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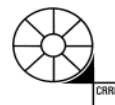
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CONTENTS

MANDEEP KAUR AND NAVKIRANJIT K. DHALIWAL	<i>Trends and Volatility in Exchange Rate of Indian Rupee against Pound Sterling in Pre and Post-Recession Period</i>	1
GURPREET KAUR	<i>Technology Parks as A Perspective towards Innovation and Employment Generation in Punjab</i>	21
ELANGO VAN N.	<i>Tradition or Technology Dilemma in Sustainability of Handloom Industry</i>	39
PAWAN K. SHARMA AND POONAM SANDHIR	<i>Rashtriya Bal Swasthya Karyakram in Punjab: An Appraisal</i>	51
BLESSY SARAH MATHEW AND PUSHPA M. SAVADATTI	<i>Involvement of Gram Panchayat Representative in Women Component Plan: A Case Study of Two Gram Panchayats in Kottayam District, Kerala</i>	73
K. MALATHI AND TINY S. PALATHARA	<i>A Comparative Study about the Selected Health Indicators of Tamil Nadu and Gujarat Using Performance Gap Index</i>	103
RAKESH KUMAR	<i>Women in Development: A Case of Trans-Giri of Himachal Pradesh</i>	121
ROHIT KUMAR AND KAVITA SHARMA	<i>Horticultural Development in the Hills: Paradoxes of Apple Growth in Himachal Pradesh</i>	139
DOCUMENT		
NOOR AHMAD BABA	<i>Islamic Predicaments of Pakistani State and Challenges of Violent Radicalism</i>	153



TRENDS AND VOLATILITY IN EXCHANGE RATE OF INDIAN RUPEE AGAINST POUND STERLING IN PRE AND POST-RECESSION PERIOD

Mandeep Kaur¹ and Navkiranjit K Dhaliwal²

Abstract: The foreign exchange market is an important element of the financial market of any country. It is the market where exchange rates are determined. An exchange rate regime is a way by which one currency may be converted into another currency. Exchange rate mechanism can be classified as fixed exchange rate and floating exchange rate. In fixed exchange rate the value of a currency is determined and controlled by the Government and central banks, whereas, in floating exchange rate the market determines the value of a currency and the Government and central banks do not interfere. One of the most integral features of Flexible Exchange Rate system is the high volatility of exchange rate. The study examined the trends and volatility in the exchange rate of Indian Rupee against Pound Sterling in the pre-recession period as well as in the post-recession period with the help of ARCH and GARCH time-series modelling. The trend analysis revealed that in the post-recession period, the depreciation was highest (128.35) as compared to that of the pre-recession period (114.63). The study found that all the three coefficients, constant, ARCH effect and GARCH effect in the three sample period data for the total period, pre-recession period and post-recession period were highly statistically significant at one per cent level of significance. The study showed that lagged conditional variance and lagged squared variance have an impact on current volatility. This means that the current exchange rate volatility can be predicted by studying and analyzing the previous period's exchange rate volatility.

Keywords: Exchange Rate, Indian Rupee, Pound Sterling, Growth Rate, Trends, Volatility, Pre-recession Period, Post-recession Period.

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Introduction

Financial markets are arrangements that deals in financial securities (or financial instruments) and financial services. These are the markets that facilitate the buying and selling of financial services. The corporations, financial institutions, individuals and the Government are participants in the financial markets.

The foreign exchange market is an important element of the financial market of any country. In the foreign exchange market, paper denominated in a given currency is traded against paper denominated in another currency. It is the market where exchange rates are determined. An exchange rate regime is a way in which one currency may be converted into another currency. The exchange rates are quoted either in direct quotation or in indirect quotation. The direct quotation is one in which exchange rates are expressed as the number of units of domestic currency per unit of foreign currency. In an indirect quotation, exchange rates are expressed as the number of units of foreign currency per unit of the domestic currency.

Exchange rate mechanism can be classified as fixed exchange rate and floating exchange rate. In fixed exchange rate the value of the currency is determined and controlled by the Government and central banks, whereas, in floating exchange rate the market determines the value of the currency and the Government and central banks do not interfere.

One of the most integral features of Flexible Exchange Rate system is the high volatility of exchange rate. Volatility represents the degree or the extent to which one variable changes over some time. The larger the magnitude of a variable change, or the more quickly it changes over time, the more volatile it is. A study conducted by Srinivasan and Kalaivani (2012) revealed that higher exchange rate fluctuation reduced real exports in India between 1970 and 2011. Singh (2013) stressed that depreciation in the value of Indian rupee resulted in higher import costs for India. It was also observed that the import bill of crude oil increased with the fluctuations in the value of Indian rupee while it decreased when the exchange rate was stable during December 2011. So, rupee depreciation is a matter of concern. Kaur and Sirohi (2013) investigated that currency depreciation also affected common man and students. After currency depreciation, people were bothered due to the inflated prices of day-to-day commodities and students who were planning to go abroad for higher studies were also affected. Goel (2014) examined the impact of rupee depreciation on the Indian economy and revealed that Indian rupee has significantly depreciated against the US Dollar and marked a new risk for the economy. Rupee depreciation has widened the current account deficit and it has increased inflation. Avhad Suhas (2016) revealed that high fluctuations in rupee led to high inflation, low growth rate and increased import bills. Even the foreign exchange reserves were not enough to meet three weeks of imports.

Review of Literature

Rehman *et. al.* (2010) investigated the impact of inflation and interest rate on the exchange rate of Pakistani rupee against UK Pound Sterling. The empirical results found that there was a significant but positive relationship between inflation and exchange rate of Pakistani rupee against UK Pound Sterling. The study further showed that there was a significant but negative relationship between the interest rate and the exchange rate of Pakistani rupee against UK Pound Sterling.

Sahu (2012) in his paper analyzed the volatility spill overs from the exchange rates of the Brazilian Real, the Russian Ruble, the South Korean Won, the Singapore Dollar, the Japanese Yen, the Swiss Franc, the British Pound Sterling and the Euro to the exchange rate of the Indian Rupee. The study found evidence of conditional auto correlation and persistence of volatility in daily exchange rates of all nine currencies. The study further viewed that volatilities observed in the exchange rate of the leading currencies transmit to volatility in the daily exchange rate of the Indian Rupee.

Suresh (2012) analyzed the impact of the appreciation of Chinese Renminbi on India's trade with China. The study revealed that appreciation in RMB affected the bilateral trade between India and China. It had been seen that revaluation of Chinese Renminbi had an impact on the India's trade. The share of imports from China had significantly risen to 10.7 per cent during 2009-10 from 7.3 per cent in 2004-05.

Objectives of the Study

The main objectives of the study are:

- To analyze the trends in the exchange rate of Indian Rupee against Pound Sterling in pre-recession and post-recession period.
- To examine the volatility in the exchange rate of Indian Rupee against Pound Sterling in pre-recession and post-recession period.

Methodology

The present study is based on secondary data. To examine foreign exchange rate volatility in the Indian market, this study used the methodology proposed by the recent empirical analysis and authors such Sahu (2012), Samsudheen and Shanmugasundaram (2012), Khan *et. al.* (2014) and Abdurehman and Hecilar (2016), etc. The daily exchange rates of Indian Rupee against Pound Sterling for the period from 2001-02 to 2016-17 have been collected from the monthly archives of Reserve Bank of India.

To analyze the stationarity in data, Augmented Dickey Fuller and Phillips-Perron Unit Root tests have been applied. The volatility in the exchange rate of Indian Rupee against Pound Sterling has been empirically analyzed with the help of ARCH and GARCH time-series modelling.

Then to measure the trends and foreign exchange rate volatility in the Indian market the study divided the entire sample period into two sub-periods, namely pre-recession period (2001-02 to 2008-09) and post-recession period (2009-10 to 2016-17).

To analyze the trends on a year- to- year basis, percentage growth rate over the base year is calculated and to check the overall trend pattern of the exchange rate of Indian Rupee against Pound Sterling exponential growth rate is calculated. The coefficient of variation is calculated to see the variability in exchange rate.

Trend Analysis

To analyze, the trends on a year- to- year basis, the base year is calculated. The steps for the trend analysis are as under:

- Select the base year
- For each line item, divide the amount in each non-base year by the amount in the base year and multiply by 100

The base year trend percentage is always 100 per cent. A trend percentage of less than 100 per cent means the balance has decreased below the base year level in that particular year. A trend percentage greater than 100 per cent means the balance in that year has increased over the base year. A negative trend percentage represents a negative number.

Co-efficient of Variation

Co-efficient of variation was used to test the consistency in terms of selected variables like loans, credit, advances, agricultural advances, agricultural loans, etc. It is calculated by using the following formula:

$$\text{Co-efficient of Variation (CV)} = \frac{\sigma}{\bar{X}} \times 100$$

Where, σ represents the standard deviation of the variable and $\bar{X}$, represents the mean of the variable.

There is an inverse relationship between the co-efficient of variation and consistency. More the value of co-efficient of variation, lesser is the consistency and vice- versa.

Percentage Growth Rate

Apart from the exponential growth rate, percentage growth rate over the base year will be calculated to analyze the trends on year- to- year basis.

The percentage growth rate over the base year is given as:

$$= \frac{V_c - V_b}{V_b} \times 100$$

Where:

V_c = Value of the given parameter in the current year.

V_b = Value of the given parameter in the base year.

Exponential Growth Rate

The change that occurs when an original amount is increased by a consistent rate over a period of time.

Exponential growth rate has been calculated by using the following formula:

$$Y = AB^t$$

Where Y is the variable for which rate of growth is calculated, and T is time.

Take log both sides

$$\text{Log } Y = \text{Log } A + T \text{Log } B$$

By estimating this log linear relationship with the help of least square method, the rate of growth has been derived by relation.

$$B = 1 + r$$

Where r is the exponential growth rate and

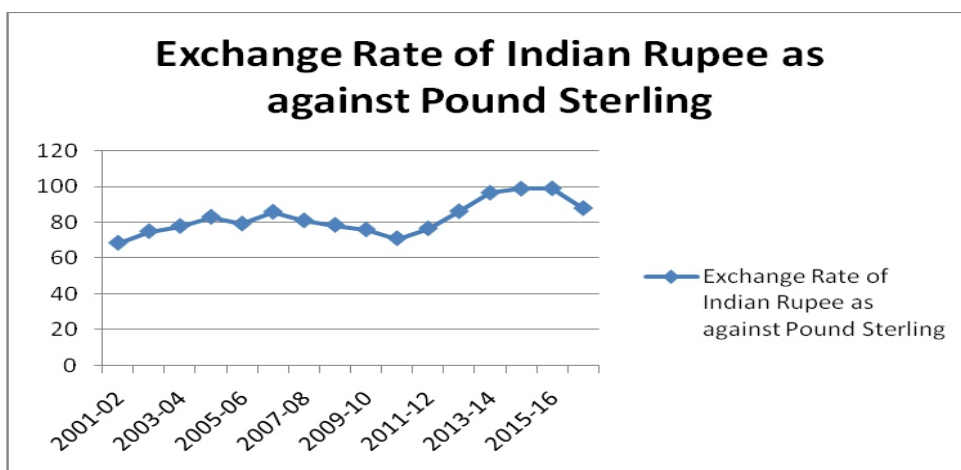
$$r\% = (B - 1) \times 100$$

1. Trends in Exchange Rate of Indian Rupee against Pound Sterling

The trends in the exchange rate of Indian Rupee against Pound Sterling were analyzed during the pre-recession period as well as during the post-recession period.

Figure 1 depicts the trends in the exchange rate of Indian Rupee against Pound Sterling from 2001-02 to 2016-17.

Figure-1
Trends in Exchange Rate of Indian Rupee against Pound Sterling
(2001 02 to 2016 17)



Source: Reserve Bank of India, Annual Report 2018

Table 1 presents the trends in exchange rate of Rupee against Pound Sterling during the pre-recession period 2001-02 to 2008-09 as well as during the post-recession period 2009-10 to 2016-17.

Table 1 shows that the exchange rate of Indian Rupee against Pound Sterling depreciated from 68.32 in 2001-02 to 87.69 in 2016-17. The Indian Rupee recorded an average exchange rate of 82.37 per cent and coefficient of variation of 11.27 per cent against Pound Sterling. The value of Indian Rupee against Pound Sterling showed a decline (EGR=1.62%) from 2001-02 to 2016-17.

Table 1 also revealed that in the pre-recession period, the exchange rate of Indian Rupee depreciated from 68.32 in 2001-02 to 78.32 in 2008-09 and in the post-recession period, the exchange rate of Indian Rupee also depreciated from 75.78 in the year 2009-10 to 87.69 in the year 2016-17. The value of Indian Rupee was lower ($\bar{X} = 86.29$) in the post-recession period as compared to the pre-recession period ($\bar{X} = 78.45$). The exchange rate of Indian Rupee against Pound Sterling remained more volatile in the post-recession period (CV= 12.80%) as compared to that in the pre-recession period (CV= 6.70%). The Table further reveals that the Indian Rupee recorded an insignificant growth rate of 1.91 per cent against Pound Sterling during the pre-recession period (2001-02 to 2008-09) and recorded a significant growth rate of 4.33 per cent during the post-recession period (2009-10 to 2016-17).

The trend analysis revealed that the value of Indian Rupee against Pound Sterling depreciated during the period of 2001-02 to 2016-17. The depreciation of Indian Rupee was highest against Pound Sterling in the year 2015-16 (144.51), followed by 2014-15 (144.28), 2013-14 (140.97) and 2016-17 (128.35) while it was lowest in the year 2010-11 (103.75), followed by 2002-03 (109.51), 2009-10 (110.92) and 2011-12 (111.82). In the post-recession period, the depreciation was highest (128.35) as compared to that of the pre-recession period (114.63).

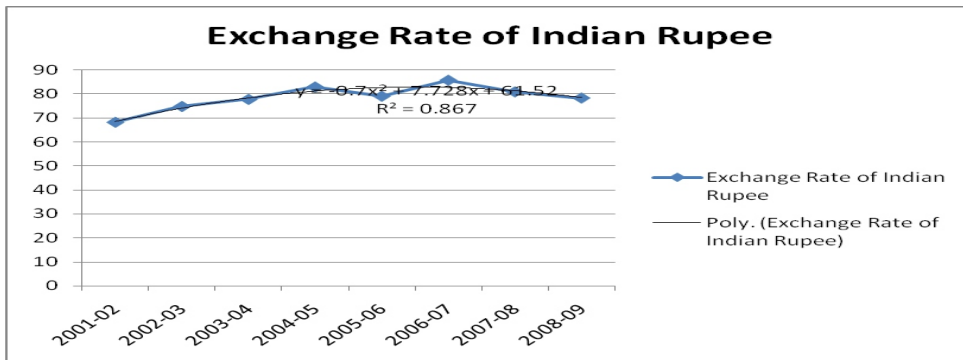
Table-1
Trends in the Exchange Rate of Indian Rupee against Pound Sterling
(Per Unit of Pound Sterling)

Pre-recession Period				Post-recession Period			
Year	Exchange Rate of Indian Rupee	%	Percentage Change	Year	Exchange Rate of Indian Rupee	%	Percentage Change
2001-02	68.3189	100	-	2009-10	75.7810	110.92	-
2002-03	74.8193	109.51	9.51	2010-11	70.8812	103.75	-6.47
2003-04	77.7389	113.79	3.90	2011-12	76.3912	111.82	7.77
2004-05	82.8644	121.29	6.59	2012-13	85.9713	125.84	12.54
2005-06	79.0472	115.70	-4.61	2013-14	96.3058	140.97	12.02
2006-07	85.6430	125.36	8.34	2014-15	98.5731	144.28	2.35
2007-08	80.8412	118.33	-5.61	2015-16	98.7260	144.51	0.16
2008-09	78.3164	114.63	-3.12	2016-17	87.6890	128.35	-11.18
EGR	1.91			EGR	4.33		
Mean	78.45			Mean	86.29		
CV	6.70			CV	12.80		
t-value	2.18			t-value	3.16		
EGR (Total Period)	1.62						
Mean (Total Period)	82.37						
CV (Total Period)	11.27						

Source: Reserve Bank of India, Annual Report, 2018

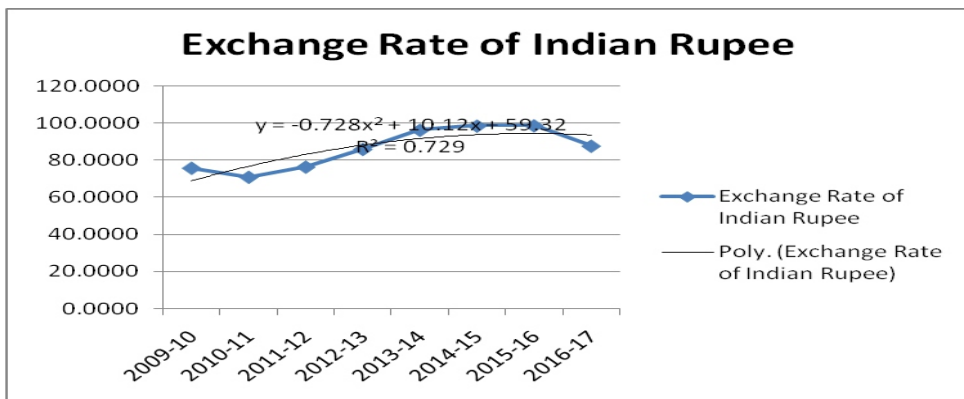
The trends in the exchange rate of Indian Rupee against Pound Sterling in the pre-recession period and the post-recession period have been shown diagrammatically in figure 2 and 3, respectively. The figures represent that the value of R^2 was 0.867 and 0.729 which indicates that there were many fluctuations in the exchange rate during the period 2001-02 to 2008-09 and 2009-10 to 2016-17, respectively. The value of the coefficient of determination R^2 was found to be higher, which suggests that the polynomial model of the trend line is the best-fitted model of the trend line in both periods.

Figure-2
Trends in the Exchange Rate of Indian Rupee against Pound Sterling in Pre-Recession Period



Source: Reserve Bank of India, Annual Report 2018

Figure-3
Trends in the Exchange Rate of Indian Rupee against Pound Sterling in Post-Recession Period



Source: Reserve Bank of India, Annual Report 2018

2. Volatility in Exchange Rate of Indian Rupee against Pound Sterling

The volatility in the exchange rate of Indian Rupee against Pound Sterling was empirically analyzed during the pre-recession period and the post-recession period.

The summary statistics of the exchange rate of Indian Rupee against Pound Sterling for the period (2001-02 to 2016-17), pre-recession period (2001-02 to 2008-09) and post-recession period (2009-10 to 2016-17) has been shown in Table 2.

Table–2
Descriptive Statistics of Daily Exchange Rate of Indian Rupee against Pound Sterling

Statistics	Total Period	Pre-Recession Period	Post-recession Period
Mean	82.36512	78.50110	86.25917
Median	81.27000	79.17000	85.76230
Maximum	106.02810	88.77000	106.02810
Minimum	64.41270	64.41270	65.64710
Standard Deviation	9.605994	5.676208	11.073380
Coefficient of Variation	11.66269	7.230736	12.837336
Skewness	0.555201	-0.438337	0.008838
Kurtosis	2.520657	2.305421	1.645389
Jarque-Bera	236.1748	101.382800	147.587400
Probability	0.000000	0.000000	0.000000
Observations	3875	1945	1930

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Table 2 represents that the Indian Rupee recorded an average exchange rate of 82.37 per cent and coefficient of variation of 11.66 per cent against Pound Sterling during the period 2001-02 to 2008-09. The exchange rate of Indian Rupee showed positive skewness (0.555201) during the period of study. The kurtosis for the period was 2.520657 which indicate that the sample period data have flatness of distribution. The Jarque- Bera test of normality for the period 2001-02 to 2016-17 rejected the hypothesis of normality at 1 per cent level of significance.

The value of Indian Rupee against Pound Sterling was lower in the post-recession period ($\bar{X} = 86.25917$) as compared to the pre-recession period ($\bar{X} = 78.50110$). The exchange rate of Indian Rupee against Pound Sterling remained more volatile in the post-recession period (CV= 12.837336) while it was less volatile during the pre-recession period (CV=7.230736). Further, the table reveals that the value of skewness was positive in the post-recession period (0.008838) while the same was negative in the pre-recession period (-0.438337) which means that the distribution is asymmetrical. The kurtosis for the pre-recession period and the post-recession period was 2.305421 and 1.645389, respectively. The table further shows that both sample periods data have flatness of distribution because a value lesser than 3 indicates the flatness of data series and a value greater than 3 indicates the peakedness of data series. The Jarque-Bera test of normality for the pre-recession period and the post-recession period rejected the hypothesis of normality at 1 per cent level of significance.

The summary statistics of the exchange rate of Indian Rupee series against Pound Sterling has been shown for the period from 2001-02 to 2016-17 in Table 3.

Table–3
Descriptive Statistics of Exchange Rate of Dlog (Indian Rupee) Series against Pound Sterling

Statistics	Total Period	Pre-recession Period	Post-recession Period
Mean	0.005145	0.004882	0.005073
Median	0.015836	0.022865	0.011251
Maximum	3.678911	3.406788	3.678911
Minimum	-6.775847	-5.704785	-6.775847
Standard Deviation	0.645275	0.643148	0.647576
Skewness	-0.650311	-0.783978	-0.517647
Kurtosis	10.27472	9.902306	10.64231
Jarque-Bera	8815.467	4058.125	4780.437
Probability	0.000000	0.000000	0.000000
Observations	3874	1944	1929

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Table 3 represents that the exchange rate of first difference series of Indian Rupee against Pound Sterling recorded average exchange rate of 0.005145 per cent and standard deviation of 0.645275 against Pound Sterling during the period 2001-02 to 2016-17. The exchange rate of Indian Rupee series against Pound Sterling showed negative skewness (-0.650311) during the period of study. The kurtosis for the total period was 10.27472, which represent that the total sample period data have peakedness of distribution. The Jarque- Bera test of normality for total period rejected the hypothesis of normality at 1 per cent level of significance.

The value of Indian Rupee against Pound sterling was lower in the post-recession period ($\bar{X} = 0.005073$) as compared to that in the pre-recession period ($\bar{X} = 0.004882$). Further, the table reveals that the value of skewness was negative in both the pre-recession period (-0.783978) and the post-recession period (-0.517647) which means that distribution is asymmetrical. The kurtosis for the pre-recession period and post-recession period was 9.902306 and 10.64231, respectively. Further, the table shows that both sample periods data have peakedness of distribution because a value lesser than 3 indicates the flatness of data series and a value greater than 3 indicates the peakedness of data series. The Jarque- Bera test of normality for the pre-recession period and the post-recession period rejected the hypothesis of normality at 1 per cent level of significance.

Augmented Dickey-Fuller (ADF) and Phillip-Perron (PP) Unit Root Test

The nature of data use in this study is in time-series data. Empirical work based on time-series data assumes that the underlying time-series is stationary (Gujarati, 2003). But many studies have shown that the majority of time-series variables are

non-stationary (Engle and Granger, 1987). Using non-stationary time-series in a regression analysis may result in spurious regression which was first pointed out by Granger and Newbold (1986). Thus, before going to any empirical analysis using time-series data, we should check our time-series data having the assumption of stationary or not. The common test to make time-series data to stationary is done by Unit Root test. There are a number of Unit Root tests are available, and among them, ADF test and PP tests are most popularly used by researchers. In this study, we use both these Unit Root tests to investigate whether the time-series data used in this study are stationary or not.

Table 4 shows the results of ADF and PP Unit Root tests of variable exchange rate of Indian Rupee against Pound Sterling.

Table—4
Augmented Dickey-Fuller and Phillips Perron Unit Root Tests (Indian Rupee against Pound Sterling)

Variable	Level		First Difference		Results	Observations
	ADF	PP	ADF	PP		
	Probabilities Values	Probabilities Values	Probabilities Values	Probabilities Values		
Total Period (2001-02 to 2016-17)	0.2303	0.2153	0.0001	0.0001	I(1)	3875
Pre-recession (2001-02 to 2008-09)	0.1350	0.1432	0.0001	0.0001	I(1)	1945
Post-recession (2009-10 to 2016-17)	0.5967	0.5658	0.0000	0.0000	I(1)	1930

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

The ADF Unit Root test probability values were 0.2303, 0.1350 and 0.5967 for the total period, pre-recession period and post-recession period, respectively. The table shows that the null hypothesis of ADF Unit Root in the variable Indian Rupee/Great Britain Pound (INR/GBP) was strongly accepted for all the three sample period data. This implies that all the series are not stationary at level itself. The PP Unit Root test probability values were 0.2153, 0.1432 and 0.5658 for the total period, pre-recession period and the post-recession period, respectively. It shows that the null hypothesis of PP Unit Root in the variable INR/GBP was strongly accepted for all the three sample period data. Thus, the series is not found stationary at level itself. Further, the table shows that at the first difference, the probability values of the ADF Unit Root test were 0.0001, 0.0001 and 0.0000 for the total period, pre-recession period and the post-recession period, respectively. It indicates that the null hypothesis of ADF Unit Root in the variable INR/GBP was rejected for all the three sample period data,

and data of all three samples period are stationary at first difference. The PP Unit Root test probability values at first difference were 0.0001, 0.0001 and 0.0000 for the total period, pre-recession period and the post-recession period, respectively. It shows that the null hypothesis of PP Unit Root in the variable INR/GBP was rejected for all the three sample period data, and all the series data are stationary at first difference.

Auto Regressive Integrated Moving Average (ARIMA) Model

An ARIMA model is a statistical model that is used for analyzing and predicting the time-series data. This model represents the present value of a time-series depends upon its past values which is the autoregressive component and on the preceding residual values which is the moving average component (Sermpinis, Dunis and Laws, 2010).

The ARIMA (p,q) model has the following general form:

$$Y_t = \phi_1 Y_{t-1} + \varepsilon_t + w_1 \varepsilon_{t-1}$$

Where, Y_t is the dependent variable at time t;

Y_{t-1} is the lagged dependent variable;

ϕ_1 is the regression coefficient;

ε_t is the residual term;

ε_{t-1} is the previous values of the residual;

w_1 is the weights.

After obtaining the residuals ε_t , the next step is regressing the squared residuals to test the null hypothesis so that there was no ARCH effects in the residual series on a constant and q lags as in the following equation:

$$\varepsilon_t^2 = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \alpha_2 \varepsilon_{t-2}^2 + \dots + \alpha_q \varepsilon_{t-q}^2 + v_t$$

where, ε_t^2 is the squared residual calculated by equation,

$\varepsilon_{t-1}^2, \varepsilon_{t-2}^2, \dots, \varepsilon_{t-q}^2$ is the lagged squared residuals up to q lags;

α_0 is the constant and $\alpha_1, \alpha_2 \dots \alpha_q$ is regression coefficients of different lags.

In ARIMA model, we use the Schwarz criterion for choosing the best model out of these models. The smaller the value of the Schwarz criterion, the better model is suited. The smallest value of Schwarz criterion for Indian Rupee series in the total period (2001-02 to 2016-17) was 1.966410. So, here the best fit model for the total period is ARMA (2,0). The smallest value of Schwarz criterion for Indian Rupee series in the pre-recession period was 1.961923. So, in this case the best fit model for the pre-recession period is ARMA (2,0). The smallest value of Schwarz criterion for Indian Rupee series in the post-recession

period was 1.977720. So, in this case the best fit model for the post-recession period is ARMA (0,1).

Tables 5, 6 and 7 shows the auto correlation and partial auto correlation results for total period (2001-02 to 2016-17), pre-recession period (2001-02 to 2008-09) and post-recession period (2009-10 to 2016-17), respectively.

Table-5
Auto Correlation and Partial Auto Correlation for Total Period (Indian Rupee Series against Pound Sterling)

Lag	AC	PAC	Q-Stat	Probability
1	0.022	0.022	1.927	
2	0.001	0.000	1.929	0.165
3	-0.029	-0.029	5.104	0.078
4	0.024	0.026	7.393	0.060
5	0.026	0.025	10.003	0.040
6	0.046	0.044	18.190	0.003
7	0.005	0.005	18.306	0.006
8	0.009	0.010	18.630	0.009
9	-0.032	-0.031	22.651	0.004
10	0.008	0.007	22.900	0.006
11	-0.027	-0.029	25.664	0.004
12	0.008	0.005	25.927	0.007
13	-0.020	-0.020	27.514	0.007
14	0.032	0.032	31.508	0.003
15	0.021	0.024	33.174	0.003
16	-0.007	-0.009	33.375	0.004
17	-0.008	-0.003	33.646	0.006
18	0.026	0.026	36.300	0.004
19	0.026	0.025	38.962	0.003
20	-0.034	-0.041	43.487	0.001
21	-0.012	-0.010	44.074	0.001
22	-0.008	-0.009	44.315	0.002
23	-0.010	-0.011	44.667	0.003
24	0.001	-0.001	44.676	0.004
25	-0.031	-0.031	48.432	0.002
26	-0.012	-0.007	48.963	0.003
27	-0.006	-0.001	49.087	0.004
28	0.002	0.004	49.106	0.006
29	0.007	0.006	49.321	0.008
30	-0.018	-0.015	50.519	0.008
31	-0.021	-0.017	52.196	0.007
32	-0.020	-0.019	53.756	0.007
33	0.013	0.009	54.438	0.008
34	-0.028	-0.031	57.513	0.005
35	0.019	0.024	58.955	0.005
36	-0.007	-0.007	59.172	0.007

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Table–6
Auto Correlation and Partial Auto Correlation for Pre-recession Period
(Indian Rupee Series against Pound Sterling)

Lag	AC	PAC	Q-Stat	Probability
1	-0.006	-0.006	0.0739	
2	0.001	0.001	0.0748	0.785
3	-0.012	-0.012	0.338	0.845
4	0.013	0.012	0.6452	0.886
5	0.028	0.028	2.2001	0.699
6	0.038	0.038	5.0325	0.412
7	0.016	0.017	5.5482	0.476
8	-0.016	-0.015	6.0477	0.534
9	-0.055	-0.055	11.956	0.153
10	0.002	0	11.964	0.215
11	-0.017	-0.02	12.501	0.253
12	0.035	0.031	14.832	0.190
13	-0.037	-0.035	17.464	0.133
14	0.045	0.048	21.348	0.066
15	0.032	0.039	23.404	0.054
16	-0.018	-0.017	24.045	0.064
17	-0.004	-0.005	24.074	0.088
18	0.023	0.02	25.155	0.091
19	0.045	0.043	29.206	0.046
20	-0.042	-0.047	32.691	0.026
21	0.017	0.016	33.235	0.032
22	-0.021	-0.024	34.130	0.035
23	-0.04	-0.036	37.354	0.022
24	-0.026	-0.029	38.681	0.021
25	-0.043	-0.044	42.303	0.012
26	0.024	0.022	43.439	0.013
27	0.019	0.026	44.181	0.014
28	-0.006	0.003	44.250	0.019
29	0.03	0.030	46.047	0.017
30	-0.004	0.004	46.086	0.023
31	-0.024	-0.028	47.258	0.023
32	-0.011	-0.014	47.516	0.029
33	0.05	0.032	52.454	0.013
34	-0.033	-0.038	54.668	0.010
35	0.007	0.012	54.772	0.013
36	-0.017	-0.017	55.369	0.016

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Table–7
Auto Correlation and Partial Auto Correlation for Post-recession Period
(Indian Rupee Series against Pound Sterling)

Lag	AC	PAC	Q-Stat	Probability
1	0.000	0.000	0.000	
2	-0.007	-0.007	0.106	0.745
3	-0.044	-0.044	3.801	0.150
4	0.036	0.036	6.327	0.097
5	0.017	0.017	6.909	0.141
6	0.046	0.045	10.975	0.052
7	-0.011	-0.008	11.210	0.082
8	0.038	0.039	14.034	0.051
9	-0.010	-0.008	14.247	0.076
10	0.015	0.011	14.673	0.100
11	-0.042	-0.040	18.020	0.055
12	-0.017	-0.022	18.564	0.069
13	0.000	0.000	18.564	0.100
14	0.026	0.018	19.865	0.099
15	0.006	0.008	19.933	0.132
16	0.002	0.003	19.941	0.174
17	-0.016	-0.008	20.409	0.202
18	0.034	0.034	22.709	0.159
19	0.013	0.015	23.051	0.189
20	-0.032	-0.035	25.073	0.158
21	-0.046	-0.043	29.240	0.083
22	0.003	-0.001	29.260	0.108
23	0.026	0.020	30.546	0.106
24	0.024	0.019	31.678	0.107
25	-0.021	-0.015	32.564	0.114
26	-0.047	-0.042	36.873	0.059
27	-0.021	-0.018	37.763	0.064
28	0.009	0.005	37.927	0.079
29	-0.020	-0.022	38.719	0.086
30	-0.022	-0.020	39.675	0.089
31	-0.001	0.001	39.678	0.111
32	-0.018	-0.023	40.293	0.123
33	-0.028	-0.029	41.845	0.114
34	-0.027	-0.021	43.244	0.109
35	0.034	0.041	45.457	0.091
36	0.001	0.002	45.461	0.111

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Tables 5, 6 and 7 represent that Q-statistics were significant at almost all lags for the total period and the pre-recession period indicating significant serial

correlation in the residuals and the null hypothesis is rejected of no serial correlation. It confirms the presence of autocorrelation in the residual series. The table further shows that Q-statistics were insignificant at all lags for post-recession period indicating that the null hypothesis has no serial correlation in the residual series.

Auto Regressive Conditional Heteroscedasticity (ARCH) and Generalized Auto Regressive Conditional Heteroscedasticity (GARCH)

The presence of heteroscedasticity in residuals of INR/GBP exchange rate return series is tested by Lagrange Multiplier (LM) test for ARCH effects proposed by Engle (1982). First obtaining residuals from an Autoregressive and Moving Average (ARMA) process and then the presence of ARCH effect in residuals in different lag periods, or the null hypothesis that there are no ARCH effects in residual series of INR/GBP is tested by ARCH LM test.

Table 8 presents the results of LM (Lagrange Multiplier) heteroscedasticity test to check the presence of ARCH effect in residual series of the total period, pre-recession period and the post-recession period at first and second lags.

Table – 8
The Result of ARCH-LM Test (Indian Rupee Series against Pound Sterling)

Lags	Statistics	Total Period	Pre-recession Period	Post-recession Period
Lag 1	F Statistics	46.63624	33.07638	11.15781
	Probability	0.0000	0.0000	0.0009
	LM Statistics	46.10489	32.55569	11.10506
	Probability	0.0000	0.0000	0.0009
Lag 2	F Statistics	41.44414	44.42147	6.594524
	Probability	0.0000	0.0000	0.0014
	LM Statistics	81.21268	85.08202	13.11968
	Probability	0.0000	0.0000	0.0014

Source: Data Analysis: Eviews 9 Test Results obtained on data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Table 8 reveals that in the case of all the three sample period data, both F-statistic and LM statistic are significant at first and second lags. The zero p-value indicates the presence of ARCH effect. The null hypothesis is rejected of no ARCH effect. The results suggest that the first difference series of INR/GBP have shown the presence of ARCH effect. Based on these ARCH effects, the foreign exchange rate volatility has been analyzed by using ARCH/GARCH model.

ARCH/GARCH Models

The ARCH and GARCH models have been used to estimate the exchange rate volatility against Pound Sterling that lagged conditional variance and lagged squared variance have impact on current volatility.

Symmetric Model

In the GARCH model, there is conditional variance to be dependent upon own previous lags. This model was developed by Bollerslev (1986) & Taylor (1986). The simplest model specification is the GARCH (1,1) model:

$$\sigma_t^2 = \omega + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 \sigma_{t-1}^2$$

where, σ_t^2 is the one period ahead forecast variance based on past information, it is called the conditional variance;

ω is the constant term;

ε_{t-1}^2 (the ARCH term), is the news about volatility from the previous period, measured as the lag of the squared residuals from the mean equation

σ_{t-1}^2 (the GARCH term), is the last period forecast variance.

The GARCH model will be stationery if the sum of ARCH term (α) and GARCH term (β) is less than 1, the volatility shocks will be persistent. In the case where the sum of $\alpha + \beta$ is much closer to 1, the volatility shocks will be much more persistent.

Table 9 shows the results of GARCH (1,1) model used for estimating the daily exchange rate volatility of Indian Rupee against Pound Sterling for all the three sample periods, total period (2001-02 to 2016-17), pre-recession period (2001-02 to 2008-09) and the post-recession period (2009-10 to 2016-17).

Table–9
GARCH Model Estimation Results (Indian Rupee Series against Pound Sterling)

Samples	ω (Constant)	α (ARCH effect)	β (GARCH effect)	$\alpha + \beta$
Total Period (2001-02 to 2016-17)	0.009113*	0.068395*	0.908942*	0.977337
Pre-recession Period (2001-02 to 2008-09)	0.003775*	0.051829*	0.938187*	0.990016
Post-recession Period (2009-10 to 2016-17)	0.024728*	0.08223*	0.858807*	0.941037

Source: Data Analysis: Eviews 9 Test Results obtained on the data series of the daily exchange rate of Indian Rupee against Pound Sterling (Reserve Bank of India, Annual Report, 2018)

Note: * indicates significant at one per cent level of significance

Table 9 reveals that all the three coefficients, constant, ARCH effect and GARCH effect in the three sample period data highly statistical was significant at one per cent level of significance. It shows that the lagged conditional variance and lagged squared variance have an impact on current volatility. This means that we can predict the current exchange rate volatility by studying and analyzing the previous period's exchange rate volatility. The highly significant value of ARCH effect evidenced the presence of clustering volatility in all the three sample period data. The coefficient of GARCH effect was also highly statistical significance during the total period, pre-recession period and the post-recession period which indicates that the past Indian daily foreign exchange rate fluctuations have a significant influence on the current Indian daily foreign exchange rate fluctuations. The sum of the coefficients of ARCH and GARCH term in the model for the total period, pre-recession period and the post-recession period is lower than 1 (0.977337), (0.990016) and (0.941037), respectively, suggesting that shocks to the conditional variance are quite persistent.

Conclusion

Indian foreign exchange market has observed extreme fluctuations caused by rapid changes in demand and supply forces leading to the sudden and sharp depreciation of Indian Rupee against Pound Sterling. The study revealed that the exchange rate of Indian Rupee against Pound Sterling depreciated from 68.32 in the year 2001-02 to 87.69 in the year 2016-17. In the pre-recession period, the exchange rate of Indian Rupee depreciated from 68.32 in the year 2001-02 to 78.32 in the year 2008-09, and in the post-recession period, the exchange rate of Indian Rupee also depreciated from 75.78 in the year 2009-10 to 87.69 in the year 2016-17. The trend analysis revealed that in the post-recession period, the depreciation was highest (128.35) as compared to that in the pre-recession period (114.63). The trends in the exchange rate of Indian Rupee against Pound Sterling in the pre-recession period and the post-recession period were polynomial trends which showed that there were fluctuations in the exchange rate during the period. Volatility represents the degree to which the value of Indian Rupee against US Dollar changes over the period. All the three coefficients, constant, ARCH effect and GARCH effect in the three sample period data (total period, pre-recession period and post-recession period) were highly significant at one per cent level. The study showed that the lagged conditional variance and lagged squared variance have an impact on the current volatility. This means that the current exchange rate volatility can be predicted by studying and analyzing the previous period's exchange rate volatility. The highly significant value of ARCH effect evidenced the presence of clustering volatility in all the three sample period data. The coefficient of GARCH effect was also highly statistically significant during the total period, pre-recession period and the post-recession period which indicates that the past Indian daily foreign exchange rate fluctuations have a

significant influence on the current Indian daily foreign exchange rate fluctuations.

