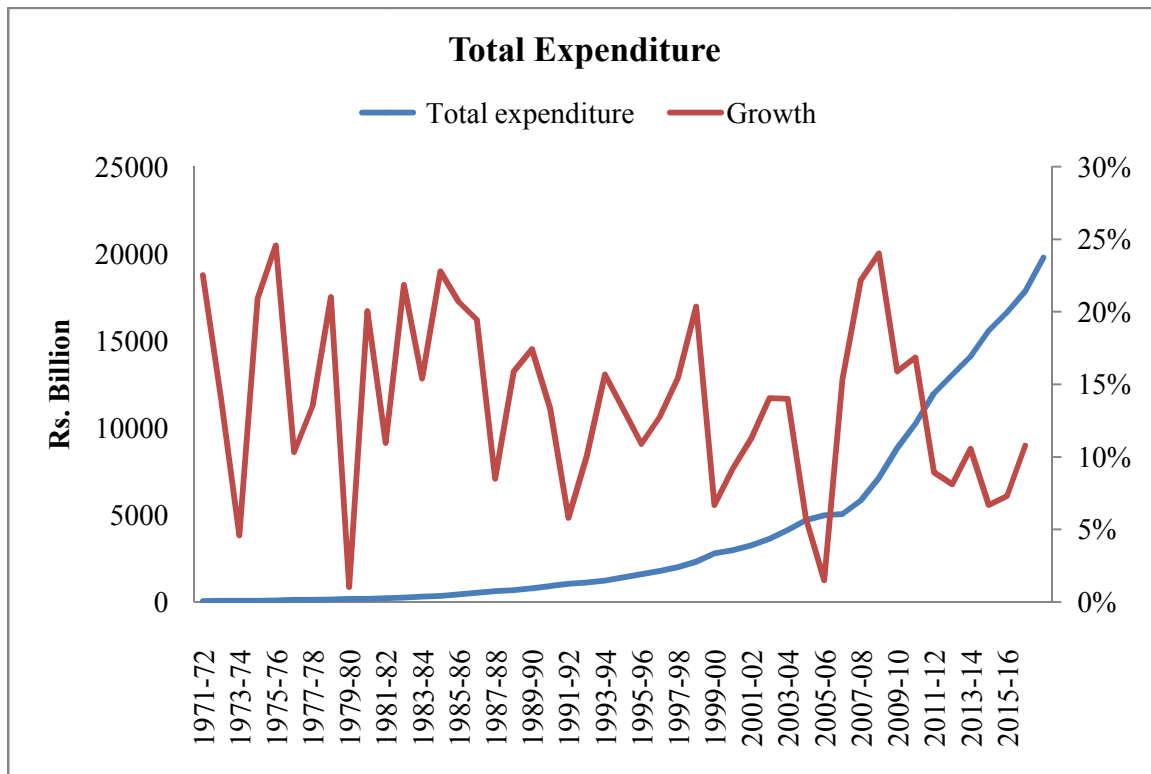
The detail of central government expenditure of the central government during the period 1970-71 to 2016-17 is presented in table and graph below.

<b>Total Expenditure of Central Government (Rs Billion)</b>					
<b>Year</b>	<b>Total Expenditure</b>	<b>Growth</b>	<b>Year</b>	<b>Total Expenditure</b>	<b>Growth</b>
1970-71	56.24	-	1994-95	1607.39	13%
1971-72	68.92	23%	1995-96	1782.75	11%
1972-73	78.57	14%	1996-97	2010.07	13%
1973-74	82.18	5%	1997-98	2320.53	15%
1974-75	99.36	21%	1998-99	2793.4	20%
1975-76	123.79	25%	1999-00	2980.53	7%
1976-77	136.57	10%	2000-01	3255.92	9%
1977-78	155.06	14%	2001-02	3623.1	11%
1978-79	187.66	21%	2002-03	4132.48	14%
1979-80	189.62	1%	2003-04	4712.03	14%
1980-81	227.68	20%	2004-05	4982.52	6%
1981-82	252.65	11%	2005-06	5057.38	2%
1982-83	307.91	22%	2006-07	5833.87	15%
1983-84	355.34	15%	2007-08	7126.71	22%



1984-85	436.32	23%	2008-09	8839.56	24%
1985-86	526.66	21%	2009-10	10244.87	16%
1986-87	629.16	19%	2010-11	11973.28	17%
1987-88	682.61	8%	2011-12	13043.65	9%
1988-89	791.11	16%	2012-13	14103.72	8%
1989-90	929.08	17%	2013-14	15594.47	11%
1990-91	1052.98	13%	2014-15	16636.73	7%
1991-92	1114.14	6%	2015-16	17853.91	7%
1992-93	1226.18	10%	2016-17	19780.6	11%
1993-94	1418.53	16%			

Source: Reserve Bank of India Database



CAGR : Capital Expenditure	
Year	Total expenditure
1970-80	14.46%
1980-90	16.91%
1990-2000	12.26%
2000-2010	13.58%
2010-2017	8.73%

It can be seen from the data that total expenditure of central government has increased from Rs 56.24 billion during 1970-71 to Rs 1052.98 billion during 1990-91 which further increased to Rs 3255.92 billion during 2000-01 reaching high level of Rs

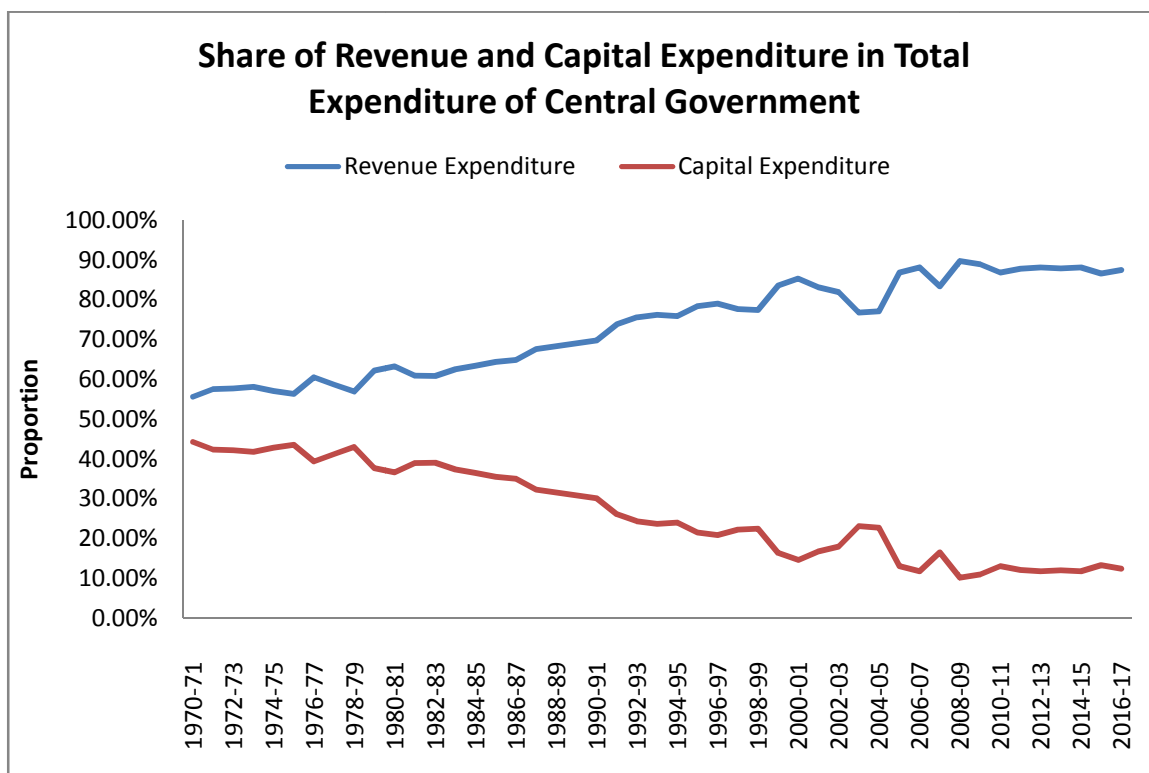


19780.6 billion during 2016-17. The information about annual increase in total expenditure shows that 24.59 percent has been registered during 1975-76 followed by 24.03 percent during 2008-09 and 22.79 percent during 1984-85. On the other hand lowest annual increase of 1.04 percent in total expenditure of the central government has been registered during the year 1979-80 followed by 1.50 percent during 2005-06 and 4.59 percent during 1973-74.

Decadal growth in total expenditure of central government computed as CAGR is also presented in table above. The data revealed that total expenditure increases at CAGR of 14.46 percent during the decade 1970-80 which increased to 16.91 during 1980-90 but registered declined thereafter to 12.26 percent during 1990-2000. During recent period 2010-17 total expenditure registered CAGR of 8.73 percent which is very low as compared to past record.

### The Share of Revenue and Capital Expenditure in Total Expenditure

Total expenditure of the central government has been divided into revenue expenditure and capital expenditure. It is interesting to note the comparative picture of revenue expenditure and capital expenditure of the central government.



The details as presented in graph above shows that revenue expenditure was nearly 55 percent of total expenditure of the central government which registered continuous increase reaching 87 percent during 2016-17. On the other hand capital expenditure was nearly 44 percent of total expenditure of the central government which declined continuously reaching 12 percent during 2016-17. Thus it is clearly evident from the data that on one hand capital expenditure shows declining trend, while on the other



hand revenue expenditure of the central government has been increasing over a period of time. This is not the good sign for country like India where development expenditure in creating assets are utmost important.

### Development and Non Development Expenditure of Central Government

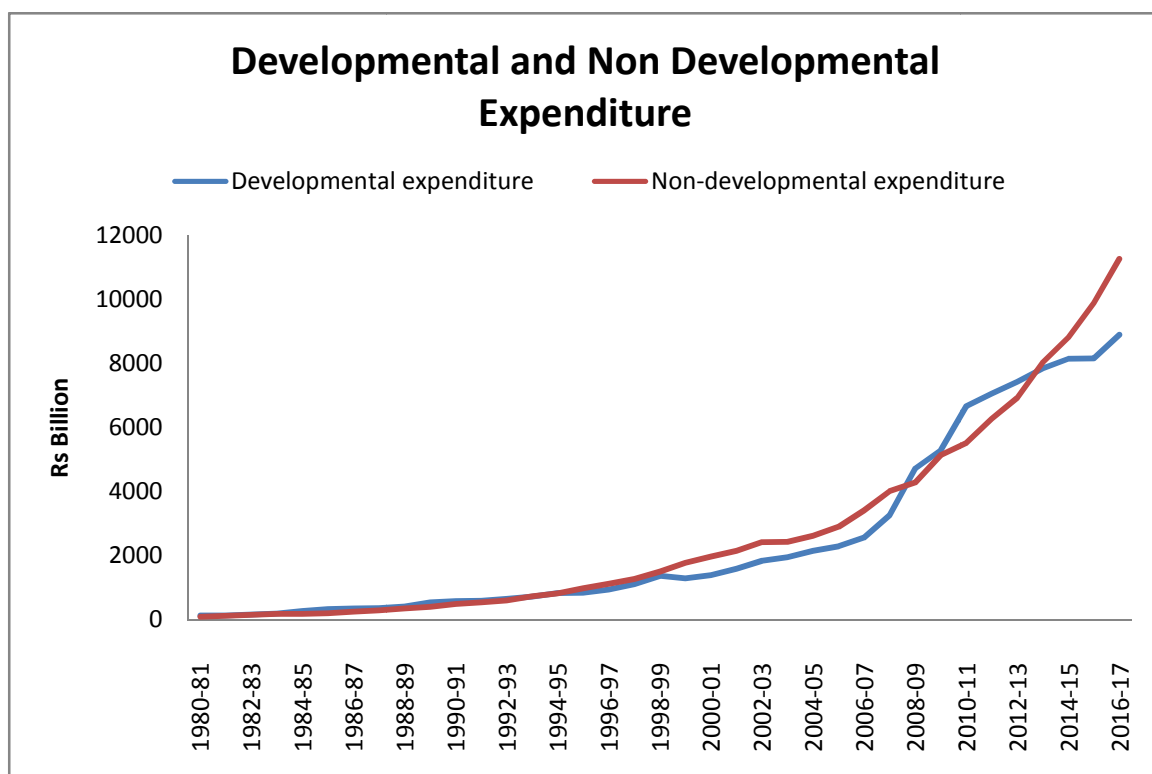
Total expenditure of central government whether plans or non-plan or capital or revenue can also be classified into developmental and non-developmental expenditure. The expenditure incurred by central government on activities directly related to economic development is called developmental expenditure. Expenditure incurred on education, health care, scientific research; infrastructure etc. is considered at developmental expenditure. On the other hand expenditure incurred on general essential services required for normal running of the government is termed as non-developmental expenditure. Expenditure incurred by central government on services relating to general administration, police, defense, judiciary etc. is non-developmental expenditure. Trend in developmental and non developmental expenditure of central government is presented in table and graph below;

<b>Developmental and Non Developmental Expenditure</b>				
<b>Year</b>	<b>Developmental expenditure</b>		<b>Non-developmental expenditure</b>	
	<b>Rs Billion</b>	<b>Percentage</b>	<b>Rs Billion</b>	<b>Percentage</b>
1980-81	133.27	57.46%	98.67	42.54%
1981-82	137.91	52.17%	126.44	47.83%
1982-83	163.33	50.68%	158.97	49.32%
1983-84	194.07	51.38%	183.64	48.62%
1984-85	273.75	59.64%	185.25	40.36%
1985-86	329.09	61.16%	208.99	38.84%
1986-87	354.98	54.80%	260.6	40.23%
1987-88	365.73	51.91%	302.61	42.95%
1988-89	415.36	53.90%	355.19	46.10%
1989-90	542.04	56.92%	410.2	43.08%
1990-91	586.45	54.30%	493.49	45.70%
1991-92	593.13	51.81%	551.7	48.19%
1992-93	654.79	51.94%	605.84	48.06%
1993-94	724.64	49.62%	735.86	50.38%
1994-95	828.03	50.12%	824.02	49.88%
1995-96	844.27	46.12%	986.32	53.88%
1996-97	941.97	45.63%	1122.17	54.37%
1997-98	1109.94	46.48%	1278.2	53.52%
1998-99	1372.57	47.73%	1502.98	52.27%
1999-00	1291.51	42.06%	1779.28	57.94%
2000-01	1393.86	41.38%	1974.7	58.62%
2001-02	1593.64	42.52%	2154.56	57.48%



2002-03	1841.97	43.14%	2427.49	56.86%
2003-04	1954.28	44.54%	2432.98	55.46%
2004-05	2149.55	44.98%	2629.04	55.02%
2005-06	2290.6	44.07%	2906.77	55.93%
2006-07	2557.18	42.83%	3412.78	57.17%
2007-08	3256.7	44.83%	4007.28	55.17%
2008-09	4713.99	52.40%	4281.45	47.60%
2009-10	5282.42	50.68%	5141.01	49.32%
2010-11	6660.69	54.71%	5514.71	45.29%
2011-12	7053.21	52.94%	6270.75	47.06%
2012-13	7424.17	51.73%	6928.56	48.27%
2013-14	7845.04	49.42%	8030.7	50.58%
2014-15	8138.13	48.01%	8811.59	51.99%
2015-16	8148.2	44.52%	9885.25	54.01%
2016-17	8888.97	44.12%	11260.07	55.88%