References

Abdurehman and Hecilar (2016). The Relationship Between Exchange Rate and Inflation: An Empirical Study of Turkey. *International Journal of Economics and Financial Issues*, Vol. 6, no. 4, 1454-1459.

Avhad, Suhas (2016). Impact of Rupee Depreciation on Indian Economy. *Scholarly Research Journal for Interdisciplinary Studies*, Vol. 4, No. 26, September- October, 2914-2919.

Bollerslev, T (1986). Generalized Autoregressive Conditional Heteroskedasticity. *Journal of Econometrics*, Vol.31, Issue 3, April, pp. 307-327.

Damodar, N. Gujarati. (2003). Basic Econometrics (4th ed). McGraw Hill NewYork.

Dunis, C.L. ; Laws Jason and Sermpinis Georgios (2010). Modelling and trading the EUR/USD exchange rate at the ECB fixing. *The European Journal of Finance*, Vol. 16, Issue 6, July, 541-560.

Engle, F. Robert and Granger, C. W. J. (1987). Co-Integration and Error Correction: Representation, Estimation, and Testing. *Econometrica* Vol. 55, No. 2 (Mar., 1987), 251-276.

Goel, Aditi (2014). Rupee Depreciation: Causes and Impact. *International Journal of Economic Issues*, Vol. 7, No. 1, January- June, 87-90.

Granger, C.W.J. and Newbold, Paul (1986). Forecasting Economic Time Series (2nd edition). Academic Press Inc.

Kaur, Navleen and Sirohi, Robin (2013). Effect of Rupee Depreciation on Common Man. *International Journal of Scientific and Research Publications*, Vol. 3, No. 10, October, 1-14.

Kaur, Navleen and Sirohi, Robin (2013). Effect of Rupee Depreciation on Common Man. *International Journal of Scientific and Research Publications*, Vol. 3, No. 10, October, 1-14.

Khan, Abdul Jalil; Azim, Parvez and Syed, Shabib Haider (2014). The Impact of Exchange Rate Volatility on Trade: A Panel Study on Pakistan's Trading Partners. *The Lahore Journal of Economics*, Vol. 19, No. 1, 31-66.

Rehman, R; Rehman, A and Raoof, A (2010). Causal Relationship between Macroeconomic Variables and Exchange rate. *International Research Journal of Finance and Economics*, Issue 46, September, pp. 58-62.

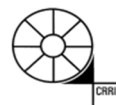
Sahu, Satyananda (2012). Volatility Transmission in the Exchange Rate of the Indian Rupee. *Reserve Bank of India Working Paper Series*, Department of Economic and Policy Research.

Samsudheen, K. and Shanmugasundaram, G (2012). Foreign Exchange Rate Volatility of Indian Rupee/ US Dollar. *Indian Institute of Capital Markets, XI Capital Markets Conference, 21-22 December 2012.*

Singh, Partap (2013). Depreciation of Rupee in Indian Economy: An Analysis. *International Journal of Innovations in Engineering and Technology*, Vol. 2, No. 4, August, 332-344.

Srinivasan, P. and Kalaivani, M. (2012). Exchange Rate Volatility and Export Growth in India: An Empirical Investigation. *Munich Personal RePEc Archive*, Paper No. 43828, January, 1-25.

Suresh, Anli (2012). Exchange Rate Impact On Bilateral Trade Between India and China. *Journal of Finance, Accounting and Management*, Vol. 3, No. 2, July, pp. 15-41.



TECHNOLOGY PARKS AS A PERSPECTIVE TOWARDS INNOVATION AND EMPLOYMENT GENERATION IN PUNJAB

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Abstract: In today's competitive world, manufacturing sector needs to exploit new ideas by encouraging new technology for growth of entrepreneurship, create new job opportunities, by introducing high-value added products and services that spur the industrial competitiveness in the global market (Gatti, 2010). However, an investment in innovation and technology always leads to an increase in productivity which further spurs economic growth and high living standard. Generally, technology and innovations perform a significant function of economic growth and sustainable development to promote manufacturing sector. In this regard, Technology Parks provide stimulus to the manufacturing sector in creating educated employment in the economy (Chadha, 2003). Thus technology parks are considered an essential component for edifying infrastructure and generating employment opportunities. They also act as funnel for policy makers in achieving the objective for sustainable development (Chadha & Kaur, 2012). The present paper focuses on the role of technology parks in generating employment in Punjab. The study is based on the case of two technology parks, located at Mohali district of Punjab. The results revealed that IT Park proved to be a significant trial by the state government for promoting employment in the state, that further enhance the cluster development as well as regional development.

Introduction

Technological innovation is an important component which endorses productive variations in the quality and quantity of knowledge through the procedure of development and advancement that further facilitate prompt changes in the economy and generate long-term economic growth (Fallah and Ibrahim, 2004).

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Over the last two decades, numerous changes have occurred in the worldwide economy. The economic and technological changes have been accompanied by the globalization of economic activities. Notwithstanding globalization; the present economy is portrayed by new technologies, new products, and furthermore, new division of labor.

Investment in technological innovation leads to increase in production that invigorates the economic growth and promotes higher living standards. Innovation performs a significant base of economic growth and sustainable development and it is an essential component for edifying infrastructure and generating employment opportunities. The concept of innovation focuses on technological innovation that includes the diffusion of new products, services, new marketing techniques, advanced approaches to communication and positioning (Aubert,2005).

Review of Literature

Lofsten and Lindelof (2002) made an effort to analyze the differences in the performance of the firms located within the technology park and outside the technology parks. The study is based on a sample of 273 firms for the period of 1996-98. The performance and impacts are examined on the ground of three components namely employment, sales, and profitability. It was concluded that the employment and sales grow but profitability does not perform better. The regression analysis conducted by using the two sets of relationships for both the on-park and non-park firms are as follows: the relationship of sales level with science parks' firms, age, location, and the second one is the relationship between employment level with the age and region. The model (i) shows a significant relationship between sales levels on science parks (as a group) but no relationship among other variables and the model (ii) explicates the significant relationship of the employment with the age and region. Another observation of the study is that due to the location benefits, the new technology based firms have maintained a linkage with local universities comparatively to off-parks 'firms'. The study observed that the parks are successful in attracting the other firms outside the parks by creating more job opportunities and marketing research. Further, it also observed that the firms in science parks are unable to fully utilize the available resources due to lack of proper management.

Hu. *et.al.* (2003) examined fifty-two Chinese National Technology Parks from the period 1992 to 2000 with the objective to investigate the economic growth of the cities in which these parks are located. The study observed by using regression model that the China's technology parks have prompted fast economic growth in the cities in which they are located. Labor productivity across technology parks is congregating and foreign direct investment reveals healthy productivity spillover to technology parks.

Zhang and Snobe (2011), investigated the effectiveness of Science and Technology Industrial Parks (STIPs) in China and focused on forty-nine high-tech companies within the park and 41 outside the STIPs with the objective to analyze the effect of agglomeration and congestion on the growth of the firms. The study examined the impact on the ground of (i) average labour productivity in terms of output value added per labour as dependent variable and capital stock, elasticity of labour, employment, research, and development activities of local universities as independent variable, (ii) impact of stock of past foreign investment on average firm size in terms of average number of workers per high tech firms, (iii) impact of stock of past foreign investment on the number of employees. All these functions were applied on STIPs and non-STIPs' firms and concluded that negative effect of congestion is higher than positive productivity effect of agglomeration within the STIPs. On the other hand, the R&D activities and foreign direct investment are positively associated with the productivity of high-tech firms and positive linkage with the firms in STIPs. Thus, this indicates that the intellectual activities and links with MNCs push the productivity. The presence of congestion outweighs economies, in favour of on-park firm's leads to inefficient resource allocation. The study suggests that the government needs to take effective steps to take efficient steps for encouraging various technology parks by introducing several incentives.

Saari and Haapasalo (2012) theoretically analyzed the knowledge-transfer process in product development through small technology parks on the basis of innovation-enabled process and product-development process. The innovation-enabled process creates a link to sectoral innovation system with a social capital assessment as well as a network analysis, and further product-development process analysis explored the development of new products by utilizing the knowledge of the local innovation system. The study implies that neither research on innovation system level and firms' product development process level nor the interaction of firm with other firms and universities determine the type of knowledge transfer to firms through product development process. Thus, the product development process varies according to the firms' activities.

Origin of Technology Parks

In today's competitive world, industries need to exploit new ideas, by empowering new innovation for the development of enterprises, by introducing high-value added products and services that spur the industrial competitiveness in the global market (Gatti, 2010). Generally, technology and innovations perform a significant function of economic growth and sustainable development to promote industrialization. In this regard, Technology Parks give a new level to industries by inducing new enterprises, and also create environment for national and

international firms to interact with each other and exchange knowledge and technology for mutual benefits (UNIDO, 2012).

The phenomenon of technology parks was originally conceived with the aim to increase profitability by commercializing university research, creating new job opportunities and expanding entrepreneurship in the country. After the success of Technology Parks in the Western region, the countries from Asia-Pacific, for accelerating their economy by utilizing their scientific and technological capacity, have shown their interest in the development of Technology Parks. The concept of Technology Parks originated about 65 years ago with the establishment of Stanford Research Park in the year 1950. Thereafter, other countries like France, United Kingdom, Belgium, Japan, Korea, Taiwan, China, India, etc. have adopted the concept of Technology Parks with the intention to lift the local economy and regional development, encouraging cooperation and flow of knowledge among firms within and outside the country and academies, creating job opportunities, generating innovation and attracting foreign investment (Mangrio, 2013).

In the year 1990, India also took initiative by developing Software Technology Parks in the country and with the success of software industry, the central government felt motivated to set its focus on technology parks in sectors like biotech, food, textile other than software by introducing several schemes for the same in different regions of the country (Vaidyanathan, 2008). Taking inspiration from other states and following a strategy of technological dynamism, encouragement to entrepreneurship, giving a new look to industries, the state of Punjab also took initiative for the development of Technology Parks.

Database Methodology

Technology Park has been offered as an incentive for the entrepreneurs of Punjab as these parks will boost their performance, generate employment, edify the infrastructure, open doors of the global market for the small-scale firms, and also improve the quality of products. The major objective of the study is to explore the role of selected technology parks in boosting the job opportunities in Punjab.

The study is primarily a case study of technology parks in Punjab. The two parks have been selected, namely Software Technology Parks of India, Mohali Branch, and IT Park, Mohali. All the firms located in selected Technology Parks have been considered for study as there exists wobbly number of firms for every studied period. The analysis is based on primary data collected through a survey of associated industrial units in the selected technology parks conducted in year 2017-18. However, the secondary data was also used to analyze the performance of industries in Punjab. The study spans over the *Post-Reform* period. The study focuses on the performance of Technology Parks in generating employment opportunities in Punjab from period 1998-99 to 2015-16

using the statistical tools like growth rate, productivity, factor intensity and employment elasticity.

Further, for evaluating the impact of technology parks in generating employment, the stepwise regression analysis has been employed using the model:

$$\text{Log Indemp} = a_{41} + b_{41} \log \text{Un} + b_{42} \log \text{Emp} + b_{43} \log \text{Pr} + b_{44} \log \text{TSale} + b_{45} \log \text{Wg} + b_{46} \text{LP} + b_{47} \text{CLR}$$

Here, Indemp= Growth of Industrial Employment of Punjab,

Un= Total Number of Units in selected Technology Parks,

Emp= Total Employment of Units in selected Technology Parks,

Pr= Gross Production of Units in selected Technology Parks,

TSale= Total Sale Turnover of Units in selected Technology Parks,

Wg= Wages given to the Employees of Technology Parks,

LP= Labor Productivity of Units in selected Technology Parks,

CLR= Capital Labor Ratio of Units in selected Technology Parks

An Overview of the Punjab Economy

Punjab is an agriculture dominated state with about more than 40 percent of population depending on agriculture. But after the Eleventh Plan, the agriculture sector in Punjab has faced crisis due to lack of policy support for inputs. However, at present the state expects to invigorate the agriculture sector and is also trying to expand the manufacturing sector by promoting structural changes in the primary activities of the state. Many studies like Bhalla.et.al (1990); Singh (2010); Khanna (2011) have observed that the contribution of Primary Sector in NSDP and in Gross Capital Formation is low as compared to other sectors.

Punjab Economy was agriculture dominated. It nevertheless worsened in dynamic sector like industry. With the growth of agricultural sector after 1966-67, the share of manufacturing sector rose from 7.86 percent to 20.12 percent from year 1966-67 to 1995-96. But from last decades, it is observed that the performance of agriculture sector has been miserable, due to which this sector has failed to absorb the workforce that was increasing, further resulting in disguised employment in the economy. Manufacturing sector has the ability to raise employment in the economy particularly in the traditional low value added labour intensive household sector. But in spite of the reasonable expansion of manufacturing sector in the state, the sector has failed to generate enough opportunity for the youth (Khanna, 2011).

The Manufacturing sector experienced negative growth in employment, emoluments, and capital investment during 1996-97 and 1998-99. During post reform period (1991-92 to 2002-03), a “Jobless Growth” occurred coupled with external diseconomies. Paying higher wages to skilled labor rather than giving opportunity to new ones, were the factors responsible for the negative growth of employment and fixed capital (Sharma, 2012).

In Punjab, the economic reforms and several industrial policies were introduced with the objective to stimulate more employment opportunities and also to support the economy. But the truncated investment decline in planned public-expenditure and absence of skill-intensive human resource as well as infrastructural bottlenecks have slowed down the growth of manufacturing sector in the state (Ahluwalia, 2002; Singh and Singh, 2002; Kiran & Jain, 2012). Regardless of the progressive economic growth and expansion, the industries of Punjab have still a long way to go to develop infrastructure and basic industries to meet the increasing demands of emerging economy (Singh, 1994). As already observed from the previous studies, the rising capital-labor ratio in Punjab’s manufacturing shows rising capital intensity of manufacturing which is labor is placing. That is why the growth of manufacturing employment has remained tardy. Punjab’s industry has remained traditionally retrogressive as its technical parameters neither scaled up, nor diversified to modernize its productive structure. It has continued to be dominated by low value-added traditional goods, and this causes hurdles in the growth of manufacturing sector. In the Post-reform period, the state economy has experienced the deceleration in economic growth as compared to other states of the nation (Singh, 1999).

Punjab, being a land-locked state could not exploit trade opportunities and hence the need to stimulate its manufacturing sector. That’s why the manufacturing sector in Punjab remained small scale, due to anachronistic techniques and lack of state support and assured market. Industries could not develop on its own, resulting in their minuscule contribution to the state domestic product. Punjab’s Industrialization has faced several constraints like deficiency of mineral resources, low priority for investment proposals by the private corporate sector as well as foreign investors, lack of marketing infrastructure and sales promotion, skilled human resource etc. in its growth.

Punjab needs structural transformation coupled with interdependence of investment and technological progress to enhance the importance of industries. The structural transformation is considered a healthy sign. For structural transformation in the economy coupled with technological transformation and investment in R&D activities, Punjab needs to enhance the industries of the state.

Punjab took initiatives of building up specialized Technology Parks for different industries for stimulating the industrial growth for increasing capital investment, diversifying as well as generating employment opportunities for

skilled and trained workers, attracting foreign direct investment in the state, encouraging entrepreneurship and transforming the low value-added industries into high value-added industries (Chadha and Kaur, 2015). Technology parks create a dynamic cluster in order to accelerate the economic growth as well as international competitiveness and create a platform for promoting technology-intensive industries, a measure for generating high-quality job opportunities and an initiative for providing high-quality facilities and services for high-technology industries (UNIDO, 2005).

Performance of Selected Technology Parks in Punjab

Technology Parks promote the stakeholders by providing them the opportunities to show their adeptness and ability for generating growth of various sectors, regions and economies (Baluch, *et. al.*, 2015). During the Eighth Plan, there was hardly any activity related to IT industry in Punjab. For a sustained development of the economy of Punjab and giving more emphasis on the development of IT sector, and generating modern infrastructure and integrated info-structure for encouraging global competitiveness, the Government took an initiative to set up Software Technology Park of India in Punjab in the year 1998-99.

Later in the year 2008-09, IT Park was set up in order to stimulate micro, small and medium enterprises by creating a productive environment for IT entrepreneurs and also with the prospects to promote software industry through innovative activities, to influence the growth of industry in the state.

Technology Parks in Punjab were developed with the aim to contribute to the prosperity and development of industry and also to promote the culture of cooperation. Generally, it is believed that firms that perform in clusters, have a number of potential business partners, suppliers, efficient manpower and technical expertise (Aulicino and Petroni, 2012; Mangrio *et.al.*, 2013). However, the clustering and geographical proximity provided the firms with the proximity to a good pool of readily available skilled and semi-skilled manpower.

Table 1 represents the trends in the growth of various constituents of technology parks in Punjab since the concept came into being. With the beginning of STPI in Punjab, the firms have shown their interest. Though the number of firms in the initial period was very less but later it showed upward trend till the year 2005-06. With the growth of a number of units, other components like employment, capital investment, production and sale turnover also grew. The incentives attracted the entrepreneurs to contribute their skill in IT sector, but due to lack of required infrastructure facilities and insufficient funds for IT industry, it created a downward trend in the growth of the number of units from the year 2006-07 to 2007-08. Again, from period 2008-09 to 2010-11, an upward trend was realized in the growth number of units as another technology park (IT Park) was introduced in Punjab, but from period 2011-12 onwards a fall

in the number of units occurred as the duration of some of the incentives like exemption from corporate income tax (for ten years) was ended.

However, the clustering and geographical proximity provided the firms with the proximity to a good pool of readily available skilled and semi-skilled manpower. That is why the haphazard growth of units does not affect the growth of other constituents especially employment and capital investment. Nevertheless, by the year 2013, the growth of units, employment, wages, capital investment, production and sales turnover exacerbated to 2.84, 17.72, 1.67, 11.38, 3.56 and 13.91 respectively. Etzkowitz (2008), Howells (2006), Migilliou and Thelwall (2011) have observed in their study that when government provides various incentives for establishing new firms, support new projects and ventures, the private sector firms took full advantage of incentives by accessing the market facilities and generating the capital investments, which further spontaneously generates employment opportunities and economic growth in the region.

Table-1
Trends in Important Constituents of Selected Technology Parks of Punjab

Year	Units (No.)	Employment (No.)	Wages (Rs. 00' Crores)	Capital Investment (Rs. 00' Crores)	Production (Rs. 000' Crores)	Sale Turnover (Rs. 00' Crores)
1998-99	37	48	6.27	1.23	27.14	0.79
1999-2000	49	87	6.67	2.1	31.76	0.82
2000-01	65	325	7.17	7.36	36.01	0.85
2001-02	71	440	7.57	9.35	40	0.87
2002-03	79	641	8.19	12.16	42.64	0.92
2003-04	87	1129	8.84	20.7	46.66	0.94
2004-05	113	1662	8.97	27.25	48.61	3.5
2005-06	121	2634	9.28	43.19	53.11	4.76
2006-07	115	2860	9.3	46.89	46.89	5.4
2007-08	103	5023	9.72	54.27	62.1	6.82
2008-09	109	7930	10.16	71.17	66.6	11.14
2009-10	125	8859	10.58	75.77	71.18	25.62
2010-11	128	11631	10.86	80.79	88.88	33.24
2011-12	127	11814	10.88	78.48	84.48	24.55
2012-13	120	16049	11.13	64.11	90.43	24.89
2013-14	122	16776	11.25	62.28	93.49	25.99
2014-15	124	16901	11.32	63.45	94.56	26.43
2015-16	127	17021	11.57	63.90	97.33	27
CAGR	2.84	17.78	1.67	11.38	3.56	13.91

Source: Government of India (various issues), Annual Reports, Software Technology Park of India, Mohali and Data Generated from Field Survey of IT-Technology Park, Mohali Conducted in year 2017-18.

Technology Parks are well renowned as effective economic tools for promoting commercialization and regional economies by raising technology-based firms (Colombo and Dalmastro, 2002; Link and Scott, 2003). Technology

parks also play a vital role in reinforcing productivity of organizations. Productivity is the effective and efficient use of inputs or resources to produce or deliver outputs. Thus, the productivity is the key to economic growth and prosperity of any region. Table 2 reveals the productivity and factor intensity of Technology Parks in Punjab. The table reflects that in the initial period of study, the low R&D expenditure causes low capital productivity (0.46) as compared to labor productivity (1.05). But later with the development of Technology Park, an upward trend occurred. Though the park's firms are smaller in terms of size, turnover and value-added, but the park tends to have high capital productivity (10.31), due to rising foreign direct investment. Further, the incentives introduced by the government in various industrial policies also generate the investment, which however generates the efficiency as well as productivity of the operating firms. Hu (2007) considered a high correlation of R&D expenditure and foreign direct investment with productivity in their respective studies.

Table-2
Productivity and Factor Intensity of the Selected Technology Parks of Punjab

Year	Capital Productivity (%)	Labor Productivity (%)	Capital -Labor Ratio (%)
2000-01	0.46	1.05	2.26
2001-02	0.67	1.43	2.13
2002-03	2.33	4.41	1.9
2003-04	4.87	7.94	1.83
2004-05	6.71	9.02	1.64
2005-06	6.43	9.54	1.64
2006-07	7.93	10.01	1.64
2007-08	8.6	9.29	1.08
2008-09	7.89	7.08	0.9
2009-10	8.66	7.4	0.86
2010-11	8.39	5.83	0.69
2011-12	8.7	5.78	0.66
2012-13	10.31	4.12	0.4
2013-14	10.9	3.79	0.35
2014-15	11.02	3.91	0.42
2015-16	11.31	4.03	0.49

Source: Government of India (various issues), Annual Reports, Software Technology Park of India, Mohali, Data Generated from Field Survey of IT-Technology Park, Mohali Conducted in year 2017-18.

Employment Elasticity is considered as the bluntest tool for investigating the phenomenon of labor absorption (Basu and Das, 2015). Table 3 represents the employment elasticity in the selected Technology Parks in Punjab during 1999-2000 to 2013-14.

The employment elasticity plummeted from the year 2005-06, implying the lack of labor absorption in Technology Parks. But low negative employment elasticity, during the year 2011-12 highlights the capital-intensive nature of the sector. That is why the growth of employment in these sectors has lagged far behind. Choi and Kon (2007), in their study, have also observed that the decreasing employment elasticity exudes greater influence of capital investment on growth. The downward trend in employment elasticity highlights the key challenge for policy makers. For attaining the economic growth, more stress has been laid on the use of capital-intensive techniques and skilled labour, and this has created a hurdle in the path of employment generation (Kumar and Gupta, 2008).

Table-3
Elasticity of Employment in Selected Technology Parks of Punjab (%)

Year	Employment Elasticity of Output
1999-2000	4.77
2000-01	5.45
2001-02	6.19
2002-03	6.92
2003-04	8.07
2004-05	11.27
2005-06	6.33
2006-07	1.01
2007-08	9.69
2008-09	7.98
2009-10	1.73
2010-11	1.25
2011-12	-0.32
2012-13	5.09
2013-14	1.34
2014-15	3.45
2015-16	4.17

Source: Government of India (various issues), Annual Reports, Software Technology Park of India, Mohali, Data Generated from Field Survey of IT-Technology Park, Mohali Conducted in year 2017-18.

The Technology Parks have inherent spillover benefits of creating employment opportunities for the educated youth. Several alterations have been recommended in the norms of industries in order to attract and raise the women employees. Table 4 reveals the gender distribution in the technology parks. The ratio of male and female workers was 81:19 in the beginning of Technology Park, but later with the expansion of technology parks, this ratio gradually started tapering off, which exhibits the increasing presence of women in the IT sector. During the survey, it was observed that about 40 percent of the female workers

were at higher organizational positions as compared to male workers. As Jindalet.al (2016) observed in their study, IT sector through its capability has generated employment opportunities for women and this develops the interest of women for technical and professional courses. A study of Nasscom (2009) also demonstrates that the ratio of male: female employees in IT sector of India has shifted in favor of females from 70:24 to 70:30 during 2000 to 2015.

Table-4
Gender Distribution of the Employees in Selected Technology Parks of Punjab

Year	Males (%)	Females (%)
1998-99	81	19
1999-2000	67	33
2000-01	76	24
2001-02	72	28
2002-03	71	29
2003-04	68	32
2004-05	73	27
2005-06	80	20
2006-07	75	25
2007-08	81	19
2008-09	76	24
2009-10	70	30
2010-11	70	30
2011-12	64	36
2012-13	66	34
2013-14	61	39
2014-15	59	41
2015-16	61	39

Source: Government of India (various issues), Annual Reports, Software Technology Park of India, Mohali and Data Generated from Field Survey of IT-Technology Park, Mohali Conducted in year 2017-18.

The firms in technology parks efficiently performed in a cluster aggregative and it represents the performance of Technology Park. Cote and Rosenthal (1998) have named Technology Parks as Industrial Parks that act as a cluster of enterprises that promotes high-tech R&D activities and cooperation among the businesses by sharing the information, raw materials, and infrastructure in order to gain economic and environmental benefits. Khomiakova (2008) asserts that performing in clusters creates competition and opportunities that help the involved firms to grow and perform better and fully utilize the available resources in the Technology Park.

In order to take a consolidated view of the performance of selected Technology Parks in Punjab, the study period has been considered from the year 1998-99 to 2015-16. Performing in cluster encourages well-established

technology incubators and science and technology parks that further promotes regional development, creates opportunities for new businesses, stimulate knowledge-based industries and also improves the standard of living, that further contributes to the growth of employment, sales and profitability of such parks (Almeida.et.al, 2009; Mangro, *et.al.*, 2013).

A Technology park is usually characterized as an apparatus meant for advancing industrial development as far as employment and production are concerned. It can subsequently be said that the major objective of a park is to encourage entrepreneurship with the final aim of promoting regional development and endorsing reindustrialization and make an attempt to support the employees from declining traditional industries by jobs in new hi-tech sectors. However, a technology park ought to clearly be the main player in a regional innovation strategy.

The objective of relating the technology park with Punjab economy is to check whether the step of introducing technology park in Punjab is worthy or not. The stepwise regression analysis has been applied to know the impact of technology parks on Punjab's industries. Human Resource is the essential component of any economy. In a model, the effect of technology parks has been assessed in generating employment opportunities in the state. For evaluating this, the model is designed as:

Model: $\text{Log Indemp} = a_{41} + b_{41} \log \text{Un} + b_{42} \log \text{Emp} + b_{43} \log \text{Pr} + b_{44} \log \text{TSale} + b_{45} \log \text{Wg} + b_{46} \text{LP} + b_{47} \text{CLR}$

Table-5 (a)
Variables Entered in the Model

Model	Variables Entered	Variables Removed	Method
1	Un	.	Stepwise (Criteria: Probability-of-F-to-enter <= .050, Probability-of-F-to-remove >= .100).

Source: Author's Calculation using IBM SPSS Statistics 18 on Primary Data

Table-5 (b)
Descriptive Statistics of the Model

Variables	Mean	Std. Deviation	N
Indemp	.0554	.05029	17
Un	1.9631	.16023	17
Emp	3.3030	.80289	17
Pr	4.7397	.16827	17
TSale	2.6625	.64647	17
Wg	2.6743	.07805	17
LP	4.4339	2.5469	17
CLR	1.3345	.8735	17

Source: Author's Calculation using IBM SPSS Statistics 18 on Primary Data

Table 5(b) represents the prediction of outcome of descriptive statistics that reflect the mean and standard deviation of each variable in the data set. The average number of growth in industrial Employment is 0.55 with standard deviation 0.050 of fifteen number of observations (N=17, because the analysis is on the basis of annual growth).

Further, the next section represents the correlation matrix (Table 5 (b)), which simply gives a rough idea about the relationship among the predictors and outcome and for a prelude look for the problem of multicollinearity in the data. Focusing on the table, the highest correlation is accounted between the employment and production among the predictors at 1 per cent of level of significance ($r=0.982$, $p=0.01$). Despite the significant correlation, it is observed that among all of the predictors, the variable Units is likely to be the best predictor for the outcome. This means more the number of units, the more will be the number of employees and more will be the employment opportunities.

Table-5 (c)
Correlation Matrix of Model

Variables	Indemp	Un	Emp	Pr	TSale	Wg	LP	CLR
Indemp	1.000							
Un	.504	1.000						
Emp	.360	.927	1.000					
Pr	.347	.868	.982	1.000				
TSale	.396	.800	.924	.950	1.000			
Wg	-.496	-.875	-.909	-.857	-.803	1.000		
LP	.350	.887	.924	.879	.882	-.866	1.000	
CLR	-.264	-.776	-.936	-.979	-.950	.771	-.823	1.000

Source: Author's Calculation using IBM SPSS Statistics 18 on Primary Data

The next part of the analysis gives the summary of essential components of the model i.e., the value of R, R Square and Adjusted R Square. The column labeled R, explained the values of the multiple correlation coefficient between the predictors (number of units) and the outcome (growth of industrial employment). The model explains that the no. of units as a predictor has affected the growth of employment in the state. The Correlation between units and growth of industrial employment is 0.604 that is $0.604 \times 100 = 60.4$ per cent. In the model the difference between the value of R Square and adjusted R Square in model is $0.554 - 0.501 = 0.043$. It would account less variance in the outcome. Focusing on Durbin-Watson test, the value of D-W test in the present model it is 1.456.

Table-5 (d)
Summary of Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.604 ^a	.554	.501	.055	1.456

Source: Author's own Configuration

In the next section of the model, it elucidates the ANOVAs test to check whether the model is significantly better at predicting the outcome than using the mean. For model, in table the F-ratio is 4.769, which is significant at 5 per cent level of significance. We can interpret the result as though model have significantly improved the ability to predict that only number of units has played an effective role for promoting growth of industrial employment in the state.

Table-5 (e)
ANOVA Test of the Model

Model	Sum of Squares	Df	Mean Square	F	Sig.
Regression	.010	1	.010	4.769	.046 ^b
Residual	.028	14	.002		
Total	.038	15			

Source: Author's Calculation using IBM SPSS Statistics 18 on Primary Data

The next part of the model is concerned with the parameters of the model. The estimates of b-values point out the individual contribution of each predictor to the model. The b-values explore the relationship between outcome and each predictor. The positive value of b in the table represents the positive relationship between the outcome and predictors and vice-versa. In the Table, the number of units positively effects the growth of industrial employment in comparison to other variables at 5 per cent level of significance. This implies that the number of units promote the employment in the state. Further, the model is free from the problem of collinearity in the data as the VIF and Tolerance fulfills the conditions of non-multicollinearity of the data.

Table-5 (f)
Coefficients

Coefficients												
Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B		Correlations		Collinearity Statistics		
	B	Std. Error	Beta			Lower Bound	Upper Bound	Zero-order	Partial	Part	Tolerance	VIF
1 (Constant)	-.255	.143		-1.789	.095	-.561	.051					
UNITS	.158	.072	.504	2.184	.046	.003	.314	.504	.504	.504	1.000	1.000

Source: Author's Calculation

It is observed from the above analysis that the number of units has positively affected the employment opportunities. The enterprises need efficient and capable employees in combination of capital investment. APTE (2005) has given an interesting approach in terms of contribution of technology parks in GDP of the region and observed that such parks have positive social and

economic impact. These parks have an important influence in generating wealth employment in the provinces where they are located. The increased awareness of technology parks and interests of entrepreneurs promotes the technological and economic development of the industries.

Leru (2015) found that the technology parks contributed in the gross value added, generate employment opportunities and promote innovative activities of the economy. In the study, the results represent the significant effect of introducing technology parks in the state. The location of the park, management capabilities, and incentives introduced in various industrial policies, and number of enterprises have influenced the performance of technology parks in the state. The technology park in the state has given opportunities for the new entrepreneurs to develop their entrepreneurial skills.

Conclusion

Industries promote a high level of innovation and new aptitudes that furthermore have impulse to support financial and social changes. Keeping in mind the end goal to convey sound environment for the development and advancement of enterprises, incentives are indispensable as they propel the economically backward areas to prosperity and augment accessibility to infrastructural facilities, advances innovation, up-gradation of R& D activities (Aregbesola and Akinkunmi, 2010). The Industrial sector is imperative for achieving balanced growth of the economy. Investment in innovation and technology increases productivity and causes economic growth and raises the standard of living. Increased productivity maintains competitiveness in the manufacturing sector. In the manufacturing sector, technological innovation is considered indispensable for steady improvement in products and for creating new innovations and job opportunities.

The development of Technology/Industrial Park is a prominent example of technical changes. The developed nations have adopted the dynamic technique of innovation for expanding their advantages and also for picking up in the grade/pace of industrialization. Such Parks have been viewed as helpful for embracing businesses, knowledge-based industry, and financial development inside the locales (Research and Industry, 1986, Link & Scott, 2003). Technology Parks have been acknowledged as a congregation of problems and solutions that are intimately linked with sustainable development in, low and medium income countries. It is considered as a crucial part for edifying infrastructure and generating job opportunities and also for acting as a funnel for policy makers in achieving the errands for sustainable development. Investment in Science, Technology and Innovations performs as a significant base of economic growth (UNESCO, 2010).

References

- Ahluwalia, M.S. (2002), "State-Level Performance Under Economic Reforms in India ", in Anne O Krueger (ed.), *Economic Policy Reforms and Indian Economy*, New Delhi: Oxford University Press.
- Almeida, A., C. Santos & M. R. Silva (2009), Science and Technology Parks in Regional Innovation Systems: A Cluster Analysis, obtained from Association for Protection of Democratic Rights, pp.2091-2118.
- APTE (2005), A Study of the Social and Economic Impact of Spanish Science and Technology Parks, published by Ministry of Education and Science, Spain.
- Aregbesola, K. & B. Akinkunmi (2010) "Software Process Implementation- A Focus on the Nigerian Software Industry", *Journal of Research in Physical Science*, Vol. 6.
- Aubert, J. E. (2005), "Promoting Innovation in Developing Countries: A Conceptual Framework", *Working Paper 3554*, World Bank Policy, pp.1-39.
- Aulicino, A & L. M. Petroni (2012), "Implementation of Technology Parks for the Eradication of Poverty in Emerging Countries: A Brazilian Case", paper published in *29th IASP World Conference*, 17-20th June, 2012, Tallon.
- Baluch, N., C. S. Abdullah & R. A. Bidin (2015), "Technology Parks of Indonesia, Malaysia and Singapore: A Critical Discourse: *Journal of Technology*, pp.41-50.
- Bhalla. G., G. K. Chadha, S. P. Kashyap and R. K. Sharma (1990), "Agricultural Growth and Structural Changes in the Punjab Economy: An Input-Output Analysis", *Research Report*, International Food Policy Research Institute in Collaboration with Centre for the Study of Regional Development at Jawahar Lal Nehru University, New Delhi, pp. 41-56.
- Chadha, V. (2003), "Punjab: Industrial Policies and State's Role", *Economic and Political Weekly*, Vol. 38, No. 47, November 22-28, pp. 4940-42.
- Chadha, V. & G. Kaur (2012), "Relevance of Technology Parks in the Industrialization of an Emerging Economy: Some Evidence from Indian States of Punjab", A Paper presented at the *Third IIMS International Conference on Contemporary Issues in Managing Development*, organized at Bali, Indonesia during November 2011-12.
- Colonibo. M. G., & M. Dalmastro (2002), "How Effective are Technology Incubators? Evidence from Italy", *Research Policy*, Vol.31, pp.1103-1122.
- Cote, P. and C. Rosenthal, (1998), "Designing Eco-Industrial Parks, A Synthesis of Some Experiences", *Journal of Cleaner Production*, Vol.6 pp.181-188.
- Choi & C. Kon (2007), "The Employment Effect of Economic Growth: Identifying Determinants of Employment Elasticity", *Report by Chonbuk National University*, South Korea, pp.1-9.
- Etzkowitz, H. (2008), *The Triple-Helix: Industry University and Government Investment in Innovation*, New York: Routledge.

Fallah. M. H., and S. Ibrahim (2004), “Knowledge Spillover and Innovation in Technological Clusters”, *Proceedings IAMOT*, Conference in Washington DC, pp.1-16.

Gatti, G. (2010), “Science and Technology Parks and Innovation Networks as Strategic Factors for Regional Development” *Prague Summer Conference on IP & Innovation* National Technical Library, Prague, Sept 14, 2010.

Government of India (Various), *Annual Reports*, New Delhi: STPI.

Government of India, Ministry of Information Technology, New Delhi: Diety.

Howells, J. (2006), “Intermediation and the Role of Intermediaries in Innovation, *Research Policy*, Vol.35, No.5, pp.715-728.

Hu, A. G. (2003), “China’s Technology Parks and Regional Economic Growth”, Paper Prepared for the *Fourth International Conference on the Chinese Economic Policy*, CERDI, Clermon-Ferrand, France, pp.23-24.

Jain, V & R. Kiran (2012), Technology Management Strategies and Small and Medium Enterprises of Punjab Manufacturing: A Use-Based Sector Analysis”, *Journal of Intellectual Property Rights*, Vol. 17, pp.64-72.

Jindal, R. M., L. Jindal, V. Vohra and G. Sukhja (2016), “ Role of Women in Information Technology Sector”, *International Journal on Innovative Research in Computer and Communication Engineering*, Vol.4, No.2, pp.1919-1922.

Khanna, K. (2011) “Growth and Structural Changes in Punjab Economy: A Study of Post of Green Revolution Period”, *Political Economy Journal of India*, Jan-July, pp.1-4.

Khomiakova, T. (2008), “Information Technology Clusters in India”, *Transition Studies Review*, Vol.14, No.2, pp.355-378.

Kumar, R. & A. S. Gupta (2008), “Towards A Competitive Manufacturing Sector”, *Working Paper 203*, Indian Council for Research on International Economic Relation, New Delhi.

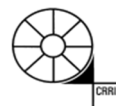
Leru (2015), “Investing in Research, Innovation and Education Really Pay-Off”, *Publication League of European Research University*, Leru.

Lindelof, P & H. Lofsten (2003),” Science Park Location and New Technology-Based Firms in Sweden – Implications for Strategy and Performance”, *Small Business Economics*, Vol. 20, No.3, pp. 245–258.

Link, A. N., & J. T. Scott (2003a). “The Growth of Research Triangle Park,” *Small Business Economics*, Vol. 20 No. 2, pp.1-20.

Link, A. N. & J. T. Scott (2003(b)), “US Science Parks: The Diffusion of an Innovation and its efforts on the Academic Mission of Universities”, *International Journal of Industrial Organization*, Vol. 21. pp. 1323-1356.