Source: Reserve Bank of India



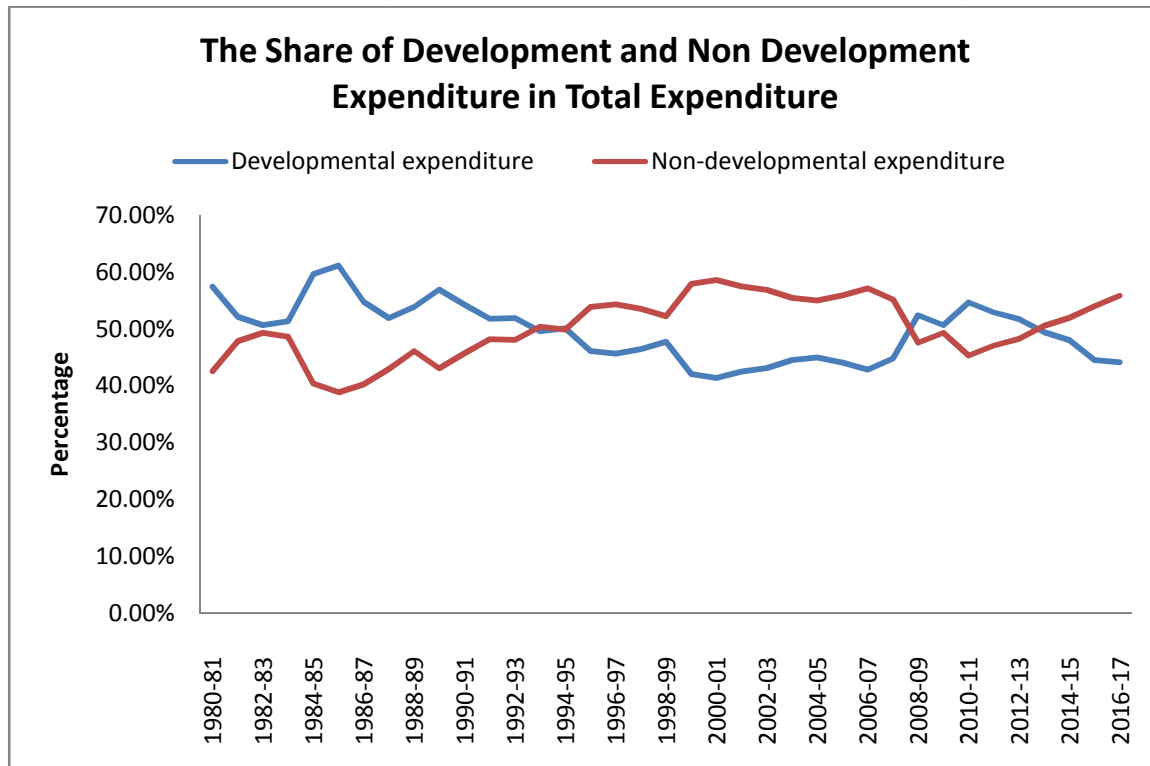
The developmental expenditure of the central government has been increasing since 1980-81. The development expenditure of central government was Rs 133.27 billion during the year 1980-81 which increased to Rs 1291.51 billion during 1999-2000 and further increased to Rs 8888.97 billion during 2016-17. On the other hand non developmental expenditure of the central government has increased from Rs 98.67 billion during 1980-81 to Rs 1779.28 billion during 1999-2000 reaching Rs 11260.07





billion during 216-17. It is Also evident from the data that non developmental expenditure of central government has increased at a rate faster than that of developmental expenditure.

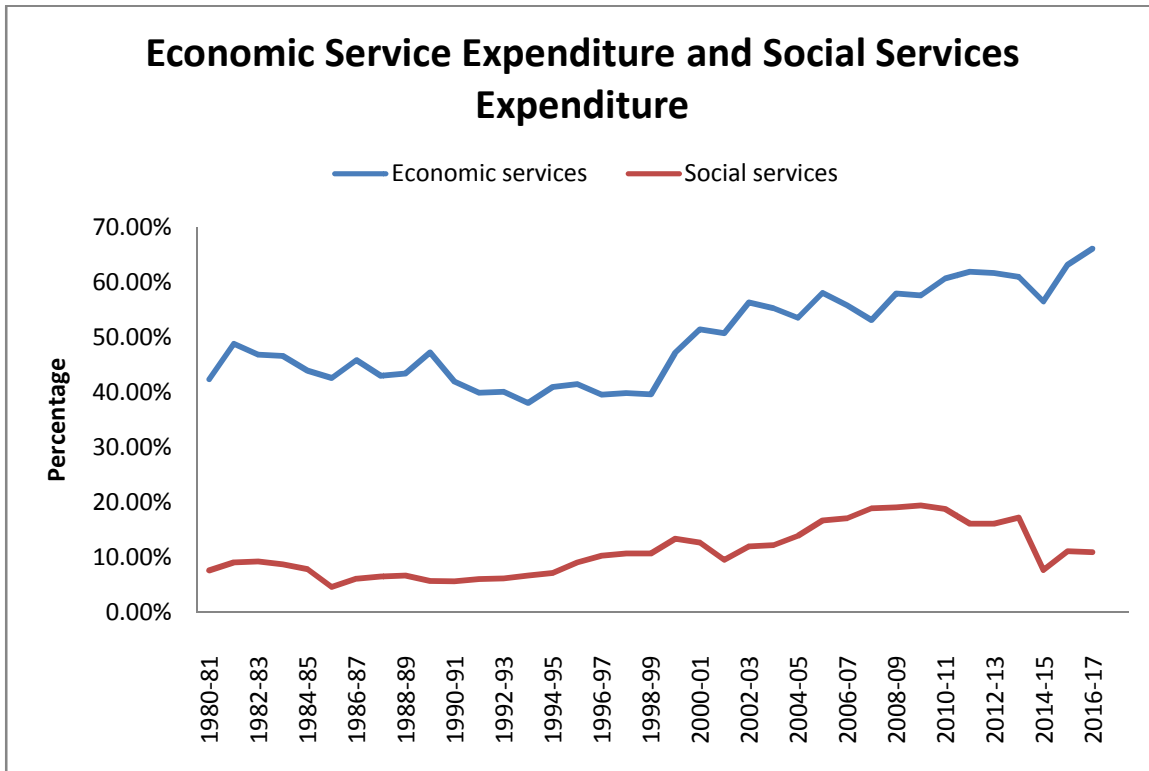
The share of developmental expenditure and non developmental expenditure is presented in graph below.



It is clearly evident from the data that share of developmental expenditure has remained higher than that of non developmental expenditure in India till 1993-94. After 1993-94 the share of non developmental expenditure has remained higher than that of non developmental expenditure till 2008-09. After the year 2010 the share of developmental expenditure has started increasing while developmental expenditure started declining. The period 1984-85 and 1985-86 marked the period with highest 59.64 percent and 61.16 percent share of development expenditure. On the other hand period 1999-2000 and 2000-01 marked a period with lowest share of developmental expenditure.

### **Economic Services Expenditure and Social Services Expenditure**

The expenditure of central government can be classified into developmental and non developmental expenditure. The developmental expenditure has two main components viz. economic services and social services. Expenditure on economic services include general economic services, agriculture and allied services, industry; and minerals, water and power and power development, transport and communication, railways, post and telegraphs etc. The detail of central government expenditure on economic services since 1980-81 is presented in graph below.



The share of economics services expenditure and social services expenditure in total developmental expenditure is presented in graph below. The data shows that the share of economic services expenditure in total developmental expenditure was 42.35 percent during 1980-81 which has been fluctuating in narrow range till the year 2000-01 when it crossed 50 percent. After the year 2010-11 the share of economic expenditure in total developmental expenditure has crossed 60 percent reaching 66.12 percent during 2016-17. With regards to share of social services expenditure in total developmental expenditure, the data shows that it has remained less than 10 percent during 1980-81 to 1995-96. After the year 1996-97 the share of social services expenditure in total developmental expenditure has remained in double digit reaching high level of 19.43 percent during 2009-10. The share of social services expenditure in total expenditure been registered at nearly 11 percent during recent time.

### Conclusion

Central government expenditure refers to central government budget expenditure as reported in the final central government accounts. on one hand capital expenditure shows declining trend, while on the other hand revenue expenditure of the central government has been increasing over a period of time. This is not the good sign for country like India where development expenditure in creating assets are utmost important. On one hand capital expenditure shows declining trend, while on the other hand revenue expenditure of the central government has been increasing over a period of time. This is not the good sign for country like India where development expenditure in creating assets are utmost important. The share of social service



expenditure in total expenditure has remained at much lower position as compared to share of economic services expenditure in total expenditure.

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## **A Study on Corporate Capital Budgeting Practices of Selected Automobile Companies in India**

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### **Abstract**

Capital investment refers to the investment in projects whose results would be available after year for the maximization profit of the company. An exertion has been made in this paper to explore the measurement of the impact of capital budgeting investment on sales (fixed asset ratio and fixed asset turnover ratio) and profitability (Net profit ratio). A sample of five automobile companies have been taken and secondary data from 2010-11 to 2014-15 was considered. The data has been analysed by using correlation analysis to find out association between capital budgeting decision and profitability; ANOVA to know the significant difference in capital budgeting and profitability of selected companies. The result revealed that there is a significant difference in capital budgeting and profitability between selected companies and significant relationship between capital budgeting and profitability.

**Key words:** Capital budgeting, Profitability, Fixed assets ratio, Fixed asset turnover ratio, Net profit ratio, Correlation analysis, ANOVA.



## **A Study on Corporate Capital Budgeting Practices of Selected Automobile Companies in India**

### **Introduction**

Capital budgeting is the planning of long term financial project relating to investment fund through long term source of capital. Capital budgeting is decision making process that facilities manager to evaluate and identify projects that are beneficial to the company.

No organization can be sustained without some investment in fixed assets. Investment in fixed assets like land, buildings, plant, machinery fitting, fixture and motor vehicle increase the productive capacity of firms since a firm acquires plant and machinery and other productive fixed assets for the purpose of generating sales.

It indicates the adequacy of sales in relation to investment in fixed assets. Generally, a high fixed assets turnover ratio indicates efficient utilization of fixed assets in generating sales, while a low ratio indicates inefficient management and utilization of fixed assets.

Capital budgeting decision is considered as very important decision as its affects directly the degree of risk and profitability of the company. Capital budgeting means investment of long term fund into fixed assets which require huge cash outflow and once decision is taken then it's very difficult to drawn back as it is an irreversible decision, so the study has been conducted to take sound capital budgeting decision which gives more return on investment than cost of capital and thereby to increase the wealth of equity shareholders.

It is an essential for any company to manage its fixed assets in a most profitable manner because huge amount of long-term funds have been invested in fixed assets. Investment in fixed assets directly affects the sales and profitability of any company.

### **Review of literature**

The current study has reviewed lot of recent studies that covers different industry sectors undertaken by various researchers all over the world in order to find out the relationship between capital budgeting and profitability. The review of such major studies is as follows.

Nousheen Tariq Bhutta and Arshad Hasan (2013). The aim of this study is to examine the impact of firm specific and macroeconomic factors on food sector in Pakistan. This study explores the impact of firm specific factors on profitability of companies listed in food sector of Karachi stock market in the presence of food inflation by employing multivariate regression analysis in common effect setting for



the period of 2002-2006. The firm specific factors include debt to equity, tangible, growth and size and macroeconomic factor include food inflation. Findings of study reveal the presence of significant negative relationship between size and profitability. However, tangibility, growth of the firm food inflation are found insignificantly positively related to profitability. Similarly, an insignificant negative relationship is observed between debt to equity ratio of firm specific factors and not macroeconomic variables. Toyin E. Olatunji and Tajudeen A. Adegbite (2014). This study modifies the investment in fixed assets and firm profitability of empirical evidence from the Nigerian banking sector. The study examined the effect of investment in fixed assets on profitability of selected Nigerian banks. Thirteen Nigerian commercial banks were purposively selected for the survey and analysis. The duration of the research was basically from 2000-2012. It is also the significant components of fixed assets investment of selected Nigerian Commercial Banks. Data were obtained from annual reports and account of selected Nigerian commercial Banks. Pooja K. Jahagirdhar and Pradeep K. Gupta(2015) The main objectives to study and understand the capital budgeting process and on what basis investment decision are taken. It is considered secondary data which collected from the books of Hotel Madhuvanand capital budgeting techniques have been used to achieve the objective. It is used both the techniques Traditional techniques and Modern techniques of the capital budgeting decision. It is service firm with hotel and lodging facilities. The firm has decided to modernize its lodging department investing 2.5lakh on each room: there are 36 rooms and require a investment of Rs.90,00,000. It was conclude the capital budgeting helps management to choose the most profitable alternative for long term investment. The existing capital budgeting proposal is found to be clear and comprehensive Capital budgeting influences managerial action for long-term implications and it effects the growth and profitability of the firm.

### Objectives of the study

- To study theoretical aspects of capital budgeting.
- To know the fixed assets investment and financing trend of selected automobile companies.
- To study the capital budgeting practices of selected automobile companies.
- To measure the impact of capital budgeting investment on sales and profit of selected automobile companies.

### Research variables

**Independent Variables:** Long-term debt to fixed assets ratio is taken as independent variable which is related to capital budgeting.

**Dependent Variables:** Net profit ratio and fixed assets turnover ratio considered as dependent variables related to internal factors of the selected automobile companies.



### **Hypothesis of the study**

- H<sub>01</sub>: There is no significant relationship between long-term debt to fixed assets ratio and fixed asset turnover ratio.
- H<sub>11</sub>: There is significant relationship between long-term debt to fixed assets ratio and fixed asset turnover ratio.
- H<sub>02</sub>: There is no significant relationship between long-term debt to fixed assets ratio and net profit ratio.
- H<sub>12</sub>: There is significant relationship between long-term debt to fixed assets ratio and net profit ratio.

### **Hypothesis testing**

Descriptive statistics to correlation analysis have been considered in this study at the 5% level of significant.

### **Research methodology**

The secondary data have been collected from websites and financial statement of the selected companies. The reference period of the study is of five year which is from the financial year 2010-11 to 2014-15. In these study five companies of automobile industry has been taken as a sample by using simple random sampling technique. The companies includes: (1) Hero MotoCorp India Ltd. (2) Maruti Suzuki India Ltd. (3) Mahindra & Mahindra Ltd. (4) Ashok Leyland. (5) Tata Motors Ltd.

### **Results and discussion**

In order to achieve the set objectives, ratio analysis has been employed by the researcher. For testing the hypothesis, correlation and ANOVA tests have been applied.



**Table 1.1 Long-term debts to fixed asset ratio**  
(Figures in times)

Company	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	St. Dev.
<b>M &amp; M ltd</b>	0.81	0.78	0.65	0.64	0.45	0.67	0.143
<b>Hero Motocorp</b>	0.36	0.27	0.1	0	0.15	0.18	0.142
<b>Maruti Suzuki</b>	0.03	0.14	0.14	0.16	0.01	0.10	0.070
<b>Ashok Leyland</b>	0.71	0.67	0.88	0.87	0.61	0.75	0.121
<b>Tata Motors</b>	1.09	0.73	0.92	0.95	1.27	0.99	0.201

Source:- Compiled from annual reports of companies

The above table 1.1 depicts the long term debt to fixed asset ratio of selected automobile companies in India. Almost all the selected companies show the decreasing trend of long term debt to fixed asset ratio except the Tata motors which is increasing during the study period means the Tata motors was raise fund in the fixed asset investment. Among the all companies the highest score of mean is 0.99 and standard deviation is 0.201 of Tata motors. This means that the automobile companies are decreasing investment trend and try to maximum utilization of available fixed assets. In case of Maruti Suzuki this ratio is very low with a mean of 0.10 and standard deviation is 0.070 indicates the company wants to retain control over the fixed asset investment and minimum utilization of long-term debt in the fixed assets.

**Table 1.2 Fixed asset turnover ratio**  
(Figures in times)

Company	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	St. Dev.
<b>M &amp; M ltd</b>	8.14	7.83	8.17	6.91	6.58	7.53	0.735
<b>Hero Motocorp</b>	4.75	6.23	7.74	11.27	9.47	7.89	2.577
<b>Maruti Suzuki</b>	6.62	4.73	4.45	4.05	4.08	4.79	1.063
<b>Ashok Leyland</b>	3.36	3.57	3.13	2.22	3.20	3.10	0.518
<b>Tata Motors</b>	3.52	3.62	2.90	2.25	2.30	2.92	0.649

Source:- Compiled from annual reports of companies

The above table 1.2 indicates the fixed asset turnover ratio of selected automobile companies in India. Which is depicts that almost all the companies decreasing trend





during the study period except the Hero MotoCorp India Ltd. The Hero MotoCorp Ltd was maximizing the sales to the fixed asset. Its maximum mean at 7.89 times and standard deviation is 2.577 of Hero MotoCorp Ltd. It Indicates the Hero Motocorp was maximum utilization of its fixed assets and gets the maximum sales ratio as compared to the other companies.

**Table 1.3 Net profit ratio**  
(Figures in times)

Company	2010-11	2011-12	2012-13	2013-14	2014-15	Mean	St. Dev.
<b>M &amp; M ltd</b>	11.35	9.04	8.29	9.28	8.31	9.25	1.251
<b>Hero Motocorp</b>	9.94	10.09	8.91	8.34	8.65	9.19	0.785
<b>Maruti Suzuki</b>	6.25	4.59	5.49	6.37	7.43	6.03	1.059
<b>Ashok Leyland</b>	5.65	4.41	3.47	0.3	2.54	3.27	2.022
<b>Tata Motors</b>	3.85	2.29	0.67	0.98	-13.06	-1.05	6.828

Source:- Compiled from annual reports of companies

The table 1.3 reveals the net profit ratio of selected automobile companies in India. Net Profit Ratio for each company in every year almost decreasing trend during the study period. The M & M Ltd has highest Net Profit Ratio as mean score is 9.25% which is shows that M & M Ltd is in better position to cope up with the market challenges. While Tata Motors has the lowest Net Profit Ratio 13.06% during the study period as it suffer from huge loss in the last year 2014-15. Taking into consideration standard deviation, Ashok Leyland and Tata motors has more standard deviation 2.022 and 6.828 respectively and lowest standard deviation is 0.785 of Hero Motocorp Ltd.



**Table:- 1.4 Correlation Analysis**

Variables		Long Term Debt to Fixed Assets Ratio	Fixed Assets Turnover Ratio	Net Profit Ratio
Long Term Debt to Fixed Assets Ratio	Pearson Correlation	1		
	Sig. (2-tailed)			
	N	25		
Fixed Assets Turnover Ratio	Pearson Correlation	-0.530	1	
	Sig. (2-tailed)	0.006		
	N	25	25	
Net Profit Ratio	Pearson Correlation	-0.588	0.670	1
	Sig. (2-tailed)	0.002	0.000	
	N	25	25	25

Note: Correlation is significant at the 0.01 level (2-tailed).

In the Table, the correlation analysis shows long term debt to fixed assets ratio is negatively (-0.530) correlated with the fixed assets turnover ratio. It means that the company's sales ratio (fixed assets turnover ratio) is lower because lower investment in the fixed assets. In this study, consider the total number of variables (N) is 25.

The data indicates the long term debt to fixed assets ratio is negatively (-0.588) correlated with the profitability ratio. It is conclude that there is negatively affect on profitability of the fixed assets investment and it shows weak insignificant relation to these factors. It is prove that there is no relation between long term debts to fixed assets ratio to net profit ratio.



**Table 1.5 Hypotheses Testing Through Correlation**

No.	Hypothesis	R-value	P-value	Result
H <sub>01</sub>	There is no significant relationship between long term debt to fixed assets ratio and fixed assets turnover ratio.	(-0.530)	0.006	Rejected
H <sub>11</sub>	There is significant relationship between long term debt to fixed assets ratio and fixed assets turnover ratio.	(-0.530)	0.006	Accepted
H <sub>02</sub>	There is no significant relationship between long term debt to Fixed assets ratio and Net Profit Ratio.	(-0.588)	0.002	Rejected
H <sub>12</sub>	There is significant relationship between long term debt to Fixed assets ratio and Net Profit Ratio.	(-0.588)	0.002	Accepted

### Conclusion

1. The Capital Budgeting of the selected automobile industry has been analyzed using different variables. The selected automobile companies are Mahindra & Mahindra Ltd, Hero Motocorp Ltd, Maruti Suzuki Ltd, Ashok Leyland Ltd, and Tata Motors Ltd. The selected automobile companies are performed well in efficient utilization of fixed assets and financing pattern asset and this will help the companies to take the important financial decision on the fixed assets. The capital budgeting is a process of continuous improvement.
2. During the financial year the performance of selected automobile companies are quite good except in case of Tata Motors Limited a based on profitability ratio. From the selected sample of total debt are most of all companies performances very well. In case of Hero Motocorp India Limited, its total debt is continuously decreasing tendency it means that the company maintains the debt ratio and continuously reducing the share of total debt during the study period.
3. The fixed assets of selected automobile companies are constantly growing tendency during the study period from year 2010-11 to 2014-15. Then it's concluded that the all the selected companies are very well proportion and continuously increasing rate of investment in fixed assets.
4. Long term debt to fixed assets ratio of all the selected five automobile companies are retained during under period of study. The Tata Motors Limited using full capacity from the resources of total debt and it brings into play an investment in fixed assets.



5. Net sales are frequently growth stage of all the selected automobile companies during the study period, it means that the all the selected companies get maximum use of resources of total debt and fixed assets investment.
6. The fixed assets turnover ratio of all the selected automobile companies are very well and optimum use of resources is done during the study period the year 2010-11 to 2014-15.

## **Recommendation**

The following suggestions are made so as to improve the financial strength of selected automobile industry in India.

1. Investment in fixed assets should be reduced and to proportional volume of sales. All the selected automobile companies does maximum share of total debt are investment in fixed assets.
2. The long term debt may be modified for speeding up of receivables. The proportion of total debt should be decrease as compare of fixed assets investment.
3. The fixed assets turnover ratio has to be increased in order for efficient management of fixed assets and increase the profitability of the selected automobile companies.
4. The selected automobile industry should try to plough back for expansion and diversification and avoid dependence on external borrowings (debt). This will help to improve profitability.
5. Cost cutting measures must be taken by the automobile industry in order to increase their profit by avoiding wastages and by reducing unproductive expenses.

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## **Examination of Affordable Housing Policies in India**

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### **Abstract**

In this paper criticise the Government of India's programmes for affordable housing in India, namely the Rajiv Awas Yojana and Housing for All 2022. Here analyse the efficacy of these policies in being able to provide thee sections of the population who are unable to avail housing from the formal market, both through direct support and most importantly in addressing the many distortions that have made the housing unnecessarily expensive, while taking away much of the value to consumers. In this paper argue that while these programmes and policies are a major advancement over the previous approaches, they do not fully exploit the potential that is there in increased FSI, sensitivity of low cost housing development to exploiting locational value appropriately, to use of government land judiciously, to the reform of titles and squatter rights, and to more efficient land use changes. They are also constrained by an inability to distinguish between what the markets can be coaxed to deliver and where state intervention becomes necessary.



## **Examination of Affordable Housing Policies in India**

### **Introduction**

The world population is over 7 billion, the fact remains that the majority of this population is not included financially and socially, living in poverty. This segment who is not perceived as profitable customers are in fact “resilient entrepreneurs and value conscious consumers”.

The need of the day involve partnering with them to innovate and partner in win-win scenarios where poor are actively engaged and companies providing products and services to them are profitable. (Prahlad&Hart 2002).A major need for frugal innovation exists in the providing housing solutions and innovations in value chain in affordable housing for the bottom of the economic pyramid.

Housing for very long in the post-independence period has had low priority. The logic of planning with its material balances implied that important materials like steel and cement whose outputs were sought to be expanded greatly, had priority for use in the capital goods and infrastructure sectors, since the argument was made that the higher the growth rate of production of capital goods in a closed economy the ultimate growth rate of the economy would be higher. Being a final goods sector whose consumption if restricted would also enhance the supply of savings outflow from the household sector.

The problem of affordable housing was a seemingly a government priority as evident in the rhetoric of many programmes of housing for the poor, the so called LIG housing areas in the master plans of many large and medium sized cities. LIG housing has absorbed significant public resources, but has thus far proved to be quite inadequate to address the problem of affordable housing. A few interesting developments of using private firms to build houses for the poor which the government then allocates have a better record in terms of quality and occupancy such as by the AP Housing Board have not been followed on the scale and quantum required to overcome the problem.

Today when many regions hope to revive housing to lift the economy out of the recession, the problem of affordable housing has no ideological or doctrinaire difficulties, nor are there any significant limitations that come from the financing side. In this paper we examine the Government of India's programmes for affordable housing in India, namely the Rajiv Awas Yojana and Housing for All 2022, and bring out the core finding that in ignoring the structural limitations that arise out of the assumptions of urban planning, transport and infrastructure design in towns and cities, severe distortions with regard to land use and allocation in the country, besides the limitations in the design of these specific policies, the effectiveness in enhancing affordability has been very limited. Scale and scope also continue to be limiting



especially when one recognises that affordable housing in late industrialising economies have come out of massive government commitment through public housing and measures to reduce the cost especially of land with high locational value.

### **Context**

India is witnessing rapid urbanisation where the growth in the urban population is by almost 3% every year as a result of migration from small towns and villages (NSSO2007) Expanding urban population has thus made increasing the housing supply necessary. For a variety of reasons, the growth in demand is not being met by supply of housing units resulting in housing shortage in urban areas. The growth per se is not unusual as if often made out to be since rapid urbanisation with the economic transformation is observed without almost any exception.

The housing “shortage” figures generally referred to in India by the government, and repeated by others is actually needs based. The housing shortage that is based on actual effective demand not being met has usually been missed in the discussions on housing. A UK Government paper on Estimating Housing Needs 2010, (Dept. for Communities and Local Government, 2010) reported the following as the major difference between the need and demand based shortage, “Need based – Shortfall from certain normative standards of adequate accommodation. Demand based – Quantity and quality of housing which households will choose to occupy given their preferences and ability to pay (at given prices).” Demand based estimation itself would not be as robust as in the case of goods and services that do not involve market failure. Land markets suffer from the hold –out problem, specific values, and values arising out the use of other lands. Thus the aspect of locational value (which arises out of the location of land relative to other lands and on the economic activities on these other lands) also prevents the market from efficient use and allocation Some of these such the hold out problem in aggregating land, can be overcome, but others can only be mitigated by regulation. Regulation when improper can often compound the problem and add further to the perversities in the market. This is the case in India. (Morris, Sebastian and Ajay Pandey 2010) . Therefore the cost price of housing for the same size and locational value can vary greatly so that the demand based estimation is meaningful only if the supply prices reflect true costs and scarcities, and not high costs (as they do in India) on account of perversities in regulation, land allocation, etc.

The Technical Group on Urban Housing Shortage for the Twelfth Five Year Plan (2012 – 17) defines housing shortage as comprised of the following components:

- Excess of households over the acceptable housing stock (people living in informal properties)
- Number of extra households needed due to congestion
- Number of extra households needed due to obsolescence
- Number of kutcha households that must be upgraded

The above classification is need based perspective of housing shortage alone and ignores the housing requirements from the demand. In other words it is not the effective demand for housing.





The Indian Government has formulated many policies for housing especially since the late eighties including the National Housing Policy of 1988. Additionally, many bodies like the National Housing Bank (NHB) and Housing & Urban Development Corporation (HUDCO) had also been created to facilitate the implementation of such policies. The first policy specific to urban housing was the National Urban Housing and Habitat policy in 2007 (Ministry of Housing and Urban Poverty Alleviation, 2007). It focused on affordable housing as a key objective for sustainable urban development. Following this, many programmes specific to affordable housing have since been incorporated:

- Jawaharlal Nehru National Urban Renewal Mission (MoHUPA, 2015a) : It aimed to construct 1.5 Million houses for the urban poor in the mission period (2005-2012) in the 65 mission cities. Two policies under JNNURM targeted housing. Integrated Housing and Slum Redevelopment Programme is a direct housing policy measure under JNNURM. Basic Services for the Urban Poor (BSUP) aims at providing entitlements such as security of tenure, affordable housing, and services such as water, sanitation, health and education and social security to low-income segments
- Affordable Housing in Partnership (AHP)(MoHUPA, 2013): A market solution based approach by involving private players.
- Rajiv Awas Yojana(MoHUPA, 2012a): This programme aimed at providing affordable housing to the urban poor.
- On May 2015, Rajiv Awas Yojana (RAY) was rolled over into the Housing for All (HFA) by 2022 policy. This report analyses the RAY and HFA 2022 policies after developing a framework for sustainable policies for addressing the problem of affordable housing.

### **Market and government in affordable housing**

Conceivably the solution to the problem of urban housing could be visualised via a two pronged approach. The first step would be to make formal housing cheaper, since it is well known that house costs are driven up by unaddressed or perversely addressed market failure, the “cost of improper regulation” and of poor governance. These happen especially through land whose “prices” embody the cost of regulatory failures, and hurdles and restrictions in land use. A key component of this entails reducing the land cost per unit of built up area. In India, restricted land use policies, lower FSI, land transfer restrictions (increasing the transaction costs), and other such policies have led to an increase in the land prices. Appropriate policies can significantly reduce the cost per built up area and allow more people to avail housing through the formal market itself. (Morris and Pandey 2010).



## **Reasons for low reach of the formal market**

Government policies have significantly caused supply problems. These policies are indirectly responsible for increasing the cost of housing. The ways in which the government affects supply are as follows:

### *Low FAR/FSI*

The Floor to Area Ratio (FAR or FSI) is defined as the ratio of maximum floor area allowed for construction to the land area on which the building is constructed. The FAR is an important parameter in defining the height of the buildings and hence, has a major potential to affect the housing supply. Additional independent height restrictions, due to “heritage” places which may constrain the FAR are sometimes in place as well.

The FAR is kept low in the Indian cities against the backdrop of “limiting” population density and “avoiding” congestion. However, this intention has not been fulfilled by the policy as despite keeping the FAR low, the population density has not reduced as the number of people per unit constructed area is very high.

New York with an FSI of 15 has a population density of 4,000 per sq km whereas Mumbai with an average FSI of 1.33 has a population density of 20,000 per sq km.

The impact of lower FSI has been to curtail the housing supply over the years. This has led to a situation where the property prices have shot up beyond reasonableness. Mumbai with an FSI of 1.33 has one of the most expensive property rates in the world, which is very much because of the lower FAR. This lowering of land supply in the prime locations of the city leads to horizontal expansion of the city which in turn leads to an increase in commuting cost and increase in energy consumption which is a load on the economy. As the families generally want to avoid moving outside the centre of the city, they stay in congested conditions with multiple families living inside the same house. Hence, the population density does not go down despite the lower FAR.

An increase in FAR is the way forward for the major Indian cities. Increased FAR will have the direct impact of increasing the housing supply leading to lowering of housing prices and making it affordable to many people who currently cannot afford.