- Mangrio, W., A. Bhutto & I. Naqvi (2013) "Contribution of Science and Technology Parks towards Firms' Performance in Pakistan", *Mehran University Research Journal of Engineering & Technology*, Vol. 32, No.3, pp. 391-400.
- Minguillo, D., R. Tijssen & M. Thelwall (2014), "Do Science Parks Promote Research and Technology? A Scientrometric Analysis of the U.K", *Scientrometrics*, Vol.102, No.1, pp. 701-725.
- Nasscom (2009), *Nasscom-Mencher, Gender Inclusivity in India: Building Empowerment Organization*, New Delhi: India
- Saari, S & H. Haapasalo (2011), "Knowledge Transfer Processes in Product Development —Theoretical Analysis in Small Technology Parks", *Technology and Investment*, Vol. 3, pp.36-47.
- Sharma, M. (2012), "Organized Manufacturing Sector of Punjab: Performance, Potential and Constraints", *Indian Journal of Applied Research*, Vol. 2, Issue 2. pp. 44-45.
- Singh (1994), "Productivity, Competitiveness and Export Growth in a Less Developed Economy: A study of Indian Punjab" *Centre Discussion Paper No. 714*, New Haven: Economic Growth Center, Yale University.
- Singh, L. and S. Singh (2002), "Deceleration of Economic Growth in Punjab: Evidence, Explanation and a Way- Out", *Economic and Political Weekly*, Vol.37, No.6, pp. 579-86.
- Singh, L. (2010), "Post-Reform Economic Development in Punjab: Constraints and Remedies", *MPRA Paper No. 26741*, pp.1-27.
- Unido (2005), "Advising and Monitoring the Planning of Technology Parks" *Conference Report*.
- UNESCO (2010), "The Current Status of Science around the World", *United Nation Educational Scientific and Cultural Organizations*, France.
- Unido (2012), "Europe and Central Asia Regional Conference on Industrial Parks", April 17-18, 2012, Baku Azerbaijan.
- Vaidyanathan, G (2008), "Technology Parks in Developing Country: The Case of India", *Journal of Technology Transfer*, Vol.33.
- Zhang, H and T. Snobe (2011), "Development of Science and Technology Parks in China, 1988-2008, Economics: The Open-Access, Open-Assessment, E-Journal, Vol. 5, pp.1-27.



TRADITION OR TECHNOLOGY DILEMMA IN SUSTAINABILITY OF HANDLOOM INDUSTRY

Elangovan N¹

Abstract: Handlooms sector plays an important role in the livelihood of artisans and the national economy. However, the industry has seen a decline over the years due to many challenges. Government has framed many policies and schemes to save the sector. Huge expenditures in terms of subsidies are being spent by the government. The revival of the sector is still not providing the turnaround even after many efforts. This paper discusses this problem from the perspective of sustainability and questions on whether to sustain the craft or sustain the livelihood. Discussion is based on the pillars of sustainability and value pyramid framework. Discussions lead to suggestions in terms of some corrections in the handloom industry's interventions.

Keywords: Handloom, Sustainability, Craft, Consumer Value Pyramid.

1. Introduction

The handloom sector is undoubtedly crucial in the country's economic activity in terms of employment and artisans' livelihood. Handloom sector contributes almost 15 per cent to the country's cloth production. Handloom sector employs around 40 lakh weavers and allied workers directly and indirectly. However, as per Office of the Development Commissioner (Handlooms), this number had come down from 124 lakh in 1970 to 64 lakh in 1995. The growth of production is also slowing down from 6.03 per cent in 2015 -16 to 4.83 per cent in 2016-17. Handloom exports are seeing a similar trend. Ministry of Textiles, Government of India has understood the seriousness and has come out with many interventions to increase the handloom sector's potential. Syama Sundari (2017) quotes that "decades of poorly-implemented protection policies and the growth of powerloom imitations has led to the slow downfall of the handloom sector".

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However, seeing it from a different perspective will show that India is the only country still producing handlooms accounting for 95 per cent of the world handloom production. Other countries have moved to advanced production methods because of quality and productivity. When handloom with fly-shuttle can produce 0.48 metres in an hour, the shuttleless projectile loom can produce 13.3 metres; this is 2700 per cent higher. Due to the low productivity and low earning, younger generations are not getting into the industry. Many studies discuss the handloom industry's prospects; many questions emerge in this situation.

- What is the objective of sustaining the handloom sector? Is it tradition or livelihood?
- Though the handloom sector provides rural employment with less capital requirement, does it give enough money to the artisans?
- With various interventions aimed at the sustaining the handloom sector, why is it still not revived?
- Is the market value based or emotional when buying Handlooms?

This paper presents the government's initiatives to sustain the industry, the likely causes for the failure and discuss the possible solutions.

2. Sustainability of Handlooms

Weaving is considered one of the oldest surviving crafts in the world. Weaving was a household activity next to agriculture and an integral part of human society fulfilling clothing needs. The industrial revolution changed the equilibrium and shifted the weaving activity from the household to the textile mills. This led to the division of handloom and powerloom. Handloom was reduced to a craft. However, many agencies, including the government, are interested in the revival and sustaining the handloom for various reasons. Any government's objective is to provide an economic source for its people to make their livelihood. The financial goal includes giving employment opportunities, distributing income, providing necessary resources, the stability of prices etc. Government's interest in protecting the handloom is because it offers rural employment at lower capital requirement. The handloom processes are less polluting and have low energy requirements because they utilise human resources and natural material.

As a craft, Handloom has encapsulated various regional skills and styles that cannot be imitated by powerloom. Craftsvilla (2017) presented that "From Kashmir to Kanyakumari, every region has its handloom techniques that are used to weave many unique fabrics" and provides a list of popular product from each state (Table 1).

Table-1
Popular Handloom Products Across the Country

Indian State	Popular Product	Indian State	Popular Product
Andhra Pradesh	Kalamkari Sarees	Manipur	Phanek
Arunachal Pradesh	Apatani Weave	Meghalaya	Eri Silk
Assam	Muga Silk	Mizoram	Puans (Loin Cloth)
Bihar	Bhagalpuri Silk	Nagaland	Naga Shawls
Chhattisgarh	Kosa Silk	Odisha	Sambalpuri Saree
Goa	Kunbi	Punjab	Phulkari
Gujarat	Bandhani	Rajasthan	Shisha
Haryana	Panja Durries	Sikkim	Lepcha
Himachal Pradesh	Kullu Shawls	Tamilnadu	Kanjeevaram Silk
Jharkhand	Kuchai Silk	Telangana	Pochampally Ikat
Karnataka	Mysore Silk	Tripura	Pachra
Kerala	Kasavu	Uttar Pradesh	Chikanjari
Madhya Pradesh	Chanderi	Uttarakhand	Panchachuli Weave
Maharashtra	Paithani		

However, not all handloom weavers are thriving. Due to various reasons, weavers are shutting their operation. The handloom Census of 1987 (30.60 Lakh), 1995 (25.25 Lakh) and 2009 (22.68 Lakh) clearly shows a drastic decline in operational looms across India. Furthermore, this data is being questioned. Outlook (July 09 2017) quotes Development Commissioner (Handlooms) that the Census 2009 was inaccurate and there were allegations that it was not conducted properly. A new Census was initiated in 2018 because the Union Textiles Ministry believes the actual figure will be lower. Even the ministry's annual report claims that handloom is the second largest employer next to agriculture is flawed and only when the textile industry as a whole is taken, will this claim be valid. An accurate data is required for the better strategies for sustainability of handlooms.

3. Challenges of Indian Handloom Sector

Various exercises have identified the challenges of the handloom industry. Ashish Kumar & Simaran Kaur (2018) lists the challenges such as availability of raw material, increase competition from powerloom, lack of credit facilities, less

consumer preferences, lack of differentiation factors, inadequate campaigns, lack of standardisation of quality, supply chain problems, institutional inefficiencies, unorganised nature of the industry, technological backwardness, the paucity of novelty of designs, working conditions, research and training, difficulties in textile processing, lack of awareness of schemes and decline in individual weavers.

Table-2
Schemes of Development Commissioner (Handlooms)

Area	Schemes
Supports	Marketing assistance & Incentive, E-commerce Yarn Supply Scheme ERP and E-Dhanga APP Hastkala Sahyog Shivirs Bunkar Mitra helpline Comprehensive Handloom Cluster Development Scheme Export Promotion Awards and Recognitions (Sant Kabir Award, National Award, National Merit Award)
Subsidies	Weavers Mudra Scheme Block-level cluster projects
Institutional	Deendayal Hastkal Sankul (Trade Centre and Museum, Varanashi Indian Handloom Brand/Handloom mark Weavers Service centre Indian Institutes of Handloom Technology (IIHTs) National Centre for Textile Designs (NCTD) Association of Corporation and Apex Societies of Handlooms (ACASH) Handloom Export Promotion Council (HEPC)
Social Security	Mahatma Gandhi Bunkar Bima Yojana (MGBBY) Health Insurance Scheme (HIS) Education facilities to the children of handloom weavers Pradhan Mantri Jeevan Jyoti Bima Yojana (PMJJBY) Pradhan Mantri Suraksha Bima Yojana (PMSBY)
Legal	Handloom (Reservation of Article for Production) Act. 1985 Geographical Indication of Goods

Annual report 2017-18 of the Union Ministry of Textiles identified that adoption of modern technology and liberalisation had taken a toll on handloom sector because of the competition from powerloom, availability of imported fabrics at a lower price, changing consumer preference and other employment opportunities. A note on handloom sector from the Office of the Development Commissioner (Handlooms) in 2015 also highlights challenges such as the decline in the number of weavers, lower productivity, limited scope for up-gradation, the movement to other sectors, younger generation not interested due to lower-earning and severe working conditions and lack of credit availability.

Despite understanding the problems, India's Government has framed various schemes and policies to sustain the handloom industry. As a non-plan scheme, the Handlooms Act 1985 reserves many textile articles for production only by handloom. As per the Annual Report 2017-18, the current interventions and planned schemes are presented in table 2.

4. Sustainability Dilemma

Delhi Solidarity Group (2018) argued that handloom weavers' daily average income is less than Rs. 100. This is far less than the Government of India's minimum wage. The Comptroller and Auditor General of India (CAG) commented that the government's initiatives did not fulfil the social objectives. The staff employed to support the core operations were paid better than the weavers. Low wages were the reason for weavers leaving the trade. On the other hand, the Times of India (2016) reported that the government is working out a strategy, which includes increasing the wages of skilled weavers to Rs. 500 per shift. At current productivity of just 4 metres per day, higher wages will mean higher cost and less value to the consumer. At lower wages, handloom weaving cannot be a livelihood of weavers. The dilemma is reflected in the budget allocation to the handloom sector under textiles' Ministry. Budget allocation in 2018-19 to the industry was less than 2/3rd of the previous budget and had a share of just 5.5 per cent of the Ministries budget. It was a little less than 10 per cent in 2017-18 and around 14.75 per cent in 2016-17. Is Government is reducing its concern on sustaining the handloom sector and allowing technology to take over the tradition?

Standard textile products have been already taken over by powerloom. Beyond the reserved category, the only product with complex and intricate work that require artistic skills remain under handloom. Some of these products are imitated by powerloom and pushed into the handloom market and exploit the benefits. India Kala (October 05, 2016) reported that “well-engineered replicas are marketed as original handmade pieces”. The counterfeit crafts pressurise many handloom crafts like Banarasi brocade, Sualkuchi silk, Pashmina shawl etc.

Another problem with the handlooms is that the product quality of standard products with mass consumption compared to powerloom is far less. In such situations, handloom will be unable to compete for both quality and price, whereas crafted products have only a smaller market. This clearly shows that sustainability efforts cannot hold the mass products under handloom, even with the reservation acts. This will only lead to powerloom being sold under the label of handloom.

There is always a debate on the modernisation and upholding the culture and traditions. André Malraux quotes that “Culture is the sum of all the forms of art, of love and of thought, which, in the course of centuries, have enabled man to be less enslaved” (Forbes, n.d.). People pursue artistic and creative expression through various outlets, constituting a community’s cultural assets. These activities are essential to a community’s well-being, economic and cultural vitality, sense of identity, and heritage (Australian Multicultural Foundation, 2014). To retain the cultural values embedded in intangible art forms, the commercial value must be avoided. Arendt and Kohn (2006) in their work “Between Past and Future” discussed the crisis in culture and argued that the works of art that express the culture and tradition should be “removed from the process of consumption and usage and isolated against the sphere of human life necessities”. In such a context, the question is whether to sustain the craft as a tangible carrier of culture or make them a commercial product to support artisans' livelihood.

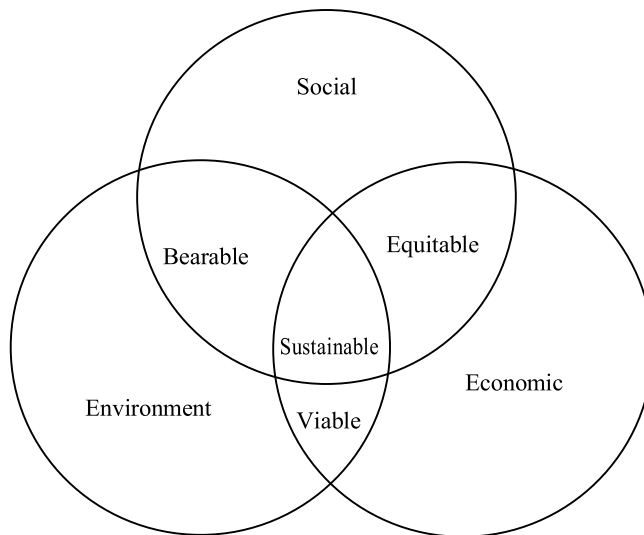
5. Discussions

Brundtland Report (1987) defines sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”. Sustainability is not just focusing on the natural environment but also on a holistic approach to embedding social and economic development. The Sustainable Development Goals (SDGs) known as the 2030 agenda, looks at eradicating poverty, protecting the planet and ensuring that all people enjoy peace and prosperity (IISD, n.d.).

5.1 Sustainability Focus and its Evaluation

The need for sustainability of handloom can be assessed using these definitions as fundamental. The three pillars of sustainability, environment, social and economical, which is also inferred as planets, people and profits are used to assess handlooms' sustainability (Figure 1).

Figure-1
Sustainable development Dimensions (Frini & Benamor, 2018).



Assessment of the environmental impact of handlooms shows that the raw materials used are natural and farm-based and are environment-friendly. The processes are mostly based on human effort and don't use energy and are non-polluting. However, compared with alternate means such as the powerloom, both processes' raw materials are the same. Comparing the energy consumption, the requirement of power per meter of fabric will be far less, and when cleaner production of electricity is produced doesn't impact the environment. Pre-process, and post-process of the fabric of handloom and power loom are the same. Considering the environmental impact power loom has the advantage because of its productivity.

Social impact of handlooms can be assessed on two aspects, society and people (weavers). Handloom having the craft value and holding the tradition requires the sustainability need. It binds the society with a feeling of togetherness and happiness. However, handloom weavers are in a poor state due to the reduced demand for handloom products, low productivity and wage-earning, the low standard of living, and the weavers' poor working condition. Their employment opportunity is also reducing. Due to their condition, their status in society is low. They do not get equal opportunity and lack social respect. Their skills are not valued, and they move to other options.

The economic impact of handloom on economic growth reveals a negative trend. Even at the best times, the contribution of handlooms to the country's economy was not substantial. Productivity is low and cannot cater to the demands of the market. The competitiveness of the handloom against the powerloom is weak. Without Government support, handloom cannot sustain the pressures from various fronts.

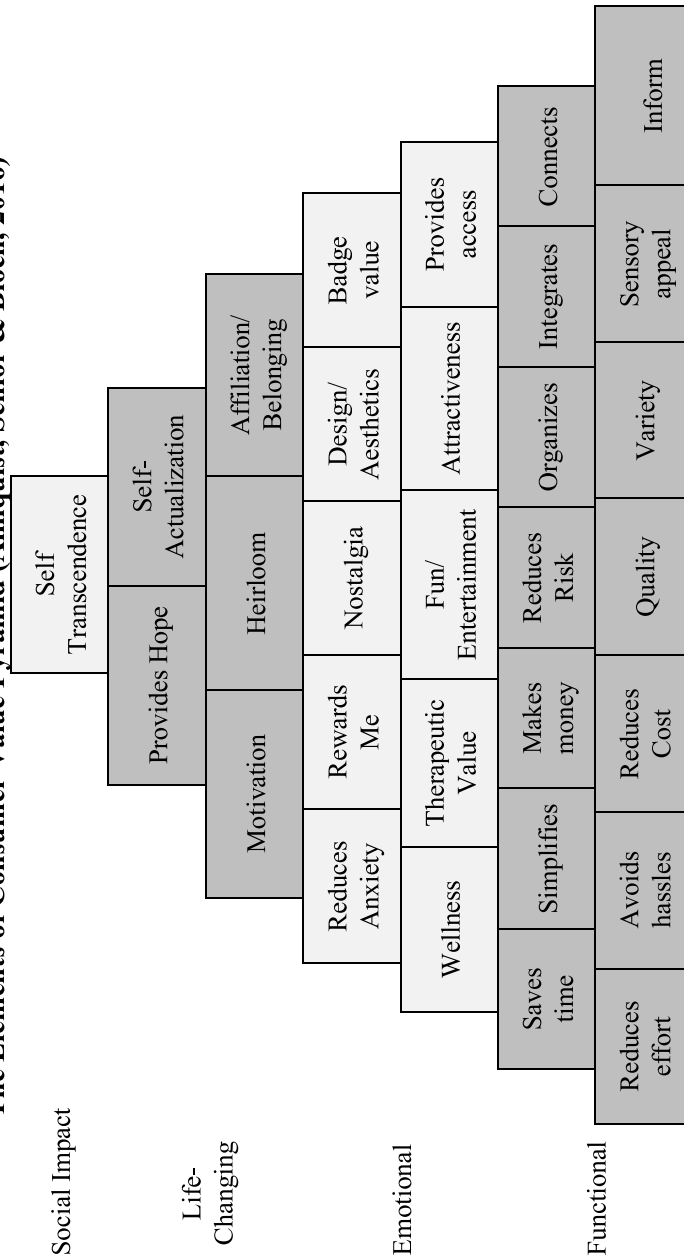
5.2 Sustainability as Craft

The need to sustain handloom as a craft becomes unimpressive if analysed from a marketing perspective. With low productivity, the cost of the product becomes higher. At a higher price evaluating the benefits provided by handlooms defines its value. Consumers will weigh its perceived value against the asking price while buying a product. The actual value is difficult to assess because how a consumer will perceive value differs on what attributes they feel is important for them. This situation may be evaluated using the consumer value pyramid (Almqvist, Senior & Bloch, 2016). The consumer value pyramid identifies 30 “elements of value” in four categories: functional, emotional, life-changing, and social impact (Figure 2). Handloom cannot score high in functional value when compared to powerloom. Handloom may create an emotional value due to nostalgia for a few consumers who would like to connect themselves to the past. Handloom can provide heirloom or affiliation value if the consumer is sympathetic to the weaver and would contribute to their lives by buying handloom. This is observed when a group of people consider wearing handloom in the offices to support weavers. This will not be long lasting, and handloom will not get the required volume to sustain customers with emotional and life-changing values.

5.3 Sustainability for Livelihood

If the Government focuses on weavers' livelihood, the initiatives need to focus more on engagement and employment of them with increased revenue. For which the use of technology cannot be ignored. Though handloom's advantage is low capital intensive, simple and cost-effective technology and use of power need to be encouraged. Human effort can be partly substituted by power so that productivities can be improved and thus earning capacity of weavers can be enhanced. Therefore, government interventions can be created such that the weavers are supported in acquiring those technologies at a lower price. Also, the primary concern would be the change in handloom definition. The current definition of Handloom as per the Handloom reservation act of 1985 goes as “any loom other than powerloom”. “To improve the productivity and reduce the manual labour on loom, the Advisory Committee on Handloom Reservation Act, in its meeting held on August 10, 2012, had recommended the modifications in the definition of handloom” (*The Hindu*, 2014).

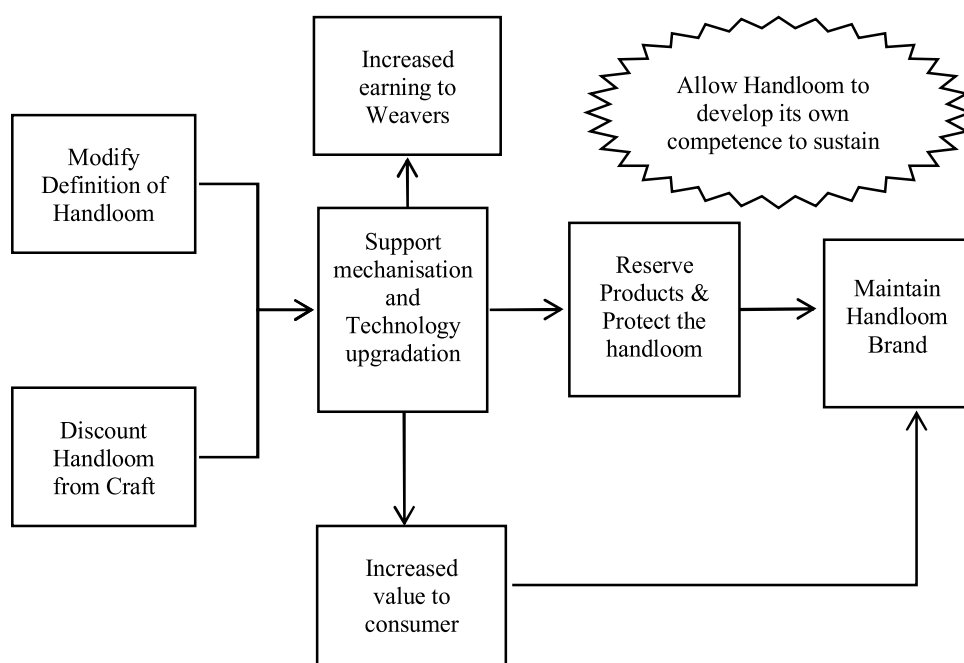
Figure-2
The Elements of Consumer Value Pyramid (Almquist, Senior & Bloch, 2016)



The proposed new definition for handloom was framed as “any loom, other than powerloom; and includes any hybrid loom on which at least one process for weaving requires manual intervention or human energy for production”. However, the same was rejected by a sub-committee of the Advisory Committee. This may be to create a distinction of handloom from powerloom. However, it should be noted that this only leads to counterfeit handloom products.

Without productivity, consumer value or the weavers' earning capacity cannot be improved. Therefore, changing the definition should be supported by handloom reservation, strict enforcement and handloom branding (Figure 3).

Figure-3
Model for Sustaining Handloom Sector



References

- Almquist, E., Senior, J., & Bloch, N. (2016). The elements of value. *Harvard Business Review*, 94(9), 47-53.
- Arendt, H., & Kohn, J. (2006). *Between past and future*. Penguin.

Ashish Kumar & Simaran Kaur, (2018). Indian handloom industry: Potential and prospects. Export-Import Bank of India, WORKING PAPER NO. 80. Retrieved on 09-09-2019 from <https://www.eximbankindia.in/Assets/Dynamic/PDF/Publication-Resources/ResearchPapers/102file.pdf>

Australian Multicultural Foundation (2014). Preserving Culture and Heritage Through Generations, Forum Report, 7th Diversity Matters Forum - Istanbul, Turkey 11-14, May 2014

Craftsvilla (January 24, 2017). Fabric tour of India: discover India's amazing handloom heritage. Retrieved on August 08, 2019, from <https://www.craftsvilla.com/blog/indian-handlooms-from-different-states-of-india/>

Delhi Solidarity Group (2018). Union Budget 2018-19: Issues of Marginalized Sections. Retrieved on 9-09-2019 from <https://counterview1.files.wordpress.com/2018/02/union-budget-2018-19-issues-of-marginalised-sections.pdf>

Forbes (n.d.) Forbes Quotes Thoughts on The Business of Life- Quotes by André Malraux. Retrieved on 10-08-2019 from <https://www.forbes.com/quotes/author/andre-malraux/>

Frini, A. & Benamor, S. (2018). Making Decisions in a Sustainable Development Context: A State-of-the-Art Survey and Proposal of a Multi-period Single Synthesizing Criterion Approach. Computational Economics 52 (2), 341–385.

IISD (n.d.). Sustainable Development Goals. Retrieved on 11-08-19 from <https://www.iisd.org/topic/sustainable-development-goals>.

India Kala (October 05, 2016). TBI Blogs: Here's How to Differentiate Between Fake & Authentic Handlooms & Handicrafts. Retrieved on 09-08-2019 from <https://www.thebetterindia.com/69817/handlooms-and-handicrafts-in-india/>.

Outlook (July 09 2017). Govt. begins fourth national handloom census. Retrieved on 09-08-2019 from <https://www.outlookindia.com/newsscroll/govt-begins-fourth-national-handloom-census/1094798>.

Sandeep Varaganti (March 16, 2017). New lease of life for handloom sector Retrieved on 08-08-2019 from <https://www.thehindubusinessline.com/opinion/new-lease-of-life-for-handloom-sector/article9587886.ece>.

Syama Sundari, B (March 21, 2017). Handlooms Are Dying – and It's Because of Our Failure to Protect Them. Retrieved on 16-08-2019 from <https://thewire.in/culture/handlooms-are-dying-and-its-because-of-our-failure-to-protect-them>

The Hindu (January 09, 2014). No change in definition of 'handloom': Textile Ministry. Retrieved on 10-08-2019 from <https://www.thehindu.com/business/Industry/no-change-in-definition-of-handloom-textile-ministry/article5558390.ece>

Times of India (April 19, 2016). Govt working to increase wages of skilled handloom weavers. Retrieved on 09-08-2019 from <https://timesofindia.indiatimes.com/city/delhi/Govt-working-to-increase-wages-of-skilled-handloom-weavers/articleshow/51897370.cms>



RASHTRIYA BAL SWASTHYA KARYAKRAM IN PUNJAB: AN APPRAISAL

Pawan K Sharma¹ and Poonam Sandhir²

Abstract: The present paper is geared to the task of assessing the ground situation of the implementation of RBSK in the state of Punjab vis-a-vis the physical and manpower norms laid under the Programme as well as beneficiary satisfaction. The results show that adherence to the physical infrastructure, manpower and equipment at all the District Early Intervention Centres (DEICs) vis-à-vis the RBSK Programme Guidelines were pretty dismal. Physical space in the DEICs was available, but unused due to lack of availability of staff and equipment. None of the MHTs functioned on a predetermined micro-plan. Dental illness (37.3%) was the most common condition in children followed by visual impairment (21.8%) and anaemia (8.9%). Poor financial status of parents, ignorance about the severity of ailments, repeated visits to referral centres and negative impact of religious *Babas* on the psyche of parents discouraging them to stay away from modern system of medicines were the critical factors leading to a weak follow-up under the Programme. It is recommended that RBSK Programme within the state needs to be revamped. Here the focus of the Programme needs to be moved from a simple screening of children to a 4D treatment.

Introduction

India is home to the largest number of children between the ages of 0 and 18 years worldwide. However, indicators of child health are a cause of concern, as India accounts for 20 per cent of the global child deaths. According to March of Dimes (2006), about six to seven of every 100 babies born in India each year, have a congenital anomaly. A verity of nutritional deficiencies in preschool children ranged from 4 to 70 per cent. Developmental delays are frequently experienced in early childhood, affecting at least 10 per cent of the children. If these delays are not treated in a timely manner, they may result in lifelong impairment of hearing or vision. Approximately 20 per cent of the infants

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discharged from Special Newborn Care Units (SNCUs) suffered from developmental delays or impairments at a later stage. Early detection and management of these ailments, including deficiencies could bring added value in preventing these conditions to progress to its severe and debilitating form and thereby reducing hospitalization (UNICEF, 2016).

The National Rural Health Mission (NRHM) launched in 2005, now called National Health Mission (NHM), demonstrated a 36 per cent reduction in under five mortality rate from 2008 to 2013. With a view to further comprehensively address child health conditions to reduce morbidity and mortality, the RBSK or Child Health Screening and Early Intervention Services Programme under the NHM was launched by the Ministry of Health and Family Welfare, Government of India in February 2013. It aims at early detection and management of 30 identified health conditions broadly classified in 4 Ds (**D**efects at birth, **D**iseases in children, **D**eficiency conditions and **D**evelopment Delays) prevalent among children (MoHFW, 2013).

Identified Health Conditions for Child Health Screening and Early Intervention Services

DEFECTS AT BIRTH	DEFICIENCIES
1) Neural tube defect 2) Down's Syndrome 3) Cleft Lip & Palate / Cleft palate alone 4) Talipes (club foot) 5) Developmental dysplasia of the hip 6) Congenital cataract 7) Congenital deafness 8) Congenital heart diseases 9) Retinopathy of Prematurity	10) Anaemia especially Severe anaemia 11) Vitamin A deficiency (Bitot spot) 12) Vitamin D Deficiency, (Rickets) 13) Severe Acute Malnutrition 14) Goiter
DISEASES OF CHILDHOOD	DEVELOPMENTAL DELAYS AND DISABILITIES
15) Skin conditions (Scabies, fungal infection and Eczema) 16) Otitis Media 17) Rheumatic heart disease 18) Reactive airway disease 19) Dental conditions 20) Convulsive disorders	21) Vision Impairment 22) Hearing Impairment 23) Neuro-motor Impairment 24) Motor delay 25) Cognitive delay 26) Language delay 27) Behavior disorder (Autism) 28) Learning disorder 29) Attention deficit hyperactivity disorder
30) Congenital Hypothyroidism, Sickle cell anemia, Beta thalassemia (Optional) 31) Primary Immunodeficiency Diseases (PIDD) (included by Punjab Government)	

RBSK targets children from birth to 18 years through platforms of anganwadi centres (AWCs) and government and government-aided schools. The RBSK aims to cover children of 0-6 years of age in rural areas and urban slums in addition to children enrolled in classes 1st to 12th in government and government-aided schools. Under the RBSK, children born at home are to be screened by ASHA workers till six weeks and children born in any public health facility are to be screened by the existing health manpower like Medical Officers, Staff Nurses and ANMs at these facilities while AWC and school based screening is to be done by the dedicated Mobile Health Teams (MHTs) at the AWCs and schools twice and once a year respectively.

Once the children are screened to be suffering from any one of the ailments, the next step is confirmation of the preliminary findings, management, referral support and follow-up through District Early Intervention Centres (DEICs) and designated higher centres for the purpose. The DEICs shall also act as referral linkages for all the children up to 18 years. According to RBSK Guidelines, different types of norms at the DEIC level have been laid as regards the manpower requirement, the physical infrastructure and the equipment. In all, the DEICs are set to be the hub for all the activities which will act as a clearing house and also provide referral linkages (MoHFW, 2014).

In Punjab, five DEICs were set-up in the district hospitals of Bathinda, Hoshiarpur, Ludhiana, Rupnagar and Tarn Taran. The treatment of health problems within the framework of RBSK provided is free in all the government hospitals and government medical colleges in Patiala, Amritsar and Faridkot. No research has yet been undertaken so far to assess the operation of RBSK in Punjab. The purpose of this paper is to assess the effectiveness of the RBSK programme and to understand the operational bottlenecks that affect its operation, if any.

Objectives

The objectives of this evaluative study are to assess the adherence to the physical infrastructure, the manpower and the equipment by the DEICs vis-à-vis the guidelines laid under the RBSK Programme; examine the performance of DEICs as regards nature of treatment provided to children referred by MHTs, examine the functioning of MHTs vis-à-vis the laid guidelines; assess the client satisfaction with different health facilities including the DEICs; and understand the operational bottlenecks that affect their functioning and offer recommendations to fill the gap, if any.

Methodology

A multistage sampling design was adopted for the selection of DEICs, MHTs, parents of the children identified to be suffering from at least one of the 4Ds.

At the first stage, three of the five DEICs in Punjab, located in the districts of Hoshiarpur, Ludhiana and Rupnagar were selected at random. Two blocks under the jurisdiction of each selected DEIC were also selected at random. These included Chamkaur Sahib and Bharatgarh in Rupnagar, Maloud and Manupur in Ludhiana and Possi and Paldi in Hoshiarpur district. From each block, one government school and one AWC, under the jurisdiction of a MHT were selected at random.

The next stage involved the selection of parents whose children were diagnosed to be suffering from at least one of the diseases covered under RBSK. The number of such parents to be interviewed from each DEIC was fixed at 20. Parents visiting the selected DEICs on the day of field visits were interviewed. Parents who had already taken treatment from these DEICs during the last six months prior to the survey were also contacted and interviewed.

Weighted averages were calculated for each of the parameters of parent's satisfaction with health care received at DEIC and other health facilities for better depiction of the results and to provide a meaningful comparison. This was calculated as follows: The beneficiaries (in this case the parents of children detected with any one of 4Ds) were classified according to their level of satisfaction with assigned codes (Highly satisfied =1, Satisfied =2, Somewhat satisfied =3, Not satisfied =4 and Very dissatisfied =5). The responses from patients on the parameter of waiting time to meet the doctor/therapist were calculated as follows:

$$12 \times 1 + 18 \times 2 + 5 \times 3 + 16 \times 4 + 9 \times 5 = 172$$

The numbers of responses 12, 18, 5, 16 and 9 as above have been taken for example. The total number of patients equals 60. So, the weighted average is $172/60 = 2.87$

Similarly, the weighted averages were calculated on all the individual parameters. The values of weighted average ranged from 1 to 5. Lower the value better is the satisfaction level in the present case.

Data was obtained with the help of three different pre-structured questionnaires, one each meant for the DEIC, parents of the children (beneficiaries) and MHTs. Group discussions were conducted with the school staff, including teaching and non-teaching staff separately as well as community leaders. Interactions were also made with AWWs.

District Early Intervention Centres

Core services: Four of the 18 core services, namely (a) medical (for diagnostic or evaluation purpose), (b) health (to enable a child to benefit from other early intervention services), (c) referral (support and treatment, including surgical interventions at tertiary level), and (d) services related to file preparation and

storing, data management and its uploading were provided in all the three sampled DEICs. While more than half of the core services (10 services) viz. occupational and physical therapy, psychological services, cognition services, vision services, lab services, nutrition services, psycho-social services, transportation and related cost services, service coordination services and training and enhancing capability were not provided in any of them. DEICs in different districts were offering diverse services. For instance, dental services were not provided in the Hoshiarpur DEIC, audiology and speech-language pathology not provided in the Rupnagar DEIC and social support services not offered in Ludhiana DEIC. Lack of manpower and equipment facilities available at the respective DEIC was cited to be the main reason for not providing a bouquet of all the core services.

On the ground situation as regards liaison with other departments including disability division of the Ministry of Social Justice and Empowerment and Ministry of Human Resource Development was not very encouraging. The supplementary service related to disbursing of disability certificates with other board members was actively done in the Ludhiana DEIC while this was absent in other two DEICs. No efforts were made by these DEICs to develop a liaison with other departments and to make linkages with Ministry of Human Resource Development.

Activities of DEIC: Broadly speaking, a majority of the activities were provided by all the three sampled DEICs. Six of the ten activities listed in the Operational Guidelines were provided in all the three DEICs. These include (a) screening of all infants discharged from Sick Newborn Care Units (SNCU) who are at-risk of developmental delays and Neuro-motor impairment, (b) confirming diagnosis of the children referred with four Ds by the MHTs, delivery points ASHAs, private medical practitioners and self-referral, (c) coordinating tertiary level treatment, (d) acting as a resource center for BEICs, (e) maintaining records of every child visiting DEIC for therapies and education, and (f) referring children beyond six years of age with neuro-motor impairments for further continuation of therapy and education to the Rehabilitative and Educational institutions. However, the activities on developing BCC materials and strategies for the purpose of creation of awareness of this new concept among the general public and acting as laboratory for the clinical and programmatic improvement through exercising were not done. The activities on tracking development of all infants discharged from the SNCUs up to the age of two years was provided in Ludhiana DEIC while the activity of assessing, intervention and parent counselling for the children confirmed to be suffering from diagnosis and Neuro-motor impairment were provided in Hoshiarpur and Ludhiana DEICs.

Physical Infrastructure: The Operational Guidelines on the DEICs laid specifications as regards the space meant for different activities to be performed

by these. Adherence to these specifications was relatively higher in the DEICs in the Hoshiarpur and Ludhiana as compared to the Rupnagar DEIC. Of the 19 activities for which specifications were laid, 13 each were adhered in the Hoshiarpur and Ludhiana DEICs while six such specifications were complied with in Rupnagar DEIC. Reception space for registration, including anthropometry, waiting space, pediatrician and medical officer room, pantry and space for drinking water and washing, toilets (male, female, staff) and open space/corridor were available in all the three DEICs. It was observed during the field survey that rooms were lying vacant in all three DEICs but due to non-availability of manpower these were not earmarked to be performing any specific activity.

The space for the play/therapy area, dental examination room, vision testing room, early intervention room-cum-occupational therapy room and computer room (Manager/DEO) existed in the Hoshiarpur and Ludhiana DEICs. It is not that the rooms were not available in the Rupnagar DEIC but these were lying unoccupied due to lack of manpower. In Rupnagar DEIC, the computer operator was operating from the main building of the parent hospital, so no room was allotted for the purpose.

Staff: Table 1 displays a dismal picture regarding composition of the staff at all the three DEICs as regards the staff availability vis.-a-vis. the laid norms. The MOs involved in the School Health Check-up Programme were posted in DEICs. The MO at the DEIC Ludhiana was posted somewhere else but was visiting DEIC on particular days. None of the three DEICs had pediatrician available with them.

Table-1
Availability of staff in DEICs vis-à-vis the laid norms, 2018

Professionals	Norm	Number in districts of		
		Hoshiarpur	Ludhiana	Rupnagar
Medical Professionals (Pediatrician -1, MO- 1, Dentist -1)	3	1	2	1
Physiotherapist	1	0	0	0
Audiologist & Speech Therapist	1	1*	1*	0
Psychologist	1	0	0	0
Optometrist	1	0	0	0
Early Interventionist-cum-Special Educator-cum-Social Worker	1	1	1	0
Lab Technician	2	0	0	1
Dental Technician	1	0	0	0
Manager	1	1	0	0
Data Entry Operator	1	0	0	0
Genetic Counselor	1	0	0	0

Source: Obtained from DEICs at Hoshiarpur, Ludhiana and Rupnagar districts during Field Survey, 2018.

Note: * - Outsourced.

The audiologist & speech therapist were outsourced in Ludhiana and Hoshiarpur districts. All children requiring these therapies were asked to visit the DEIC on the fixed day. The audiologist & speech therapist were charging Rs. 130 per child per session and this entire money was paid by the respective DEICs from the RBSK funds. The staff crunch in these DEICs was proving to be a hindrance in achieving the desired objectives.

The RBSK guideline to have dedicated DEIC staff members (not rotated or posted elsewhere, preferably for a minimum of 3 year period) was not followed strictly. The situation on the count of DEIC team members to be deputed from the existing pools was quite discouraging in all the three DEICs. This was not adhered to in Rupnagar DEIC but followed to some extent in others. It was followed regarding the availability of nurses in Hoshiarpur and pediatrician, ENT and psychiatrist in Ludhiana DEIC.

Equipment: The situation as regards the availability of furniture and logistics was more or less satisfactory in Ludhiana and Hoshiarpur DEICs. It was relatively better in Ludhiana as compared to Hoshiarpur district. The Rupnagar DEIC did not have computer desktops for reception/registration, DEIC manager room with internet facility, television in the waiting area, speaker system and intercom system for each room.

The situation on the count of availability of medical equipment was very pathetic in all the three DEICs (Table 2). None of them have even a single prescribed item, including pediatric stethoscope, sphygmomanometer with pediatric cuff, direct ophthalmoscope, pediatric auroscope, ear speculum, magnifying glass, weighing machine (both baby and adult), infantometer, stadiometer, measuring tape, torch, knee hammer and x-ray viewer. Non-availability of even the basic equipment required for the identification and treatment at the district headquarters puts a question mark on the quality of services rendered by these DEICs.