The arguments against a higher FAR basically majorly argue that our prime locations cannot serve the greater demand and pressure that will be put on the existing systems, such as the increased demand on the road and railway transportation systems, water and sewerage systems, sanitation system and electricity system. The major fallacy in this argument is that they do not consider the current congestion and already high population density in these areas which will not increase significantly by increasing



the FARs. An increase in FAR will not (and cannot) increase the population in absolute terms and also will have minimal impact in increasing the population density (people will not settle in a particular location only because it has a higher FAR). (Morris, and Pandey, 2010).

Therefore, increasing the FAR is an important step in decreasing the cost of the land component in housing and urban infrastructure, and such policies are highly recommended and are also in the nature of low hanging fruits. Suddenly increasing the FAR/FSI would put windfall gains into the hands of property and land owners where this increase is allowed. However this cannot be an argument against increase. There are ways to combine increase with transfer of development rights (TDRs), auction of FSI, having buildable FSI based on FSI procured from others not using their FSI, and intervention in the TDR markets by which rapid convergence to socially optimal land use and to optimal densities is possible., (Morris and Pandey, 2010).

### **Land use policies**

There are various normative regulations put on housing development in the country pertaining to built-up space, plot sizes, parking spaces, etc. which cause unnecessary waste of land in many locations. These norms are not designed on practical basis and hence, they do not cater to location specific needs. See for instance Berated (1996) for detailed analysis.

Such policies may be appropriate for some regions but having a blanket policy for all kinds of housing development may not be the best solution. In the current supply crunch scenario, policies that constrain the effective land use such as maximum of 45% ground coverage provide for artificial constraining of housing. They also leave vast amounts of improperly used land even in the metros which actually subtract greatly from social and public value.

### **Land transfer policies**

There are various complications associated with land transfer policies. The various complex transactions that are needed for development of a township are cited in Appendix I. From the table, it can be inferred that the construction of development site happens only after a number of steps which leads to unnecessary hurdles. The process of conversion of agricultural land into non-agricultural land is one of the more tedious processes. Also the stamp duty and registration process are expensive and lead to increase in housing prices. Moreover they are source of much discord and protest, since farmers would not be able to convert agricultural land to other uses, while the aggregator can resulting in vast rents being accumulated by the builders and fixers, and paid to officials in decision making. The various permissions from the Urban Development Department and the Revenue Department make the whole process slow and corruption prone. This whole maze of regulations and permissions lead to constraining of real estate supply. See Morris, Sebastian and Ajay Pandey (2007).



Hence it is important to remove non-agricultural use clearances, streamline the process for land transfer and have a single umbrella body which is responsible for attending all such issues related to land transfer rights, including the institution of proper titles to land. With the current norms and maze of regulations, it is nearly impossible to start a new township or society development without a gestation period of 2 years.

### **Non-Usage of Govt. Land**

A significant portion of the land occupied by the various government bodies is being wasted. According to initial estimates by the Department of Public Enterprises (Ministry of Finance, 2015b). 2.35 Lakh acres of surplus land lies with public sector undertakings (PSUs) which is completely non-productive currently. Similarly, Railways have 0.38 lakh acres of vacant land. Majority of the government surplus land that is wasted can be utilized for providing housing facilities. This is a measure that can be taken immediately for increasing the land supply. Application of GIS to accurately map existing Government land is an attractive option. Andhra Pradesh is actively pursuing the implementation of a GIS policy in the state (Govt. of AP, 2016).

Under the Cantonments Act, 2006 (earlier Cantonments Act 1924), the Government of India through the Ministry of Defence notifies vast areas as Cantonments. As of 2015, 62 locations occupying 1,86,730 acres have been notified as Cantonments (Ministry of Defence, 2015b). The remaining 15,96,000 acres of military-occupied land lie outside these notified areas. Such colonial-era military stations house 20,91,734 people (including defence personnel and civilians) while occupying approximately 17,82,000 acres of prized lands across 19 Indian states in cities such as Ahmedabad, Bangalore, Delhi, Jabalpur, Kanpur, Meerut, Pune, Secunderabad, Trichy etc. 80% of this area is concentrated in five populous states of Rajasthan, Madhya Pradesh, Maharashtra, Uttar Pradesh & Punjab. Based on relative population density alone, these Cantonments can be termed as surplus land lying with the State. Also due to multiplicity of laws such as the Defence Act 1903, there is unreasonable delay in transfer and mutation of properties in these areas due to corruption, restrictions on conversion into freehold land and on new constructions of buildings etc. Technically, however, it is difficult to conclusively state that there is unused surplus land because land is acquired for defence purposes only after its proposed military use is specified and accepted by the government. The use of these defence lands though is vastly suboptimal. The cantonments typically occupy the central areas of cities and their built up densities can be lower than that of rural places. Some like Dehradun have nearly 80% of their central areas being occupied by a few government organisations, leaving the rest of the population to live in perpetual congestion.

There is a growing need for release of land that is in the possession of government and used very wastefully, especially when these are located in prime areas of central places, because of which there is both the opportunity loss of not using these lands, and the very high costs of urban access imposed on the population that have to move



around and through these lands. The locational value weighted quantum of such land in the possession of government could in many cities – Kanpur, Pune, Dehradun, railway towns rival or even exceed the land currently in use by citizens.

### **Non recognition of slums dwellers' rights**

According to the 12th Five Year Plan report (Planning Commission, 2013), 3 million hectares of land have been declared as surplus of which 30% is caught up in litigations. This is compounded by other clandestine land transfers leading to illegal possession of pieces of land. In some cases, the plots allotted to various beneficiaries under the government policies do not have clear title. Since the cost of housing for even the lower middle classes is very high in areas with reasonable locational value (necessary for accessing the job markets), when slum clearance schemes provide for sites far away from the central places (with little or no locational value), and are not therefore meaningful options for the poor, who then have to live in new “illegal” spaces in urban places. An additional aspect is that the poor get pushed to the unregulated niches (ex-villages within cities). All these create a very large slum and chawl population in most large cities. As evidenced in the affordable housing policy in Brazil (Refer section on Sao Paulo) provision of some kind of legal tenure to squatters is instrumental in controlling urban squalor.

The landless and poor choose to occupy these pieces of disputed lands because they are less expensive than legal and overly regulated housing. With little or no reform of the regulation, there soon emerges an entire market in “illegal” development with its own developers who cater to the needs of those who can't afford housing in the formal sector and choose to stay in such “illegal” sites.

Now, as the disputed land provides no property rights to its occupants, or their land use prohibits them from use for housing, the residents there typically cannot ask for basic municipal facilities such as water and sewerage services, sanitary services, electricity services<sup>7</sup>. This is compounded by the disincentive that occupants have against investments, which could have led to improvement in living conditions as they do not have property rights and are not sure of their tenure. These factors lead to people living in awful conditions in these slums. The functionality of these illegal habitats to the urban places is without doubt. These “illegal” habitats (which are home to as much as 30-50% of the population) and allow its residents to live and participate in the economic activities; and without their work and services cities could hardly have grown.

Improving the quality of existing slums by provision of basic municipal facilities for the slum dwellers, while limiting the negative externalities of slums on other public services like transportation, road access etc is one of the important ways forward. Affordability for these services could be better than is generally assumed. According to the World Bank Report “Global Partnership on Output-Based Aid (GPOBA) lessons learned”, the payments made to middlemen in order to access basic municipal services are greater than that would have been paid if supplied legally to the municipal bodies. No doubt improving the condition of the slums will lead to an incentive for the current slum dweller to increase his tenure in the slum, but this stock of improved



slums can be utilized as a launching pad for getting into the formal housing sector. So essentially, we can improve the living conditions of the existing slums, leading to provision of some affordable housing which is suited for quality human habitation.

### **Framework for policies on affordable housing**

A policy on affordable housing should aim at two things:

*Improving reach of formal market.* This can be done through a coordinated approach that involves Increasing land supply

- Using the vast amounts of land with the government especially in central places more efficiently with affordable housing besides public infrastructure having a larger claim on the same.
- Resolving land title issues by adopting a Torrens System and allowing squatters rights to some part of the land which are convertible to either actual occupancy rights or rights that are transferable to more appropriate locations for affordable housing.
- Increasing FAR/FSI which would have the most impact on value creating affordable housing? The fear of windfall gains to private owners of land suitably located to have higher FSI can be addressed through bid based FSI and / or rights transfer.
- Modify building bye-laws/ sanctions that are archaic in nature and make them more functional and efficient

### **The rajiv awas yojana project (RAY) (mohupa, 2012a, 2012b, 2012c)**

The RAY programme aims at creating a slum free India. It was launched in 2011 in two phases. The “preparatory phase” ended in 2013. The “implementation phase” was sanctioned for action from 2013 to 2022. The two major objectives of RAY can be summed up as follows:

- Legal recognition of slums and bringing them into the formal system
- Redress the failures of the formal system

The RAY comprises of a series of guidelines that govern the many aspects of the program, right from the policy measures to be taken to the way in which these measures must be implemented. For our study, we shall focus only on the policy measures proposed by this scheme. We do not carry out a micro level analysis of implementation of the said policies. The efficacy and potent of the said measures will be analysed vis-a vis the policy framework described in the previous section. RAY is among the most comprehensive projects thus far from the government. Policy reforms to tackle the problems of affordable housing are an integral part of the scheme. They build on the policy reforms on the urban poverty alleviation reforms of the JNNURM scheme. This section will critique the policy measures under RAY in the light of the framework developed in the previous section.

The key features of the programme are listed below, which are examined further.



### Slum Intervention Strategies

- Provision of dwelling units in all tenable slums
- Wherever in-situ development is not possible, the slum dwellers must be rehabilitated elsewhere (designated untenable)
- Homeless and pavement dwellers to be included in adjoining slums or to be relocated.
- The slum intervention strategies would be of three types:
  - a) Upgradation: Includes upgradation of kuchha to pucca houses, incremental addition of rooms and provision of basic services
  - b) In-situ redevelopment
  - c) Resettlement: Relocation to nearby zones slums that cannot be rehabilitated.

### Slum Prevention Strategies

- Assessment of supply side constraints: The programme to address time consuming land approvals processes, constraining building rules etc.
- Assessment of constraints to rental housing to free up the rental markets.
- Review of demand side constraints: This would pertain to supply of credit and the penetration of micro-finance institutions

### Affordable housing in Partnership Scheme

- Subsidization up to 75,000 per DU of size up to 40 m<sup>2</sup>.
- Minimum of 250 DUs with a mix of EWS/ LIG/ Higher categories and commercial
- 60% of FSI to be used for DUs of carpet area not more than 60 m<sup>2</sup>

### Assignment of lease rights

- Assignment of lease rights to a dwelling unit for slum dwellers who have been residents of the slum for more than 5 years.
- These rights will be mortgage able, renewable, and inheritable.
- The lease rights shall be in form of a title deed in the name of the female of the household.
- The slum dwellers who are not eligible for leasehold rights shall be covered with rental housing in the form of dormitories and night shelters

### Cross subsidization and incentives to developers



- 15% of FSI or 35% of dwelling units are to be reserved for EWS/ LIG in future housing projects. In return, the developers will be granted relaxations in terms of FAR restrictions, building bye-laws and land use concessions.

Earmarking of 25% of municipal budget

- Basic delivery of civil and social services are to be provided for urban poor including slum dwellers.

State policy reforms

- Constitution of a land bank by State/ UTs to be allocated for affordable housing
- Streamlining the process of giving clearances and approval of affordable housing projects to constrain them to a certain timeframe.
- Nominal stamp duty for EWS/ LIG housing

Master Plan amendments

- Recognize slums and poor neighborhoods in non-conforming but non-objectionable land use status. Hazardous areas such as low lands, lakes, areas close to polluting industries are not covered. Such recognized tenable lands would be designated as residential or mixed use.

Simplification of sanctioning process and building bye-laws

- Single window approval for building sanctions and bye-laws
- Online process to be introduced

Improving access to credit

- Rajiv Rinn Yojana/ Interest Subsidy Scheme for Housing the Urban Poor:
  - a) Interest subsidy of 5% on long term loans (15-20 yrs.)
  - b) Ceiling of Rs.5 lakh for EWS and Rs 8 lakh for LIGCredit Risk Guarantee Fund (CRGF): Coverage of up to 85% of loans to EWS/ LIG.

### **Evaluation of the RAY scheme**

The “framework for policies on affordable housing” is used to evaluate the RAY scheme.

*Usage of Government land* :The proposal to construct a land bank under the “State policy reforms” of RAY can definitely free up some Government land for use in affordable housing projects.

*Easing restrictive Govt. policies/ Removal of procedural bottlenecks*: The slum intervention policy measure attacks the procedural bottlenecks part of the affordable housing policy. It also seeks to tackle the demand side problem. However, the demand





side problem is not as significant. In urban India, it is more a question on affordability than access to credit.

The “state policy reforms” of RAY also seek to remove procedural bottlenecks for only affordable housing projects. However, streamlining the process for only affordable housing is unlikely to impact the land supply in any significant way. Procedural bottlenecks must be removed on a systemic basis.

The credit policy under the RAY scheme tackles the issue from the demand side, which is not as significant a problem in India. Hence, this is not the most important issue.

*Taxation of affordable housing projects:* As per the KPMG report (KPMG, 2014), “Decoding Housing For All 2022”, a significant percentage of the cost (~35%) is due to taxes. The levy of nominal stamp duty can hence have significant impact on affordable housing costs.

*Increasing FAR:* RAY tackles this problem to some extent when it proposes easier FAR norms for developers in its cross-subsidization scheme. While such relaxations do tackle the problem of low FARs and restrictions on density, it is not the most efficient solution. The price reduction due to FAR and density relaxations is offset by the cross-subsidization. Moreover, the FAR relaxations will be effective when it is across the board for all types of housing projects. While narrow relaxations do tackle the issue to some extent, significant effects can be felt only after systemic implementation of this relax.

*Subsidization of housing for the poor:* “Affordable Housing through partnership” measure will allow for efficient development of housing societies by subsidizing those who cannot avail housing through the formal market.

*Cost outlay for Government;* The “affordable housing in partnership” scheme bypasses the massive expenditure of a direct housing policy.

*Assignment of lease rights:* RAY actively tackles the problem of tenure rights. Assignment of lease rights will tackle critical problem of dwellers not investing in their living conditions. This will also reduce frictions in transactions of their properties and increase liquidity in the housing market.

*Addressing tenure rights:* The “Master Plan amendments’ of RAY also addresses the issue of tenure rights for slum by recognising tenable land titles.

### “Housing for all 2022”

The policies which have been envisaged by the governments over the years have been some modification of “Housing For All 2022” (HFA) policy (MoHUPA, 2015b) that has currently been introduced. The HFA policy envisages providing, according to the President’s Speech, “every family with a pucca house with water connection, toilet facilities, 24x7 electricity supply and access”.



The housing shortage in the country is divided into 4 parts as per the MHUPA report on HFA 2022:

- i) Slum dwellers
- ii) Urban poor living in non-slum areas
- iii) Prospective migrants
- iv) Homeless and destitute

The government policy for slum dweller and urban poor living in non-slum areas would have to be considered.