The situation on the count of availability of other equipment required for ROP, hearing, vision, lab and computers with LAN was no different. None of them has any of the four labs equipment including automated blood cell counter, microscope, semi-automated analyzer and digital hemoglobinometer. For all labs related requirements, parents were directed to avail the services offered either at the district hospital or from outside.

The status as regards the availability of dentistry equipment was dismal in all the three sampled DEICs. In fact, out of 47 types of prescribed equipment for dentistry only one pediatric dental chair was available in Ludhiana DEIC. Similarly, for physiotherapy, 38 types of equipment are prescribed. Of these, three, namely therapy balls of 65 cm and 45 cm, pump for inflation and bolster swing were available in Hoshiarpur DEIC, eight, namely peg board, ball pool,

pool balls, bolster swing, platform swing, tube swing, rope ladder and equilibrium board in Ludhiana DEIC and five, namely balance board, bolster swing, peg board, ball pool and multi-color balls of 7cm or 8 cm diameter in Rupnagar DEIC. Tools for psychological tests were also partially available in all DEICs. Tool on receptive-expressive emergent language test was available in all three DEICs. While tools on dyslexia early screening test 4-6 years (DEST) were available in both Hoshiarpur and Ludhiana DEICs. Tool on dyslexia screening test junior (6-11 years) was available only in Hoshiarpur DEIC. Five types of sensory integration equipment such as bolster swing, platform swing, tyre tube swing, rope ladder swing and balance boards were available in Rupnagar DEIC only. Computers were available in Hoshiarpur and Ludhiana DEICs but without LAN services.

Table-2
Availability of different types of equipment in DEICs vis-à-vis prescribed norms

Type of equipment	Norm	Available in (numbers)		
		Hoshiarpur	Ludhiana	Rupnagar
Medical	13	0	0	0
R.O.P.	4	0	0	0
Hearing	23	0	0	0
Vision	5	0	0	0
Tools for psychological tests	9	3	2	1
Lab	4	0	0	0
Dentistry	47	0	1	0
Computers with local area network	6	0	0	0
Physiotherapy	38	3	8	5
Sensory integration	21	0	0	5

Source: Obtained from DEICs at Hoshiarpur, Ludhiana and Rupnagar districts during Field Survey, 2018.

The situation as regards the availability of types of toys in the play area as specified in the Operational Guidelines of DEICs was miserable in Hoshiarpur DEIC while it was little better in Ludhiana and Rupnagar districts.

Training: According to Operational Guidelines of the DEICs, compulsory basic level one month training is to be imparted to all specialists. The staff members in all the three DEICs had received RBSK induction training, but they did not receive one month training. A few of them had also received orientation training.

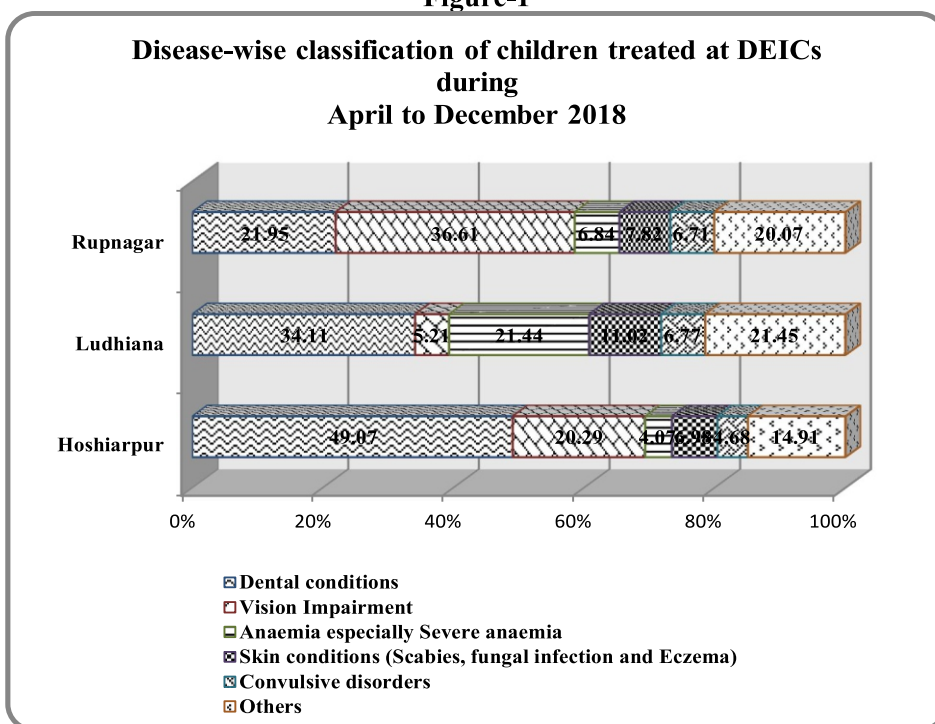
Performance: Figure 1 displays the proportion of children found with four Ds in DEICs of Hoshiarpur, Ludhiana and Rupnagar during first three quarters of F. Y. 2017-18, i.e., from April 2018 to December 2018. During this period, the most frequent diseases identified in DEICs were dental problems (37.3%), vision impairment (21.8%) and anaemia (8.9%). Not even a single child was detected to

be suffering from developmental dysplasia of the hip, congenital cataract and retinopathy of prematurity. Skin conditions (scabies, fungal infection and eczema), convulsive disorders, reactive airway disease, congenital heart diseases and otitis media together contributed about one-fourth of the total diseases identified during this period.

The variations were quite evident in three DEICs as regards the occurrence of these diseases. About half (49.1%) of the children in the Hoshiarpur DEIC were identified to be suffering from dental problems while the corresponding figures in Ludhiana and Rupnagar DEICs were 34.1 and 21.9 per cent respectively. On the other hand, 36.6 per cent of the children in the Rupnagar DEIC were suffering from vision impairment which was seven times higher the proportion of children in the Ludhiana DEIC (5.21%) and 1.8 times higher the proportion of children in the Hoshiarpur DEIC (20.2%).

A few important suggestions made by MOs and other staff members included filling-up of the vacant DEIC posts, better availability of equipment as per the norms, provision of transport facilities for poor parents to bring children in DEICs to augment the follow-up services and availability of pediatricians at least with the parent hospital.

Figure-1



Field Survey, 2018

Mobile Health Team

Composition: At least two dedicated MHTs in each block of a district are to be engaged to conduct screening of children in both the platforms, AWCs and Schools. As per the suggested Operational Guideline, a MHT will consist of four members - two Doctors (AYUSH) one male and one female, one ANM/Staff Nurse and one Pharmacist with proficiency in computer for data management.

In terms of composition of members of a MHT, the situation was satisfactory in both the blocks in Rupnagar district, namely Chamkaur Sahib and Bharatgarh while both Maloud and Manupur blocks covered in Ludhiana district were deficient in paramedical staff. The situation varied in the two blocks of Hoshiarpur district. In Possi block, the post of MO (AYUSH) Female and the pharmacist were lying vacant while in Paldi block one additional pharmacist was part of the MHT.

The ground situation revealed that while one MHT with requisite members was available in each of the two blocks in the Rupnagar district, but this single team was further divided into two teams. Half of the members of the team led by either the Female MO (AYUSH) or the Male MO (AYUSH) were working separately to screen children in AWCs and schools. A similar situation was observed in Manupur block in the Ludhiana district and Paldi block in the Hoshiarpur district. Both teams were provided with two separate vehicles to visit their destinations simultaneously. In contravention with the Guidelines one single Male MO (AYUSH) constituted one team in Manupur block. In all those cases where one MHT was divided into two, the reports were compiled for the entire block. So MHT was broken into two for the functional purpose, but for compiling records this was considered one single unit. Increasing the coverage area, i.e., number of AWCs and schools under their jurisdiction was cited as the main reason for making two teams. The number of working days on which these teams could visit the schools are limited as the schools have long vacations or are busy in exams/busy in preparation of different types of contests or science fairs, etc. So, in order to fulfill the mandate of covering all the schools at least once a year one MHT was broken into two teams.

The measures suggested by MHT members to enhance their functioning was the requirement of a pharmacist especially in big schools and better composition of a team as adolescent girls preferred to talk to a female doctor only.

Functions: According to RBSK Programme Guideline, every MHT was to work in accordance with a micro-plan provided to them. However, the ground realities were different. All sampled MHTs prepared the micro-plan but its implementation deviated. All the MHT members opined that it was not feasible to work as per plan as they were given different tasks not related to the RBSK

Programme. For instance, almost all MHT members were directed to be part of special immunization drives. The Punjab Government in the month of January 2019 had launched specially designed information, education and communication (IEC) vans under the flagship programme “*Tandarust Punjab*” with the objective of medical check-up and awareness about various diseases and their prevention. All the MHT members were directed to participate in this Programme on a full time basis. As a result of this, their micro-plans got disturbed.

All the six members of the MHTs interviewed were asked about their main RBSK functions. The activities related to screening of eligible children in the AWCs and schools, registration of new cases and referral of identified and suspected cases to DEIC or other secondary/tertiary facilities were undertaken as per the Guidelines while activities on follow-up of cases, upkeep of health records, providing counselling and advice to parents to avail proper treatment for their children was found wanting. A large number of parents of children, identified to be suffering from at least one of the 4Ds, were not willing to meet MHT members or school teacher despite repeated requests as most of them were daily wagers who were not willing to lose their one day wage. This resulted in weak follow-up.

All the six MHTs were deficient in tool kit required for screening of children. Regarding learning disorders and ADHD, the MHTs did not have tools and were largely dependent on the feedback provided by the school teachers.

Performance: Table 3 depicts the status of RBSK activities in AWCs by the MHTs in three districts during the first three quarters of 2018-19. So far, about 60 per cent of the total AWCs have been visited in the sampled blocks during these nine months. In other words, the MHTs are yet to cover 40 per cent of the AWCs during the last quarter under their jurisdictions. Among the six blocks, the coverage of AWCs by the MHTs was highest in Manupur block in the Ludhiana district (81.1%) while it was lowest in Possi block (34.9%) in the Hoshiarpur district.

The average number of children enrolled in AWCs ranged from a high of 103 children in the Paldi block to a low of 28 children in the Manupur block. About one-third of the children enrolled in the AWCs have been screened so far by the MHTs. The proportion of children in AWCs screened, so far, by the MHTs ranged from a high of 81 per cent in the Manupur block in the Ludhiana district to a low of 12.3 per cent in the Bharatgarh block in the Rupnagar district and 12.4 per cent in the Paldi block in the Hoshiarpur district. The MHTs were lagging behind in screening of children in AWCs. It was a case where the proportion of AWCs covered during this period was high, but coverage of the proportion of children in these AWCs was low.

The average number of students enrolled in AWCs ranged from 103 in the Paldi block in Hoshiarpur district to 28 children in the Manupur block in the Ludhiana district. However, not more than six children were available in any of the six AWCs on the day survey team visited them. The MHTs reported that on the day fixed for screening of children the AWWs and their helpers were directed to ensure that all children are available in the AWCs so that a large number of children could be screened. Despite this, the presence of children on the day of screening remained low. The members of the MHTs reported that the AWWs were providing an inflated number of children in their AWCs thereby harming the cause of screening of children under RBSK and disturbing execution of the micro-plans.

Table-3
Status of RBSK activities in AWCs in sampled blocks during April 2018 to December 2018

Activities	Hoshiarpur		Ludhiana		Rupnagar		Total
	Possi	Paldi	Maloud	Manupur	Chamkaur Sahib	Bharatgarh	
AWCs under jurisdiction	226	205	154	228	237	212	1262
AWCs visited during reference period (2 nd visit)	34.96 (79)	59.51 (122)	38.96 (60)	81.14 (185)	52.32 (124)	78.30 (166)	58.32 (736)
Children registered in AWCs	4536	12517	2306	5269	6251	13463	33082
Average number of students registered in AWCs	57	103	38	28	50	81	45
Children screened in AWCs	22.3 (1013)	12.4 (1555)	28.5 (658)	81.0 (4269)	33.6 (2103)	12.3 (1654)	34.0 (11252)
Children diagnosed and referred with ailments listed under RBSK in AWCs	6.8 (69)	9.5 (148)	3.3 (22)	2.3 (98)	2.1 (45)	1.8 (29)	3.7 (411)

Source: Mobile Health Teams of sampled blocks.

Of the total children enrolled in AWCs visited by the MHTs during this period, 3.7 per cent were diagnosed to be suffering from at least one of the 4Ds. The percentage ranged from 9.5 children in the Paldi block in the Hoshiarpur district to 1.8 in the Bharatgarh block in the Rupnagar district.

Table 4 depicts the status of RBSK activities undertaken by MHTs in government schools during the first three quarters of financial year 2018-19. So far, about 72 per cent of the total schools have been visited during these first nine months. In other words, the MHTs are yet to cover 28 per cent of the schools during the last quarter under their jurisdictions. Among the six blocks, the coverage of schools by the MHTs was highest in the Manupur block in the Ludhiana district (90.2%) while it was lowest in the Bharatgarh block (37.1%) in

the Rupnagar district. The performance of MHTs in the Bharatgarh block lagged far behind as they are yet to cover about 62.9 per cent of the schools.

Table 4
Status of RBSK activities in schools in sampled blocks during April 2018 to December 2018

Activities	Hoshiarpur		Ludhiana		Rupnagar		Total
	Possi	Paldi	Maloud	Manupur	Chamkaur Sahib	Bharatgarh	
Schools under jurisdiction	201	191	126	204	208	221	1151
Schools visited during reference period (1 st visit)	74.1 (149)	72.8 (139)	88.1 (111)	90.2 (184)	76.4 (159)	37.1 (82)	71.6 (824)
Children registered in schools	14768	12976	15348	20078	11011	3965	78146
Average number of students registered in schools	99	93	138	109	69	48	95
Children screened in schools	67.7 (10000)	72.4 (9400)	64.5 (9893)	69.7 (14000)	61.3 (6746)	85.4 (3386)	68.4 (53425)
Children diagnosed with ailments listed under RBSK in schools	27.8 (2781)	11.7 (1103)	1.6 (154)	3.4 (479)	22.8 (1538)	6.4 (217)	11.7 (6272)

Source: Obtained from Mobile Health Teams of different blocks during Field Survey, 2018.

The average number of children enrolled in schools ranged from a high of 138 children in the Maloud block in the Ludhiana district to a low of 48 children in the Bharatgarh block in Rupnagar district. About 70 per cent of the children enrolled in the schools have been screened so far by the MHTs. The proportion of children in schools screened, so far, by the MHTs ranged from a high of 85.4 per cent in the Bharatgarh block in the Rupnagar district to a low of 61.3 per cent in the Chamkaur Sahib in the same district. The MHTs were lagging behind in screening of children in schools. During the discussion with MHTs, it was observed that so far they have selected schools with lower enrollments.

Of the total children screened in schools by the MHTs during this period, 11.7 per cent were diagnosed to be suffering from at least one of the 4Ds. This percentage ranged from 27.8 in the Possi block in the Hoshiarpur district to 1.6 in the Maloud block in the Ludhiana district. All these children were referred further to other health facilities.

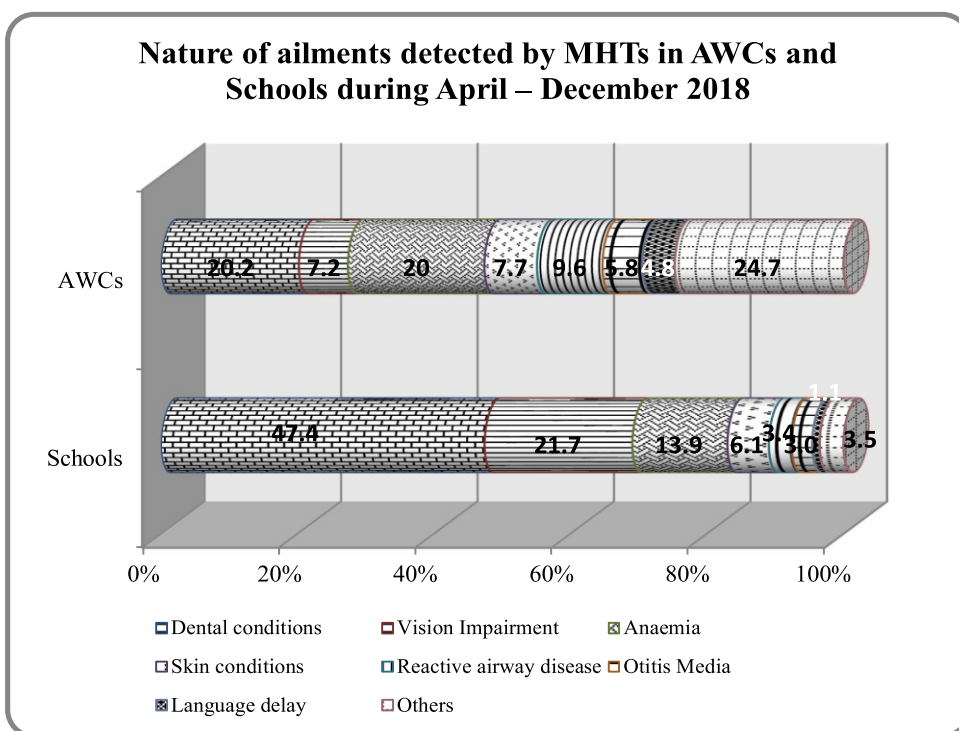
The ailments identified by these MHTs during first three quarters of 2018-19 (April 2018 to December 2018) in AWCs displayed that the three diseases, namely dental problems, severe anaemia and reactive airway disease contributed half of the total diseases screened in the AWCs. Skin disease (7.7%), vision impairment (7.2%), otitis media (5.8%), severe malnutrition (5.3%),

language delay (4.8%), congenital heart disease (3.9%), and convulsive disorders (3.9%) followed these diseases. A meager number of children suffered from learning disorders, congenital cataract, cleft lip and palate, downs syndrome and neural tube defect diseases.

In schools, the dental problems contributed 47 per cent of the total diseases screened by the six MHTs. In fact, dental problems along with vision impairment (21.7%) and severe anaemia contributed more than 80 per cent of the total diseases identified by the MHTs. The proportion of children detected by MHTs with rheumatic heart disease, vitamin –A deficiency and neural tube defect was meager.

On the whole, the dental problems were more frequently detected among school children as compared to children enrolled in AWCs (Figure 2). A similar situation was found as regards the occurrence of severe anaemia wherein a higher proportion of children in schools (21.7%) were detected with severe anaemia as compared to children in AWCs (7.2%). A higher proportion of children in AWCs were detected to be suffering from skin conditions (8%) as compared to children enrolled in schools (6 %).

Figure-2



Field Survey, 2018

Mobilization and follow-up: Mobilization of the community by the MHT was on expected lines as all the MHTs reported that they were adhering to this guideline. All of them involved ASHAs, ANMs, school teachers (especially the nodal teacher) and AWWs while undertaking screening of children. However, half of the interviewed MHT members felt that the role of ASHAs or ANMs was quite poor in follow-up services to be provided to parents of the children identified or suspected to be suffering from one of the 4Ds. They opined that extent of the follow-up services to be provided by them, teachers and ASHA/ANMs were also not up to the desired extent. The role of MHTs was observed to be limited to screening of children. Thereafter, it was almost entirely left up to the parents whether they take their child to the referral centres or not. It was also observed that small efforts were made by the MHTs and teachers to convince parents to take their child to the referral centres, but it was limited to those cases wherein children were detected with life threatening diseases such as congenital heart disease.

The members of the MHTs were asked about the barriers which were deterring parents from taking their children to the referral centres. Poor financial status of the parents and ignorance of the severity of ailments were the prime reasons for weak follow-up care services by parents. Location of health facilities at a distant place and lack of proper care in the public health facilities were the other reasons.

In a few cases, especially among those who were detected with severe anaemia, malnutrition and dental conditions, the MHT reported that it was difficult to convince the parents that their children suffered from these ailments as they did not consider these as ailments which require medical attention.

Interestingly, local religious *Babas* were discouraging a large number of parents not to visit the health facilities where they were referred to by the MHTs, even if their child was detected to be suffering from life threatening diseases. These parents have developed a blind faith on these religious *Babas* resulting in death of few children who were identified to be suffering from life threatening diseases by MHTs. Instead of taking their children to DEIC, their parents took them to these *Babas*. Efforts made by members of the MHTs and school teachers to convince such parents to visit the DEIC proved futile due to stronghold of these *Babas* on their psyche. These *Babas* have lots of influence on the psyche of parents especially among children who were suffering from convulsive disorders. Interestingly, these *Babas* had discouraged children to wear specs or get operated.

It was opined that health care infrastructure at the public health facilities, especially at the CHC level should be improved. Due to non-availability of specialist MOs at the nearby CHC level, the MHTs had to refer ailing children to the district hospitals which were distantly located. In a large number of such cases, poor parents, especially the daily wagers were unwilling to travel to these

hospitals. Not only this, the DH/DEIC/CHC staff members were asking these parents to make repeated visits due to non-availability of the concerned MOs. The staff behaviour in these hospitals was not appreciated by a large number of parents.

It was also opined that while health department is the lead agency in RBSK Programme, it takes the help of the Education Department, the ICDS Department and the local Panchayati Raj Institutions and the coordination between these departments should be strengthened.

The members of the MHTs also suggested that for improving the efficiency of the MHTs, the e-data should be made available to them prior to their actual field visit to these schools. This would help them in tracking their health status, especially in the monitoring of follow-up care throughout their schooling period. It was also recommended that for better follow up services the coordination between the school teachers and parents should be improved. Further, parents need counselling and motivation to take their children to the referred health facilities. It was also advocated that the health department should provide official mobile phones to MHT members as in some case they were using their own personal mobile phones.

Other measures to improve the functioning of MHTs included reduction in paperwork as a lot of MHT time gets consumed in generating and transmitting the records to the concerned authorities especially if data entry operator was not in-position. Also, the health facilities where the children with ailments are referred to should be directed to attend them on a priority basis.

Another important recommendation was that the health facilities should be equipped with medicines required to treat children with any of the 4 Ds. In case the patients do not get any medicine, they are not likely to revisit these health facilities in the future. Also, the MOs should be strictly directed to prescribe generic medicines as high cost of branded medicines result in drop out. If possible, some basic medicines should be handed over to MHTs.

The time lag between the detection of ailments and their handling should be minimized, especially among the vision impairment cases. The time taken to make the specs available to children at times is so long that by the time these reaches school, some of children had already left the school, for some, vision got distorted further and others have purchased the specs. The same was the case for hearing aids.

Another recommendation for improving the functioning of MHTs was as regards the assignment of additional duties to the staff members. At times they are put on night duties at the health facilities or they are sent on VIP duties or they are put on duties not related with RBSK.

Beneficiaries

Background characteristics: Incidentally, half of the sampled children were males and the remaining half females. The corresponding percentages of male and female children sampled in AWCs were 60 and 40 and in government schools 43 and 57. The average age of the sampled children who availed RBSK services was two years in AWCs and 10 years in schools. The average age at which the current ailment got detected for the first time was seven months in AWCs and six years in schools.

About three-fifths of the children belonged to the scheduled caste category, one-third to general category and the remaining to the other backward castes. The majority of the children in AWCs (52%) as well as in schools (63%) belonged to the scheduled caste category. About one-third of the fathers and mothers of the total sampled children were illiterate (Table 5).

Table-5

Background characteristics of beneficiaries (parents of children) (in per cent)			
Characteristics	AWC	School	Total
Caste of household			
Scheduled caste	13 (52.0)	22 (62.9)	35 (58.3)
OBC	1 (4.0)	4 (11.4)	5 (8.3)
General	11 (44.0)	9 (25.7)	20 (33.3)
Education of father			
Illiterate	4 (16.0)	15 (42.9)	19 (31.7)
Up to primary	7 (28.0)	11 (31.4)	18 (30.0)
Up to secondary	9 (36.0)	6 (17.1)	15 (25.0)
Up to higher secondary	4 (16.0)	3 (8.6)	7 (11.7)
Graduate and above	1 (4.0)	0 (0.0)	1 (1.7)
Education of mother			
Illiterate	5 (20.0)	13 (37.1)	18 (30.0)
Up to primary	5 (20.0)	15 (42.9)	20 (33.3)
Up to secondary	9 (36.0)	6 (17.1)	15 (25.0)
Up to higher secondary	5 (20.0)	1 (2.9)	6 (10.0)
Graduate and above	1 (4.0)	0 (0.0)	1 (1.7)
Sex of children			
Male	15 (60.0)	15 (42.9)	30 (50.0)
Female	10 (40.0)	20 (57.1)	30 (50.0)
Total (N)	25	35	60

Source: PRC-CRRID, Chandigarh, Field Survey, 2018.

About three-fifths of the sampled children (60%) in AWCs were born in public health facilities while 46 per cent in private and the remaining four per cent at home. In case of the school children a little more than one-third of them were born in public health facilities, one-fifth in private and the remaining 46 per cent at home.

Satisfaction: About 15 per cent of the parents of the children were highly satisfied with the overall location and access to the hospital (Table 6). Overall rating of the location and arrival facilities in the health institutions was termed as satisfactory by 20 per cent of the parents. Distance between the home and the current health facility and non-availability of convenient transport facilities to reach these health facilities were the main reasons for dissatisfaction among the beneficiaries. On the scale of 1 to 5 (displaying highly satisfied to not satisfied), the weighted average was 2.6 in case of easiness to reach different departments and 3.45 in case of distance between home and health facility. The comfort level of patients was least while reaching the health facility which rose when they reached the hospital.

The satisfaction level among the parents on parameters of cordial behaviour, attention given by the doctor in listening to their problems and their competence in understanding the problems in detail was quite high as reflected in their weighted averages; 2.27, 2.35 and 2.38 respectively (Table 7). However, long waiting hours to meet the doctor after the registration and non-availability of doctors during OPD timings had made a few parents feel dissatisfied.

Table-6
Beneficiary satisfaction with location and arrival services in hospital

Facilities	Highly satisfied	Satisfied	Somewhat satisfied	Not satisfied	Very unsatisfied	Index value
Distance between home and hospital	10 (16.7)	7 (11.7)	10 (16.7)	12 (20.0)	21 (35.0)	3.45
Transportation facility to reach the hospital	9 (15.0)	12 (20.0)	9 (15.0)	12 (20.0)	18 (30.0)	3.30
Effectiveness of signage system inside the hospital	9 (15.0)	16 (26.7)	22 (36.7)	12 (20.0)	1 (1.7)	2.67
Easiness to reach different departments	8 (13.3)	17 (28.3)	25 (41.7)	10 (16.7)	0 (0.0)	2.62
Overall rating of the location and arrival in the hospital	9 (15.0)	12 (20.0)	21 (35.0)	18 (30.0)	0 (0.0)	2.80

Source: PRC-CRRID, Chandigarh, Field Survey, 2018.

Three-fourths of the parents had availed diagnostic services from the same health facility in which their child was currently taking treatment. One-third of the parents had received medicines from the pharmacy in the health facility. Getting medicines from the hospital pharmacy was an issue which had made about 60 per cent of the parents to feel a bit dissatisfied (index value=3.61). Medicines were provided free of cost to children in DMC and CMC but it was only for the duration of admission in these hospitals. Once the children were discharged, they had to purchase medicines from outside. About 40 per cent of the parents of the children reported that they had to borrow money for getting treatment of their children and for purchase of medicines. The medicines required to treat convulsions are provided free of cost from DEICs. In case parents purchase these from the market, they could submit bills to DEICs for refund of money. But very few parents were aware about this facility.

Table-7
Beneficiary satisfaction with services of doctors/therapists/others

Facilities	Highly satisfied	Satisfied	Somewhat satisfied	Not satisfied	Very unsatisfied	Index value
Waiting time in meeting them after the registration	12 (20.0)	18 (30.0)	5 (8.3)	16 (26.7)	9 (15.0)	2.87
Their availability during OPD timings	14 (23.3)	13 (21.7)	19 (31.7)	14 (23.3)	0 (0.0)	2.55
Explanation provided by them to tackle the ailment in future	6 (10.0)	26 (43.3)	19 (31.7)	9 (15.0)	0 (0.0)	2.52
Their response in answering your all queries	6 (10.0)	31 (51.7)	14 (23.3)	9 (15.0)	0 (0.0)	2.43
Time given by them while attending to you	5 (8.3)	33 (55.0)	14 (23.3)	8 (13.3)	0 (0.0)	2.42
Their competence in understanding your problems in detail	7 (11.7)	30 (50.0)	16 (26.7)	7 (11.7)	0 (0.0)	2.38
Attention given by them in listening to your problems	7 (11.7)	32 (53.3)	14 (23.3)	7 (11.7)	0 (0.0)	2.35
Their cordial behavior	7 (11.7)	36 (60.0)	11 (18.3)	6 (10.0)	0 (0.0)	2.27
Overall rating of the location and arrival in the hospital	9 (15.0)	20 (33.3)	19 (31.7)	12 (20.0)	0 (0.0)	2.57

Source: PRC-CRRID, Chandigarh, Field Survey, 2018.

Barriers in getting treatment: All the parents were asked about the barriers faced by them in the process of getting their child treated under RBSK Programme. Despite the fact that the treatment under RBSK is provided free of cost, still financial consideration (80%) was the major barrier followed by costly transport facilities to reach the health facilities (73.3%) and lack of manpower at the health facilities (73.3%). The cost of accommodation, transport and food for the attendants were critical issues which had raised the out-of-pocket expenditure. Of course, the high cost of medicines added to their woes. Long waiting hours to meet the concerned health official was another barrier which had posed different types of problems to them, especially loss of wages.

All the parents interviewed were asked whether they would like to continue to get treatment at the same hospital or they would like to shift their children to some other hospital. Almost all the parents stated that they would like to continue to get the treatment from the same hospital. This was largely due to the fact that visiting these hospitals was most convenient to them in the absence of any other such hospital in their vicinity.

Conclusions

Compliance with the physical infrastructure, manpower and equipment in all the DEICs vis-à-vis the RBSK guidelines has been rather dismal. All DEICs had a shortage of staff, infrastructure and equipment. The rooms were available, but they were not used because of unavailability of personnel and equipment. None of the three DEICs had pediatricians, physiotherapists, psychologists, optometrist, dental technicians, data entry operators and genetic counsellors. The availability of medical equipment, auditory and visual equipment, computers with LAN, sensory integration and laboratory equipment was pretty pathetic.

Dental disease (37.3%) was the most common disease among the children who visited these DEICs followed by visual impairment (21.8%) and anaemia (8.9%). Skin conditions (scab, fungal infection and eczema), convulsive disorders, reactive respiratory tract diseases, congenital heart disease and otitis media together contributed to approximately one-quarter of the total identified diseases.

None of the MHTs functioned in accordance with the pre-determined micro-plan. The micro-plans were prepared but their execution deviated.

The poor financial situation of parents, ignorance of the severity of diseases, repeated visits to referral centres along with negative impact of religious *Babas* on the psyche of parents making them stay away from modern system of medicines, were the critical factors leading to poor follow-up of children in the Programme.

Overall, the RBSK Programme in the state of Punjab needs to be revamped. The goal of the Programme needs to be moved from a simple screening of children to a 4 D treatment. This requires strong follow-up care services. Specialist physicians, in particular at the level of CHC level, should be posted by the state government as the remote location of upper-level referral centres led to abandonment of referrals.

Recommendations

In order to strengthen the RBSK Programme in the State, the following recommendations are proposed.

- The DEICs in the state must be staffed with personnel, infrastructure and equipment in accordance with established RBSK standards. A mechanism should be developed to engage pediatricians in the RBSK Programme where available. Eligible children who visit different OPDs at a government health facility for the treatment of any of the RBSK 4 Ds should be referred to DEICs.
- MHT members in coordination with the ASHAs/ANMs and school teachers must ensure that the parents are motivated to take their children to the designated facilities. A strong IEC Programme must be launched in the state to prevent parents of the sick children from being misled by religious *Babas* who were discouraging them to use the modern system of medicines.
- Arrangements should be made to bring sick children to the referral centres on a designated day after ensuring that the required number of medical specialists are available. A bus or tractor trolley designated by *Panchayat* can be used for this purpose. This would reinforce the already weak monitoring care in the state, particularly among poor parents.
- The delay between the detection of vision and hearing loss and effective transmission of specifications and hearing aids should be reduced to a minimum. Appropriate measures should be taken to provide medication to parents who visit health facilities for follow-up care services. Simple consultation in the context of RBSK was not regarded as a service. To that end, additional funds may be granted under the RBSK Programme.
- MHT members should not be involved in other tasks unrelated to RBSK. They should solely undertake RBSK activities in order to be able to more effectively implement their micro-plans.
- Although the department of health is the lead agency, it should also coordinate effectively with Ministry of Education, Department of Women and Child Development and Ministry of Rural Development for screening of children in AWCs and schools. This would strengthen RBSK follow-up care services.

References

Christianson, Arnold, Christopher P. Howson and Bernadette Modell (2006): *March of Dimes, Global Report on Birth Defects, The Hidden Toll of Dying and Disabled Children*, March of Dimes Birth Defects Foundation, White Plains, New York.

Ministry of Health and Family Welfare (2013): *Operational Guidelines Rashtria Bal Swasthya Karyakram (RBSK) Child Health Screening and Intervention Service under NRHM*, GOI, New Delhi.

Ministry of Health and Family Welfare (2014): Setting up District Early Intervention Centres, *Operational Guidelines Rashtria Bal Swasthya Karyakram (RBSK) Child Health Screening and Intervention Service under NRHM*, GOI, New Delhi.

UNICEF (2016): *Formative Research Report on RBSK: From Survival to Healthy Survival*, Deloitte, Touche Tohmatsu India LLP, Gurgaon, Haryana India.



INVOLVEMENT OF GRAM PANCHAYAT REPRESENTATIVE IN WOMEN COMPONENT PLAN: A CASE STUDY OF TWO GRAM PANCHAYATS IN KOTTAYAM DISTRICT, KERALA

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Abstract: The Local Government, the being the primary institution of participatory democracy, is the key performer in imparting gender equality at the local level. The active participation and involvement of Gram Panchayat Representatives in decision making is key to the local government's efforts. Women empowerment is one of the major concerns of the Local Bodies in Kerala. The government of Kerala introduced Women Component Plan (WCP) at Rural Local Bodies in 1996 to ensure mandatory allocation towards women and their unique needs. This paper tries to identify the type of projects included under WCP, and fund allocated and spent under WCP at Gram Panchayat. It also tries to determine the involvement of Gram Panchayat Representatives and Gram Panchayat committee at each stage of WCP projects.

Keywords: Women Component Plan, Gram Panchayat Representatives, Rural Local Bodies

1. Introduction

Kerala has been well praised for its low gender gap in basic capabilities compared to other Indian states. It is celebrated as an indicator of women's high-status in the state. However, the growing practice of dowry and related crimes, rising domestic violence, increasing sexual harassment, high incidents of rape, gender discrimination in wages, and declining women's property rights are questioning women's status in the state (National Crime Records Bureau, 2017). Though Kerala has favourable indicators in female educational attainment,

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maternal mortality, adolescent fertility, however the presence of women in legislature bodies and labour force participation market is poor (Kerala Economic Review, 2013). Educational attainment, maternal mortality and adolescent fertility are the pre-requisite for the take-off, and parliamentary representation and labour force participation are the take-off indicators of women development. Patriarchy leads to poor visibility of women in public places and continues to devalue their position not only in their families but also in society. Affirmative action is always indispensable to empower women who are undergoing discrimination and powerlessness in society's patriarchal order. These necessitate the critical need for government interventions for empowering women.

The Local Government (LG) being the primary institution of participatory democracy, are the key performers in imparting gender equality at the local level. The active participation and involvement of females in decision-making are critical to LG's efforts for it. Women have to be considered as equal shareholders in decision making and implementation, rather than only beneficiaries of welfare schemes. By this process, LG can be more people-friendly in general and gender-friendly, particularly in upholding gender justice. The 73rd Amendment Act, 1992, envisages gender justice by ensuring access and one-third representation of women in the Rural Local Bodies' power structure. One step forward from other states in the country, the Government of Kerala launched the People's Plan Campaign (PPC) in 1996 as part of participatory democracy at the local level to provide space and potential for peoples' participation, especially for women. PPC has given a due thrust to achieve gender equality and mandated Gram Panchayat (GP), the grass-root level Rural Local Bodies (RLB) to allocate at least 10 per cent of the plan funds (now it is known as development fund) devolved by the state explicitly for women through Women Component Plan (WCP). Kerala Panchayat (Amendment) Act 2009 gave more space to women in RLBs by increasing the reservation to fifty from thirty-three per cent (Jafar, 2014). While these are commendable, the question is that more than twenty years down the line, what were the initiatives for rural women by the WCP sub-plan in GP in the state?

Though there are several studies related to women empowerment, WCP at GP in Kerala is an area of research study that has been less explored, particularly GP representatives (GPRs) at different stages of WCP projects planning and execution.

With this background, this paper addresses questions as follows:

What are the types of projects included under WCP?

What is the percentage of utilisation of fund under WCP?

Whether the utilisation rate of WCP fund is the same as the GP fund?

Why there is a gap between allocation and utilisation of WCP fund?

What is the level of involvement of GPRs at different stages of WCP projects?

Who makes final decisions on WCP projects in GP?

To what extent do the GP committee work together for better functioning of WCP projects?

The objectives of this paper are:

1. to identify the type of projects included under WCP, and funds allocated and spent under WCP at GP.
2. to find out the involvement of GPRs and GP committee at each stage of WCP projects.

2. Methodology

Kottayam district is selected for the research because it was declared the first complete literate municipal town of India (Census, 1991). It played an admirable role in achieving the first fully literate state title by Kerala. Besides, Kottayam district is the first district in the country to achieve 100 per cent primary education. Once again, it was an inspiration for the state, and later, Kerala got 100 per cent primary education status in 2016. The district also bags first place for the female literacy rate in the state (Census, 2011). In the rural sector, Kottayam has the highest Work Force Participation Rate in self-employment (675) in Kerala (NSS, 66th round). The data on total allocation and utilisation of GP fund of 72 GPs during XII five year were collected from Deputy Directorate of Panchayat, Kottayam. The highest and lowest GP Total Development Fund's utilisation rate is the criteria used for selecting the study area. These criteria are used to examine whether GPs gave equal importance to WCP fund spending compared with spending of GP Total Development Fund. Therefore, Karoor GP and Manarcad GP are selected as the study area for the present study. They are identified as highest and the lowest utilisation of GP Development fund in Kottayam district during the twelfth five-year plan period. This study used data from primary and secondary sources. Primary data was collected from Karoor GPRs, and Manarcad GPRs and secondary data was collected from Karoor GP office and Manarcad GP office. Annual Plan Reports of the twelfth plan period (2012-17) were collected from the selected GPs and interviewed GPRs of both GPs during office 2010-15 and 2015-20.

3. Literature Review

3.1. Gender Budgeting

The *Convention on the Elimination of All Forms of Discrimination against Female* and *Beijing Platform for Action* are the best-known instruments for attaining gender equality (Kapungu, 2008). In working to achieve an equal society, it becomes vital to question whether the promise of gender justice is

considered when decisions, particularly budgetary decisions, are taken by the government (Hugendubel, 2004). Budgeting is a critical tool that helps translate and transform a government's policies, programs, and commitments into practical measures (Mahbub and Budlender, 2007). Often government budgets are considered neutral and failed to address women's priorities and concerns. Gender budgeting has been globally accepted as a key tool for empowering women by including gender perspective and needs at all levels and stages of development planning, policy, programmes and delivery mechanism. Government of India introduced Gender Budgeting, including a "specific Gender Budgeting Statement" in union budget since 2005-06 (Mishra and Jhamb, 2009). Gender Budgeting means "identifying and incorporating the felt needs of women in the policies, programmes and schemes of government" and "providing an adequate budgetary allocation for them" (Ministry of Women and Children, 2007).

Government of Kerala instructed the local bodies to allocate at least ten percent of the plan funds devolved by the state for women through WCP, way back in 1996. A budgetary framework was given for empowering rural women by making WCP Sub-Plan as part of the budget of Rural Local Bodies in Kerala. WCP Sub-Plan introduced at the GP helps to include region-specific schemes to bring women from behind the curtain to society's frontline and make gender equality a reality. It must be noted that Kerala, despite its otherwise impressive gender indicators, did not have an enviable record of addressing gender issues until the introduction of the WCP (Nisha and John 2014).

3.2. The feminisation of Rural Local Bodies

The concept of local government was included in the Directive Principle of State Policy (Article 40, 1950) in the Constitution of India. It instructs to form GPs and provide the authority and power to function as self-government units. The Government of India appointed the committee headed by Balwantrai Mehta to study the Community Development Programme in 1957. One notable suggestion was the democratic decentralisation with a three-tiered rural LG. However, the representation of women was not addressed by Balwantrai Mehta Committee. The Ashok Mehta Committee (1977-78) constituted by GOI presented 153 suggestions to strengthen the country's Rural Local Bodies. The committee put forward two new recommendations on women's representation. Firstly, to include women who received a large share of votes but had lost in the elections' rural local bodies. Secondly, in the absence of no women contested in an election, eligible women were to be nominated. However, only after the 73rd Constitutional Amendment Act, 1992 which came into force on 1993 had brought a tectonic shift in Rural Local Bodies, in terms of women representation. The reservation provides at least one-third seats and executive post in Panchayats at all three levels for women in the Panchayat system.

This thirty-three per cent reservation has brought women's entry in mainstream politics at the country's local level. It has created political space for women across caste and class. It is a significant step for inclusive politics and, by addressing women's political marginality, it has the capacity for rewriting gender relations (Buch, 2000). In line with the 73rd Constitutional Amendment Act, 1992 Kerala formulated Kerala Panchayat Act which guarantees one-third of seats for women in Rural Local Bodies. Later, the Kerala Panchayat (Amendment) Act 2009 provided more space to women in Rural Local Bodies by enhancing the reservation to fifty from thirty-three per cent. The Act also gave the reservation of leadership posts for women in alternative years (Jafar, 2014).

3.3 Decentralization and Women Representatives

The great scholar Plato encouraged the participation of women in public affairs. Karl Marx saw political participation as a manifestation of human freedom. Most of earlier discussion on women political participation is limited to voting rights. International Union of Local Authorities worldwide declaration on *Women in Local Government* states that the orderly integration of female augments the democratic basis, the efficiency and the quality of the activities of LG. If LG is to meet the needs of both men and women, it must build on the experiences of both of them, by an equal representation of them at all levels and in all areas of decision-making, covering all range of responsibilities of LGs. To create sustainable, equitable and democratic LGs, where male and female have equal opportunity to decision making and services and equal treatment in these services, the gender angle must be mainstreamed into all areas of policy-making and management in LG.

Decentralisation and female representation in governance are known to increase social welfare by influencing local policy decisions favouring women (Chattopadhyay and Duflo, 2004 Bhalotra and Clots-Figueras 2014). Muraleedharan in her study (2003) has noted that decentralised planning offers democracy in place of domination, empowerment in place of submission, environment and community in place of profit, and passivity. The reality is that the women's movement is weak, in its capacity to obstruct unsatisfactory policy outcomes against them.

3.4. Gender and Planning

The Rural Local Bodies are responsible for administering local infrastructure and ensuring the welfare of the individuals living in the villages. They spend money for development and monitor how the funds are used (Duflo and Chattopadhyay, 2004) and therefore have a vital role to play in education, health, governance and empowerment of marginalised sections, particularly women. Gender equity is treating both men and women equally while identifying diversity and discrimination and ensuring resources and services to the most disadvantaged

group to guarantee equal benefits. It is critical to include gender when framing local government planning, policies, and service deliveries to guarantee equal opportunities. Women empowerment is one of the major concerns of Kerala's decentralisation process. Kerala's government introduced WCP at Rural Local Bodies in 1996 to ensure mandatory allocation towards women and their special needs.

3.5 Women Component Plan

An earlier study noted that WCP facilitates women to grow as leaders at the grass-root level (Khan *et. al.*, 2004). Projects incorporated under general expenditure were included under WCP-Sub Plan like *Anganwadi* feeding, toilets, drinking water and roads (Human Development Report, Kerala, 2005). This leads to the reduction of resources solely for women. WCP projects only meet women's general needs (Human Development Report: Ernakulum District, 2009). Women's strategic needs are not considered under the preview of WCP Projects. A study by Paul (2014) on Kodassery GP, Thrissur district found that GP has spent WCP amount for productive activities, but a substantial part of WCP was spent on general-purpose like housing and seed distribution which do not yield any direct benefit for women and which do not come under the purview of WCP. As per the study conducted by Eapen and Thomas (2004), whether female or male is head of the panchayat is invalid because there is no difference between the quality of allocation and expenditure in WCP projects of panchayats headed by either male or female. Panchayat functionaries prioritise general projects, resulting in lower spending rate of the WCP Fund than the General Fund (Nisha and John 2014). Although, there are a few studies on WCP at RLBs, studies on GPRs and GP committee involvement at each stage of WCP projects are rare to find in the literature.

4. Data Analysis

To study the involvement of GPRs in WCP, a detailed examination of the Development and Non-Development Fund of the GPs is essential. The main reason is that without considering the allocation details, we do not know how much resource is allocated among women as part of WCP. This section divided into two parts: part one presents an analysis of budget allocation and expenditure of WCP, and part two discusses the involvement of GPRs in WCP.

4.1. Allocation and Expenditure of Fund under WCP in Karoor GP and Manarcad GP

In this part, a detailed examination of the allocation and utilisation of fund and schemes under WCP and comparative study of WCP and GP Total Fund (TF) are carried out.

4.1.1. Allocation and Utilisation of WCP Fund (WCPF) and Total Fund (TF)

The GP fund comprises of Development Fund (DF) and the Non-Development Fund (NDF). General, Special Component Plan, Tribal Sub-Plan, Special grant, Central Finance Commission and World Bank come under the Development Fund. Central, State, District Panchayat, Block Panchayat, Own, Maintenance (Road and Non-Road) and miscellaneous fund are collectively known as Non-Development Fund.

Table-1.1
WCP Fund: Allocation and Utilisation in Karoor GP (2012-17)

(Amount in Rupees)

Year	WCP Development Fund		WCP Non-Development Fund		WCP Fund	
	Allocation	Utilisation	Allocation	Utilisation	Allocation	Utilisation
2012-13	1981520	1981520 (100)	842105	775185 (92.05)	2823625	2756705 (97.63)
2013-14	2411150	2411150 (100)	1762950	1762575 (99.98)	4174100	4173725 (99.99)
2014-15	3271350	3271350 (100)	1551550	1310409 (84.46)	4822900	4581759 (95)
2015-16	2941500	2941500 (100)	1582250	233041 (14.73)	4523750	3174541 (70.17)
2016-17	1575769	1575769 (100)	1455231	1455231 (100)	3031000	3031000 (100)
XII	12181289	12181289 (100)	7194086	5536441 (76.96)	19375375	17717730 (91.44)

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

*Figures in the brackets are percentages

Karoor GP has fully utilised WCP fund allocated under DF fund during the XII five-year plan period. In the financial year 2015-16, where the election took place in the GP, there is only 15 per cent utilisation of NDF in WCP leading to 30 per cent underutilisation in total WCP fund (Table 1.1). At the same time, Manarcad GP has spent only around 40 per cent of WCP fund during XII plan period, except in 2016-17. In 2014-15 only one-eighth of WCP TF was utilised (Table 1.2). Table 1.1 reveals that in Karoor GP's initial three years of the twelfth five-year plan period, there is a remarkable increase in allocation of WCP fund. But after that, it declined, and the decline is much steeper after revised guideline for mandatory Development Fund for WCP in GP in 2016. The data reveals that nearly fifty per cent of the reduction in DF in the financial year 2016-17 than the previous year leads to the steep decline in WCP Fund in Karoor GP. The revision in guideline regarding mandatory DF allocation for WCP in 2016 (G.O. (M.S.) No. 4/2016/LSGD, Kerala, 2016) leads to a reduction in the volume of fund for women-specific projects in Karoor. At the same time, we can observe an increasing trend in the allocation of WCP DF in Manarcad GP during the same period and reduction in WCP Fund in 2014-15 and 2015-16 years are due to

decline in WCP NDF. Therefore, we can conclude that there is no impact of the revision in WCP DF guideline in 2016 on Manarcad GP (Table 1.2). Karoor GP failed to utilise one-fifth of the TF during the XII five-year plan period. However, Manarcad only used two-fifths of the TF during the same period (Table 4.1.3 and 4.1.4).

Table-1.2
WCP Fund: Allocation and Utilisation in Manarcad GP (2012-17)
(Amount in Rupees)

Year	WCP Development Fund		WCP Non-Development Fund		WCP Fund	
	Allocation	Utilisation	Allocation	Utilisation	Allocation	Utilisation
2012-13	1628619	790619 (48.54)	365569	129158 (35.33)	1994188	919777 (46.12)
2013-14	1705000	1038050 (60.88)	1787532	0 (0)	3492532	1038050 (29.72)
2014-15	1694776	375246 (22.14)	937500	0 (0)	2632276	375246 (14.26)
2015-16	2009279	689644 (34.32)			2009279	689644 (34.32)
2016-17	2783720	1986434 (71.36)	226656	163668 (72.21)	3010376	2150102 (71.42)
XII	9821394	4879993 (49.69)	3317257	292826 (8.83)	13138651	5172819 (39.3)

Source: Calculated from Annual Plan Reports (2012-17), Manarcad GP

*Figures in the brackets are percentages

The study found that Karoor GP has given more priority to the utilisation of WCP fund than TF of GP, but Manarcad GP has given less priority to utilising WCP fund than TF of GP. The utilisation rate of WCP fund (91%) is higher than the rate of utilisation of GP TF (81%) in Karoor GP, which has the highest rate of utilisation of GP DF in Kottayam district. Whereas the rate of utilisation of WCP fund (39%) is lower than the rate of utilisation of TF (41%) in Manarcad GP which has the lowest GP DF utilization rate in Kottayam district.

The study identifies the relationship between GP fund utilisation rate and WCP fund utilisation rate. If the GP fund utilisation rate is high, the utilisation rate of WCP fund will be higher than that of GP fund. GP prioritises women-specific projects and tries to use the maximum allocated fund for it. At the same time, if the GP fund utilisation rate is low, then the WCP fund utilisation rate will be lesser than that of GP fund utilisation rate. The utilisation of available GP funds for development activities is much lower and hardly uses available resources for women-specific projects in the GP. According to Moser, one of the major challenges that policymakers face is transforming gender policy and commitments into practice (1993). At this context, Karoor GP's higher utilisation rate of WCP fund as compared to the GP Total fund is a notable achievement.

Table-1.3
Total Fund: Allocation and Utilisation in Karoor GP (2012-17)
(Amount in Rupees)

Year	Total Development Fund		Total Non-Development Fund		Total Fund	
	Allocation	Utilisation	Allocation	Utilisation	Allocation	Utilisation
2012-13	15258788	15258788 (100)	21950339	13745641 (62.62)	37209127	29004429 (77.95)
2013-14	18096472	18096472 (100)	26654161	18731247 (70.28)	44750633	36827719 (82.30)
2014-15	20546746	17943746 (87.33)	33933426	19959898 (58.82)	54480172	37903644 (69.57)
2015-16	18300885	18300885 (100)	34444525	27599583 (80.13)	52745410	45900468 (87.02)
2016-17	23708985	21513234 (90.74)	25635959	21074696 (82.21)	49344944	42587930 (86.31)
XII	95911876	91113125 (95)	142618410	101111065 (70.9.)	238530286	192224190 (80.59)

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

*Figures in the brackets are percentages

Table-1.4
Total Fund: Allocation and Utilisation in Manarcad GP (2012-17)
(Amount in Rupees)

Year	Total Development Fund		Total Non-Development Fund		Total Fund	
	Allocation	Utilisation	Allocation	Utilisation	Allocation	Utilisation
2012-13	16553469	12358176 (74.66)	18101332	8033895 (44.38)	34654801	20392071 (58.84)
2013-14	20752800	11111547 (53.54)	21781926	9010511 (41.37)	42534726	20122058 (47.31)
2014-15	28707118	17951919 (62.53)	78706292	14914225 (18.95)	107413410	32866144 (30.60)
2015-16	24581433	15067377 (61.30)	29787093	14935378 (50.14)	54368526	30002755 (55.18)
2016-17	28194205	16053216 (56.94)	48554867	9741515 (20.06)	76749072	25794731 (33.61)
XII	118789025	72542235 (61.07)	196931510	56635524 (28.76)	315720535	129177759 (40.92)

Source: Calculated from Annual Plan Reports (2012-17), Manarcad GP

*Figures in the brackets are percentages

4.1.2. How far GP able to allocate mandatory DF under WCP?

Government of Kerala (GOK) instructed GP to allocate mandatory ten percent of DF for WCP during the second year of the Ninth Five Year Plan. It was replaced by GOK order in 2016, which limited the 10 per cent amount from the DF excluding fund World Bank, Central Finance Commission, special grand (DF*) for WCP. (G.O. (M.S.) No. 4/2016/LSGD, Kerala, 2016).

Table-1.5
Share of WCP Development Fund to the Total Development Fund in Karoor GP (2012-17)

Year	Development Fund		Development Fund*	
	Total (Rs)	WCP Share (%)	Total (Rs)	WCP Share (%)
2012-13	15258788	12.98	9669696	20.49
2013-14	18096472	13.32	11925000	20.22
2014-15	20546746	15.92	12448000	26.28
2015-16	18300885	16.07	12448000	23.63
2016-17	23708985	6.64	14883118	10.59
XII	95911876	12.70	61373814	19.85

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

*Development Fund (Total of General, SCP and TSP fund)

Table-1.6
Share of WCP Development Fund to the Total Development Fund in Manarcad GP (2012-17)

Year	Development Fund		Development Fund*	
	Total (Rs)	WCP Share (%)	Total (Rs)	WCP Share (%)
2012-13	16553469	9.84	10478410	15.54
2013-14	20752800	8.22	13108600	13.01
2014-15	28707118	5.90	16090749	10.53
2015-16	24581433	8.17	15849417	12.68
2016-17	28194205	9.87	16064618	17.33
XII	118789025	8.27	71591794	13.72

Source: Calculated from Annual Plan Reports (2012-17), Manarcad GP

*Development Fund (Total of General, SCP and TSP fund)

Table 1.5 shows that share of WCP DF to total DF in Karoor GP remained almost same during the first four years of XII plan period and after that, there was a reduction in the share of DF WCP, particularly sharp decline after the GOK order on WCP in 2016. On the other hand, in Manarcad GP, the share of WCP DF to total DF has decreased during first three years, and later years it shows an increasing trend in XII plan period (Table 1.6). The decision by the department of LSGIs on mandatory WCP DF has reduced the volume and share of fund towards WCP DF in Karoor GP, and it has not impacted share of WCP DF to Total DF in Manarcad GP.

Tables 1.5 and 1.6 reveal that percentage allocation to WCP DF to Total DF falls short of the prescribed ten percentage in Karoor and Manarcad GP during the Twelfth Plan period. Irrespective of the type of GPs both GPs envisaged a lesser amount for women-specific projects under WCP. There is a gap between rhetoric and reality in government policies towards addressing women concerns in development planning (Nisha and John, 2014). The study on evaluating projects implemented by the World Bank found most of the gender

sensitivity projects' record poor performance. The initiatives in the past decades to improve the lives of the people, more particularly, of women failed to achieve (Beneria, 2003) and the theory and practice inconsistency in gender development is a universal phenomenon (Molyneux, 2007).

However, both the GP allocated 10 per cent of DF* during the same period. Karoor on an average allocated one-fifth of total DF* towards WCP DF, but Manarcad allocated only one-eighth of total DF* towards WCP DF during the plan period. Karoor envisaged higher proportion of fund for WCP in absolute and relative terms compared with Manarcad. Manarcad GP recorded a lower utilisation rate of WCP fund and also the lowest share of fund allocated for WCP during the Twelfth Plan period.

4.1.3. Guidelines for projects in WCP

Before assessing projects under WCP sub-plan, guidelines ordered by GOK need to be kept in mind. LSGD gives clear instructions on kind of projects to be covered under WCP sub-plan to GP from time to time. GOK order in 2012 states that WCP sub-plan projects should help improve the economic and social status of rural women. It should not include projects that equally benefit both men and women, like building houses and toilets. But, projects like the building of house and toilet and provision for drinking water can be included for women headed houses (G.O. (M.S.) No. 225/12/LSGD, Kerala, 2012). GOK order in 2016 directed to include the construction of toilets exclusively for women in schools, hospitals, veterinary hospitals, markets, bus stands and other public spaces under the control of GP. WCP should include projects for building rooms for breastfeeding mothers in bus stands and public places. Also, the creation of labour bank and enterprises to market the finished goods produced by Self-Help Groups and self-defence training for girls at the secondary and the higher secondary level (G.O. (M.S.) No. 4/2016/LSGD, Kerala, 2016).

4.1.4. Nature of WCP Projects implemented

The decision to separate fund exclusively for women as WCP made planners in GP plan about a “concrete gender planning” for appropriate fund utilisation (Paul, 2014). WCP projects are broadly classified into three sectors; the infrastructure sector, the production sector and the service sector.

Table-4.1.7
WCP Infrastructure Sector Projects in Karoor GP (2012-17)

(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Infrastructure Sector Fund	
	Allocation	Utilisation
Women Tailoring training centre	1000000	1000000 (100)

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

Table-4.1.8
WCP Infrastructure Sector Projects in Manarcad GP (2012-17)
(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Infrastructure Sector Fund	
	Allocation	Utilisation
Women employment training centre	3951834	1244119 (31.48)
Kudumasree office and help desk	946788	419777 (44.33)

Source: Calculated from Annual Plan Reports (2012-17), Manarcad GP

Tables 1.7 and 1.8 show that under infrastructure sector, both GP included an employment training center. Karoor GP is specific about the project they want to start using the space created. It shows organization and planning before fund allocation to the projects. Besides, Manarcad GP allocated fund for constructing Kudumbasree office room and help desk. Karoor GP is very successfully running the tailoring center built under infrastructure projects. It is providing training in stitching and embroidery to the women in GP. The investment made by the GP is bearing fruits. The women who receive skill training are employed productively at boutiques or in the textile industry. Many are self-employed as well. On the other side, in Manarcad GP, the construction of women employment training institute has yet to finish. Kudumbasree office is constructed adjacent to the GP Office and but it is shared by the Integrated Child Development Scheme. Kudumbasree Community Development Society Chairperson of Manarcad GP complained that the Kudumbasree office room is being used as a liquor room during the budget planning by the male GPRs in GP.

Agriculture and animal husbandry is the primary source of income in Karoor GP. Therefore, WCP also caters to women dairy farmers' needs through calf care scheme, which provides kits containing mineral mixture and vitamins. Calf care scheme has the highest share of fund among the WCP production sector projects and goat distribution for women accounts second-highest share of the fund, followed by cow distribution in WCP. Layer poultry also accounts a reasonable fund share in the WCP production sector. Except for grass cutter machine for women, entire production projects were on animal husbandry and poultry. The majority of the production sector projects under WCP support the existing dairy farmers or promote the dairy farming by distributing cow, calf and goat to women. The advantage of dairy farming is that it provides income to farmers regularly not as seasonal income generation in cultivation. Karoor GP tries to avoid repeating the same projects year after year. Calf care scheme is the only scheme repeated year after year, not any other projects repeated more than twice (Table 4.1.9).

Table-4.1.9
WCP Production Sector Projects in Karoor GP (2012-17)

(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Production Sector Fund	
	Allocation	Utilisation
Calf care scheme	5125000	4187500 (81.70)
Calf rearing - SC	45000	45000 (100)
Cattle fodder subsidies	99000	99000 (100)
Cow rearing	1200000	1200000 (100)
Goat rearing	1200000	1200000 (100)
Goat rearing - SC	240000	240000 (100)
Goat rearing - ST	96000	96000 (100)
Grass cutter machine for SC SHGs	53000	53000 (100)
Layer poultry		896100 (100)
Layer poultry - SC	896100 46350	46350 (100)
Rabbit rearing	400000	400000 (100)

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

Table-4.1.10
WCP Production Sector Projects in Manarcad GP (2012-17)

(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Production Sector Fund	
	Allocation	Utilisation
Calf care scheme	2500000	625000 (25)
Cattle fodder subsidies	1250612	500000 (39.98)
Vegetable farming	1040000	352480 (33.89)
Layer poultry	486625	381857 (78.47)

Source: Calculated from Annual Plan Reports (2012-17), Manarcad GP

Manarcad GP also included animal husbandry supportive scheme such as calf care subsidies for cattle fodder for dairy farmers. Similarly, to Karoor GP, calf care scheme accounted for the highest fund share among the production

sector in the WCP sub-plan in Manarcad GP. Vegetable farming at courtyard and terrace is encouraged by distributing saplings, seeds, grow bags and fertilizers. Layer poultry was also included in Manarcad GP (Table 4.1.10). The GP's population largely depends on the District Layer Poultry center for local hen and eggs. Majority of the women in GP are not ready to invest time and work for rearing hen when it is readily available at a price lower than the market price. Hence, the GP Committee should do a proper ground study before including each project under WCP.

Table-4.1.11
WCP Service Sector Projects in Karoor GP (2012-17)

(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Service Sector Fund	
	Allocation	Utilisation
Aasrya Project for old women	200000	200000 (100)
Aganawadi workers: Additional Honorarium	248400	247350 (99.57)
Aganawadi: Protein powder distribution	5000010	4280915 (85.61)
House construction for widows	2800000	2800000 (100)
House electrification for SC women headed family	12000	12000 (100)
House maintenance for SC women headed family	150000	150000 (100)
Land purchase for landless widow	200000	200000 (100)
Land purchase for landless SC women	150000	150000 (100)
Scooter for differently-abled SC women	71505	71505 (100)
Scooter for differently-abled women	143010	143010 (100)

Source: Calculated from Annual Plan Reports (2012-17), Karoor GP

Lack of decent housing is a threat to social harmony and economic prosperity. “*Women need access to housing which is safe and affordable*” (Charles, 1994). Therefore, housing projects are included for giving financial support for building houses to economically vulnerable females in the GP. Housing for the poor, particularly the landless poor, is a critical development intervention. Absence of affordable housing is one of the most pressing issues rural communities in the state face. Providing decent shelter for women was always a concern for WCP Projects in Karoor GP. GP allocated fund for

purchasing land for landless women and constructing decent houses for women-headed households. GOK introduced Aasrya project to meet the needs of destitute in the state. Asarya project aims to meet the basic needs of destitute older women in the Karoor GP by providing medical and food for those who are not independent due to age and mortality. An additional honorarium to Anganwadi workers is always allocated from the WCP service sector. WCP of Karoor GP caters to the need of differently-abled women who are double deprived and Scheduled Caste (SC) differently deprived women and who triple deprived as women, SC, disabled (Table 1.11).

Table-4.1.12
WCP Service Sector Projects in Manarcad GP (2012-17)

(Amount in Rupees, Figures in the brackets are percentages)

Project Name	WCP Service Sector Fund	
	Allocation	Utilisation
Anganwadi workers: Additional Honorarium	259500	252940 (97.47)
House construction for women headed family	200000	200000 (100)
House construction for SC women headed family	200000	0 (0)
House maintenance for women headed family	1240000	1090000 (87.90)
Land purchase for SC landless women	875000	0 (0)
Sanitary napkins for high school girls	63292	31646 (50)
SC female students: Scholarship for professional courses	25000	25000 (100)
SC women marriage: Financial assistances	100000	50000 (50)

Source: Source: Calculated from APRs, Manarcad GP

Manarcad GP also uses the WCP for providing fund for giving additional honorarium for Anganwadi workers. The GP included social security scheme for promoting professional education of SC girls and financial support for SC girls to meet their marriage expenditure. WCP sub-plan considered teenage girls who attain puberty, by providing sanitary napkins to move away from traditional ways for meeting the needs during their menstrual days. The Integrated Child Development Scheme (ICDS) runs with Anganwadi workers' help, and helpers are underpaid. They are given an "honorarium" not wages claiming that they are volunteers. ICDS chairpersons of both GP claimed that the GP's additional honorarium enhanced the quality of service provided by Anganwadi workers and helpers in their GP (Table 1.12).

4.2. Women Component Plan and Gram Panchayat Representatives

Election to Rural Local Bodies' office in 2010 and 2015 was conducted after the Panchayat Amendment Act, 2009, which stated that at least 50 per cent seats should be reserved for women. Karoor GP consists of 15 wards, in that eight seats are reserved for women. Manarcad GP consists of 17 wards, in that nine seats are reserved for women (Table 2.1). In Manarcad GP, two female members are elected for both periods. Therefore, the total sample size of the present study is 62.

Table-4.2.1
Gender-Wise Distribution of GPR's in Karoor GP and Manarcad GP
(2010-15 and 2015-20)

(2010-15 and 2015-20)					
Gender	Gram Panchayat				Total
	Karoor		Manarcad		
	Term of Office				
	2010-15	2015-20	2010-15	2015-20	
Male	7	7	8	9	30
Female	8	8	8	9	34
Total	15	15	16	18	64

Source: Department of LSG, Kerala

4.2.1. Sources of Identifying WCP Projects to be included under WCP by GPRs

Table-4.2.2
WCP Project Identification Practices of Male GPRs' in Karoor GP
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

WCP Project Identification Sources	GPRs' Practices				
	Highest	High	Neutral	Low	Lowest
Successful previous projects	4 (28.57)	7 (50)	3 (21.42)		
Successful projects of nearby GP	2 (14.28)	2 (14.28)	3 (21.42)	3 (21.42)	4 (28.57)
Successful projects of Best GP		10 (71.42)		2 (14.28)	2 (14.28)
Needs of female's in the ward	9 (64.28)	4 (28.57)	1 (7.14)		
Demand raised during Gram Sabha	11 (78.57)	3 (21.42)			
Central government schemes			1 (7.14)	10 (71.42)	3 (21.42)
State government schemes			2 (14.28)	7 (50)	5 (35.71)
Suggestions from Working Group	12 (85.71)	2 (14.28)			
Suggestions from Development Seminar	10 (71.14)	1 (7.14)	1 (7.14)	2 (14.28)	

Source: Primary data

The study posed the question of how each GPRs identify projects that could be included under WCP. Projects recommended by the working group (WG) on women are the major reference for identifying projects for GPRs from Karoor irrespective of their gender. They pointed out that those projects are considered more often because they are feasible projects to implement in the GP. Male GPRs gave more stress to the need of women in their representing ward. However, female GPRs gave more weight to the schemes demanded in the Gram Sabha. They also agreed that they refer to the WCP projects in the district's better working GPs. On the other hand, central and state government schemes were given the least priority. According to Karoor GPRs the WCP projects should meet women's specific needs in the GP rather than financing central and state schemes for women through WCP (Table 2.2 and Table 2.3).

Table-4.2.3
WCP Project Identification Practices of Female GPRs' in Karoor GP
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

WCP Project Identification Sources	GPRs' Practices				
	Highest	High	Neutral	Low	Lowest
Successful previous projects	4 (25)	10 (62.5)	2 (12.5)		
Successful projects of nearby GP	1 (6.25)		3 (18.75)	8 (50)	4 (25)
Successful projects of Best GP	1 (6.25)	10 (62.50)	3 (18.75)	2 (12.50)	
Needs of female's in the ward	14 (87.50)	2 (12.5)			
Demand raised during Gram Sabha	13 (81.25)	2 (12.5)	1 (6.25)		
Central government schemes		2 (12.5)	3 (18.75)		11 (68.75)
State government schemes		2 (12.5)	4 (25)	1 (6.25)	9 (56.25)
Suggestions from Working Group	15 (93.75)	1 (6.25)			
Suggestions from Development Seminar	12 (75)	4 (25)			

Source: Primary data

For male GPRs in Manarcad GP, successful projects of the nearest GP are the best source for identifying WCP projects. At the same time, female GPRs give the highest priority to the GP's previous successful projects implemented. Recommendations and suggestions received during the development seminar in GP is also a major source of identifying WCP Project. Majority of GPRs ignored

the demand raised by women in Gram Sabha meeting, stating that those demands are difficult to translate into projects. Besides, they failed to identify women's specific needs in their respective wards. Irrespective of the gender GPRs does not make efforts to refer to the model projects of the better working and nearby GP. Manarcad GPRs also does not consider state and central schemes under WCP, but they do not have any particular reason for the same. (Table 2.4 and Table 2.5).

The study found that GPRs in Karoor prioritise selecting the project under WCP. They rely on women WG (Karoor GPRs states that GP has an efficient women WG) suggestions which provides feasible projects based on the requirement of women in GP and also consider demands and needs of women which WG does not address. GPRs believe that the success of WCP and enhancement in the status of women in family and society also depends on the selection of the project. Therefore, they give adequate importance to select appropriate projects under WCP. On the other hand, Manarcad GPRs take project selection lightly, which is evident from the less number and homogeneity of WCP projects. At the same time, WCP projects are heterogeneous in Karoor GP. It also tries to address the need for poor women, widow, SC women, older women, and differently-abled women.

Table-4.2.4
WCP Project Identification Practices of Male GPRs' Manarcad GP
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

WCP Project Identification Sources	GPRs' Practices				
	Highest	High	Neutral	Low	Lowest
Successful previous projects	1 (6.25)	6 (37.5)	7 (43.75)		2 (12.5)
Successful projects of nearby GP	12 (75)	2 (12.5)		2 (12.5)	
Successful projects of Best GP		1 (6.25)		3 (18.75)	12 (75)
Needs of female's in the ward	1 (6.25)	1 (6.25)	2 (12.5)	10 (62.5)	2 (12.5)
Demand raised during Gram Sabha	3 (18.7)	1 (6.25)	1 (6.25)	8 (50)	3 (18.75)
Central government schemes			2 (12.5)	4 (25)	10 (62.5)
State government schemes		4 (25)		2 (12.5)	10 (62.5)
Suggestions from Working Group	4 (25)	1 (6.25)	8 (50)	3 (18.75)	
Suggestions from Development Seminar	7 (43.75)		4 (25)	5 (31.25)	

Source: Primary data

Table-4.2.5
WCP Project Identification Practices of GPRs' in Manarcad GP
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

WCP Project Identification Sources	GPRs' Practices				
	Highest	High	Neutral	Low	Lowest
Successful previous projects	12 (75)		3 (18.75)	1 (6.25)	
Successful projects of nearby GP	4 (25)	2 (12.5)	8 (50)		2 (12.5)
Successful projects of Best GP		1 (6.25)	1 (6.25)	2 (12.5)	12 (75)
Needs of female's in the ward	3 (18.75)		4 (25)	9 (56.25)	
Demand raised during Gram Sabha	6 (37.5)		3 (18.75)	7 (43.75)	
Central government schemes		2 (12.5)		6 (37.5)	8 (50)
State government schemes	1 (6.25)	3 (18.75)		4 (25)	8 (50)
Suggestions from Working Group	4 (25)		12 (75)		
Suggestions from Development Seminar	9 (56.25)			3 (18.75)	4 (25)

Source: Primary data

4.2.2. WCP and Stages of Involvement of GPRs

Planning and coordination are essential to excellent performance in local government systems (Ostrom 1972). In Karoor GP, male and female GPRs are actively involved in the working of different stages of WCP projects. Female GPRs are more enthusiastic about contributing to WCP than male GPRs except for the allocation aspect of WCP projects (Table 2.6 and Table 2.7). That is, theory and practice inconsistency is a universal phenomenon (Molyneux, 2007). Majority of male GPRs of Manarcad GP are involved in fund allocation stage, and a sizeable proportion contributes to planning and framing of WCP projects. On the other side, female GPRs are participating only in identifying and planning and framing WCP projects and a minority involved in allocating the projects (Table 2.8 and Table 2.9). Complete utilisation of WCP DF (total DF utilisation is only 95%) in the Twelfth Plan period and success of WCP projects in Karoor GP results from the active involvement of GPRs, particularly women at each stage of WCP projects. On the other hand, the absence of involvement of GPRs,

particularly women, leads to poor utilisation of WCP fund compared to the GP fund and a failure of WCP projects implemented at Manarcad GP.

Table-4.2.6
WCP Stages and Degree of Involvement of Male GPRs' in Karoor GP
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	GPRs' Involvement				
	Highest	High	Neutral	Low	Lowest
Identifying	12 (85.71)	1 (7.14)		1 (7.14)	
Planning and framing	12 (85.71)				2 (14.28)
Allocation	13 (92.85)			1 (7.14)	
Monitoring	12 (85.71)		1 (7.14)		1 (7.14)
Intervene	10 (71.42)	1 (7.14)	2 (14.28)		1 (7.14)
Resolving	12 (85.71)	1 (7.14)			1 (7.14)

Source: Primary data

Table-4.2.7
WCP Stages and Degree of Involvement of Female GPRs'in Karoor GP
(2010-2015 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	GPRs' Involvement				
	Highest	High	Neutral	Low	Lowest
Identifying	15 (93.75)	1 (6.25)			
Planning and framing	14 (87.50)		1 (6.25)		1 (6.25)
Allocation	13 (81.25)	1 (6.25)		1 (6.25)	1 (6.25)
Monitoring	13 (81.25)		2 (12.5)	1 (6.25)	
Intervene	14 (87.50)		1 (6.25)	1 (6.25)	
Resolving	15 (93.75)		1 (6.25)		

Source: Primary data

Table-4.2.8
WCP Stages and Degree of Involvement of Male GPRs' in Manarcad GP
(2010-2015 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	GPRs' Involvement				
	Highest	High	Neutral	Low	Lowest
Identifying	1 (6.25)	3 (18.75)	2 (12.5)	8 (50)	2 (12.5)
Planning and framing	6 (43.75)		2 (12.5)	3 (18.75)	5 (31.25)
Allocation	10 (62.5)		3 (18.75)	1 (6.25)	2 (12.5)
Monitoring	1 (6.25)		6 (37.5)		9 (56.25)
Intervene	1 (6.25)		1 (6.25)	4 (25)	10 (62.5)
Resolving	2 (12.5)		2 (12.5)	3 (18.75)	9 (56.25)

Source: Primary data

Table-4.2.9
WCP Stages and Degree of Involvement of Female GPRs' in Manarcad GP
(2010-2015 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	GPRs' Involvement				
	Highest	High	Neutral	Low	Lowest
Identifying	7 (43.75)	3 (18.75)	2 (12.5)	4 (25)	
Planning and framing	6 (37.5)	2 (12.5)			8 (50)
Allocation	2 (12.5)			4 (25)	10 (62.5)
Monitoring	2 (12.5)		3 (18.75)		11 (68.75)
Intervene	2 (12.5)		2 (12.5)		12 (75)
Resolving	1 (6.25)	1 (6.25)			14 (87.5)

Source: Primary data

4.2.3. Functioning of WCP Sub-Plan in GP Committee (GPC)

Local government's proper functioning *creates* "well-being by developing specific capabilities" since they are closer to local people than the other governments (Addabbo, Lanzi and Picchio 2010). Karoor GPRs stated that GP committee does productive and lengthy discussions to decide the projects, plan and frame the projects, and decide the amount required for each project under WCP. They also monitor and intervene in the implemented projects to bring the potential output. If the beneficiaries face any difficulties in continuing the projects, GPC put their maximum support to overcome the hindrance (Table 2.10). Whereas in Manarcad GP, extensive discussions on WCP, in deciding the projects, planning and framing, and allocating the necessary fund are absent. Besides, GPC does not take the initiative to monitor, intervene and resolve WCP projects; hindrances (Table 2.11). The study finds that before implementing WCP projects, adequate discussion at each stage helps in not only choosing appropriate projects but also in allocating funds and framing the projects according to the specific need of rural women. Nevertheless, the proper running of projects depends on the mechanism of GPC to monitor, intervene and resolve hindrances of WCP projects. Therefore, the study concludes that the responsibility of GPC lies in both pre-and post-implementing stages of WCP projects. That is, the GP committee's proper functioning is essential for the success of WCP projects.

Table-4.2.10
Functioning of WCP in Karoor GP Committee: Perspective of GPRs' (2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	Perspective of GPRs'				
	Highest	High	Neutral	Low	Lowest
Extensive discussions: Projects	28 (93.33)	1 (3.33)		1 (3.33)	
Extensive discussions: Planning and Framing	27 (90)		2 (6.66)		1 (3.33)
Extensive discussions: Allocation	25 (83.33)		4 (13.33)	1 (3.33)	
Monitor	26 (86.66)		3 (10)		1 (3.33)
Intervene	24 (80)	4 (13.33)		2 (6.66)	
Resolve	25 (83.33)	2 (6.66)	1 (3.33)	3 (10)	

Source: Primary data

Table-4.2.11
Functioning of WCP in Manarcad GP Committee: Perspective of GPRs’
(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Stages of Involvement	Perspective of GPRs’				
	Highest	High	Neutral	Low	Lowest
Extensive discussions: Projects	4 (12.5)	4 (12.5)	8 (25)	4 (12.5)	12 (37.5)
Extensive discussions: Planning and Framing	3 (9.375)	2 (6.25)	9 (28.125)	1 (3.125)	17 (53.125)
Extensive discussions: Allocation	9 (28.125)		8 (25)	4 (12.5)	11 (34.375)
Monitor	2 (6.25)	2 (6.25)			28 (87.5)
Intervene	2 (6.25)	2 (6.25)		5 (15.625)	23 (71.87)
Resolve	3 (9.375)		4 (12.5)		25 (78.125)

Source: Primary data

4.2.4. Decision-Making Power in GP

Table-4.2.12
WCP: Decision-making Power in Karoor GP- Perspective of Male GPRs’ (2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Decision-Making Power	Perspective of Male GPRs’				
	Highest	High	Neutral	Low	Lowest
Project: Male GP President		1 (7.14)		3 (21.42)	10 (71.42)
Project: Male GP Representatives’		1 (7.14)	1 (7.14)		12 (85.71)
Project: GP Committee	11 (78.57)	2 (14.28)			1 (7.14)
Planning and Framing: Male GP President	1 (7.14)	1 (7.14)		2 (14.28)	10 (71.42)
Planning & Framing: Male GP Representatives’				2 (14.28)	12 (85.71)
Planning and Framing: GP Committee	13 (92.85)				1 (7.14)
Allocation: Male GP President		1 (7.14)		1 (7.14)	12 (85.71)
Allocation: Male GP Representatives’	1 (7.14)		1 (7.14)		12 (85.71)
Allocation: GP Committee	13 (92.85)			1 (7.14)	

Source: Primary data

Active involvement in decision-making bodies “*requires intensive knowledge and skills, because these bodies are likely to be influenced by powers that be and to discard and discourage participation of socially and economically weaker section*” (Kerala Development Report, 2008). An earlier study by Issac and Franke (2000) also found the lesser involvement of women in GP decision-making bodies due to the same reasons. Karoor GPC collectively decides on the final decisions regarding the WCP project. Nevertheless, in Manarcad GP, male and female GPRs have a different view on who takes the final decision on WCP projects. Male GPRs from Manarcad said GP President takes the final decision. Whereas, the majority of the female GPRs from Manarcad stated that it’s Male GPRs take crucial decision regarding WCP Projects. In short, female GPRs have a lesser role to perform in WCP decision-making in Manarcad GP (Tables 2.12 to 2.15). WCP and its women-specific projects require special attention from female GPRs since they can design and plan and frame the projects in a better way than their male counterparts. Female GPRs have a better understanding of the needs of women in their respective GP and ward. The success of WCP lies in translating this understanding into selecting, planning, framing and allocating funds for appropriate projects, according to the need and using the decision making power. Female representatives of Karoor GP are successful to an extent in this regard which is reflected in the utilisation of the fund and positive outcome of WCP projects implemented in Karoor GP during the twelfth five-year plan period.