The policy for slum dwellers is itself divided into 3 parts:

- i) Slums on public land
- ii) Slums on private land
- iii) Unauthorized colonies as slums

The major points under the strategy for slums on public land are:

- In-situ redevelopment or up gradation of the public land on the basis of private partnership by using land as a resource
- Provision of higher FSI to such lands
- Private party to exploit part of the land with increased FSI for commercial purpose
- Private party to build part of the land for eligible slum dwellers at free of cost (cross subsidization)
- GOI and State Governments to share the burden of the viability gap, if any

The major points under the strategy for slums on private land are:

- In-situ redevelopment or upgradation of the slums by the freeing up part of the land for commercial use with higher FSI to the owner and the shifting the slum to a lesser area with higher FSI
- Government to provide technical specification and area norms
- The major point under the strategy for slums living in untenable land such as river bed, forests, drain, high tension line, etc. is to shift such slums to other tenable areas. The major points under the strategy for slums on unauthorized colonies are:
  - Regularization of these colonies
  - Provision and improvement of basic municipal services such as roads, sanitation, sewerage, water services and electricity in these areas
  - Improvement of general infrastructure

The policy also aims at resolving some of the supply side issues with the following interventions



Government bodies which already have slums on their lands, such as Railways-1198 acres of slum, Ministry of Defence- 2876 acres of slum, Department of Public Enterprise- 5800 acres of slums etc., would free up some part of their land

- Provision of extra FSI for Affordable Housing
- Easier Window Clearance for building permission and deemed NA (Non-Agricultural Use) permission

### **Evaluation of housing for all by 2022 scheme**

Analysing this policy against the framework for affordable housing policies

*Usage of Government Land:* This policy tries to leverage the government occupied land in a small way by utilizing the currently government land occupied by squatters. The policy in a way tries to free up that land by separating it into 2 parts- one for affordable housing and the other for commercial purpose. However, it would have been even better if there would have been a policy clause where the government bodies which are sitting on vast pieces of unoccupied and unused land were made to give up their lands or asked why the lands currently vacant or under suboptimal use should not be taken away for public use / housing development. There is likely to be considerable resistance from the public bodies against any such move. Hence, the proposed policy of usage of occupied government land by slum dwellers in itself can be seen as a first step to a more radical but necessary measure of making the public bodies relinquish the unoccupied piece of land, or to put them to optimal use. Lands available with the government could have been traded for other lands or directly used in development of affordable housing projects instead of letting it out into the market. This way while the supply of dwelling units in market will increase, it will also then be in the affordable housing segment.

*Land under litigation, disputes and property right issues:* The HFA-2022 policy tries to leverage the private land under dispute by providing higher FSI to the private party and simultaneously providing for Affordable Housing in the same land. Also, the HFA 2022 aims at regularizing the unauthorized colonies, provision and improvement of basic municipal services such as roads, sanitation, sewerage, water services and electricity in these areas and a general improvement in the infrastructure. However, the policy is silent on many aspects of property rights/tenure rights of the people currently living in slums. The policy does not try to resolve the property rights problems that are one of the primary reasons for poor conditions of the existing slums.

*Restrictive Land Transfer Policies:* The HFA-2022 policy tries to address the problem of convoluted land transfer policies and difficult agricultural to non-agricultural land policies. The policy accounts for easier clearance window for various permissions and deemed NA permission. This is a significant step in the direction of removing the bottleneck between land occupation and land development. However overall abolition of NA Clearance would have removed one major perversity in urban land markets that



jacks up the cost of land for housing and urban use, and prevents wider participation in the land aggregation and development parts of the value chain.

*FAR Norms:* The policy tries to provide for a higher FAR in the public and private lands where there will be a provision of affordable housing construction. This will serve as an incentive for the private player to develop the land for commercial purposes and at the same time develop housing solutions for the slum dwellers/poor which are affordable, regulated and have proper municipal facilities. However, the policy does not address the problem a higher FAR in general (i.e. for properties other than affordable houses). This essentially means that the policy does not resolve the land supply constraint due to lower FAR in anyway. Hence, the policy will have low impact in reducing the property prices in any significant manner.

*Land Use Policies:* The policy is silent on the blanket approach by the government/local bodies in deciding the land use policies.

<b>Appendix I:</b> Timeline of Statutory Approvals Typically in India			
Sr.No.	Activity	Months/ activity	Cum. Months
1	Conversion of Land Use	8-12	12
2	Project Letter of Intent and License / Intimation of Disapproval	4-6	18
3	Pre-construction Approvals from State Level Bodies	6-8	26
4	Pre-construction Approvals from Central Level Bodies	5-7	33
5	Approvals for Construction Plan Sanction	5-7	40
6	Approvals for Commencement of Construction	2-3	43
7	Construction Period	24-30	63
8	Inspection and Approval Procedure for Building Completion	2-3	66
9	Occupancy Certificate Receipt from date of completion of above	2-3	69

Source: Jones Lang LaSalle, Affordable Housing in India (2012)  
[http://www.joneslanglasalle.co.in/india/en-gb/Research/Affordable\\_Housing\\_in\\_India\\_2012.pdf?27e6f554-2aa8-4864-8bc3-9127a4b902bc](http://www.joneslanglasalle.co.in/india/en-gb/Research/Affordable_Housing_in_India_2012.pdf?27e6f554-2aa8-4864-8bc3-9127a4b902bc)



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## **Determinants and Service Utilization of Healthcare Services in Erode District of Tamilnadu**

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### **Abstract**

Health is imperative factor and source of productivity for human being. Because of, it can be a proxy of labour quality. Health can be an investment for future economic return and this positive impact of health on economy has been tested by a number of micro studies based on regional or country surveys. Based on a cross country regression analysis, health measured by life expectancy has a positive impact on economic growth. Health status also has indirect impacts on economy through its influence on education. Several studies confined that health status has a positive effect on educational attainments. Health along with education is commonly regarded as one source of human capital in the sense that it has a close relation with labour quality. Productivity that is one of the key elements for economic development which is substantially influenced by the physical condition of labour, particularly when they undertake heavy or time consuming work. Each person's economic condition is more or less subject to his or her health status.

The overall economic condition of a country, state or region can be profitably influenced through improvement of health condition of people. Despite of this socioeconomic and health backwardness of the District of Erode, empirical studies on health problem of the District is almost absent. The prevailing situation requires that meaningful research is carried out in this area for the development of health condition of the people of the District in particular and the economic condition of the District in general. This paper focused on the service utilisation on health by people and their expenditure pattern with irrespective characteristics from Rural, Urban, Educational status and living pattern by economic and social values.





## **Determinants and Service Utilization of Healthcare Services in Erode District of Tamilnadu**

### **Introduction**

Emphasize the quality of life is an imperative of the development paradigm in most of the developing countries. Better health, education, equal and wider job opportunities to all, trustworthy and transparent administration, dignity, self-esteem and life security, sustainable and cleaner environment are the key manifestations of the quality of growth (World Bank, 2000). If the quality of human capital is not maintained, physical capital and natural resources cannot be properly utilized and growth could neither be sustained nor be qualitative. Health is a major determinant of human capital. The level of health status of a person is a strong reflection of the state of development of the nation. A nation with good health tends to be productive and productivity tends to uplift economic and societal developments.

Necessarily, health has to be defined from a practical point of view and, therefore, it has been defined according to life expectancy, infant mortality, and crude death rate, etc. In fact, it is studied as a function of medical care, income, education, age, sex, race, marital status, environmental pollution, and also certain personal behaviours like smoking habits, exercise, and other characteristics. It is also used as an independent variable to explain labour force participation rates particularly at old age. Not only do retired persons frequently cite poor health as the reason for retirement, but also current workers, who report health limitations, are more likely to withdraw from work in future. Health status is often used to explain wages, productivity, school performance, fertility and the demand for medical care.

The connection between the health status of the individual (or the population as a whole) and consumption of medical services builds the link between “economics of health” and “economics of health care”. Health care refers to any type of services provided by professionals or Para professionals with an impact on health status. Health care system is a formal structure for a defined population, whose finance, management, scope and content is defined by laws and regulations. It provides for services to be delivered to people to contribute to their health...delivered in defined settings such as homes, educational institutions, workplaces, public places, communities, hospitals, clinics and soon.

The relationship between health and development is fundamental, and the improvement of people’s health must be a major objective of development. For poor countries, there is a clear relation between GDP per head and life expectancy. At the lower end of the GDP range, the relationship is quite steep. In more developed societies, such as those within the European Region where the major causes of mortality and morbidity are non-communicable diseases, there is now strong evidence



that the burden of these diseases is also related to the social environment, and there is growing evidence of the complexity of this relationship.

While improved health, measured in terms of life expectancy, generally correlates with income per head of population, there are many exceptions to this. There are poor countries with relatively good health and rich countries with relatively poor health. This complexity increases when income differentials within countries are added to the discussion, as there are poor groups within rich countries whose health is well below that of the population of markedly poorer countries.

### **Statement of the problem**

In India, fiscal policy measures have highly concentrated for rural health sector which is next to agriculture and education. Acute health measure (or) indicator of core human development index shows good health. Tamilnadu state envisages becoming a valid (or) good state in terms of social welfare and social indicators. It also raises the standard of health delivery to international standards by ensuring universal access to health facilities by increasing the capacity of primary and secondary health care network.

Secondly, trauma, ambulatory, disaster management care and diagnostic services concerned for rural health. TN State has converged more resources on health. Despite, a large number of resources infrastructure and peoples' participation in Tamilnadu, It has not been achieved the provisions of National Rural Health Mission. Therefore, the present study will try to make an attempt to find or observe the factor which is involving structure and elements of rural health measures which will incorporate and enhance with their part of life among the rural people. These are the magnitude of our research. The following research questions are involved and endurable to the (replication of the research) validity of our study.

What are the factors deciding for utilisation of health service related to our public expenditure?

Where are the perceptions of people's choice, willingness towards treatment or any influenced factor or push factor determinants of health services?

How far the level of infrastructure of rural health and socio-economic values, background deciding their rural health measurements?

Hence, this paper makes an attempt to find out factors that provide solutions for overcoming health services.

### **Need of the Study:**

Health is indispensable element for every human being. It has necessary source of productivity because of it can be a proxy of labour quality. Health can be an investment for future economic returns and this positive impact of health on economy has been tested by a number of micro studies based on regional or country surveys.



Based on a cross country regression analysis, health measured by life expectancy has a positive impact on economic growth. Health status also has indirect impact on economy through its influence on education. Several studies confined that health status has a positive effect on educational attainments. Health along with education is commonly regarded as one source of human capital in the sense that it has a close relation with labour quality. Productivity that is one of the key elements for economic development which is substantially influenced by the physical condition of labour, particularly when they undertake heavy or time consuming work. Each person's economic condition is more or less subject to his or her health status. The overall economic condition of a country, state or region can be profitably influenced through improvement of health condition of people. Despite of this socio-economic and health backwardness of the District of Erode, empirical studies on health problem of the District is almost absent. The prevailing situation requires that meaningful research is carried out in this area for the development of health condition of the people of the District in particular and the economic condition of the District in general.

### **Objectives of the study**

The objectives of the present study are,

- I. To find the differential use of the healthcare services by different socio-economic strata of the sample households.
- II. To analyze the expenditure pattern of healthcare services among sample households.

### **Area of the Study**

Erode district has been selected for this study purpose. The reason is, per capita income range is as much as higher than remaining Districts except Coimbatore. Besides, it covers northern part of border district and hill regions. Thus, integral part of socio-economic perspectives is spread over here.

### **Data:**

The study utilised both primary and secondary data. The primary data are collected with the help of a pre-tested structured interview schedule from sample individuals through personal interview method. The structured questionnaire is prepared for obtaining information from sample units on the physical characteristics, access to health care facilities, sanitation, and portable water factors on which the income depends etc.

### **Sample Design:**



This study is followed by purposive sampling. The sample comprises of 446 individuals who are the earning members of households belonging to age-group 19-55 years, drawn from rural and urban areas- 300 from rural and 146 from urban areas. The sampling technique followed for the study is purposive random sampling where people belonging to different castes, religions, occupations- formal, informal sector, and rural-urban areas etc. categories are selected. The survey is conducted in the rural-urban areas of the Erode District which is one of the backward developing regions of the state of Tamilnadu. Attempts have been made to make the sample a representative one by including people belonging to different caste, religion, rural-urban areas.

### Data Analysis

**Table 1**  
**Source of finance and Expenditure**

Source of Financing \ Expenditure	Current incomes	Past Savings	Sale of asset	Sale of land	Borrowings	Total
Expense for consultation/doctors fee	178(63.6)	0	26(81.3)	0	32(65.3)	236(52.9)
Expense for medicines and injections	44(15.7)	14(40)	0	0	0	58(100)
Expense for surgery	14(5.0)	18(51.4)	0	47(94)	13(26.5)	92(20.6)
Expense for hospital ex-rays etc.,	17(6.1)	0	0	0	0	17(3.8)
Non –Hospital expenses	2(9.6)	3 (8.6)	6 (18.8)	3( 6.0)	4 (8.2)	43(100)
Total	280(100)	35(100)	32(100)	50(100)	49(100)	446(100)

There is a significant associate between medical expenses and source of finance at 5 per cent level. Chi Square value is 0.25. Minimum expected count is 1.22

In our civil society, the nature of expenditure is not common parlance of fulfilling our demands or desires. But, health premises have totally exempted from other expenses incurred among any category of people. Unlike other areas of spending, health treatment is neither regular nor predictable. Moreover, in the Indian context with poor environmental and general standards of living, all household members are likely to require health treatment, although women, children and the elderly are likely to suffer more from poor



health. Unlike other categories of expenditure, spending on health treatment is often unavoidable, since illness may lead to lack of active life and long work. However, the amount spent may widely vary and may be determined by the nature of the illness, the type of treatment provided, system of healthcare from which treatment is sought and the healthcare service provider. Often people report sickness suddenly and there are incidences like accidents, which warrant emergency treatment. It is necessary to consider the sources through which the households obtained money for treatment. Table 1 shows that 94 per cent of the respondents were sold their assets to undergo the expense of surgery itself. Nearly, 60 per cent of the respondents were spent their current income under the expense category on doctor's fees, medicine expenses. Therefore, mitigation strategy of coping mechanism depends solely on health expenditure. While major treatment by respondents' health expenditure depends largely on current income rather than past savings and assets or jewels. Thus, financial sources are coping up with their parallel occupation with their regular subsistence and long term savings.

**Table 2**  
**Place of Treatment with Occupational Status**

Place of Treatment \ Occupational Status	Self treatment	GH	PHC	Private Hospital	Total
Employed Service Class	0 0.0%	16 18.6%	16 18.6%	54 62.8%	86 100.0%
Own Business	16 19.8%	15 18.5%	0 0.0%	50 61.7%	81 100.0%
Agriculturist Class	0 0.0%	16 50.0%	0 0.0%	16 50.0%	32 100.0%
Daily Wage	0 0.0%	68 36.6%	16 8.6%	102 54.8%	186 100.0%
House Keeping	0 0.0%	0 0.0%	0 0.0%	46 100.0%	46 100.0%
Student	0 0.0%	0 0.0%	15 100.0%	0 0.0%	15 100.0%
Total	16 3.6%	115 25.8%	47 10.5%	268 60.1%	446 100.0%

There is a significant associate between occupation and place of treatment at 5 per cent level. chi square value is 3.44

There are various types of healthcare facilities available for treatment of illness. In India, an array of healthcare providers is available and accessible to people from varied socio-economic categories. At one end of the spectrum, there is an informal sector, comprising providers such as faith healers, or religious healers, who dispense certain forms of indigenous medicines. The non-allopathic streams such as homeopathic and



ayurvedic medicines are also popular, and in fact often they find a place within the formal set-up such as government organisations. At the other extreme, there are the qualified allopathic providers, dispensing health services in both government and the private sectors, constituting the formal sector.

The healthcare services flow into individuals through government, private and self-treatment categories. Government facilities include all the government run healthcare institutes such as Government Hospitals, Primary Health Centers, Community Health centers etc., irrespective of the systems of medicine. Private facilities include all types of private hospitals, dispensaries and clinics run by charitable institutions, non-government organizations and individual practitioners. Self treatment covers efforts taken for healthcare of family members by relatives, friends and self at the household level with home remedies. Thus, Occupational category decides about the treatment. Some of white collar job holders and sophisticated job holders avoid queue or spend time for token slip or procedural oriented entry in Government Hospital. Table shows that 36 per cent of the respondents from occupational category on daily wage earners utilized Government services. The same category of them utilized private services was up to 54 per cent. Similarly, 62 per cent of the employed service people utilized private service and 18 per cent utilized Government service.

**Table 3**

**Place of Treatment with Hospital expenditure**

Place of Treatment Hospital expenditure	Self Treatment	GH	PHC	Private Hospital	Total
Non Hospital expenditure	2(4.7)	13(30.2)	2(4.7)	26(60.5)	43(100)
Expenditure – consult/doctor fees	14(5.9)	86(36.4)	31(13.1)	105(44.5)	236(100)
Medicine/injunction	0	0	14(24.1)	44(75.9)	58(100)
Surgery	0	16(17.4)	0	76(82.6)	92(100)
X Ray	0	0	0	17(100)	17(100)
Total	16(3.6)	115(25.8)	47(10.5)	268(60.1)	446(100)



Chi-Square value is 11.3 the minimum expected count is .61. There is a significant association between Place of Treatment and Hospital expenditure at 5 % level.

The service providers of health differ from place, nature of treatment, based on the person. The cautious treatment or critical surgery expenses have become minimum level at AIIMS and Vellore CMC, Pondicherry JIPMER etc. But, these expenses might be at enormous level in popular private hospitals in metro cities. In case, small urban areas where there is equal amount spent for GH (logistics, travel) and private hospitals (nearest place with personal belonging support). In case, any police enquiry by trauma, or minor accident they will appear for GH. Contrarily, we can note that mandatory procedures were indulged with Government service compulsory, not for personal mind set. Table 3 shows that 44 per cent of the respondents spent consultation fees in private hospitals. Whereas 36 per cent of the respondents spent for consult/doctor fees at GH. But, there is no mandatory for levied fees in Government hospitals in certain circumstances. This is contrary statement or empirical in nature of health expenses. Further, 82 per cent of them spend for surgery expenses at private hospitals. Whereas 17 per cent of them spent for surgery expenses at Government Hospitals. Similar studies have quoted that the average household healthcare expenditure for treatment between two sexes was different in the case of both private and government hospitals. The average cost of treatment per episode for male members was Rs.510.45 in government hospitals and Rs.752.80 in private hospitals, while for female it was Rs.322.76 and Rs.704.24 respectively. The difference was small in private hospitals while it was more in government hospitals. In government and private hospitals, the direct expenditure for female patients was higher than that for male. In private hospitals, the direct expenditure for female patients was higher than that for male. The average doctor fee was Rs.159.67 for female and Rs.129.54 for male. If we consider indirect expenditure, we can say that the indirect expenditure for male was higher because the loss of earning was more in the case of male than female patients.



**Table 4**

**Place of Treatment with cost of health service**

Place of Treatment \ Cost of health service	Self Treatment	GH	PHC	Private Hospital	Total
	Lower than expected level	0	83(36.1)	31(13.5)	116(50.4)
Medium	16 ( 96 )	32( 19.2)	16(9.6)	103(61.7)	167(100)
Costl	0	0	0	49(100)	49(100)
Total	16(3.6)	115(25.8)	47(10.5)	268(60.1)	446(100)

Chi-Square value is 7. The minimum expected count is 1.76. There is a significant association between Place of Treatment and Hospital expenditure at 5 % level.

Opinion based results for cost of health service is depicted in this table. Nearly 50 per cent of the respondents felt that their cost of health services is lower than expected level in the private hospitals. The same category of the people who preferred cost is minimum or less than expected level in Government (36%). Whereas, one fourth of the respondents felt that their expenditure was costly in private hospitals.

**Table 5**

**Reliability analysis**

Health care delivery	Mean	Std.,	Respondents	score	
				+	-
financial condition in availing of the services of the hospital	2.59	.941	446	1.065	0.319
lack of personal attention	3.06	1.114	446	1.39	0.13
poor quality treatment	3.80	.880	446	1.736	0
corrupt practices followed by paramedical staff	3.55	1.048	446	1.281	0.453





Based on the 5 point scale measurement, opinions for health care elements are given. Table explains about the score result for poor quality treatment from both GH and Private Hospitals.

### **Determinants of household health expenditure for health care choice**

The household healthcare expenditure for health care choice may be impacted by many factors such as gender, age, social group, drainage and separate toilet etc., In order to find the factors impacting the health care expenditure of households; the study used the following OLS regression equation.

This study considers the above discussed measures to find the effect of house hold characteristics on health expenditure for health care choice.

Total data set is classified and regression model is employed as given below:

$$\ln(\text{hh\_exp})_{i} = \alpha + \beta_{zi} + \mu_i$$

**Table 6**

#### **Variable Definition and their summary statistics**

<b>Variable</b>	<b>Expected Sign</b>	<b>Mean</b>	<b>Std. Deviation</b>
Whether female	+	0.41	0.118
Age in years	+	36.30	10.493
Type of family (Nuclear)	--	0.229	0.361
Social Group (SC)	+	0.845	0.561
Drainage (Open)	+	0.433	0.689
Separate Toilet (No)	+	0.231	0.421

The table 6 reveals the description of variables taking for the analysis. The mean level, expected sign for the variables are presented. It shows that the mean age level is 36.3 and higher the deviation is goes to type of family. The social group includes different classes and average level of deviation is posted and social group of indicators which are integral part of health determinants. They are credibility in nature of health care services and accountability of hospitals both government and private. After that, the study has used multivariate regression approach is to examine, the effect of socio economic characters on amount spend on health care service.

The results of a regression model tested to examine its significance include the  $R^2$ , the model statistic, and the individual regression coefficients for each independent variable, their associate t statistics and the individual beta co efficient. The co efficient



of determination describes the strength of the relationship between all the independent variables in the equation and the dependent variable.

From the below table, it is observed that the value of the  $R^2$  reveals that 39.7 and Adj  $R^2$  37 percent of the total variation in the dependent variables.

**Table 7**

**Regression analysis of Household health Expenditure**

**Dependent Variable: LNHEP (Ln. health care expenditure)**

Variable	Coefficient	Std. Error	t-ratio	p-value	Sig
Constant	2.94643	0.617471	4.772	<0.0001	***
Whether female	0.0166125	0.110724	0.1500	0.8807	
Age in years	0.220119	0.0396035	5.558	<0.0001	***
Type of family (Nuclear)	0.0137342	0.0300857	0.4565	0.6483	
Social Group (SC)	0.426637	0.0936120	4.557	<0.0001	***
Drainage (Open)	0.829849	0.130904	6.339	<0.0001	***
Separate Toilet (No)	-0.626906	0.100829	-6.217	<0.0001	***

\*\*\*, \*\*, \* Significant at 1,5,10 percent level respectively

R Square	Adj R Square
0.397	0.370

The above Table 7 presents multiple regression estimates which measures the use of health services from a public provider. However, since other factors, such as household living standards, are also likely to influence choice of service, these are most important. The results indicated that the weather female category has insignificant positive result. Likewise the type of family brings the same kind of results. The age in year's shows positively significant result which implies increasing age in years has positive effect on the health care expenditure. The social group variables disclose the positive significant result that has clarity on prone towards health care expenditure. Besides, the preferential decision making for treatment expenditure was finalized by female member. Therefore, bivariate tabulation result was higher for female category in government hospital. But the private hospital the indirect expenditure for male was higher than female. Because of, loss of earning was more in the case of male. Family type itself observed that there is no significance. Because of, social structure is one of the prime element of health determinant from socio-economic determinant and values.



### Multinomial Logit Model

The overall model fit is explained through no of cases correctly predicted that constitutes 68% of the total sample taken. The likelihood ratio test conveys the p-value is significant. The dependent variable choice of treatment is explained by the selected variables.

Dependent variable : Choice of Treatment

Number of Observations: 446

Iterations completed: 06

Log likelihood function: 241.7850

Number of cases 'correctly predicted' = 305 (68.4%)

Likelihood ratio test: Chi-square = 419.174 [0.0000]

**Table 8**

#### Multinomial Logit Estimates

Variable	Choice I -- Government Hospital (GH)				
	Coefficient	Std. Error	z	p-value	Sig.
Constant	-2.14340	0.440420	-4.867	<0.0001	***
Whether female	0.0284239	0.127843	0.2223	0.8241	
Age in years	0.941209	0.628507	1.498	0.1343	
Type of family (Nuclear)	-0.276923	0.0867849	-3.191	0.0014	***
Social Group (SC)	0.2987	0.861503	0.002008	0.9984	
Drainage (Open)	0.795500	0.265347	2.998	0.0027	***
Separate Toilet (No)	-0.494415	0.144581	-3.420	0.0006	
Variable	Choice II -- Primary Health Center (PHC)				
	Coefficient	Std. Error	z	p-value	Sig.
Constant	0.0658514	0.111888	0.5885	0.5562	
Whether female	0.0046383	0.101547	0.04568	0.9636	
Age in years	0.0284239	0.127843	0.2223	0.8241	
Type of family (Nuclear)	-0.989236	0.400931	-2.467	0.0136	**
Social Group (SC)	0.166300	0.127139	1.308	0.1909	
Drainage (Open)	0.0277411	0.0961922	0.2884	0.7730	
Separate Toilet (No)	0.740755	0.279164	2.653	0.0080	***



Variable	Choice III -- Private Hospital (PH)				
	Coefficient	Std. Error	z	p-value	Sig.
Constant	-0.494415	0.144581	-3.420	0.0006	***
Whether female	-0.0292791	0.111147	-0.2634	0.7922	
Age in years	2.74396	0.479639	5.721	<0.0001	***
Type of family (Nuclear)	-0.0137318	0.0705538	-0.1946	0.8457	
Social Group (SC)	0.6346	0.861503	0.002163	0.9983	
Drainage (Open)	1.40314	0.228000	6.154	<0.0001	***
Separate Toilet (No)	-0.694121	0.358966	-1.934	0.0532	*

\*\*\*, \*\*, \* Significant at 1,5,10 percent level respectively

The above Table 8 presents multinomial logit estimates which measures the use of health services from a public provider, primary health care centre and private hospital. However, since other factors, such as household living standards, are also likely to influence choice of service, these are most important. The results indicated that the weather female category has showed positively significant result in the case of Choice I and II but it is negative in the case of Choice III but it brought out insignificant result. The type of family variable brings out the same kind of results that is negatively significant in Choice I, II and III. The age in years shows positively significant result in the case of Choice I and Choice II and which implies increasing age in years has positive effect on the health care expenditure but it is insignificant. The social group variables disclose the positive significant result that has clarity on prone towards health care expenditure in the case of Choice I, II and Choice III. The drainage facility open has positive result on all the three choices of health care service provider in a significant way. The age in years and drainage open are significant with 1 percent level. Besides, the components of attitudinal change or effect from awareness about health service provider with socio economic variables are significant in terms of treatment, awareness level and pattern of expenses for overall treatment.

### Findings

It is noted that 39 percent of the respondents are covered under the age group of 21-30 years. Next, 24 percent of them are belonged to the age group of 31 – 40 years. This age group category is meant for cautious of health because of their dedication to their familial and social commitments. If their health would affect, the affect or harmful is applied for entire members of the family.

Majority of the respondents (96%) have consumed safe drinking water. Therefore, amenity is availed properly without any constraint.

Nearly 60 per cent of the respondents spent for medical purpose through current income under the category of below 5000 per month. Ironically, it shows that daily wage earners save money for emergency expenses or they can have cope up



mechanism of health care and precautionary measure of money source for medical expenditure.

It is noted that among the different age groups, 38.1 per cent of respondents belonged to the age group of above 60 years, followed by 34.2 per cent of them belonged to the age group of 6 to 14 years and 31.8 per cent in the age group of 31 to 60 years preferred government hospitals. As age increases there is a gradual increase in the proportion of people (27 to 38 per cent) seeking government hospital services. It indicates that there are several dimensions which are involved service utilisation among various categories of (socio-economic) people. Age factor itself is not an influence consequence of service utilisation. The respondents who utilized service by government is mostly for behavioural approach that is based on income and mandatory for verification and certification under the circumstances like accident (or) police inquiry.

It is noted that 94 per cent of the respondents were sold their assets for the expense of surgery itself. Nearly, 60 per cent of the respondents were spent their current income under the expense category on doctor's fees, and medicine expenses. Most of the middle class families (irrespective of occupational category) use their current income for their medical expenses.

Majority of the respondents who are having accession with the nearest place of medical treatment is (70%). During some exceptional situations, they seek with specific (or) rare occasions and approached particular hospitals which are far away from their residences (30%).

### **Conclusion**

Paradoxically, health expenditure and service provider by government is infinitive developmental goals in India. As per the technological competitiveness in worldwide forum and service sector reformation, it has been enhanced properly in India. The choice is taken by the people who preferred government services rather than private hospitals. But, provisional allocation of dispensary, infrastructure man power planning and monitoring are regulative one. Secondly, source of finance for people's cope up mechanism on hospitalized expenditure is mostly covered under current income.

Secondly, service providers are some category (range of infrastructure) of equipment, structural, elements of precautionary measures. Large number of people seeks their medical/health care facilities (or) services from private hospitals (or) clinics rather than government hospitals. The generalized factors on attitudinal changes narrow down the characteristics which have followed by the whole society and laid down for the richest persons who negated for free (or) margin service from government due to their prestige. At the same time, their family members seek for medical seat/quota only in government medical colleges. Therefore, service provider and determinants of health and amenities have served or meant for its reliable in nature of peoples accessibility and governed by common parlance of equal treatment.



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## **A Study on Factors Affecting Online Shopping in Ahmedabad City**

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### **Abstract:**

In the present digital era all engaged with E-commerce activities. E-commerce has changed lifestyle of all in the current situation. E-commerce has changed political, social, environmental and technological environment worldwide. In our daily life we have also changed our shopping mode with changing our life style with E-commerce. The traditional shopping style is somewhat changed and online shopping has taken place. As we have changed the purchasing mode in the current era, there are many factors which affects to online shopping. Researcher has tried to find out factors affecting online shopping. And researcher has also tried to find out the factors motivating for online shopping. Researcher has indentified the factors impacting for online shopping.