Table-4.2.12
WCP: Decision-making Power in Karoor GP- Perspective of Male GPRs’ (2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Decision-Making Power	Perspective of Male GPRs’			
	Highest	High	Neutral	Lowest
Project: Male GP President		1 (7.14)		3 (21.42) 10 (71.42)
Project: Male GP Representatives’		1 (7.14)	1 (7.14)	12 (85.71)
Project: GP Committee	11 (78.57)	2 (14.28)		1 (7.14)
Planning and Framing: Male GP President	1 (7.14)	1 (7.14)		2 (14.28) 10 (71.42)
Planning & Framing: Male GP Representatives’				2 (14.28) 12 (85.71)
Planning and Framing: GP Committee	13 (92.85)			1 (7.14)
Allocation: Male GP President		1 (7.14)		1 (7.14) 12 (85.71)
Allocation: Male GP Representatives’	1 (7.14)		1 (7.14)	12 (85.71)
Allocation: GP Committee	13 (92.85)			1 (7.14)

Source: Primary data

Table-4.2.13**WCP: Decision-making Power in Karoor GP - Perspective of Female GPRs'(2010-15 and 2015-2020)***(Figures in the brackets are percentages)*

Decision-Making Power	Perspective of Male GPRs'				
	Highest	High	Neutral	Low	Lowest
Project: Male GP President		1 (6.25)		3 (18.75)	12 (75)
Project: Male GP Representatives'		1 (6.25)		1 (6.25)	14 (87.5)
Project: GP Committee	14 (87.50)	1 (6.25)	1 (6.25)		
Planning and Framing: Male GP President	1 (6.25)		2 (12.5)		13 (81.25)
Planning & Framing: Male GP Representatives'	1 (6.25)			4 (25)	11 (68.75)
Planning and Framing: GP Committee	15 (93.75)			1 (6.25)	
Allocation: Male GP President			2 (12.5)		14 (87.50)
Allocation: Male GP Representatives'		1 (6.25)		3 (18.75)	12 (75)
Allocation: GP Committee	15 (93.75)				1 (6.25)

Source: Primary Data**Table-4.2.14****WCP: Decision-making Power in Manarcad GP - Perspective of Male GPRs(2010-15 and 2015-2020)***(Figures in the brackets are percentages)*

Decision-Making Power	Perspective of Male GPRs'				
	Highest	High	Neutral	Low	Lowest
Project: Male GP President	9 (56.25)		4 (75)	2 (12.5)	1 (6.25)
Project: Male GP Representatives'		8 (50)	5 (31.25)		3 (18.75)
Project: GP Committee	3 (18.75)				13 (81.25)
Planning and Framing: Male GP President	11 (68.75)	3 (18.75)			2 (12.5)
Planning & Framing: Male GP Representatives'	5 (31.25)		9 (56.25)	2 (12.5)	
Planning and Framing: GP Committee	3 (18.75)		2 (12.5)	4 (25)	7 (43.75)
Allocation: Male GP President	8 (50)	4 (25)	1 (6.25)		3 (18.75)
Allocation: Male GP Representatives'	10 (62.5)		3 (18.75)		3 (18.75)
Allocation: GP Committee	4 (25)		4 (25)		8 (50)

Source: Primary Data

Table-4.2.15
WCP: Decision-making Power in Manarcad GP – Perspective of Female GPRs(2010-15 and 2015-2020)

(Figures in the brackets are percentages)

Decision-Making Power	Perspective of Male GPRs'				
	Highest	High	Neutral	Low	Lowest
Project: Male GP President	12 (75)		1 (6.25)	1 (6.25)	2 (12.5)
Project: Male GP Representatives'	10 (62.5)			3 (18.75)	3 (18.75)
Project: GP Committee	3 (18.75)		1 (6.25)		12 (75)
Planning and Framing: Male GP President	13 (81.25)			1 (6.25)	2 (12.5)
Planning & Framing: Male GP Representatives'	4 (25)	5 (31.25)	2 (12.5)	2 (12.5)	3 (18.75)
Planning and Framing: GP Committee	2 (12.5)	1 (6.25)			13 (81.25)
Allocation: Male GP President	14 (87.50)				2 (12.5)
Allocation: Male GP Representatives'	11 (68.75)			2 (12.5)	3 (18.75)
Allocation: GP Committee	2 (12.5)				14 (87.50)

Source: Primary Data

4.2.5. Reasons for lesser spending than the allocation in WCP

The enquiry on the lesser spending of the allocated fund in WCP has brought out reasons for it. During the XII five-year plan period, Karoor GP had entirely spent the allocated fund for different projects under WCP except for two projects. Delay by state and central governments in releasing funds for protein powder distribution through Aganwadi lead to lesser spending for the project than what was expected. Under utilisation in calf care scheme is due to the inability of beneficiaries to contribute to the scheme. Beneficiaries have to contribute fifty per cent of the expenditure in most of the general individual schemes. According to Manarcad GPRs the reasons for underutilisation of resources in WCP are due to the design and nature of projects, lack of cooperation from women beneficiaries, delay in release of funds by central and state Government. There have been severe lapses by the State Government in timely disbursement of the allocated fund to local bodies and the growing gap between budget allocation and spending of local bodies over the years (Chaudhuri, Harilal and Heller, 2004). Fault in the “*design and nature*” of the WCP projects contributed to lower utilisation of fund (Nisha and John, 2014). It is high time to local and state

government to find a mechanism to solve these causes for underutilisation, which are repeating year after year.

5. Findings

The total quantum of the fund earmarked for WCP sub-plan as a percentage of total DF has reduced after new GOK WCP guideline in 2016 in Karoor as well as in Manarcad GP. One of the major findings of the study is GP which is having the highest rate of utilisation of GP Fund has a much higher utilisation rate in WCP fund than total GP fund. At the same time, in the GP which has the lowest utilisation rate of GP fund has a much lower utilisation of WCP fund than the total GP fund. That is when there is low rate of spending in GP total fund, the degree of spending for women-specific projects will be much lower than the spending rate of general projects. This results in more reduction of available resources for WCP, particularly women-specific projects. Manarcad GP failed to spend more than half of WCP DF, 91 per cent of WCP NDF and three-fifth of the allocated WCP fund during the Twelfth Five Year Plan period. Karoor GP is eligible for appreciation because the GP achieved 100 per cent utilisation of WCP DF, 77 per cent of NDF and 91 per cent of WCP fund. Besides, Karoor GP has an efficient women working groups which suggest feasible projects based on demands and specific needs of women in the GP. GPRs consider the needs and demands of women but they gave more priority to choose the projects based on the recommendations of women working group in the GP. One of the major reasons for the high acceptance of WCP projects by women in Karoor GP is the efficiency with which the GP translates the demands and needs of women as projects. This in turn results in the efficient utilisation of WCP fund. But, in Manarcad GP majority of GPRs gave priority to successful previous year's projects as well as projects implemented in the nearby GP while choosing schemes under WCP. However, GPRs ignored the specific needs and demand of women in their representing ward results unwelcoming of the WCP projects by the women in the GP. Though Manarcad GPRs claimed that they consider previous year successful projects, the reality is far from it, because hardly any WCP projects other than social security schemes are success in terms of utilisation of fund and efficient working. The study finds that Manarcad GP includes previous year projects without examining the rate of success of the projects and these practices create unsuccessful WCP projects year after year.

Also, field-survey reveals that GPRs of Karoor irrespective of their gender actively participated in different stages of WCP projects. In comparison, Manarcad GPRs have only put less initiative in working on WCP projects and female representatives' participation is much lower than that of men. For example, the resources spent on constructing women training centre is not resulting in women development in Manarcad GP. At the same time, tailoring centre constructed as part of WCP is providing skill training to the women and

thereby enabling them to be self-employment in Karoor GP. The effective running of the training centre is because of the monitoring, intervention and readiness for resolving hindrances by GPRs.

The active participation and involvement of GPRs in working of WCP are directly reflected not only in the full utilisation of WCP fund but also providing economic independence to the stakeholders of WCP projects implemented in Karoor GP. Here the question arises why was Manarcad GP unable to utilise more than three-fifths of the WCP fund when neighbouring GP spent WCP fund for women development activities? Also, why are the implemented projects not able to function for the betterment of women? The primary data reveals that the participation and involvement of Manarcad GPRs in different stages of WCP is meagre compared to Karoor GPRs. The study found a direct relationship between participation and involvement of GPRs and utilisation of the allocated fund under WCP sub-plan and positive outcome of projects.

6. Conclusion

It can be stated, without any confusion, active participation and involvement in project identification, planning and framing, monitoring, intervention and readiness to resolve the challenges of WCP projects by GPRs are pre-requisites for higher utilisation of fund and better outcome of WCP projects. Women are more likely to be affected by resources' underutilisation since they face historical neglect. Some serious efforts from GPRs are required to rectify the situation. Even twenty years down the line, the WCP sub-plan is promoting the practical needs of women rather than strategic needs. Projects under WCP Sub-Plan should enable women to lead autonomous lives and the freedom to act. GOK guideline for WCP sub-plan in 2016 has reduced the volume of mandatory fund for WCP in GP. Therefore, GOK should increase the resource for women-specific projects under WCP to attain socio-economic empowerment of the state's rural women. By ignoring the women in rural areas, it is impossible to climb the ladders of economic development, because gender equality is a vital catalyst for inclusive growth of the country.

Reference

- Addabbo, T., Diego, L., & Antonello, P. (2010). Gender Budgets: A Capability Approach. *Journal of Human Development and Capabilities*, 11(4), 479 - 501.
- Beneria, L., Berik, G., & Floro, M. (2015). *Gender, Development, and Globalisation: Economics as if All People Mattered* (2nd ed.). London: Routledge.
- Bhalotra, S., & Irma, C.-F. (2014). Health and the political agency of women. *American Economic Journal: Economic Policy*, 6(2), 164 - 197.
- Charles, N. (1994). The housing needs of women and children escaping domestic violence. *Journal of Social Policy*, 23(4), 465 - 487.

Duflo, E., & Chattopadhyay, R. (2004). Women As Policy Makers: Evidence From A Randomized Policy Experiment In India. *Econometrica*, 72(5), 1409–1443.

Eapen, M. (2004). Report on gender analysis of select gram (village) panchayat plan-budgets in Trivandrum district, Kerala. *Consultation on Impact of Macroeconomic Policies on Women*. New Delhi: Human Resources Development Centre. Retrieved from <http://wcd.nic.in/gbsummary/Mridul.pdf>

Government of India . (2007). *Gender Budgeting* . New Delhi: Ministry of Women and Children .

Government of India. (2008). *Kerala development report*. New Delhi: National Planning Commission & Academic Foundation.

Government of India. (2018). *Crime in India 2017*. New Delhi: National Crime Records Bureau, Ministry of Home Affairs.

Government of Kerala. (2005). *Human Development Report* . Thiruvananthapuram : State Planning Board.

Government of Kerala. (2006). *Panchayat level statistics: Kottayam District*. Thiruvanthapuram: Department of Economics & Statistics.

Government of Kerala . (2009). *Report of the committee for evaluation of decentralised planning and development*. Thiruvananthapuram, Kerala: Department of Local Self Government.

Government of Kerala. (2012). *G.O. (M.S) No. 225/12/LSGD*. Thiruvananthapuram: Department of Local Self Government.

Government of Kerala. (2014). *Kerala Economic Review 2013*. Thiruvananthapuram: State Planning Board.

Government of Kerala . (2016). *G.O. (M.S.) No. 4/2016/ LSGD*. Thiruvananthapuram: Department of Local Self Government .

Heller, P., Harilal, K. N., & Chaudhuri, S. (2007). Building local democracy: Evaluating the impact of decentralisation in Kerala, India,. *World Development*, 35(4), 626 -648.

Hugendubel , K. (2004). *Gender Budgeting*. Brussels: European Women's Lobby.

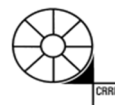
Isaac, T. T., & Franke, R. (2000). *Local democracy and development: People's campaign for decentralised planning in Kerala*. New Delhi: Leftword.

Jafar, K. (2014). *A note on People's Planning Initiative – Possible lessons from the Kerala Experience*, MPRA Paper No. 65610. Retrieved from <http://mpra.ub.uni-muenchen.de/65610/>

Kapungu, R. (2008). The Zimbabwe Gender Budgeting and Women's Empowerment Programme. *Agenda*, 22(78), 68 - 78.

Khan, P. B., John, O., & Kumari P. , L. (2001). *Report of the Study of Women Component Plan in Kerala*. Chennai: United Nations Children's Fund.

- Mahbub, N., & Budlender, D. (2007). *Gender Responsive Budgeting in Pakistan: Experience and lessons learned*. Washington: International Budget Partnership.
- Mayoux, L. (1995). Women, gender inequality and participatory development. *Development and Change*, 26(2), 235–258
- Mishra, Y., & Jhamb, B. (2009). An Assessment of UPA-I through a Gender Budgeting Lens. *Economic and Political Weekly*, 44(35), 61-68.
- Moser, C. O. (1993). *Gender Planning and Development: Theory, Practice and Training*. London: Routledge.
- Muraleedharan, S. (2003, October). Gender and Decentralisation: Opportunities and Challenges. *Kerala Calling*.
- Nair, N. V., & Moolakkattu, J. S. (2014). Women Component Plan at the Village Panchayat Level in Kerala: Does it Live Up to its Promise? *Indian Journal of Gender Studies*, 21(2), 247–276.
- Ostrom, E. (1972). Metropolitan Reform: Proposition Derived from Two Traditions. *Social Science Quarterly*, 53, 474 - 493.
- Paul, J. (2014). Development Expenditure on Women Empowerment Under Decentralisation in Kodassery Gram Panchayat in Thrissur District in Kerala. *International Journal of Business and Administration Research Review*, 1(2), 139 - 146.



A COMPARATIVE STUDY ABOUT THE SELECTED HEALTH INDICATORS OF TAMIL NADU AND GUJARAT USING PERFORMANCE GAP INDEX

“Healthy Citizens are the greatest asset any country can have”

Winston Churchill

K. Malathi¹ and Tiny S Palathara²

Abstract – Health indicator is always considered very important because it can be correlated with a country’s economic growth. Enhancing the quality of growth is an important objective of the development paradigm in many developing countries. Better health, education, equal and wider job opportunities to all, trustworthy and cleaner environment, self esteem, life security are the key manifestations of the quality of growth (World Bank, 2000). There are number of health indicators and the performance of these indicators should always be better in a country. In India, some states are better in economic growth but, they fail in providing better health facilities to the people. If health sector is ignored, we cannot say that the state has developed in spite of achieving in various other indicators. This study aims to compare the selected health indicators of Tamil Nadu and Gujarat. The health indicators are taken for both the states and a comparison is being made. The study also aims to find out the Performance Gap Index of the two states. Performance Gap Index helps to identify the gap performance of health indicator from the best performer in each indicator. Finally this paper suggests some policy implications from the findings of the study.

Keywords: Health, Indicator, Development, Performance Gap Index

Introduction

Health sector is considered as very important because only if people are healthy, a country can improve. There are various indicators that can be taken to see

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whether a country or state has improved in their health sector. The indicators are Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), Neo Natal Mortality Rate, Under Five Mortality Rate (U5MR), Child Mortality Rate, Crude Birth Rate, Crude Death Rate and so on. The improvement in these indicators will show us the actual situation of the country in health sector. According to WHO, health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity. The health status is usually measured in terms of various indicators like IMR, Crude birth and death rate, MMR. These indicators of health are determined by the number factors such as income of the people, their spending towards health, housing, sanitation facilities available, and incidence of poverty and the like. (Reddy and Selvaraju ,1994)

There are various states in India where some states are well developed and some are not. The GDP growth of certain states shows a sharp increase and their income also improves but we if take health situation of the people, it does not show any improvement. Hence there are states which give more importance to infrastructure development, energy etc. but give least preference to health. A state or a country should give equal importance to all the sectors and most importantly to the health sector. Health is always considered as a very important indicator for a country growth. Even though there are various other development indicator that can be calculated for a country's growth, the social indicators like education and health should always be given at most importance. Every government should see to it that more funds are allocated for health. The following discussions will be comparing the performance level with respect to selected health indicators of Tamil Nadu and Gujarat.

Objectives

- To examine the health status of Gujarat and Tamil Nadu.
- To compare the selected health indicators of the Tamil Nadu and Gujarat.
- To find out the performance gap for selected health indicators of Tamil Nadu and Gujarat.
- To arrive at relevant policy implication from the findings of the study.

Methodology

The study uses the secondary sources for availing the data. Various published sources, Government reports like National Family Health Survey, Sample Registration system and other reputed journals are also referred. Performance Gap index is the term commonly used to find out the disparities that arises. This study attempts to identify the gaps in performance of the health related outcome and finds out the best and the least performers in every indicator.

To find out the performance gap index the study uses the following method.

$$\text{Performance Gap Index (PGI)} = \frac{\text{Best performers Value} - \text{Value of Gujarat/Tamil Nadu}}{\text{Best Performers Value} - \text{Least Performers Value}} \times 100$$

The selected health indicators used for comparing Tamil Nadu and Gujarat are Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), Neo Natal Mortality Rate, Under Five Mortality Rate (U5MR), Chid Mortality Rate, Crude Birth Rate and Crude Death Rate.

Significance of the study

As mentioned earlier, health sector plays a significant role for a countries economic development. In India the expenses made for this sector are unequal among the states. Some states spend a little more than others whereas some states spend very less. When a state gives utmost importance to health sector, there is an overall development seen in other sectors as well. The state of Tamil Nadu and Gujarat has difference in spending for health sector. There are differences seen in various indicators like Maternal Mortality Rate (MMR), Infant Mortality Rate (IMR), Neo Natal Mortality Rate, Under Five Mortality Rate (U5MR), Chid Mortality Rate, Crude Birth Rate and Crude Death Rate. A need arises to compare Tamil Nadu and Gujarat to find out the state that gives more importance to health sector and the performance gap index also will show us how much improvement has to be made by the states.

Health status of Gujarat and Tamil Nadu

Gujarat is one of the most important industrialised states of India with steadily high economic growth rate and high urbanisation. The Statistics show that Gujarat is the second fast growing among the major states during 2015-16. But this improvement in economic growth has not resulted any kind of progress in health outcomes of Gujarat. The proportion share of health expenses from GDP is usually high in developed economy. But this is not seen in the case of Gujarat. On the whole, Gujarat ranked sixth among the major states and Tamil Nadu ranked in the top in the proportion share of health expenses.

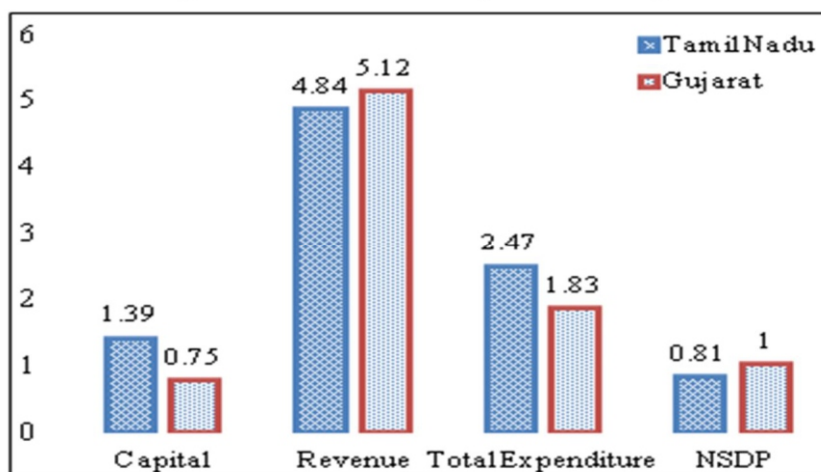
Comparison of Health Expenditure in Tamil Nadu and Gujarat

It can be clearly stated that Tamil Nadu utilizes the amount better than Gujarat. Even though the total expenditure is almost same for both the states, Tamil Nadu allocated and utilizes it in a better way.

Chart 1 clearly mentions about the health expenditure as a percentage of total expenditure. The total expenditure for Tamil Nadu has been 2.47 and Gujarat is 1.83. As far as revenue expenditure is considered it shows that Gujarat

is slightly higher than Tamil Nadu (Chart). During the year 2011, Tamil Nadu health expenses have been increased to 6.83 per cent whereas for Gujarat it is 5.11 per cent (Ministry of Health).

Chart-1
Health Expenditure as a Percentage of Total Expenditure



Source: Computed by authors from CSO-MOSPI, 2013 & RBI, 2013

The average expenditure a household incurs for hospitalisation in a government hospital is much lower in Tamil Nadu than in Gujarat. During the year 2004, the household expenditure for hospitalisation in Tamil Nadu was Rs.934 in rural areas and Rs.1666 in urban areas whereas in Gujarat it is Rs.2253 and Rs.4185 (Sharma 2011).

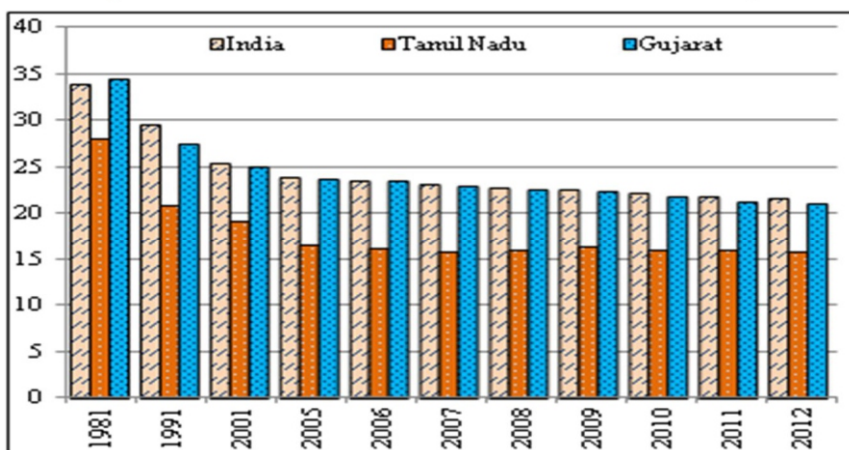
On the whole when we take revenue expenses of health, Gujarat shows a better position. But overall when we take the total expenses for health, Tamil Nadu has utilized it in a better way than Gujarat. As pointed out by author Sharma, the household expense in Tamil Nadu is much lesser when compared to Gujarat. This shows that Tamil Nadu utilizes the health expenses in more productive manner.

Comparison of Selected Health Indicators of the Tamil Nadu and Gujarat.

A. Comparison of Crude Birth Rate in Tamil Nadu and Gujarat

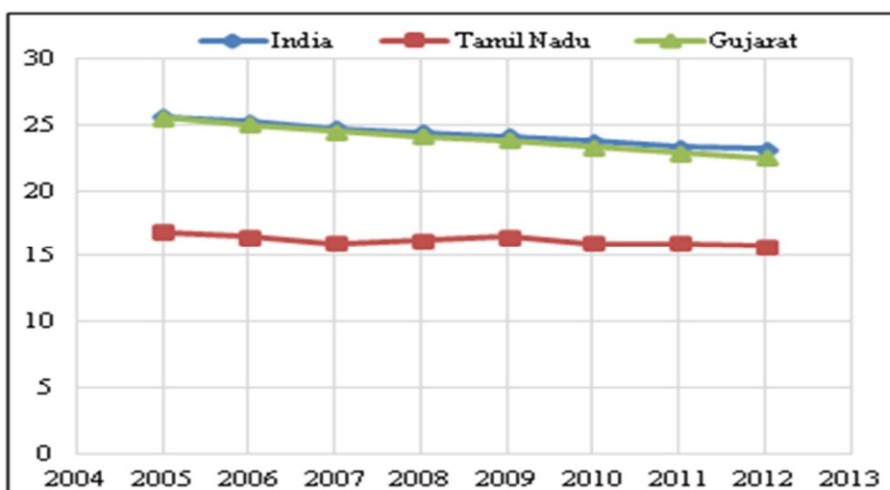
Chart 2 indicates a comparison of Crude Birth Rate in Tamil Nadu and Gujarat. It indicates that the figures for Gujarat show a higher percentage when compared to the state of Tamil Nadu. There seems to be a gradual decrease in the birth rate in Tamil Nadu. The figures of Gujarat also show a very slight decrease in the birth rate.

Chart-2
Comparison of Crude Birth Rate in Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

Chart-3
Comparison of Crude Birth Rate in Rural areas of Tamil Nadu and Gujarat

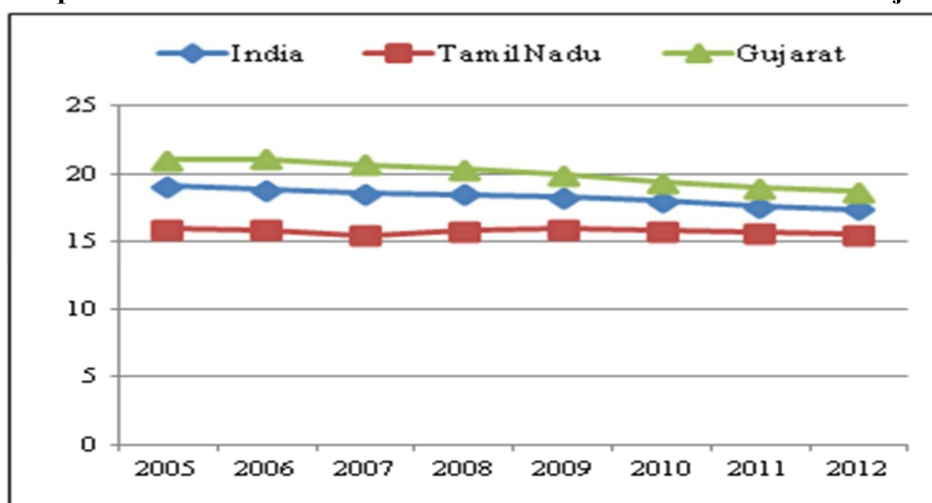


Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

Chart 3 compares the Crude Birth rate of Tamil Nadu and Gujarat in the rural areas of the two states. It can be understood that Tamil Nadu shows a better trend than Gujarat as it shows an increasing trend in the crude birth rate in the rural areas of Gujarat.

Chart 4 shows CBR in urban areas. The trend line for India and Gujarat are almost the same and thus it shows that the growth of birth rate is almost the same. Whereas for Tamil Nadu there is a slight decline in the birth rate when compared to India's overall figure and that of Gujarat.

Chart-4
Comparison of Crude Birth Rate in Urban areas of Tamil Nadu and Gujarat

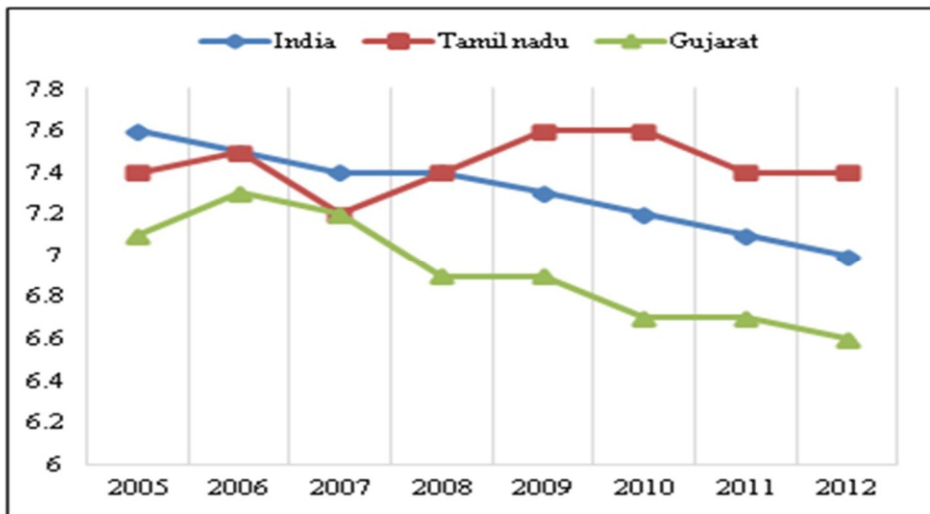


Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

B. Comparison of Crude Death Rate in Tamil Nadu and Gujarat

Chart 5 shows that CDR for Gujarat shows a declining trend from the year 2005 to 2012. India's figure also shows a declining trend. Whereas Tamil Nadu shows a slight increase in the death rate. The all India total Crude death rate during the year 1981 shows a per cent of 12.5. During the year 2005 it declined to 7.6 and there has been no improvement in the year 2007 and 2008 where it was in the same per cent of 7.4. During the year 2012 the death rate declined to 7 per cent. The all India figure for urban shows a better decline from 7.8 during 1981 to 5.6 during the year 2012. Comparison in the death rate between Tamil Nadu and Gujarat shows that in the rural areas during the year 1981 it was 13.5 per cent which declined to 8.2 per cent during the year 2012 whereas in urban area during the year 1981 the crude death rate was 7.9 per cent and during 2007 it declined to 6.3 per cent. A slight increase is seen from 6.2 to 6.9 in 2010 and then a decline of 6.4 in the following years of 2011 and 2012. Gujarat's crude death rate shows a total of 12 per cent where it is 12.4 per cent in rural area and 10.7 per cent in the urban area. The urban areas are in a better position where during 1991 it has been 7.9 per cent which further declined to 5.9 per cent during 2006. There has been a decline of 5.4 per cent in the year 2008.

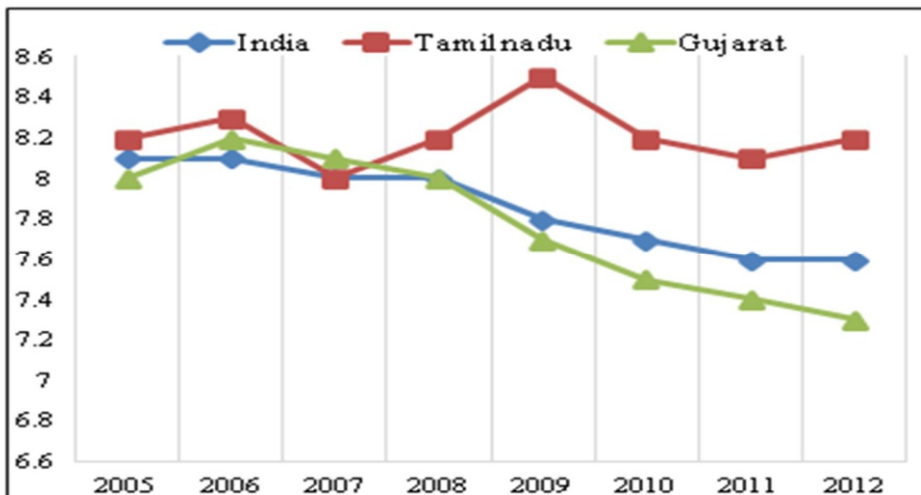
Chart-5
Comparison of Crude Death Rate of Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

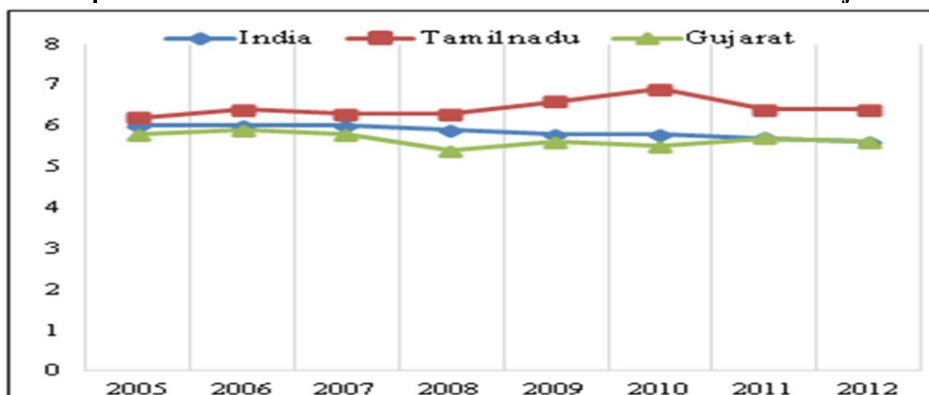
Following chart 6 shows that CDR in rural area from the year 2005 to 2012. The trend line for Gujarat shows a declining rate and for Tamil Nadu shows an increase in 2009 and then slowly a declining trend till 2012.

Chart-6
Comparison of Crude Death Rate in Rural areas of Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

Chart-7
Comparison of Crude Death Rate in Urban areas of Tamil Nadu and Gujarat



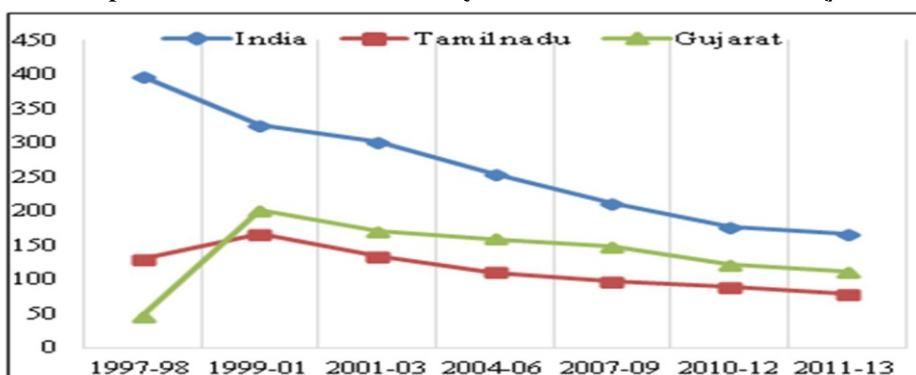
Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

Chart 7 shows that CDR in urban areas of both Gujarat and Tamil Nadu is given in the figure. It can be understood from the figure that Gujarat and India are more or less in the same trend line. The trend line for Tamil Nadu shows a slight increase in 2010 and for the other two years it has declined.

C. Comparison of Maternal Mortality Rate of Tamil Nadu and Gujarat

The all India figures for MMR shows a very high number of 398 during 1997-98 which declined to 327 during 1990-01. A further decline is seen during the years 2004-06 to 254 and then onwards the figures are showing a decline.

Chart-8
Comparison of Maternal Mortality Rate of Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

Comparison of MMR of Gujarat and Tamil Nadu shows huge variations between the states. In Gujarat during 1997-98 the MMR was only 46, whereas in

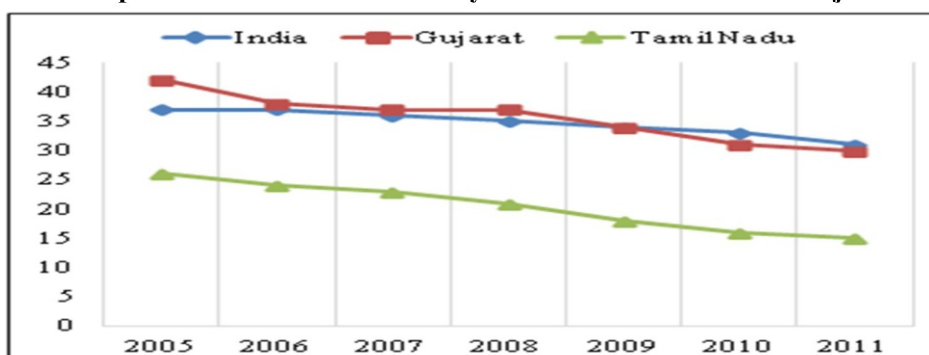
Tamil Nadu it was 131. The year 1999-02 showed a high increase to 202 in Gujarat and 167 in Tamil Nadu. Both the states show an increase. Then from 202 it declined to 172 during 2001-03 in Gujarat and in Tamil Nadu also there is a decline to 134. It is notable that the decline has been very drastic to 79 in Tamil Nadu during the year 2011-13 but in Gujarat the decline has been only 112 during the same year (Chart 8).

D. Comparison of Neonatal Mortality Rate of Tamil Nadu and Gujarat

Neo Natal Mortality rate is the number of resident new born in a specified geographic area (country, state etc.) during at less than 28 days of age divided by the number of resident live births for the same geographic area (for a specified time period; usually a calendar year) and multiplied by 1000.

The all India figure shows that during 2005 it was 37, which declined to 36 and further the figure, show a declining rate only. During the year 2012 the NMR has been 29. The comparison of Gujarat and Tamil Nadu shows a drastic difference where Tamil Nadu's figures shows a sharp decline from 26 during 2005 to 21 during 2008 and then further decline to 15 in the year 2012 (Chart 9).

Chart-9
Comparison of Neonatal Mortality Rate of Tamil Nadu and Gujarat



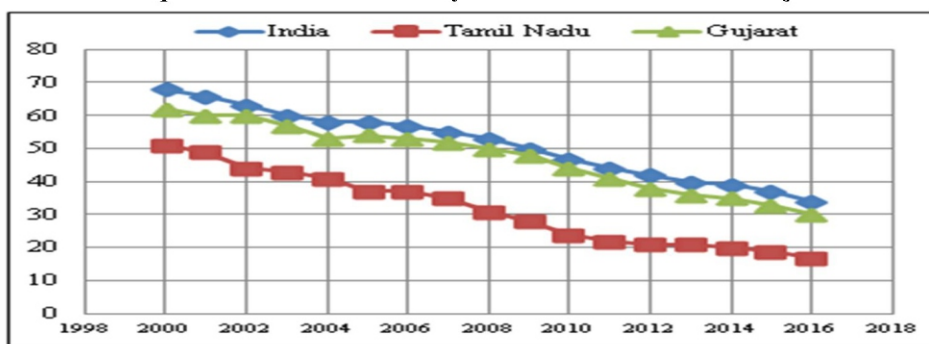
Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

E. Comparison of Infant Mortality Rate of Tamil Nadu and Gujarat

There is a decline in the IMR in Tamil Nadu. During the year 2000 it was 51 and gradually the figures show a decline to 41 in 2004 and further declined to 28 during 2009 and in the year 2015 and 2016 it declined to 19 and 17.