**Keywords:** Online shopping, Factors, Gender, Satisfaction

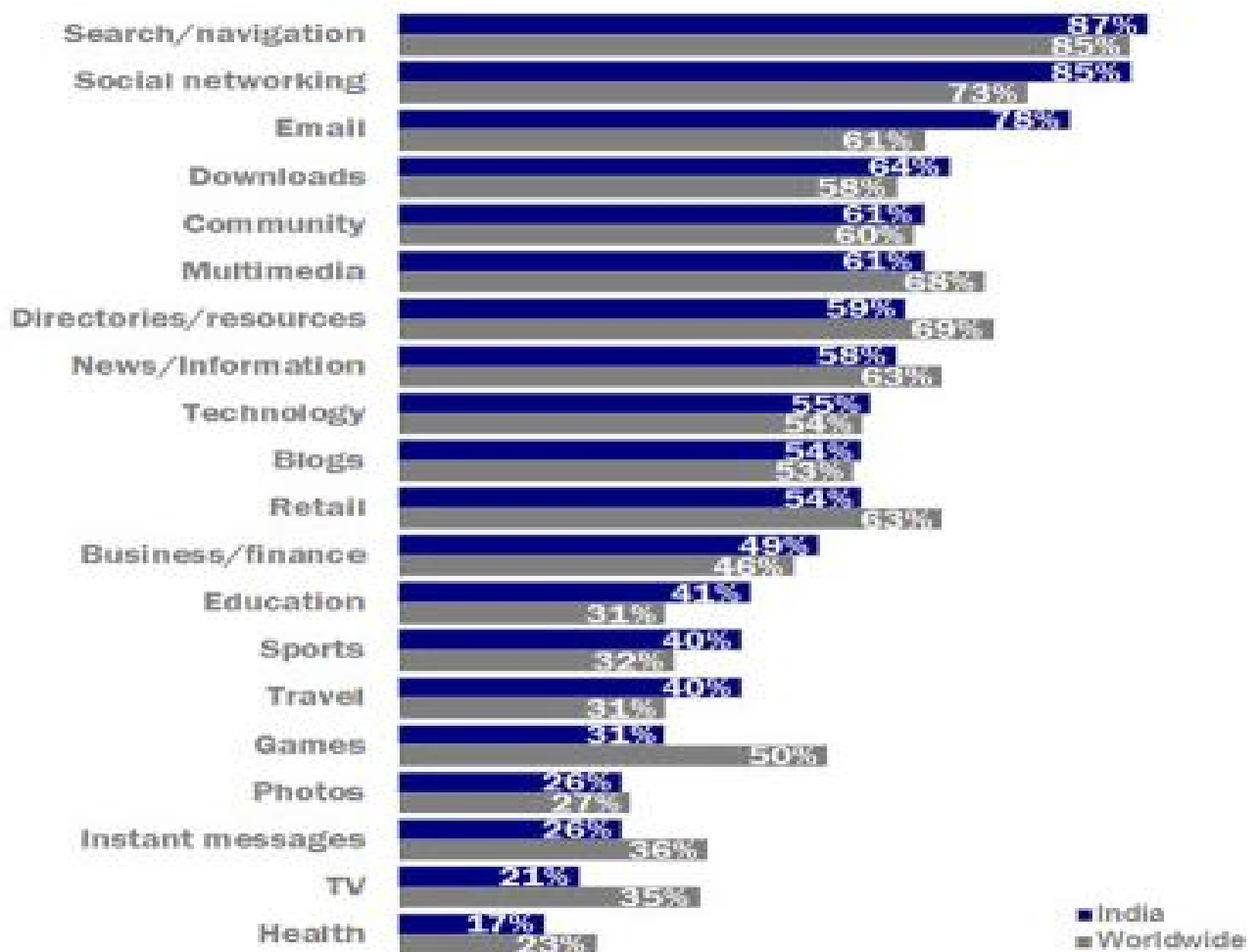


## A Study on Factors Affecting Online Shopping in Ahmedabad City

### Introduction:

Online contracts are classified as distance contracts, which means that the trader (service provider, seller) and the consumer (natural person who is acting for purposes which are outside his trade, business or profession), in lack of their simultaneous, actual and physical presence enter into contract not by meeting in person (e.g. in commercial premises, market, open-air market, via trade agent etc.), but only in an electronic way.

**Fig :1 Reach of Key online Categories: India Vs Worldwide**



www.DigitalStrategyConsulting.com

Source: comScore Media Metrix, March 2011

5192

Notes: Internet audience aged 15+ accessing the internet from home or work





Search, social networking and e-mail are the top three key online categories for online communities in India, with social networking and email being significantly more popular categories in India than the rest of the world.

## **Top On Line Shopping Sites In India**

### **1. Amazon.in**

Score (4.15)- World leader in e-commerce market recently started operation in India. Now Indians can buy Books, CDs and Electronics at cheaper prices from Amazon.in. For limited time they are offering free shipping.

### **2. Flipkart.com**

Score (4.24) - Founded in 2004 with only Rs. 400,000 now in 2014 valued over 60,000 Crore company. You can not only buy books online through Flipkart, but also mobile phones & mobile accessories, laptops, computer accessories, cameras, movies, music, televisions, refrigerators, air-conditioners, washing-machines, Clothing, Footwear, Accessories, MP3 players and products from a host of other categories. After takeover of Letsbuy.com now Flipkart is the largest player of e-commerce of India.

### **3. Snapdeal.com**

Score (4.52) SnapDeal offers everything from local daily deals on restaurants, spas, travel to online products deals. They offer you the best price with free shipping.

### **4. Paytm.com**

Score (4.85) - Started with Mobile Recharge and Bill Payment website now Paytm selling everything from Home Decor, Clothing, Laptops to Mobile at a killer price. In a very short time period Paytm has grown very fast and is able to place under our Top 10 Indian Shopping Website list.

### **5. ebay.in**

Score (5.00) After almost 6 months of dominating at number 1 eBay has come down at number two on Indiafreestuff.in list. eBay.in is the Indian version of the popular online shopping portal eBay.com - world's online marketplace. eBay has a diverse and passionate community of individuals and small businesses. eBay offers used and fresh items with a wide network of international shipping.



#### **6. Jabong.com**

score (5.09) Jabong Fashion & Lifestyle Store offers you great discount on all listed product. They offers wide range of products from Apparel to Home needs.

#### **7. Myntra.com**

Score (5.12) Myntra.com is leading online retailer of lifestyle and fashion products. Myntra offers T-shirts, Shoes, watches and more at discounted price.

#### **8. Shopclues.com**

score (5.60)- Shopclues is famous for their heavily discounted Jaw Dropping deals. Shopclues is one of the best online stores that offers a wide variety of cameras, Computer accessories, Mobile, Gift, Jewellery, Cosmetics, toys, clothes, books and bag. Their Jaw Dropping deal has become most liked deal of 2012.

#### **9. Pepperfry.com**

score (5.81)-Pepperfry is one of leading Indian website in selling lifestyle products ranging from men and womens clothing, home decor, jewellery, perfumes and cosmetics, furnitures, bags and accessories.

#### **10. Homeshop18.com**

Score (5.99) here you find large range appliances, kitchen, cameras, mobiles, laptops, site, indian, gifts, apparel, buy, online, gifts. and more, HomeShop18 is a venture of theNetwork18 Group, India's fastest growing media and entertainment Group. Network18 operates India's leading business news television channels - CNBC TV18 and CNBC Awaaz. HomeShop18 has also launched India's first 24 hour Home Shopping TV channel. The company has its headquarters in Noida, UP. The website has received the 'Best shopping site' award from PC World Magazine in 2008.

Other websites also referred frequently for online shopping are Nearby.com, Zovi.com, Infibeam.com, Firstcry.com, Shopping.indiatimes.com, Lenskart.com, Croma.com, Koovs.com, American swan.com, Zoomin.com.



### **Literature Review:**

Kavitha R. (2015) in their paper noted that the majority of online consumers are of age 21 years to 30 years. The highest customers purchased their product through Flipkart; prefer to buy electrical and electronics goods. Majority of the respondents were highly aware about the terms and conditions, aware about functions of Federal Trade Commission. The main factors driving identified for online shopping were time savings process, gives safety and quality. Majority consumers are satisfied with the product and services offered by online shopping sites. Majority of consumers preferred cash on delivery and recommend the online shopping method to other people.

Bhatt A. (2014) has identified in their paper that world E-commerce India was second largest country in Asia. He has noted that online shopping attracted by elder people and younger people. Studies have shown that online shoppers mainly consist of people with Higher Education and income and working in middle to senior management of professionals. Consumers having monthly income below Rs.10000 preferred cash on delivery and above Rs. 30000 preferred internet banking. In this study found that Indian consumers are finding online shopping very comfortable because of many variables like cash on delivery, customization or personalization of websites, home delivery etc.

Kanupriya. (2016) has found that factors influenced for online shopping is convenience followed by time saving and price. From the products available online tickets is the highest category of goods purchased online, followed by computer components, clothes, electronics, fashion accessories, gifts, books, house-ware, CD / video, toys and software. Around 60% respondents are agreed that information given about the products on various sites are sufficient for the consumers to purchase them. Flipkart is the most favorite shopping site of the respondents. Cash on delivery is the most common method of payment available online. Majority of respondents are satisfied with online shopping. The major problems faced are delay in delivery, cheap quality of the product, damaged product, etc.

Nazir S. (2013) Indian consumer shows higher perceived risk in online purchasing, financial / privacy and time/convenience risks. The study also brings out the



observation that the Indian Internet users do not feel that the medium offers variety Indian consumer does not significantly recognize time/convenience benefit associated with online shopping, Indian marketers/managers should focus on making website easier and user friendly and should look to reduce the user website navigation time by not asking information (e.g. personal details) which are not important and easy access to the wide range of merchandise.

Reddy K. (2014) has found that convenience and time saving is the factors for which consumers wants to shop online. Limited internet and security is the main problem that the consumers focus on offline shopping. A lot of stress need be given on these two parameters so that this IT revolution can be use to everyone in India and then only it can be a success in sense of terms. Offline shopping still allows for more ground to the consumer in terms of being able to physically check out and even the merchandise that he wants.

Gupta P. (2015) has analyzed that who are aware of technology, knowledge and high income level population are specially engaged in the online shopping. Consumers who are between the age group 18-25 are more comfortable for online shopping than rest of the group. Flipkart is the shopping site which is more preferable by the youngest. The increasing demand of online shoppers because the variety of options for the consumers to choose and that to at a reasonable prices than offline market. Electronic items were less demanded from the e-shopping but clothes are much more demanded by the consumers.

### **Contribution of the Research Paper**

As we have changed the purchasing mode in the current era, there are many factors which affects to online shopping. Researcher has tried to find out factors affecting online shopping. And researcher has also tried to find out the factors motivating for online shopping. Researcher has indentified the factors impacting for online shopping.



### **Objectives**

1. To identify the factors affecting online shopping.
2. To identify motivating drivers for online shopping.
3. To identify the impact of the factors for online shopping.

### **Hypothesis**

- H01: Age of consumers has significant relationship with online shopping.  
H02: Income of the consumers has significant relationship with online shopping.  
H03: Gender has significant relationship with online shopping.

### **Research Methodology**

Type of Research: Analytical Study

Type of Data: Primary Data

Sampling Frame: Ahmedabad City

Sampling Method: Convenience Sampling

Sample Size: 100

Sampling Area: Ahmedabad (Gujarat)

### **Data Collection**

Questionnaire (mail, online) is suitable to collect primary data.

### **Results and Discussion**

Reliability of measures was assessed with the use of Cronbach's alpha of all items. The Cronbach's alpha is calculated to be 0.85. As a general rule a coefficient greater than or equal to 0.7 is considered acceptable. Hence it was found that the data is highly reliable for further analysis.



**Table 1: Demographic Profile Respondents**

Sr. No	Factor of Respondent	Category	Frequency
1	Gender	Male	46
		Female	54
2	Age	18-25	42
		26-35	35
		36-45	14
		Above 45	9
3	Marital Status	Married	51
		Single	49
4	Education	S.S.C or below	1
		12 (H.S.C)	20
		Graduate	43
		Post Graduate	36
5	Income	Below 10,000	13
		10000-20,000	32
		20000-30,000	27
		More than 30,000	28
6	Occupation	Service	45
		Business Man/woman	7
		Student	27
		House wife	21

From the above table it is evidence that female highly inclined towards online shopping. Age is important factor for online shopping as we found the highest number of online shopper are age of 18 years to 25 years. And the lowest online shoppers are of age above 45 years. And we can say that marital does not affect to online shopping as married and single both are interested in online shopping in same proportion.



Education is one of the important factors to determine lifestyle, product choices and living standard. In case of online shopping individual education is very much influencing factors as shown in above table. Income indicates that 55% of respondents have income between 20,000 to and more than 30,000 per month. It is also observed that larger parts of respondent are lower middle and middle income group. The above table revealed that the persons who are doing service is highest online shoppers. Students and house wife also take part in online shopping.

**H01:** Age of consumers has significant relationship with online shopping.

Pearson Correlation Test

		Age	Online Shopping
Age	Pearson Correlation	1	-.943
	Sig. (2-tailed)		.057
	N	2	4
Online Shopping	Pearson Correlation	-.943	1
	Sig. (2-tailed)	.057	
	N	4	4

From the above table we conclude that the Pearson coefficient is -.943 between Age and Online Shopping. We reject the null hypothesis. So, age and online shopping has no significant relationship.



**H02:** Income of the consumers has significant relationship with online shopping.

Pearson Correlation Test

		Income	Online Shopping
Income	Pearson Correlation	1	-.500
	Sig. (2-tailed)		.667
	N	3	3
Online Shopping	Pearson Correlation	-.500	1
	Sig. (2-tailed)	.667	
	N	3	3

From the above table we conclude that the Pearson coefficient is -.500 between Income and Online Shopping. We reject the null hypothesis. So, Income and online shopping has no significant relationship.

**H03:** Gender of the consumers has significant relationship with online shopping.

Pearson Correlation Test

		Gender	Online Shopping
Gender	Pearson Correlation	1	-1.000**
	Sig. (2-tailed)		.
	N	2	2
Online Shopping	Pearson Correlation	-1.000**	1
	Sig. (2-tailed)	.	
	N	2	2





From the above table we conclude that the Pearson coefficient is -1.000 between Gender and Online Shopping. We reject the null hypothesis. So, Gender and online shopping has no significant relationship.

**Other Factors affecting to online shopping:**

<b>Factors</b>	<b>Preference of the Respondents (in %)</b>
Convenience and cost saving	95
Price	31
Quality	28
Security	21
Offer/Discount	32
Features	20
Variety	13
Brands	23
Consumer protection Laws	4
Benefits	21

From the above table we conclude that online shopper give first preference to convenience and cost saving. Online shoppers prefer Discount or offer, price and quality. And online shoppers also consider security, features and brands as important factors for online shopping. Online shoppers do not consider security and consumer as first preference to shop online.

**Findings:**

We found that the most affective factor to online shopping is convenience as nowadays we find crowd around the shopping mall. And Age and income don't have significant relationship with online shopping. So Age and income are not affective factors for online shopping. Other factors affecting to online shopping are offers, discount, price, quality, security, features, brands and benefits.



### **Limitations of the Study**

This study is limited to Ahmedabad city only so results cannot be generalized. Time constraint also played important factor for research work.

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## **Are Indians Aware about Herbal Medicine? : A Study of Gujarat**

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### **Abstract**

According to WHO report on Herbal medicine for human health factors such as an easy availability of herbal remedies, accessibility to practitioners at all times and an inherent faith, particularly in rural areas, in natural things, also complement the desire of large sectors of the population to use medicinal herbs for therapeutic purpose. The World Health Organization (WHO) has recently defined traditional medicine (including herbal drugs) as comprising therapeutic practices that have been in existence, often for hundreds of years, before the development and spread of modern medicine and are still in use today. Or say, traditional medicine is the synthesis of therapeutic experience of generations of practicing physicians of indigenous systems of medicine. The traditional preparations comprise medicinal plants, minerals, organic matter, etc. Herbal drugs constitute only those traditional medicines which primarily use medicinal plant preparations for therapy. The use of herbal medicine is limited due to many factors inkling awareness about the same. Present paper is an attempt to study the level of awareness about herbal medicine in India. Study is based on sample of 300 respondents selected from the state of Gujarat. Primary data were collected with the help of structured questionnaire. The results of the study show that only about 26 percent respondents are fully aware about herbal medicine. Various demographic and socio-economic factors have significant impact on the level of awareness about herbal medicine. In order to promote the use of herbal medicine, it is very essential to create awareness among people.