In Gujarat the IMR declined at a very slow rate. During the year 2000 it was 62 and further declined to 60 in the year 2002 to 54 in 2005. Each year has seen a very slow decline in this state, where during 2012 it has been 38 and declined to 36 in 2013. The year 2015 and 2016 saw a decline of 38 and 30 (Chart 10).

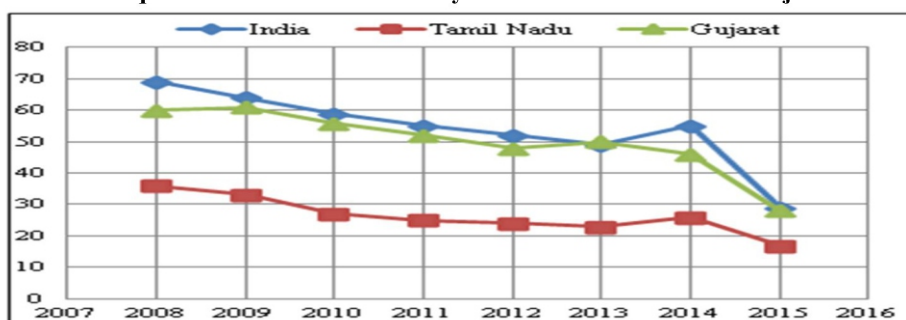
Chart-10
Comparison of Infant Mortality Rate of Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

F. Comparison of Under Five Mortality Rate of Tamil Nadu and Gujarat

Chart-11
Comparison of Under 5 Mortality Rate of Tamil Nadu and Gujarat



Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

The chart 11 shows the under 5 mortality rates of where Gujarat and overall India's figure shows a very high rate and only a slight decline is seen. In case of Tamil Nadu the U5MR has declined from the year 2008 to 2016. Only during the year 2014 there has been a very slight increase after which it has a very decline during the year 2016 in Tamil Nadu.

I. Performance Gap for Selected Health Indicators of Tamil Nadu and Gujarat

A. Performance Gap Index

The table 1 indicates the performance gap index of Gujarat. The various indicators taken for the study are the CBR, CDR, MMR, NMR, UMR, and CMR. In the various indicators that are selected, the performance gap index shows the best performers and the least performer with their values and also the values of

Gujarat for all the indicators that are selected. From the table it is clear that the best performer for crude birth rate is Goa with a value of 13 per cent and the least performer is Uttar Pradesh with a value of 27.4. The value of Gujarat for crude birth rate is 21 per cent and hence the PGI (Performance Gap Index) is 55.9 per cent.

The same manner for crude death rate, Nagaland as a value of 3.2 and it is the best performer and the least performer is Orissa with a value of 8.5. The value of Gujarat is 6.6 and the PGI is 64.1. As far as MMR is concerned the value of Kerala tops and it is the Best performer with a value of 66 and the least performer is Assam with a value of 328. The value of Gujarat is 122 and the PGI is 21.3 per cent. When it comes to IMR again it is Kerala with a value of 12 and the least performer is Madhya Pradesh with a value of 56. Gujarat has the PGI with 59 per cent. The NMR also shows that Kerala as the best performer with a value of 37. The value of Gujarat is 28 and the PGI is 70 per cent. The NMR is very bad in Gujarat. In under five mortality rate the best performer is Kerala with a value of 13, and the least performer is Assam with a value of 75. Gujarat has a value of 48 and PGI with 56.4 per cent. The indicator CMR again shows Kerala as the best performer with a value of 2.5 and the least performer is Madhya Pradesh with a value of 17.8. The value of Gujarat is 10.9 with PGI of 54.9 per cent (table 1).

Table-1
Performance Gap Index of Gujarat

<i>Indicators</i>	<i>Best Performer</i>	<i>Value</i>	<i>Least Performer</i>	<i>Value</i>	<i>Value of Gujarat</i>	<i>PGI (in %)</i>
Crude Birth Date	Goa	13.1	Uttar Pradesh	27.4	21.1	55.9
Crude Death Rate	Nagaland	3.2	Orissa	8.5	6.6	64.1
Maternal Mortality Rate	Kerala	66	Assam	328	122	21.3
Infant Mortality Rate	Kerala	12	Madhya Pradesh	56	38	59
Neo Natal Mortality Rate	Kerala	7	Uttar Pradesh	37	28	70
Under5 mortality Rate	Kerala	13	Assam	75	48	56.4
Child Mortality Rate	Kerala	2.5	Madhya Pradesh	17.8	10.9	54.9

Source: Computed by authors from Health and Family Welfare Statistics in India, 2013.

The table 2 shows the Performance gap of Tamil Nadu. The indicators like CBR, CDR, MMR, IMR, NMR, UMR, and CMR are taken and it shows the best performer and the least performer states. Already we have mentioned the best and the least performer states and their values. If we take the value of Tamil Nadu, it is much better than the value of Gujarat. The PGI shows that CBR for Tamil Nadu is 18.18 per cent whereas for Gujarat it is 55.9 per cent. There is a wide disparity seen in CBR. Then if we take CDR it is Gujarat which is better and has 64.1 per cent when compared to Tamil Nadu with 79.24 per cent. The MMR shows an unbelieving situation in Gujarat with 21.3 per cent in PGI and 9.16 per cent in Tamil Nadu. Another notable figure is seen in IMR where

Gujarat PGI is very bad with 59 per cent and Tamil Nadu has only 20.45 per cent. Even more pathetic is Gujarat's situation in NMR with PGI of 70 per cent whereas it is only 26.6 per cent in Tamil Nadu. The UMR and CMR are equally bad in Gujarat with 56.4 per cent and 54.9 per cent whereas in Tamil Nadu it is only 17.74 per cent and 15.68 per cent which shows a better position than Tamil Nadu (Table 2).

The Table indicates that if we take the values of Tamil Nadu it is much better.

Table-2
Performance Gap Index of Tamil Nadu

<i>Indicators</i>	<i>Best Performer</i>	<i>Value</i>	<i>Least Performer</i>	<i>Value</i>	<i>Value of PGI Tamil Nadu (in %)</i>
Crude Birth Date	Goa	13.1	Uttar Pradesh	27.4	15.7
Crude Death Rate	Nagaland	3.2	Orissa	8.5	7.4
Maternal Mortality Rate	Kerala	66	Assam	328	90
Infant Mortality Rate	Kerala	12	Madhya Pradesh	56	21
Neo Natal Mortality Rate	Kerala	7	Uttar Pradesh	37	15
Under5 mortality Rate	Kerala	13	Assam	75	24
Child Mortality Rate	Kerala	2.5	Madhya Pradesh	17.8	4.9

Source: Computed by author from Health and Family Welfare Statistics in India, 2013.

B. Performance Gap Index for Crude Birth Rate (CBR)

From the table it is clear that for CBR, the value of Gujarat is 21.1 per cent. Best performer state is Goa where the value is 13.1 and the least performer is Uttar Pradesh and the value is 27.4 per cent. The Performer Gap Index for Gujarat is

$$\begin{aligned}
 &\text{Performance Gap Index (PGI) of Gujarat for CBR} \\
 &= \frac{\text{Value of Goa} - \text{Value of Gujrat}}{\text{Value of Goa} - \text{Value of Uttar Pradesh}} \times 100 \\
 &= \frac{13.1 - 21.1}{13.1 - 27.4} \times 100 \\
 &= 55.9 \text{ per cent}
 \end{aligned}$$

The PGI of Gujarat is 55.9 per cent for Crude birth rate. The following shows the value for Tamil Nadu.

$$\begin{aligned}
 &\text{Performance Gap Index (PGI) of Tamil Nadu for CBR} \\
 &= \frac{\text{Value of Goa} - \text{Value of Tamil Nadu}}{\text{Value of Goa} - \text{Value of Uttar Pradesh}} \times 100 \\
 &= \frac{13.1 - 21.1}{13.1 - 27.4} \times 100 \\
 &= 18.18 \text{ per cent}
 \end{aligned}$$

Hence this clearly shows that the performance gap index (PGI) for Gujarat is very high at 55.9 per cent whereas for Tamil Nadu only 18.18 per cent.

The calculation shows the value of Goa because, it is the best performer in the CBR. The value is 13 per cent. Hence Goa has the least value and it is the best performer state in CBR. The comparison of Gujarat and Tamil Nadu shows that the PGI of Gujarat with highest value than the PGI of Tamil Nadu for CBR.

C. Performance Gap Index for Crude Death Rate (CDR)

From the table it is clear that the PGI for crude death rate for Gujarat is 64.1 per cent. The same method is followed.

$$\begin{aligned}
 &\text{Performance Gap Index (PGI) of Gujarat for CDR} \\
 &= \frac{\text{Value of Nagaland} - \text{Value of Gujarat}}{\text{Value of Nagaland} - \text{Value of Orissa}} \times 100 \\
 &= \frac{3.2 - 6.6}{3.2 - 8.5} \times 100 \\
 &= 64.1 \text{ per cent}
 \end{aligned}$$

The same method is adopted for Tamil Nadu and the PGI is calculated by the following

$$\begin{aligned}
 &\text{Performance Gap Index (PGI) of Tamil Nadu for CDR} \\
 &= \frac{\text{Value of Nagaland} - \text{Value of Tamil Nadu}}{\text{Value of Nagaland} - \text{Value of Orissa}} \times 100 \\
 &= \frac{3.2 - 6.6}{3.2 - 8.5} \times 100 \\
 &= 79.24 \text{ per cent}
 \end{aligned}$$

This shows that there is an increase of PGI of 79.24 per cent which is higher in Tamil Nadu when compared to Gujarat.

The PGI for CDR shows that Nagaland tops in reducing the death rate to 3.2. Gujarat's PGI value is 64.1. When compared to Tamil Nadu which has a PGI of 79.24.

D. Performance Gap Index for Infant Mortality Rate (IMR)

Infant Mortality Rate (IMR) value of Gujarat is 38. The best performer is Kerala with a value of 12 and least performer in Madhya Pradesh with a value 56.

$$\begin{aligned}
 &\text{Performance Gap Index (PGI) of Gujarat for IMR} \\
 &= \frac{\text{Value of Kerala} - \text{Value of Gujarat}}{\text{Value of Kerala} - \text{Value of Madhya Pradesh}} \times 100
 \end{aligned}$$

$$= \frac{12 - 38}{12 - 56} \times 100$$

$$= 59 \text{ per cent}$$

The IMR value of Tamil Nadu is 21. The same method is followed

Performance Gap Index (PGI) of Tamil Nadu for IMR

$$= \frac{\text{Value of Kerala} - \text{Value of Tamil Nadu}}{\text{Value of Kerala} - \text{Value of Madhya Pradesh}} \times 100$$

$$= \frac{12 - 21}{12 - 56} \times 100$$

$$= 20.45 \text{ per cent}$$

Performance gap index for infant mortality rate is Tamil Nadu. This clearly shows that the state of Gujarat has a very high PGI of 59 per cent than Tamil Nadu.

The best performer for IMR is Kerala and the value is 12. The IMR of Tamil Nadu and Gujarat is given with their values. The PGI value of Gujarat is very high with 56 when compared to the PGI value Tamil Nadu which has a PGI value of 20.45.

E. Performance Gap Index for Neo Natal Mortality Rate (NMR)

Neo Natal Mortality rate of Gujarat shows a value of 28. The best performer is Kerala with a value of 7 and the least performer is Uttar Pradesh with a value of 37.

Performance Gap Index (PGI) of Gujarat for NMR

$$= \frac{\text{Value of Kerala} - \text{Value of Gujarat}}{\text{Value of Kerala} - \text{Value of Uttar Pradesh}} \times 100$$

$$= \frac{7 - 28}{7 - 37} \times 100$$

$$= 70 \text{ per cent}$$

Neo natal mortality rate of Tamil Nadu is 15. so the PGI is

Performance Gap Index (PGI) of Tamil Nadu for NMR

$$= \frac{\text{Value of Kerala} - \text{Value of Tamil Nadu}}{\text{Value of Kerala} - \text{Value of Uttar Pradesh}} \times 100$$

$$= \frac{7 - 15}{7 - 37} \times 100$$

$$= 26.6 \text{ per cent}$$

The performance gap index value for neo natal mortality rate of Tamil Nadu is only 26.6 per cent and it is definitely showing a better position than the state of Gujarat which shows 70 per cent.

The Neo Natal Mortality calculations show that the PGI of Kerala is very less in NMR with a value of 7. The PGI of Gujarat is high with 70 and Tamil Nadu's PGI is 26.6. The value 70 is very high and Gujarat government should definitely take better policies to bring down this value.

F. Performance Gap Index for Under 5 Mortality Rate (U5MR)

The value for under 5 mortality rates of Gujarat is 48. The best performer in U5MR is Kerala with a value of 13 and the least performer is Assam with a value of 75. The Performance Gap Index for U5MR is calculated by the following

$$\begin{aligned} & \text{Performance Gap Index (PGI) of Gujarat for U5MR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Gujarat}}{\text{Value of Kerala} - \text{Value of Assam}} \times 100 \\ &= \frac{13 - 48}{13 - 75} \times 100 \\ &= 56.4 \text{ per cent} \end{aligned}$$

The value for under 5 mortality rates of Tamil Nadu is 24. Hence the PGI is

$$\begin{aligned} & \text{Performance Gap Index (PGI) of Tamil Nadu for U5MR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Tamil Nadu}}{\text{Value of Kerala} - \text{Value of Assam}} \times 100 \\ &= \frac{13 - 24}{13 - 75} \times 100 \\ &= 17.74 \text{ per cent} \end{aligned}$$

The Performance gap index for Under 5 mortality rates of Tamil Nadu is least with a value of 17.74 per cent which is relatively better than Gujarat.

The U5MR shows that the value of Kerala is very less with only 13. From the PGI calculations it can be inferred that Gujarat has high per cent in U5MR than the PGI of Tamil Nadu.

G. Performance Gap Index for Maternal Mortality Rate

The value of maternal mortality rate for Gujarat shows 122. The best performer is Kerala with 66 and the least performer is Assam with 328. So, the Performance gap index for Gujarat is

$$\begin{aligned} & \text{Performance Gap Index (PGI) of Gujarat for MMR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Gujarat}}{\text{Value of Kerala} - \text{Value of Assam}} \times 100 \end{aligned}$$

$$= \frac{66 - 122}{66 - 328} \times 100$$

$$= 21.3 \text{ per cent}$$

The value of maternal mortality rate for Tamil Nadu shows 90. Hence the PGI is

$$\begin{aligned} &\text{Performance Gap Index (PGI) of Tamil Nadu for MMR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Tamil Nadu}}{\text{Value of Kerala} - \text{Value of Assam}} \times 100 \\ &= \frac{66 - 90}{66 - 328} \times 100 \\ &= 9.16 \text{ per cent} \end{aligned}$$

The value of Tamil Nadu shows a less per cent of 9.16 when compared to Gujarat which has 21.3 per cent.

H. Performance Gap Index for Child Mortality Rate

The value of child mortality rate of Gujarat is 10.9. The best performer is Kerala with a value of 2.5 and least performer is Madhya Pradesh with 17.8. So PGI for child mortality rate of Gujarat is

$$\begin{aligned} &\text{Performance Gap Index (PGI) of Gujarat for CMR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Gujarat}}{\text{Value of Kerala} - \text{Value of Madhya Pradesh}} \times 100 \\ &= \frac{2.5 - 10.9}{2.5 - 17.8} \times 100 \\ &= 54.9 \text{ per cent} \end{aligned}$$

$$\begin{aligned} &\text{Performance Gap Index (PGI) of Tamil Nadu for CMR} \\ &= \frac{\text{Value of Kerala} - \text{Value of Tamil Nadu}}{\text{Value of Kerala} - \text{Value of Madhya Pradesh}} \times 100 \\ &= \frac{2.5 - 4.9}{2.5 - 17.8} \times 100 \\ &= 15.68 \text{ per cent} \end{aligned}$$

Even in child mortality rate Tamil Nadu shows a better value of 15.68 per cent which is less when compared to Gujarat which has 54.9 per cent.

Findings of the study on the basis of Performance Gap Index (PGI)

1. The performance gap index for crude birth rate shows that the PGI is very high for Gujarat with 55.9 per cent and for Tamil Nadu it is only 18.18 per cent. Gujarat has very high level of birth rate than Tamil Nadu.

2. The PGI for crude death rate for Gujarat is 64.1 per cent and for Tamil Nadu it is 79.24 per cent. Gujarat shows a better performance in the reduction of death rate.
3. The PGI for under 5 mortality rate is very poor in Gujarat where it is 56.4 per cent which is very high level when compared to Tamil Nadu with 17.74 per cent only showing a better condition.
4. The PGI for maternal mortality rate also shows an increasing level for Gujarat with 21.3 per cent and for Tamil Nadu it is only 9.16 per cent which is comparatively less.
5. The performance gap index for Infant Mortality Rate (IMR) of Gujarat is 59 per cent and for Tamil Nadu it is 20.45 per cent which is very low compared to Gujarat.
6. The performance gap index for Neonatal mortality rate of Tamil Nadu is 70 per cent and for Gujarat it is 26.6 per cent which is comparatively less.
7. The performance gap index for child mortality rate of Gujarat is 54.9 per cent and for Tamil Nadu it is 15.68 per cent.

Policy Implications

1. The government should take necessary steps to control the increasing birth rate in Gujarat which shows a higher level of growth than Tamil Nadu. Awareness campaign should be promoted in a better way.
2. Tamil Nadu's death rate is slightly higher than of Gujarat, and hence that can be brought under control with better medical facilities.
3. The under 5 mortality rate shows a very bad picture in Gujarat. There should be some kind of an immediate measure that can be taken to bring down this. It shows a very pathetic situation in Gujarat. So children need to be taken care and should be given well-nourished food.
4. Another important step that could be taken by the government of Gujarat is women's health. Already women are more anaemic and malnourished. Women health should be given utmost importance, so that the maternal mortality rate does not show further increase in the state.
5. The neonatal mortality is another problem of Gujarat and government should somehow try to bring down the NMR in Gujarat.
6. The MMR is very high in Gujarat. Women health should be improved and MMR should be brought down in Gujarat.
7. Child immunisation should be monitored and especially in the rural areas so that there will be a decline in U5MR.

8. Women education should be improved. More initiatives should be given to them so that they will be aware of improving their wealth.
9. Better medical facilities to be given to women and children to bring down MMR and IMR in Gujarat.

Conclusion

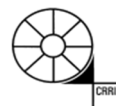
India's present position in health system needs a drastic change. There are inequalities seen in different states and the performance of various health indicators shows that some states are better performed whereas some do not perform well. Two states Gujarat and Tamil Nadu has been compared in this study. Tamil Nadu is definitely showing a better position in almost all the indicators when compared with Gujarat. The state of Gujarat needs to focus more on health sector and especially in NMR. The state records a very poor position in NM R and the government need to take some necessary step to improve the state's NMR. Another important issue is the IMR which also is on increase. These needs a thorough study about the reason as why there is an increase in IMR and should try in solving this problem as well. The next problem is U5MR and CMR that also needs immediate attention. The study has taken only two states for comparison. There are number of states which are least performers in the health indicators like Uttar Pradesh, Orissa, Madhya Pradesh and Assam. It is the need of the hour that better policy frame works are required to improve the health system and more amounts should be allotted for public spending in the health sector. Improvement in various sectors and infrastructure is necessary but above all improving the sector should be the primary goal of all the states. Government should ensure that a balanced regional development be given to health sector in all the states in an equal manner.

References

Shreenath Iyenger & Ravindra H. Dholakia, 2016, "What Determines Performance Gap Index of Health Care in Gujarat?" Journal of Health Management, 18 (1), 95-116, SAGE Publications.

Government of India, National Human Development Report, 2001, New Delhi, Planning Commission.

_____, National Human Development Report, 2011, New Delhi, Planning Commission.



WOMEN IN DEVELOPMENT: A CASE OF TRANS-GIRI OF HIMACHAL PRADESH

Rakesh Kumar¹

Abstract: The current paper seeks to analyse the female achievements in various discipline of the development, applying alternative methods other than traditional Gender Development Index (GDI) with multi-stage stratified random sampling in Trans-Giri of Himachal Pradesh. Paper uses Relative Status of Women (R.S.W.) in extended form, adding female comparative achievements in literacy, life expectancy, decision-making power, and assets control. Paper also uses Duncan Segregation Index and IP index for female representation in the labour market and shows that females in a patriarchal society have more disadvantages than relatively open societies. In patriarchal societies, females mostly associate with unpaid domestic and agricultural work, excluding them from the mainstream. Reservation for females in jobs and enforcement of property rights entitlement, especially for land can reduce the gap between male and female earning.

Keywords: Development; Gender; Labour; Discrimination; Participation

1. Introduction

The initial accepted metric to measure welfare and progress was money and later the per capita income and domestic production. Failure of per capita income and gross domestic product as a perfect indicator of welfare resulted in the Human Development Index (HDI) in 1991. Human Development Index is designed using a holistic approach to include the most valuable human traits formed on human capabilities (Anand and Sen, 1997). Development is manifested in the broad dimensions of literacy which indicates the knowledge and information to the general individuals in the society; health includes the dietary and other existential need of the human beings which sustain their life, and living standard consists of the possession of resources which individuals can spend to achieve the accomplishments. Though HDI was initially considered a single yardstick to

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measure welfare, it did not represent all society's facets. In 1995 considering gender equality as one of the most important parts of human development, United Nations Development Programme (UNDP) introduced two gender equality measures namely Gender-related Development Index (GDI) and Gender Empowerment Index (GEM).

These measurements of gender development came under severe criticism on the basis that these underrepresented women situations and presented only a crude reality of the development of the women (Dijkstra, 2000, 2002). The Standardized Index of Gender Equality (SIGE) was consequently devised. The SIGE has variables such as education, health, labour market participation, share in higher labour market occupations, positions and share in parliament. The traditional gender indices were also criticised because they had not considered the socio-cultural practices that largely frame women achievements (Forsythe *et. al.*, 2003). The OECD's Social Institutions and Gender Index (SIGI), published in 2009, takes a different tack, focussing on critical societal norms and institutions which affect how women fare using family code, physical integrity, son preference, civil liberties and ownership rights. SIGI was built around the overarching concept of social institutions and focused not on gender outcomes but rather on gendered institutions (Gaye *et. al.*, 2010). SIGE and SIGI have some conceptual and methodological weaknesses. Klasen (2017) attributed that UNDP modified GDI was better to assess women's actual situation.

Women form half of the population and they encounter many issues in achieving the ends considered valuable for humankind like in Amartya Sen's terms, literacy, employment, health and better standard of living. Women face many hurdles in terms of socio-cultural and economic set up in achieving those ends. Keeping in view all the information available in literature related to gender development and its measurement; this paper argues for various methodologies to measure women's development in relation to men. This paper uses the HDI, GDI, reformed RSW index based on nine indicators varying from male-female contribution in the house making to unpaid agriculture work and the paid jobs. Reformed Duncan Segregation Index and IP index are used to measure the dissimilarity in the labour market.

A study was conducted by Department of Economic and Statistics from July 2015 to June 2016 with a sample size of 5332 of which 79.30 per cent from rural and 20.70 per cent was from urban areas. This study was had concluded that 96.80 per cent families were doing their homework themselves. Females were doing the majority of work and their value of one-month agricultural activities was Rs. 6593 per women per month. Women's total work for all type of unpaid work was Rs. 9479 per month per woman. The highest percentage contribution to Gross State Domestic Product (GSDP) was recorded in agricultural and allied activities (7.18%) followed by domestic work (3.34%). Contribution of women in

agricultural and allied activities and their sole responsibility for house making force them into financial constraints and hovering around the activities that can be managed from home. On the other hand, the male family member goes outside to work and makes financial decisions.

The above study reveals that in a patriarchal society, the work allotted to females include that of farming on own land, along with child rearing and making the home without any financial burden. Women fortified position around the house, costs the nation and family's economic gains and hurdles women's development.

2. Data Sources and Methodology

This study is based on primary data captured with a pre-tested semi-structured questionnaire based on a modified mixed reference period (MMRP) during 2016-2017. The choice of primary study is motivated by the lack of secondary data on all human development indicators and the data used to construct the Duncan and Duncan Index and IP index. A multi-stage stratified random sampling procedure was adopted to select the appropriate sample size.

For study purpose, Trans-Giri of Sirmour district is selected as it forms hilly terrain and comparatively backward than other district counterparts. As the study region is substantially heterogeneous, all regions are selected for the survey. Ten per cent of the villages (i.e. 39 out of 388 villages) were selected for sampling adopting the following methodology.

a) Construction of Index

Index of each village on thirteen economic variables was constructed. The goalposts for sex ratio, working population in general and female, and the marginal working population for general and females are fixed based on higher and lower values observed in the study region. An economic profile on thirteen indicators of all 388 villages was prepared based on these thirteen economic indicators. The villages for sample chosen from each stratum as per scores attained by each village.

b) Number of Samples and Selection of Households

After selecting villages, the number of sample households had to decide, and for this purpose, the methodology developed by RGD Steel and J.H. Torrie (1981) has been applied. Based on this method, range and standard deviation(σ) was calculated. Dividing the range with standard deviation(σ) gave a value of 5.21 for household and population, the table value was 5. Corresponding table value for calculated value was 100 respondents. For this purpose, out of one hundred respondents which table value referred for sampling, 96 respondents were surveyed randomly from the study region and 4 people were consulted as key

informants. These 96 respondents are surveyed on the proportionate basis among regions.

c) Tools Used for Data Analysis

i) Gender Development Index (GDI)

Analysis of inclusive growth without considering real achievements that people make may underestimate inclusive growth progress and analysis. The link between economic growth and human progress was considered not automatic. Economic growth accompanied by reasonably equitable income distribution was generally the most effective path to sustained human development (HDR, 1990). The inequality in various forms hampers inclusion and income distribution pattern, which again hinders the fight against poverty. Human Development Reports (HDRs) put the human in the centre of development, and regards means the only way to fulfil ends based on capabilities and were evaluative. Such measurement came in 1990 in Human Development Reports (HDRs) based on three dimensions: Longevity, Knowledge and Standard of Living. Indicators chosen were, life expectancy, adult literacy rate and gross enrolment ratio for education and GNP per capita (\$) measured in purchasing power parity. Later, there were minor changes in the calculation, and in indicators such as in place of adult literacy rate and gross enrolment ratio, the new indicators were means years of schooling (MYS) and expected years of schooling (EYRS). Furthermore, in place of an average of these three indices, the geometric mean of indices was used. The current study applies refined HDI methodology.

Since the Gender Development Index (GDI) is dependent on HDI and evaluates gender achievements in human development, the same will also be calculated.

The achievements will be calculated by applying the following formula:

$$\text{Dimension Index} = \frac{\text{Actual} - \text{Minimum}}{\text{Maximum} - \text{Minimum}}$$

Whereas, HDI will be

$$\text{HDI} = (\text{I}_{\text{Health}} * \text{I}_{\text{Education}} * \text{I}_{\text{Income}})^{1/3}$$

For calculation of GDI following formula will be used:

$$\text{GDI} = \frac{\text{HDI}_f}{\text{HDI}_m}$$

ii) Measure of Gender wise Inequality in Major Economic Dimensions

Since the GDI methodology is limited to the indicators and dimension, which is part of HDI, it bypasses other dimensions which play a crucial role in keeping women excluded from the developmental process. HDI under-represents women's relative underdevelopment and inequality and it fail to give appropriate measures of gender equality. Alternative aggregation methodology proposed by

Dijkstra and Hanmer (2000) that abstracts from the overall development levels and focuses only on the comparison of the achievement levels between women and men has been adopted for the present purpose. In the current paper, the index of "Relative Status of Women"ⁱⁱ was calculated based on nine variables: literacy, income, land holding, life expectancy, credit access, unpaid working hour, employment, household ownership and the number of drop outs.

$$RSW = \frac{1}{9} \left(\frac{x^1}{y^1} + \frac{x^2}{y^2} \dots \dots \dots + \frac{x^n}{y^n} \right) \quad (1)$$

Where: x_i, y_i are the female and male achievement as included in the variables: literacy, income, land holding, life expectancy, credit access, unpaid working hour, employment, household ownership, and the number of drop out(s).

Further, the RSW is broadly defined as $RSW_n = \frac{1}{n} \sum_{i=1}^n \left(\frac{x^i}{y^i} \right)$

Where a large number of dimensions ($n \in N$) are considered and each $x_i, y_i \geq 0$.

iii) Segregation Indices Used: These are: i) the Duncan's Segregation Index and ii) the Segregation Index.

$\Rightarrow$ **First:** The Duncan Segregation Indexⁱⁱ. This index of dissimilarity (I), for a job category, is calculated as follows:

$$I = \frac{1}{2} \sum_{i=1}^n |M_i - F_i|$$

Where M_i and F_i represent the percentage of males and females working in this job category, respectively.

$$M_i \equiv \frac{m_i}{m} \text{ and } F_i \equiv \frac{f_i}{f}$$

This index's main purpose is to measure the extent to which women's 'position' is better or worse than men. When $I = 0$ implies that there is no segregation in any category. In other words, $M_i = F_i$ When $I = 1$ implies complete segregation in all categories. This can be seen since when $M_i > 0$, the $F_i = 0$ and vice versa. M_i and F_i are the percentages of the males and females in a given group (M or F) in category i .

Consequently:
$$\sum_{i=1}^n M_i = 1, \text{ and } \sum_{i=1}^n F_i = 1$$

$\Rightarrow$ **Second is the (IP.) Segregation Index:** This segregation index is calculated using the following formula:

$$I = \frac{1}{T} \sum_{i=1}^n |(1 - a) m_i - a f_i|$$

$$\text{where } T = m + f, \text{ and } a = \frac{m}{T}$$

3 Field Observations

i) Demographic Profile of the Study Area

Table-1
Selected Socio-economic Indicators of Trans-Giri

Socio-Economic Indicators	Trans-Giri					Overall
	Sangarh	Rajgarh	Shillai	Kamrau	Anj Bhoj	
Percentage of SC Population	42.59	44.84	30.96	31.87	26.91	36.38
Sex Ratio*	958	946	892	911	915	926
Sex Ratio for SC	945	961	902	933	934	937
Literacy	76.00	86.09	63.02	68.32	71.18	74.31
Male literacy	83.07	90.86	75.96	77.01	80.47	81.50
Female literacy	68.61	81.07	61.03	58.75	61.01	66.53
Literacy Gap#	14.46	9.79	14.92	18.26	19.46	14.97
Percentage of working population	62.31	71.53	62.34	51.68	45.89	60.12
Percentage of working population (female)	47.53	47.85	44.08	40.36	35.76	44.55
Percentage of main working population	65.03	74.30	58.49	61.55	54.16	63.81
Percentage of main working population (female)	39.74	43.67	31.58	19.64	18.06	34.41
Percentage main casual labour population	83.79	84.20	82.94	64.66	51.47	78.39
Percentage of main female casual labour population	41.39	46.26	32.72	18.89	19.14	36.99
Percentage of marginal working population	34.97	25.70	41.51	38.45	45.84	36.19
Percentage of marginal working population (female)	62.03	59.94	61.70	73.54	56.68	62.45

Source: Compiled from Census of India, 2011 for the present study.

Note: *Female per thousand male; # absolute gap between male-female literacy

Table 1 depicts the differences in achievements on various socio-economic indicators among regions and between social classes of all of Trans-Giri area on selected socio-economic indicators drawn from Census data of 2011. The table is summarised as follows:

- Overall Trans-Giri has substantial Scheduled Cast (SC) population (36.38 per cent of the total population).
- Sex ratio for SC category (937) marginally better than the overall sex ratio of 926.

- c. Overall literacy gap for Trans-Giri was calculated as 14.97. The highest gap is recorded for Anj Bhoj (19.46) and lowest for Rajgarh (9.79) percentage points.
- d. Male working population is greater than the female working population.
- e. Marginal working female population is greater than the marginal working population for males.
- f. Regions such as Rajgarh and Sangrah with the highest SC population percentage also reflect a better literacy and sex ratio than other regions within Trans-Giri where the relative SC population is lower. The apparent relationship between the majority of the SC population and these two socio-economic indicators required some more interrogation of the findings below.

ii) Gender Development Index

Gender Development Index (GDI) is defined as a "distribution-sensitive measure that accounts for the human development impact of existing gender gaps in the three components of the HDI" (Klasen, 2017). Hence, a higher GDI score indicates a higher gain in gender development achievements in three dimensions, and lower values show lower gain and higher inequality. GDI is prepared in the current chapter based on sex-disaggregated data from the field visit.

Data about income earned by women, job profile, age, education and concentration in the job market are used in the current chapter. Gender-based results can evaluate the outcomes of gender-focused and mainstream interventions and policies and help reveal barriers to achieving success. They can provide vital information for adjusting programmes and activities to achieve gender equality goals and not negatively impact women and men. In terms of HDI and GDI, women and men's relative positions are presented in consequent sections.

Table-2
GDI and Comparative HDI among Sampled Households in Trans-Giri

Region	Trans-Giri								
	LEI		Literacy Index		Income Index		HDI Value		GDI
	Male	Female	Male	Female	Male	Female	Male	Female	
Sangrah	0.701	0.757	0.715	0.529	0.309	0.164	0.537	0.404	0.751
Rajgarh	0.753	0.792	0.848	0.600	0.305	0.245	0.580	0.488	0.842
Shillai	0.711	0.753	0.728	0.520	0.129	0.085	0.405	0.322	0.795
Kamrau	0.760	0.815	0.841	0.713	0.361	0.292	0.613	0.554	0.903
Anj Bhoj	0.767	0.783	0.824	0.713	0.288	0.211	0.567	0.490	0.864
Trans-Giri	0.697	0.745	0.767	0.583	0.367	0.185	0.581	0.432	0.743

Source: Field Survey, 2016-17

Note: Life Expectancy Index

Table 2 shows large variations of 149 points in the Human Development Index for male and female in Trans-Giri region. Whereas HDI value for male is 0.581, it is only 0.432 points for female. Indicators wise, females secure higher life expectancy index scores in Trans-Giri and all other regions. In terms of literacy and income index, women record lower score and income index for females. They show the worst performance because traditionally, females do not represent financial powers of a household and the majority of women engaged in unpaid household work.

iii) Relative Status of Women (RSW) in Trans-Giri

HDI and GDI are comprised of the same indicators, and GDI reflects only the comparative positions of women relative to HDI. It is possible that indicators which are suitable to measure human development may not necessarily or appropriately measure gender equality (Dijkstra and Hanmer, 2000). In terms of work distribution, females also get unequal burden such as unpaid household work and have less decision-making power or less autonomy. In a patriarchal society like India and Trans-Giri, cultural beliefs and norms often imply that women are seen as second rank human beings. Women tend to be more vulnerable to domestic violence and rape than men (UNDP, 1995).

As GDI does not adequately capture the extent of gender inequality, this section tries to establish women inequality as an alternative to the GDI. Though women inequality is also rooted in cultural beliefs and norms, socialisation of gender identity, these factors are difficult to measure and depend on social values. To make the indicators of current study measurable, the indicators related to beliefs and cultural norms are omitted.

Table-3
RSW among Sampled Households in Trans-Giri

Dimensions/ regions	Trans-Giri									
	LI	YI	LHI	LEI	CAI	UWHI	EI	HOI	DOI	RSW Index
Sangrah	0.907	0.384	0.029	1.055	0.000	0.400	0.167	0.097	0.667	0.412
Rajgarh	0.953	0.670	0.538	1.037	0.333	0.357	0.200	0.417	1.000	0.612
Shillai	0.878	0.752	0.065	1.040	0.000	0.500	0.143	0.188	0.750	0.479
Kamrau	0.966	0.634	0.013	1.051	0.333	0.475	0.400	0.143	1.000	0.557
Anj Bhoj	0.944	0.599	0.045	1.015	0.000	0.500	0.300	0.111	1.000	0.502
Trans-Giri	0.846	0.300	0.133	1.049	0.182	0.448	0.222	0.171	0.800	0.461

Source: Field Survey, 2016-17

Note: LI-Literacy Index, YI-Income Index, LHI-Land Holding Index, LEI-Life Expectancy Index, CAI- Credit Access Index, UWHI- Unpaid Working Hour Index, EI-Employment Index, HOI- Household Ownership Index, DOI-Drop-out Index, RSW-Relative Status of Women.

Table 3 shows women's relative status on nine indicators and shows 0.461 index values for Trans-Giri, which means females' achievements are less than half of males. Whereas RSW index for Rajgarh, Kamrau and Anj Bhoj show relative better positions, this is because the dropout rate in these areas is nil for both males and females. The zero-weight age for drop out in these areas pushes the value of overall RSW up.

Women lead only in life expectancy index, whereas in other indicators they perform lower. The lowest RSW index score is contributed by land holding, credit access, household ownership and employment. Historical factors of ownership of resources contributed to women's relative disadvantages. And it seems that cultural traits of patriarchal society percolated into economic inequality. The obligations and responsibilities attached to women add more burdens. These responsibilities value their reproductive over their productive role and reinforce women as mothers rather than workers. Patriarchal set up of Trans-Giri society left women with meagre land holding and lower credit access ratio.

The only factor contributing positively to women status is life expectancy index that too can be contributed to inherent biological capacity to survive more than men. One of the more important index, the income index on which women's actual status reflects, shows the lowest value. This indicates less control of female on disposable resources. In the absence of land holding by the females (values for land holding are relatively lower in all of the areas except Rajgarh), absence of collateral automatically nullify female claim to the credit. One more negative observation from the disintegrated Duncan segregation index indicates a dual undesirable outcome for Trans-Giri females. It's drop out index shows higher values and even absolute value in some of the above table areas. In terms of employment in the formal and informal sector, females show lower representation as the highest value for this particular index is in Kamrau.

iv) Women in the Labour Market

Historical accounts indicate certain do's and don'ts for females, and these accounts' choice of work and profession. The development of humankind lead to the females considered better only for procreation and certain domestic works. The domestic work, which is often unpaid, is multiplying women's relative loss in financial matters. This is a strong reason why, even today, women's workforce is very less compared to men. Though their representation in other informal work is often more, as it is observed from field evidence, domestic chorus is relatively borne more by female and men only stay at home for the physical hard work e.g. for ploughing. One way of establishing if jobs are distributed by gender, race, or form is by looking at whether certain jobs are more likely to have a larger per cent of a particular type of employees (Blackburn, 2009). To analyse females' relative presence in certain professions, the present chapter applies Duncan

in local bodies), technical occupation and jobs (government and semi-government) and skilled work. An indirect indication of lower wages for female concentrated occupation is also cited through segregation indices (Chant, 1997). Among all disaggregated indices, females are least represented in technical and jobs in government and semi-government, and skilled work. Surprisingly, the index for domestic work shows lower values because in households some of the works that need physical power (such as the collection of firewood, assisting in bringing fodder for livestock) are largely performed by males' counterparts. Unpaid agriculture, such as ploughing and staking, are primarily conducted by men. Still, this unpaid agriculture occupation needs to take women out roughly forty to fifty per cent.

Table-4
Duncan Segregation Index among Sampled Households in Trans-Giri

Regions	Trans-Giri					DSI
	I _{Dw}	I _{AU}	I _{MW}	I _{Tw}	I _{JSW}	
Sangrah	0.47	0.45	0.39	0.58	0.75	0.55
Rajgarh	0.36	0.40	0.39	0.59	0.69	0.61
Shillai	0.24	0.44	0.30	0.55	0.81	0.54
Kamrau	0.30	0.42	0.34	0.60	0.72	0.60
Anj Bhoj	0.27	0.47	0.32	0.62	0.76	0.63
Trans-Giri	0.38	0.41	0.35	0.58	0.74	0.57

Source: Field Survey, 2016-17

Note: I_{Dw}-Index for domestic work, I_{AU}-Index for agriculture unpaid, I_{MW}-Index for managerial work, I_{Tw} Index for technical work, I_{JSW}-index for jobs and skilled work, DSI- Duncan Segregation Index.