## **Are Indians Aware about Herbal Medicine? : A Study of Gujarat**

### **Introduction**

According to World Health organization (WHO) nearly 80 per cent of the world population depends on traditional medicines. Major chronic diseases such as diabetes, piles, fistula, renal stones, skin diseases, arthritis, hyperacidity and constipation, impotency and paralysis etc. are treated with the use of herbal medicines. Traditional use of herbal medicines implies substantial historical use, and this is certainly true for many products that are available as ‘traditional herbal medicines’.

In many developing countries, a large proportion of the population relies on traditional practitioners and their armamentarium of medicinal plants in order to meet health care needs. Although modern medicine may exist side-by-side with such traditional practice, herbal medicines have often maintained their popularity for historical and cultural reasons. Such products have become more widely available commercially, especially in developed countries. In this modern setting, ingredients are sometimes marketed for uses that were never contemplated in the traditional healing systems from which they emerged.

Herbal medicine is the oldest and still the most widely used system of medicine in the world today. It is medicine made exclusively from plants. It is used in all societies and is common to all cultures. There are many different "types" of herbal medicine that spring from different cultures around the world. All these have the use of medicinal plants in common, but they vary in the plants they use, the way they prepare and use medicines from these plants, and the philosophy of their treatment approaches. Different cultures may also use the same plants but differ in how it is used, or the part they use.

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**Herbs:** crude plant material such as leaves, flowers, fruit, seed, stems, wood, bark, roots, rhizomes or other plant parts, which may be entire, fragmented or powdered.

**Herbal materials:** in addition to herbs, fresh juices, gums, fixed oils, essential oils, resins and dry powders of herbs. In some countries, these materials may be processed by various local procedures, such as steaming, roasting, or stir-baking with honey, alcoholic beverages or other materials.

**Herbal preparations:** the basis for finished herbal products and may include comminuted or powdered herbal materials, or extracts, tinctures and fatty oils of herbal materials. They are produced by extraction, fractionation, purification, concentration, or other physical or biological processes. They also include preparations made by steeping or heating herbal materials in alcoholic beverages and/or honey, or in other materials.

**Finished herbal products:** herbal preparations made from one or more herbs. If more than one herb is used, the term mixture herbal product can also be used. Finished herbal products and mixture herbal products may contain excipients in addition to the active ingredients. However, finished products or mixture products to which chemically defined active substances have been added, including synthetic compounds and/or isolated constituents from herbal materials, are not considered to be herbal.

### **Herbal Market in India**

Herbal medicine is predominant among India's traditional health systems. It runs parallel to the modern health care sector and has a seventy per cent share of the formal medicine market. It consists of organized and unorganized sector. Organized sector include large manufacturing units comprise the well established manufacturers who operate in both domestic and international markets. Dabur, Baidyanalh, Zandu, Himalaya Drug Company, Charak Pharmaceuticals, Vicco Laboratories, Aimil Pharma & Emami groupetc are major players in this category. Unorganized sector include small manufacturing units manufacture a few medicines and operate in a small area. The unorganised sector includes practicing ayurvedic experts (vaidyas) and micro-units manufacturing only a few products and operating at local level. Nonetheless, at times such units are quite strong in their area of operation. There are certain small manufacturing units who cater to export markets only.

The importance of herbal medicine has increased worldwide due to its natural characteristics and absence of side effect. Recent upsurge in use of herbal medicines has led to a sudden increase in herbal manufacturing units in India. There are about 14 well-recognized and 86 medium scale manufacturing units of herbal drugs in India along with about 8,000 licensed small manufactures on record. According to the study by Associated Chambers of Commerce and Industry of India (Assocham), Indian herbal market is registering an extremely significant growth and is likely to reach Rs.14,500 crore and exports to Rs.9,000 crore (Rs 90,000 million) with a CAGR of 20% and 25% respectively. According to the report 'Herbal Industry Biz Potential'



currently, the Indian herbal market size is estimated at Rs.7000 crore (Rs 70000 mn) and over Rs.3600 crore (Rs 36000 mn ) of herbal raw materials and medicines are exported by India. setting up of Herbal farm clusters by the government for improving quality of drugs and promotion of exports, doubling the cultivation of medicinal plants by converting existing farmland, continuous focus for R&D on product and process development and effective marketing of herbal products etc. were cited as reasons for the experimental growth of herbal industry in India. Study also revealed that out of 700 plant species commonly used in India, only 20% were earlier being cultivated on commercial scale and 90% of medicinal plant used by the industries are collected from the wild. On the whole, India is stated to have 45,000 plant species (nearly 20% of the global species) occurs in the Indian sub-continent. Out of these, about 4,500 species of both higher and lower plant groups are of medicinal value. Urge for swadeshi (indigenous) herbal medicines has been rising due to their quality ingredients, availability factor and price competitiveness with virtually little side effects.

According to the study the lack of organized and regulated markets is the major hurdle for cultivating medicinal and aromatic plants as a sustainable agricultural profession. Various measures like regulation of production on scientific lines, effective enforcement of licensing system and setting up of Export Promotion Zones (EPZ) in select states will push up exports of herbal material and medicines. Stringent quality norms imposed by the EU through the Traditional Herbal Medicinal Products Directive (THMPD), Food Supplement Directive (FSD) restrict exports of herbal products from India.

India is the largest producer of medicinal plants, having more than 40% of global diversity. The states which are major producer of herbal plants having the highest medicinal value include Gujarat, Rajasthan, Haryana, Tamil Nadu, Andhra and the Himalayan Range. Around 70% of India's medicinal plants are found in tropical areas mostly in the various forest types spread across the Western and Eastern ghats, the Vindhyas, Chotta Nagpur plateau, Aravalis and Himalayas. Although less than 30% of the medicinal plants are found in the temperate and alpine areas and higher altitudes they include species of high medicinal value.

According to the study medicines like psyllium husk, semal leaves & pods, sandalwood chips and dust, Jojoba seeds, psyllium seeds, pyrethrum, basil, hyasop, rosemary safe, svory, galangal rhizomes and roots have established export demand in economies of scale and produced with international quality norms. The application of these medicines is multifaceted and cure even serious ailments with little precautions and that's why are in great demand. India's share in medicinal plant export in global trade is just about 2.5% against 13% of China.



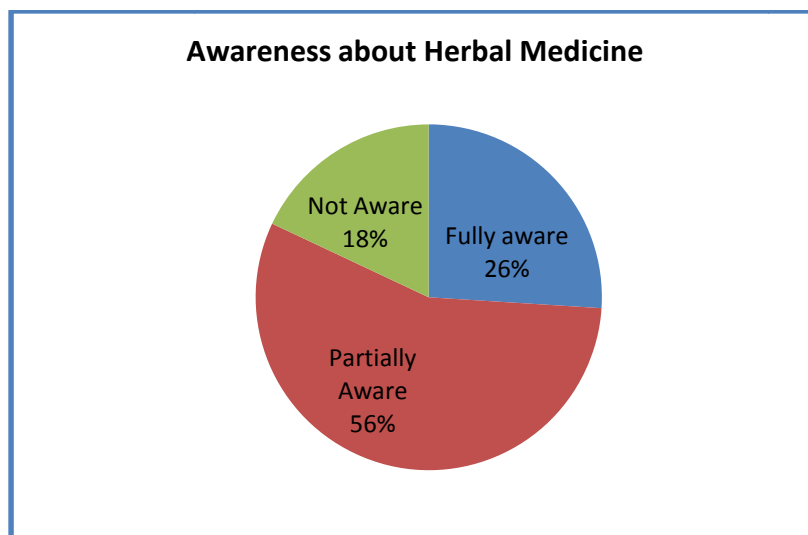
### Research Methodology

Present paper is an attempt to study the level of awareness about herbal medicine in India. Study also aims at knowing the impact of various socio-economic and demographic factors in the level of awareness about herbal medicine. Research is based on the primary data collected from selected districts of Gujarat. The sample of 300 respondents was selected from four districts viz. Ahmedabad, Baroda, Surat and Rajkot. Primary data were collected with the help of structured questionnaire. Before finalization of the questionnaire pilot testing has been conducted with the sample of 30 respondents. Primary data collected were analyzed with the help of SPSS. Various statistical test has been used for the purpose of hypothesis testing.

### Awareness about Herbal Medicine

Herbal medicines are available for many health problems but the biggest concern with regards to herbal medicine is lake of awareness about the same. People are not aware about herbal medicine and benefit of the same. The information collected during the study about level of awareness about herbal medicine among respondents is presented in table below.

Are you aware about herbal medicine?		
Awareness	Frequency	Percent
Fully aware	78	26.0
Partially Aware	168	56.0
Not Aware	54	18.0
Total	300	100.0





The information on awareness about herbal medicine as presented in table and graph above indicates that only about 26 percent respondents are fully aware about herbal medicine while 56 percent are partially aware. Nearly 18 percent respondents have reported that they are not aware about herbal medicine.

<b>Age and Awareness about Herbal Medicine</b>					
Age		Are you aware about herbal medicine?			Total
		Fully aware	Partially Aware	Not Aware	
Up to 20	Count	21	36	21	78
	%	26.9%	46.2%	26.9%	100.0%
21-30	Count	15	66	21	102
	%	14.7%	64.7%	20.6%	100.0%
31-40	Count	9	15	6	30
	%	30.0%	50.0%	20.0%	100.0%
41-50	Count	15	21	3	39
	%	38.5%	53.8%	7.7%	100.0%
Above 50	Count	18	30	3	51
	%	35.3%	58.8%	5.9%	100.0%
Total	Count	78	168	54	300
	%	26.0%	56.0%	18.0%	100.0%
<b>Chi-Square Tests: Age and Awareness about Herbal Medicine</b>					
		Value	df	Asymp. Sig. (2-sided)	
Pearson Chi-Square		22.626 <sup>a</sup>	8	.004	
Likelihood Ratio		24.756	8	.002	
Linear-by-Linear Association		12.370	1	.000	
N of Valid Cases		300			

The relationship between level of awareness and age is presented in table above. The data shows that level of awareness about herbal medicine increases with age. As compared to 26.9 percent respondents from age up to 20 years, 35.3 percent of respondents from age group above 50 have reported that they are fully aware about herbal medicine. The proportion of respondents reporting that they are not aware about herbal medicine is more among young as compare to elder. Chi-square test performed to check the significance relationship between age and level of awareness reject the null hypothesis about independence between two variables (Chi-square 22.626,  $p < 0.05$ ).





<b>Gender and Awareness about Herbal Medicine</b>					
Gender		Are you aware about herbal medicine?			Total
		Fully aware	Partially Aware	Not Aware	
Male	Count	45	84	36	165
	%	27.3%	50.9%	21.8%	100.0%
Female	Count	33	84	18	135
	%	24.4%	62.2%	13.3%	100.0%
Total	Count	78	168	54	300
	%	26.0%	56.0%	18.0%	100.0%

<b>Chi-Square Tests : Gender and Awareness about Herbal Medicine</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	4.895 <sup>a</sup>	2	.087
Likelihood Ratio	4.965	2	.084
Linear-by-Linear Association	.546	1	.460
N of Valid Cases	300		

Attempt has been made to check the relationship between awareness about herbal medicine and gender. Comparative picture about level of awareness about herbal medicine across gender is presented in table above. The data shows that 21.8 percent male as compared to 13.3 percent female have reported that they are not aware about herbal medicine. On the other side, 27.3 percent male as compared to 24.4 female have reported that they are fully aware about herbal medicine. Chi-square test performed to test the relationship between gender and level of awareness shows that there is not significant relationship between them. Results of chi-square test do not rejects the null hypothesis that level of awareness and gender are independent (chi-square 4.895,  $p > 0.05$ )

<b>Education and Awareness about Herbal Medicine</b>					
Education		Are you aware about herbal medicine?			Total
		Fully aware	Partially Aware	Not Aware	
Up to secondary	Count	15	3	0	18
	%	83.3%	16.7%	0.0%	100.0%
Higher Secondary	Count	3	12	3	18
	%	16.7%	66.7%	16.7%	100.0%
Undergraduate	Count	15	42	21	78
	%	19.2%	53.8%	26.9%	100.0%
Graduate	Count	24	54	12	90
	%	26.7%	60.0%	13.3%	100.0%
Post Graduate	Count	21	57	18	96
	%	21.9%	59.4%	18.8%	100.0%
Total	Count	78	168	54	300
	%	26.0%	56.0%	18.0%	100.0%



<b>Chi-Square Tests : Education and Awareness about Herbal Medicine</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.061 <sup>a</sup>	8	.000
Likelihood Ratio	35.643	8	.000
Linear-by-Linear Association	5.380	1	.020
N of Valid Cases	300		

The level of awareness about herbal medicine is expected to have some relationship with level of education. In contrast to general understanding, it was found during the survey that level of awareness about herbal medicine was higher among respondents with lower level of education as compared to respondents with higher level of education. Nearly 83.3 percent respondents with education up to secondary level were fully aware about herbal medicine as compared to 21.9 percent respondents with post graduate qualification. It is noteworthy that 18.8 percent respondents with post graduate qualification have reported that they are not aware about herbal medicine. The significant relationship between level of awareness about herbal medicine and level of education is tested with the help of Chi-square test. The results of chi-square test reject the null hypothesis about independent between level of education and level of awareness about herbal medicine (Chi-square 39.06,  $p < 0.05$ ).

<b>Monthly Income and Awareness about Herbal Medicine</b>						
Monthly Income		Are you aware about herbal medicine?			Total	
		Fully aware	Partially Aware	Not Aware		
Up 10000	Count	39	60	24	123	
	%	31.7%	48.8%	19.5%	100.0%	
10000 - 20000	Count	15	27	3	45	
	%	33.3%	60.0%	6.7%	100.0%	
20000-30000	Count	6	51	12	69	
	%	8.7%	73.9%	17.4%	100.0%	
30000-40000	Count	9	9	9	27	
	%	33.3%	33.3%	33.3%	100.0%	
Above 40000	Count	9	21	6	36	
	%	25.0%	58.3%	16.7%	100.0%	
Total	Count	78	168	54	300	
	%	26.0%	56.0%	18.0%	100.0%	

<b>Chi-Square Tests : Monthly Income and Awareness about Herbal Medicine</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	25.674 <sup>a</sup>	8	.001
Likelihood Ratio	28.659	8	.000
Linear-by-Linear Association	1.674	1	.196
N of Valid Cases	300		



The relationship between level of awareness about herbal medicine and income of the respondents is presented in table above. The comparative picture about level of awareness about herbal medicine and monthly income is presented in table above. The data shows that largest numbers of respondents from income level of 30000-40000 are not aware about herbal medicine. The proportion of partially aware about herbal medicine is highest among respondents with income 20000-30000. Chi-square test also rejects the null hypothesis that awareness and income are independent (Chi-square 25.67,  $p < 0.05$ ).

### Conclusion

The results of the study show that only about 26 percent respondents are fully aware about herbal medicine. Only around 26 percent individuals are fully aware about herbal medicine. Majority of individuals are only partially aware about herbal medicine. Various demographic and socio-economic factors such as age, income, gender, education etc. have significant impact on the level of awareness about herbal medicine. In order to promote the use of herbal medicine, it is very essential to create awareness among people

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