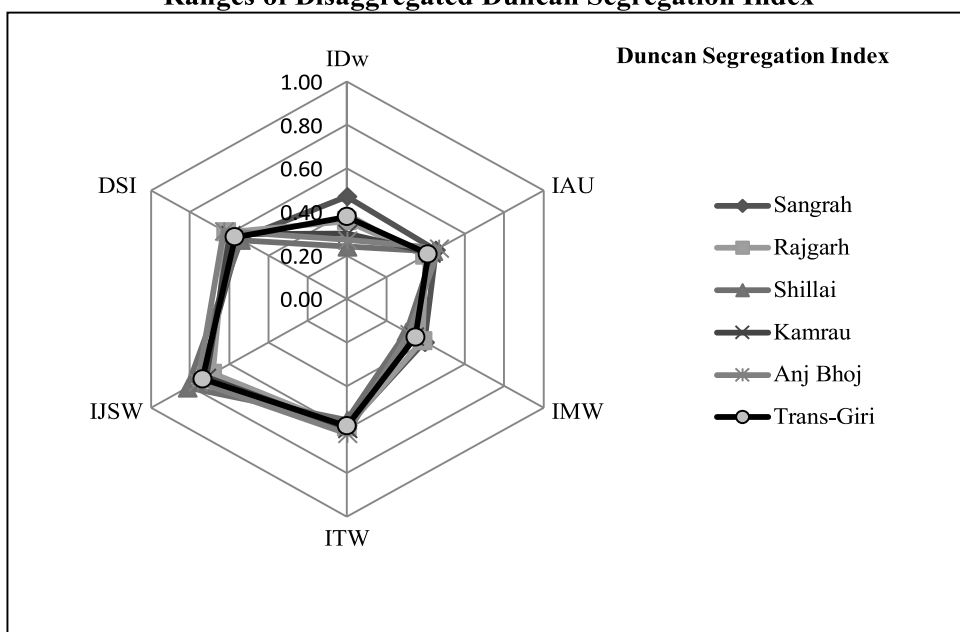
Managerial work index presents as the least segregated occupation due to the reservation for females in local bodies. For field statistics, females are represented in local bodies only from reserved seats and work as managers in women NGOs (such as *Mahila Mandals*). In contrast, in the open field, women's presence was negligible in managerial occupation. In managerial occupation, thirty to fourth per cent of women need to change their occupation to make this field more even.

The technical occupation and other occupation like the concentration of women in government, semi-government and formal set up (where skilled labour demand often remains high) are less concentrated. In other words, these occupations are largely segregated and underrepresented by women. Index for jobs and professional work for Shillai remained high, indicating less women education, skill, and consequently less wages for females.

Duncan Segregation Index can be understood better by plotting on spider chart, range chart or radar chart. The spider chart is better for explaining various sub-indices under Duncan index. The spider chart or range chart is presented in the figure below for the current purpose.

Figure 1 shows index values, their positions for disaggregated Duncan segregated index for domestic work, unpaid agriculture occupation, the index for managerial works, index for technical occupations and index for formal and informal jobs in both government, semi-government, and private jobs on spider chart. The chart shows the highest values for all regions under the index for jobs (government, semi-government, and private formal). The high value of the index for the job and skilled work indicates that many women need to enter these occupations to make this disaggregated index evenly distributed. Much variation can be observed in the index for domestic work, which shows variation within 0.24 to 0.47 stretches. This variation is mainly credited to collections of fodder and firewood and rearing of livestock in which there is comparatively less segregation compared to other micro occupations. Other micro occupations show less segregation variations, indicating a particular gender's concentration in a particular occupation.

Figure-1
Ranges of Disaggregated Duncan Segregation Index



Source: Field Survey, 2016-17

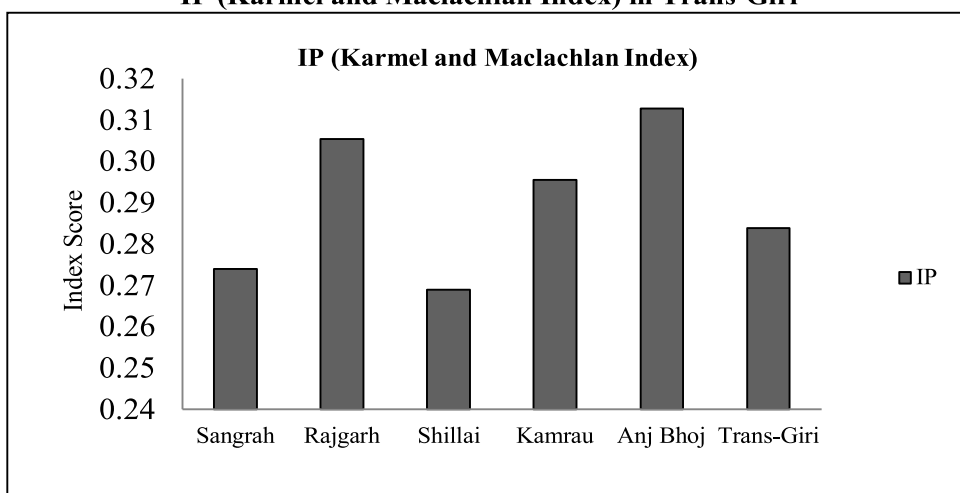
Note: IDw-Index for domestic work, IAU-Index for agriculture unpaid, IMW-Index for managerial work, ITW Index for technical work, IJSW-index for jobs and skilled work, DSI- Duncan Segregation Index.

Duncan segregation index takes into account presence of both men and women and suggests replacing jobs or allotting excess women in a particular occupation to other occupation to bring evenness in the concentration of jobs. On

the other hand, Karmel and Maclachlan index, popularly known as IP index takes into account the redistribution of jobs within the occupation without changing the number of workers. The following figure shows the IP index for Trans-Giri.

Figure 2 shows the IP index for Trans-Giri, and it is highest for Anj Bhoj, which indicates about 31 per cent of women need to change occupations to desegregate certain occupations. In contrast, Shillai shows the lowest percentage of women to change occupation to make evenness in genders' occupational distribution. The lowest value of the index in Shillai is credited to the male households who responded to sharing the collection of firewood and fodder for livestock. The second reason was that most of Shillai population were employed in agriculture. Index values for Anj Bhoj and Rajgarh are pushed by more men in skilled, technical, and other public, private, and formal jobs.

Figure-2
IP (Karmel and Maclachlan Index) in Trans-Giri



Source: Field Survey, 2016-17

4. Conclusions and Policy Implications

Human development is the core reflection of any person's achievements in basic life dimensions measured through three indicators. The outcome can be interpreted as measurable achievements of well-being, which further contributes to individual capabilities. Lacking in these basic human capabilities means hurdles in achieving interlinked, interconnected capabilities and lacking in which seriously impede values to live a well and decent living. Since Human Development is considered core concern of the human achievements, under representation of females in traditional measurement impedes females' inclusion in mainstream. As per societal set up in India, the measurement of female accomplishments should be seen in the light of prevailing socio-economic

condition. When females' achievements measured under these indicators separately, they appear much behind than man. Traditional indices of human development underrepresented females and take a crude version of human life in terms of health, knowledge, and standard of living.

The lowest component of the HDI score is contributed by income index in all regions. Field evidence rectifies underreported income from agriculture and from other sources.

- As females are traditionally patriarchal societies are deterred from land holding and from their rights on other tangible assets in their maternal and in-laws home and a majority of females engaged in unpaid domestic and agriculture work, the income they claim is significantly less and often remain dependent on males income. Financial powers of households usually stay with the male breadwinner, and females often are not consulted in this matter.
- The lower values of the Human Development Index for women in all indicators can be attributed to the stereotypes in society that females' education and their income are not incurred to their paternal home. Therefore, they are considered a liability.
- Unavailability of schools near the villages makes households uneasy to send their daughters to far away from home for study purposes. The second reason for lower literacy among women is that traditionally females are seen as to be mastered in domestic work, so besides their formal schooling, they also perform domestic work. The prevalent belief among households that daughters must perfect in domestic work.
- The reason for lower women in the higher study is their matrimonial liability on parents, distance, and domestic work perfection.
- Segregation indices indicated towards concentration of women and men in particular jobs and prevalent stereotypes of society about employment choice by gender. Reallocating occupations more evenly among genders has tremendous potential of addition in state and national domestic income and household's improvement in the standard of living.

Finally, it can be concluded that there is a loss in human development throughout the intra region, presenting regional inequalities in Trans-Giri and an overall loss in Human Development Index. The lower value in HDI is carried by the lowest index values of income index. For gender also since patriarchal society prevails in Trans-Giri, most women in these areas are subjected to unpaid domestic and agriculture work. This domestic engagement of women results in meagre economic resources and restricts access to other economic amenities such as credit access. Study shows that about 54 per cent of women need to change

accomplishments should be seen in the light of prevailing socio-economic condition. When females' achievements measured under these indicators separately, they appear much behind than man. Traditional indices of human development underrepresented females and take a crude version of human life in terms of health, knowledge, and standard of living.

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their occupations for equivalence with their male counterparts. However, it is observed from the field evidence that state interference in ensuring gender equality results in improvement of women participation. The reservation for women in local bodies' management represents women voices nominally.

Endnotes

ⁱ. The main purpose of this index to measure the extent to which women's position is better or worse than men. When $RSW < 1$ women are discriminated against, when $RSW > 1$ men are discriminated against and $RSW = 1$ reflects gender equality. The RSW has the great advantage of being conceptually simple: it just computes the arithmetic mean of the relative gender gap. As such it was used the present study it has also been used in the academic and policy literature.

ⁱⁱ. The Duncan Segregation Index is basically a measure of occupational segregation based on gender that measures whether there is a larger than expected presence of one gender over another in a given occupation or labor force by identifying the percentage of employed women (or men) who would have to change occupations for the occupational distribution of men and women to be equal. A Duncan Segregation Index value of 0 occurs when the share of women in every occupation is the same as women's share of employment as a whole. In other words, 0 indicates perfect gender integration within the workforce, while a value of 1 indicates complete gender segregation within the workforce.

In 1955, Otis Dudley Duncan, a professor at the University of Chicago at the time and Beverly Duncan published "A Methodological Analysis of Segregation Indices," in the *American Sociological Review*. The Article investigated many different potential measurements of segregation and concluded that the Index of Dissimilarity, also known as the Duncan Segregation Index, was the best measure of occupational segregation. The Duncan Segregation index of dissimilarity was the easiest measure of segregation to calculate (Duncan and Duncan, 1955).

The distribution of different jobs on the bases of gender, race and other ethnic forms also measured through the use of the Segregation Index. The index attempts to review whether there is a "larger" than expected presence of a certain group in any given job category. In the general form of "Duncan Segregation Index" M and F could represent any other two groups, and the general form is expressed as follows:

$$\frac{1}{2} \left(\frac{m^1}{m} + \frac{m^2}{m} + \dots + \frac{m^n}{m^n} \right)$$

References

Alkire, Sabina. (2002). Dimensions of Human Development, Pergamon, Elsevier Science Ltd., Vol. 30, No. 2, pp 181-205, retrieved from https://www.unicef.org/socialpolicy/files/Dimensions_of_Human_Development.pdf

- Anand Sudhir and Amartya Sen. (1997). Concepts of Human Development and Poverty: A Multidimensional Perspective, Human Development Progress, UNDP.
- Basu Kaushik. (2006). Gender and Say: A Model of Household Behaviour With Endogenously Determined Balance Of Power, *The Economic Journal*, Royal Economic Society, pp. 558-580.
- Chant, S. (2006). Re-thinking the "feminisation of poverty" aggregate gender indices, *Journal of Human Development*, No. 7 (2), pp. 201-220.
- Deaton Angus. (2015). Consumption, Poverty and Welfare, Kungl. Vetenskaps Akademien, The Royal Swedish Academy of Sciences.
- Department of Economics and Statistics. (2018). Women Unpaid Economic Contribution in Himachal Pradesh, Government of Himachal Pradesh.
- Dijkstra Geske and Hammer. (2000). Measuring Socio-economic Gender Inequality: Towards an Alternative to the UNDP Gender-Related Development Index, *Feminist Economics*, Institute of Social Studies, Netherlands.
- Dreze and Sen. (1999). Indian Economic Development and Social Opportunity, Oxford Univ. Press, New Delhi.
- Duncan, Otis Dudley and Duncan. (1955). A Methodological Analysis of Segregation Indexes, *American Sociological Review*. Vol. 20, No. 2, pp. 210–217. Article accessed on 20/5/2018 from [JSTOR](https://www.jstor.org/stable/2086841).
- Forsythe Nancy *et al.* (2003). Gender inequalities, economic growth and economic reform: A preliminary longitudinal evaluation, Employment Paper, No. 45. International Labour Office Geneva. Article retrieved from: http://ilo.org/wcmsp5/groups/public/@ed_emp/documents/publication/wcms_115121.pdf.
- Gaye Amie *et.al.* (2010). Measuring Key Disparities in Human Development: The Gender Inequality Index, Human Development Research Paper, No. 46. Article retrieved from: http://hdr.undp.org/sites/default/files/hdrp_2010_46.pdf
- Jager Ulrike and Anja Rohwer. (2009). Women's Empowerment: Gender-Related Indices As A Guide for Policy, DICE Report No. 4.
- Kapteyn Arie. (1985). Utility and Economics, *De Economist* 133, NR.1.
- Klasen, Stephan. (2017). UNDP's gender-related measures: Current problems and proposals for fixing them, Courant Research Centre: Poverty, Equity and Growth - Discussion Papers, No. 220, Courant Research Centre Poverty, Equity and Growth, Göttingen, article retrieved on 4th May 2018 from: <https://www.econstor.eu/bitstream/10419/157265/1/882698184.pdf>.
- Marshall Alfred. (1920). Principles of Economics (8th ed.), Palgrave Macmillan, New York.
- Mises Von Ludwig. (1998). Human Action: A Treatise on Economics (The Scholar's Edition), Ludwig Von Mises Institute, Alabama.

Nussbaum C. Martha. (2000). Women and Human Development, Cambridge University Press, Chicago.

_____. (2000). Women's Capabilities and Social Justice, Journal of Human Development, Vol. 1 No.2. pp. 219-247.

Nussbaum C. Martha. (2011). Creating Capabilities: The Human Development Approach, Harvard University Press, USA.

Palumbo Michael et al. (2002). On the Relationships Between Real Consumption, Income, and Wealth, Federal Reserve Bank. Article retrieved from <https://www.federalreserve.gov/pubs/feds/2002/200238/200238pap.pdf>

Ranis Gustav. (2004). Human Development and Economic Growth, Center Discussion Paper No. 887, Economic Growth Center, Yale University.

Schumpeter. (2012). The Mommy Track: the real reason more women don't rise to the top of companies, The Economist.

Sen Amartya. (2001). Development as Freedom, Oxford Publication, New Delhi.

_____. (1999). Commodities and Capabilities, Oxford University Press, Delhi.

_____. (2000). A Decade of Human Development, Journal of Human Development, Vol. 1, No. 1, pp. 17-23.

_____. (2001). Many Faces of Gender Inequality, Frontline, Vol. 18, No. 12, pp. 1-14.

Seth Suman and Antonio Villar. (2017). Measuring Human Development and Human Deprivations, OPHI, Working Paper No. 110, retrieved from, <https://www.ophi.org.uk/wp-content/uploads/OPHIWP110.pdf>

Stanton Elizabeth. (2007). The Human Development Index: A History, Political Economy Research Institute, Working Paper Series No. 127 University of Massachusetts, Amherst, downloaded on 4th May 2018 from: https://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1101&context=peri_workingpapers.

UNDP. (1995). Human Development Report 1995, New York, Oxford University Press.

_____. (2010). Human Development in India: Analysis to Action, UNDP, retrieved from, http://planningcommission.nic.in/sectors/hdbi/rep_analysis.pdf.

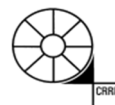
_____. (2010). Human Development: Definitions, Critiques, and Concepts, Background paper for 2010 Human Development Index, OPHI Working Paper No. 36. Retrieved from https://www.ophi.org.uk/wp-content/uploads/OPHI_WP36.pdf

_____. (2015). Gender Equality in Human Development: Measurement Revisited, Human Development Report Office, Issue Paper, retrieved from http://hdr.undp.org/sites/default/files/hdro_issue_paper_on_gender_indices_with_cover.pdf

Vepa Swarna. (2007). Gender Equity & Human Development, Indian J Med Res 126, pp 328-340.

Wicksell Knut. (1954). Value Capital and Rent, George Allen and Unwin Ltd., London.

World Economic Forum. (2018). The Global Gender Gap Report 2018, World Economic Forum



HORTICULTURAL DEVELOPMENT IN THE HILLS: PARADOXES OF APPLE GROWTH IN HIMACHAL PRADESH

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Abstract: The horticultural cash crop production and apple cultivation in Himachal Pradesh may have changed and transformed its identity from a pre-modern agricultural producing state to a horticultural state and increased the per capita income and GDP of the state and given it the recognition as apple state but has also generated many new complexities for the state to continue these processes in a similar way, following the same direction. Horticultural commercialization has grown as an alternative and an extended form of capitalist development. It has brought certain changes in terms of the primitive land use pattern, shifting it from traditionally sustainable agriculture to modern commercial horticultural cash crops production. Interestingly changes in the land use pattern have been entwined with encroachment issues in the state. This paper explores the paradoxes that emerged in horticultural development, especially in the cultivation and production of apple in Himachal Pradesh. Paper also throws light on how after the eviction of encroachments order, the apple production in Himachal Pradesh has been affected. Political parties' role in patronizing problems such as encroachments is also the paper's focus.

Keywords: horticulture, cash crops, paradox, development, commercialisation, encroachments.

Introduction

In the last few years, the country's horticulture sector has witnessed a noticeable boom. Causing a natural interplay between all the three sectors of the economy from the means of production point of view, this sector is seen as a growth driver for agriculture as a whole. It is growing with a compound annual growth rate of 2.6

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per cent nationally, which is double the annual growth in food grain output; even in the financial year 2017-18, horticultural crops surpassed the production than that of food grains. This increasing share of the sector in the total agricultural output needs to be looked at because horticulture has moved from rural confines to a commercial venture. Here it is worth mentioning that horticulture encompasses a wide range of crops, including fruits, vegetables, spices, plantation crops and flowers. Western Himalayan hilly regions, including Jammu & Kashmir, Himachal Pradesh and Uttarakhand, have been known for producing horticultural cash crops. The major reason for this productive characteristic is the suitability of the region's geo-topographical and agro-climatic conditions.

Historically, being primarily agricultural, in nature and character, these regions have shifted to the new identity of being 'horticultural states', mainly after the British establishments. British had experimented successfully with the cash crop productions here, apple being one major. In this regard, Satyanand Stokes' mention is unavoidable, who had introduced apple production in Himachal Pradesh. Today, Himachali apple contributes a larger share in the national horticultural production and the states GDP. The encouraging rise in horticultural crops in the given regions, more specifically in apple production, unfolds many explanations and some unanswered questions. Needless to say, that effort of the central and state governments, along with drawing support from international organisations to promote horticulture, is one of the factors behind this significant growth. Another important reason for the increasing growth of horticultural cash crops in the region and the paper's main argument is the lack of an alternative to industrial development other than horticulture which has become a part of capitalist commercialisation.

The geo-topographical barriers have given a push to this development in the region. Jammu & Kashmir and Himachal Pradesh are the largest apple producers in India. Himachal is in the second position after Jammu & Kashmir (Panwar, 2011). Other than apple, many other cash crops have also been produced on a large scale, but apple is the dominantly produced crop in these regions. In the case of Himachal, one-third of the population depends on the 4000-crore apple economy. It has become an important part of the state's gross domestic product. Where horticultural development (other than the tourism sector, which is also a strength of these regions) has provided an alternative development model for these regions, it carries its paradoxes too. Large scale deforestation has taken place due to encroachments for growing apple trees. Deforestation has also been done by governmental agencies to construct roads in the regions to enhance the connectivity and strengthen the seamless supply chain arising out of the development requirements from the horticultural and tourism sectors. This mess of developmental activities in the regions has seriously impacted Western Himalaya's ecology. Construction of multi-lane roads has increased landslides and acute debris problems amidst the ongoing construction activities; repair of the hilly roads,

especially on slopes, has turned quite worrisome, as the debris disposal in a sustainable manner hills, is still an area to be re-attended. Demands for more connectivity, speedy channels of supply have increased after commercialising horticultural crops, especially apple.

This paper explores these horticulture developmental paradoxes, especially in the apple belt of Himachal Pradesh. The author will focus on three research questions- first, how the horticultural cash crops cultivation in Himachal Pradesh has changed the land use pattern from agriculture to horticultural cash crops, especially for apple production? Second, after the eviction of the encroachments order, which has been mostly done for apple cultivation, the state's apple production has got affected? Third, how this rise of horticultural output appears to be coupled with some irreparable ecological and social harms? Simultaneously the author will also identify the problems of governability responsible for these development-related problems in the state.

Methodology and Sources of Data Collection

This article is mainly based on the reports and data collected from Government departments. Specific areas have been selected to know the extent of encroachments for apple growth and the impact of eviction orders on apple production in these. For the data related to the increased land use pattern for horticulture and apple growth, increased apple production and decline in the production after the encroachment eviction orders passed by The High Court of Himachal Pradesh in 2016, authors have studied various statistical reports published by the Forest Department, Economic and Statistics Department and Horticulture Department of Himachal Pradesh. Authors have also visited these departments to collect data that was not available in the reports and yearly books of these departments and collected from informal sources like unpublished papers. These departments' annual reports helped the researchers build arguments strong and authentic statistically. Existing literature on ecology, horticultural and agricultural sustainability also helped sharpen the region's understanding.

The Rationale of Horticultural Development

Historically the western Himalayan regions were dominantly agricultural economies, the reason being the geo-topographical environmental conditions. Other than this, the introduction and penetration of modern style agriculture and cash crops were not available to these rural un-modern societies. As mentioned before, horticultural footprints in the state draw a British influence, which had introduced apple in the region and gradually changed the hilly terrain's perception and prospects to produce traditional crops.

After independence, when the Indian state chose to design its developmental path on the capitalist-industrial model, a tussle-some situation arose parallel (though remained less discussed in the mainstream discourse) that how the

hilly regions like western Himalayan can produce surplus capital necessary for the success of capitalist-industrial ideology. Where traditional agriculture was found as a pre-modern productive system and insufficient to fulfil the needs and demands of a growing population in the influence of capitalist socialisation, horticulture became the solution for these regions. However, agriculture has not been avoided but given less preference in search of rapid growth. A large proportion of the population still performs agricultural activities but finds more commercial benefits in producing cash crops. A shift towards horticulture as a new developmental alternative is observable in the hill states, including Himachal Pradesh. Horticulture has emerged as an industry that filled the gap of development in the hills. It is not only satiating the demand of the market but also employs people living in the village, which is more profitable than agriculture. Despite less hard work, horticulture ensures more income than agriculture. Thus, in the competitive market era, the people of Himachal Pradesh are emphasising horticulture for their financial security.

This new developmental alternative has increased the people of this region's per capita income and states' GDP but has given birth to many environmental problems (see also Ives and Messerli, 1989). The large forests and organic agriculture have maintained the region's ecological balance, which has been disturbed after introducing cash crops. New kinds of chemical fertilisers, pesticides, insecticides, and chemical sprays have been introduced for commercialisation. According to Rinki Sarkar (1998) "the reason for doing only agriculture is because it is risk reducing and resource conserving technique". Horticulture in itself can be the reason for putting the adverse effect on soil. Apple trees can suppress other plants by releasing toxic substances from living parts or dead plant tissues during their decomposition (Bres & Politycka, 2016). Where crops like Beas and Beans help make the soil more productive, horticultural trees negatively affect soil productivity.

Apart from that, the hilly-mountainous terrains of western Himalaya, due to their geo-morphological situations, are more susceptible to landslides, earthquakes and many other problems. The drastic change in these hilly regions' climate is apparent, which is inevitable for those living there. Particularly apple growers have observed changes like snowfall reduction, abrupt rain patterns, change in temperature etc. (Sen, Rana, Chauhan & Aditya, 2012). Although some phenomenon like hailstorms and cloudbursts are not new to these areas, such incidences have become more adverse and resulting in more loss. Suppose the balance got disturbed due to large scale deforestation, heavy road constructions and increasing debris in steep slopes of hills and mountains. In that case, it can invite uncalled environmental disasters in times to come, bringing peculiar Himalayan ecology and its promising health indicators to its verge.

Though the transition from 'traditional agriculture', which was sustainable character-wise to 'profit-making business', or in other words, shifting to more and

more cash crops-based cultivation-wherein horticulture came up, one prominent part of this shift-all has never been so smooth in the given context. Putting it otherwise, it is not the case out-rightly that ecological consciousness against the developmental activities has remained missing in the given region. Environmental movements in Himachal and its surrounding states attest to the fact. Chipko movement in Garwal Kumaun hills of Uttarakhand was a movement that emerged against tree cutting for commercial purposes and became a path-breaking experience for the region's environmental consciousness (Guha and Gadgil, 1994; Gadgil and Guha, 1995). In Himachal Pradesh, the movement led by Kinkri Devi of Sirmaur district against mining has a similar implication for which she was awarded by the prime minister Atal Bihari Vajpayee (Vinayak, 1996, January 15).

Besides all this, another significant yet often ignored aspect is the relation between crop and culture. Cultivation practices involved in traditional cropping and horticultural cropping vary. What Marx called relations of production is particular practices coupled with particular relationships which impact society's overall superstructure. Thus, 'crops' being produced are more than 'need' and 'technique' only (Hahn and Saraiva et. al., 2014).

Apple Cultivation in Himachal Pradesh

Topographically, Himachal has been divided into three distinct regions- the Lower Himalaya (also known as the Shivalik) with altitude up to 1,500 mts; Middle Himalaya between 1,500 to 3,000 mts altitude and the Greater Himalaya more than 3,000 mt altitudes. The middle and parts of greater Himalaya are mainly the big producers of apple. Conventionally Himachal was also an agricultural state (Alam, 2008). As explained in the preceding part, its identity as a horticultural state has some colonial impressions. The introduction of apple in the state is also credited to British influence.

For a long time, apple production was limited only to Kinnaur, Shimla and Kullu districts in the middle Himalayas- but now it has been extended to other hilly districts of Mandi, Chamba, and Lahul & Spiti. With the revolution in apple production in these districts, horticultural cash crops other than apple have taken up the pace in the lower districts of Kangra, Hamirpur, Bilaspur and Una of Himachal Pradesh. These lower districts mainly grow citrus fruits like lemon, orange etc. This process has pushed agricultural activities to a secondary position, and cash crops, mostly apple production, got priority. Now horticulture has become a significant contributor in setting up the economic profile of Himachal Pradesh (Table 1).

Table 1 indicates horticulture's contribution to the state's GDP has always remained high. Within horticulture, the proportion of apple contribution has remained relatively larger than other cash crops. Shimla, the largest producer of apples, shows a decline after 2016. A possible explanation is implicit in the High

Court intervention in the land encroachments, an order issued in 2016, discussed in the following paragraph.

Table-1
Year-wise Contribution of Horticulture, Apple and Other Fruits in GDP of Himachal Pradesh

Years	Horticulture (%age)	Apple (%age)	Other Fruits (%age)
2007-8	4.4	3.7	0.6
2008-9	3.3	2.7	0.6
2009-10	3	2.3	0.7
2010-11	4.4	3.8	0.6
2011-12	2.3	1.8	0.5
2012-13	3.8	3	0.8
2013-14	3.9	3.4	0.6
2014-15	3.4	2.9	0.5
2015-16	3.1	2.5	0.6
2016-17	2.3	1.6	0.6
2017-18	2.3	1.8	0.5

Source: Data collected from the Economic and Statistical Dept. of Himachal Pradesh and compiled by the authors.

There is no doubt that the share of horticulture has increased in the state's GDP over the years, and Himachal has been awarded as best horticulture state quite recently. Still, in the last few years, the quest for earning more profit out of apples has led to illegal encroachments in the state. To en-cash more commercial benefits out of production, people have converted their agricultural land to grow fruits like apple, but they are also taking illegal ways. This is worth considering as it features a cultural shift with respect to the state and poses a challenge for the state agencies (Table 2). Finally, the High Court had to intervene in the matter in 2016. Many apple tracts were declared illegal, followed by eviction. Thus, horticultural production has changed the land use pattern in the state.

Table-2
Land under Agriculture and Horticulture Sectors from 1970 to 2018 in Himachal Pradesh

Years	Agricultural land under Major Crops* (in Hect.)	Horticultural land (in Hect.)	Land under Apple (in Hect.)
1970-71	836100	44329	26735
1980-81	856600	92467	43356
1990-91	871600	163330	62828
2000-20	814600	212951	88673
2010-11	794760	211295	101485
2017-18	786930	230852	112634

Source: Data collected from the Economic and Statistical Dept. of Himachal Pradesh and compiled by the authors.

Note: * Major crops include- Rice, Maize, Wheat, Barley, Pulses, Ragi and Common Millets.

Data in Table-2 shows how the land use for horticultural cash crops, fruit crops, especially apple, has been increased tremendously compared to the land use for agricultural purposes. In 1970-71, the agricultural land under major crops was

8,36,100 hectares, whereas horticultural land consisted of 44,329 hectares. Interestingly, the land for agricultural activities reduced to 5.88 per cent in 2018, but the land for horticulture increased 420.77 per cent in 2018, which indicates that with time the importance of horticulture in this small hilly state has increased tremendously. Even in horticulture, the land share under apple cultivation remained larger than other horticultural crops. In 1970, the share of land under apple in horticultural land was 60.31 per cent. Although the share of land under apple in horticultural land remained 48.79 per cent in 2018, it is still more significant than other horticultural crops. With increasing the land for horticulture cultivation, the production, especially of apple, has grown tremendously (Table-3).

Table-3
Decade-wise Production of Major Agricultural Crops, Horticulture and Apple Fruits in Himachal Pradesh since 1970

Years	Major Crops* Production (M.T.)	Total Fruits Production (M.T.)	Apple Production (M.T)
1970-71	954500	148600	103100
1980-81	1157400	139800	118000
1990-91	1433300	386300	342100
2000-2001	1112100	428030	376700
2010-11	1420410	1027800	892100
2017-18	1645350	565307	446574

Source: Data collected from the Dept. of Agri. and Horticulture, Himachal Pradesh and compiled by the authors.

Note: * Major crops include- Rice, Maize, Wheat, Barley, Pulses, Ragi and Common Millets.

In 1970-71, the agricultural production was 9,54,500 MT and increased to 1645350 MT in 2017-18, which shows a growth of more than 58 per cent. Horticultural production also increased from 1,48,600 MT to 5,65,307 MT from 1970-71 to 2017-18. Besides, the share of apple production was 69.38 per cent in 1970-71, which increased to 78.99 per cent in 2017-18. Noticeably, the land share of apple under horticultural land decreased 11.52 per cent, but apple production increased to 9.61 per cent from 1970-71 to 2017-18. This indicates that the land has not increased with the revolution in horticulture tools and techniques, but the production has increased with new chemical fertilisers, pesticides, and insecticides.

Apple is a fruit crop produced in Himachal Pradesh, but it's enhanced, and tremendous growth has prioritized it over other fruits and horticultural crops. The revolution in its growth and production occurred mainly after the 1970s because of awareness among people regarding the increased profit. This awareness increased apple growth and production in the 'apple belt' of Himachal Pradesh and spread it in the non-apple belt or districts with new varieties of apple plants (Table 4). At present, nine out of twelve districts produce apples in Himachal Pradesh. Among these districts, Shimla, Mandi, Kullu and Kinnaur are the largest producers of apple and constitute the 'Apple Belt', and the rest of the districts are known as the non-apple belt.

Table-4
Decade and District-wise Production of Apple and Other Fruits
in Himachal Pradesh since 1980

Districts	Apple/Other Fruits	Decade-wise Production of Apple and Other Fruits (in MT)				
		1980-81	1990-91	2000-2001	2010-2011	2017-2018
Shimla	Apple	73521	243042	274056	602684	251897
	Other Fruits	1323	1551	2216	12837	3617
	Total	74844	244593	276272	615521	255514
Mandi	Apple	4190	15359	16612	22315	42078
	Other Fruits	2436	4560	4328	7609	7311
	Total	6626	19919	20940	29924	49389
Kullu	Apple	29058	70857	58926	191212	78948
	Other Fruits	3342	4799	11933	26193	17318
	Total	32400	75656	70859	217405	96266
Kinnaur	Apple	7151	9159	21793	63781	52189
	Other Fruits	661	604	637	392	680
	Total	7812	9763	22430	64173	52869
Chamba	Apple	1736	2661	4480	10789	18959
	Other Fruits	700	859	1040	2083	2326
	Total	2436	3520	5520	12872	21285
Bilaspur	Apple	----	---	---	1	6
	Other Fruits	1261	1499	1770	2066	1773
	Total	1261	1499	1770	2067	1779
Solan	Apple	504	70	99	38	15
	Other Fruits	2559	3200	3126	6024	8341
	Total	3063	3270	3225	6062	8356
Sirmour	Apple	1159	474	362	673	1896
	Other Fruits	2920	4506	4942	15677	16460
	Total	4079	4980	5304	16350	18356
Kangra	Apple	694	422	295	425	285
	Other Fruits	5106	16847	15943	46504	35792
	Total	5800	17269	16238	46929	36077
Una	Apple	---	---	---	---	---
	Other Fruits	925	4706	4225	12009	22186
	Total	925	4706	4225	12009	22186
Hamirpur	Apple	---	---	---	---	1
	Other	582	1103	2135	4297	2891
	Total	582	1103	2135	4297	2892
L&S	Apple	---	27	113	194	300
	Other	---	9	18	18	38
	Total	---	36	131	212	338

Source: Data collected from the Department of Horticulture, Himachal Pradesh and compiled by the authors.

Table-4 shows the year-wise and decade wise contribution of apple production and other fruits production in Himachal Pradesh. District Shimla is the largest apple producer since 1980-81. In 1980-81, district Shimla produced 73521 MT, which increased to 2,51,897 MT in 2017-18, which shows a growth of 29.19 percent. Other than district Shimla, districts like Kinnaur (13.70%), Kullu (36.81%), and Mandi (9.95%) have also shown growth in apple production. This table also shows that during 1980-81, Hamirpur, Lahaul & Spiti and Bilaspur

districts had not produced any apple, but in 2017-18, these districts are also started to produce the apple. This shows the demand and importance of apple production as a cash crop. Although other fruits are grown in many districts, apple is the dominant cash crop.

From the above analysis, it can be concluded that the people of Himachal Pradesh are focusing more on horticultural cash crops cultivation than agriculture, which reflects a change in their economic perception and cultural moorings. As crops and related cultivation practices have a particular cultural aspect, this shift needs a re-look from this perspective too. Many traditional crops having high medicinal and nutritional value are getting out of the scene. Moreover, before the prevalence of horticulture, people used to grow various crops that fulfilled the medicinal and nutritional need. But the shift from agriculture to horticulture posed a challenge to this aspect of the cultivation of crops. The fields which could be seen full of different types of crops are now filled with only apple trees. Since people only grow apple, they rely on the market to buy everything else. Besides this, it is interesting to note that now imported planting material in the apple industry is being used to encourage high-density plantations as they are said to be climate-change resilient. How sustainable cultivation practice would prove to be, is again missing from the mainstream discourse, which is pathetic. Lessons drawn from India's Green Revolution inspire a precautionary policy stance. Ignoring these lessons may result in irreparable damage to the environment and ecology, contributing to maintaining the state's natural cycles beneficial for its productive capacities. Increasing productivity is a need of the hour but sustaining it for the long run is more important.

Paradoxes of Apple Growth in Himachal Pradesh

Apple cultivation in Himachal Pradesh became an alternative to capitalist industrialisation, but the influence of this capitalist-industrial ideology in terms of commercialisation has increased the greed among people. So, they are pursuing apple cultivation carelessly without recognising its ill impact on the environment of the state and Himalayas (Singh, 1989). The introduction of various chemical fertilisers, pesticides, insecticides, and different chemical sprays has badly impacted the natural environment and original productive capacity for commercial exchange. The excessive use of fertilisers and pesticides has resulted in soil degradation, leading to drop in output (Chauhan, 2013, February 14). State agencies have also neglected the problems related to its commercialisation in its initial phase, and a free hand has been given to its cultivation.

It is interesting to note that though the 'Niti Aayog' had set up five working groups in June 2017 to prepare a roadmap for actions in five thematic areas, broadly focusing on saving the Himalayan ecology and bio cultural diversity, it fails to sense the nexus between unsustainable horticultural entrepreneurship and growing ecological and biological crisis. Tikender Panwar's

research on the correlation between rising cancer patients in the Theog region of Shimla District and high use of pesticides in the horticulture sector is worth considering (Panwar, 2019, November 5).

Where apple cultivation in Himachal Pradesh provided it with a distinct identity by increasing per capita income and contributing to the state's GDP, it has also given birth to the problems like deforestation and encroachments (Table 5). The high mountainous areas, which used to be full of dense forests, are filled with expansive orchards. The desire for increasing apple production has made the people so blind that they are cutting forests rapidly without even knowing its inverse effect on production. The people's foremost concern in increasing their orchards is to seize more and more land, which results in rapid and drastic deforestation.

Table-5
Circle wise Encroachment in Himachal Pradesh from 2008 to 2015

Name of Circle	Total Encroachment from 2008 to 2015
Bilaspur	205.73
Chamba	39.32
Hamirpur	149.31
Kullu	1356.16
Mandi	495.83
Rampur	1892.81
Shimla	3124.66
Dharmshala	3654.39
Nahan	982.55
Total	11900.76

Source: Data collected from Forest Department, Himachal Pradesh and compiled by the authors.

Table-6
Circle wise Encroachments in 'Apple Belt' (2008 to 2015)

Years	Circle-wise Encroachments in 'Apple Belt'-2008 to 2015 (Hect)				Total
	Shimla	Kullu	Rampur	Mandi	
2008	261.61	114.46	243.82	20.46	640.53
2009	272.29	109.71	247.85	16.73	446.58
2010	374.92	110.28	249.15	11.09	745.44
2011	402.18	153.13	249.68	7.00	811.99
2012	430.70	151.83	224.87	12.38	819.78
2013	348.34	127.88	243.07	13.53	732.82
2014	507.76	180.83	216.94	205.64	1111.17
2015	526.86	408.04	217.43	209.00	1361.33
Total	3124.66	1356.16	1892.81	495.83	6869.46

Source: Data collected from the Forest Department, Himachal Pradesh and compiled by the authors.

The High Court Verdict for the eviction of encroachments in 2016 highlighted the severity of this problem and got the attention of policymakers, political commentators and general masses. However, it must be emphasised that the encroachments in Himachal Pradesh are not only related to apple cultivation but it is a general practice. But as it has been done to grow apple trees in the

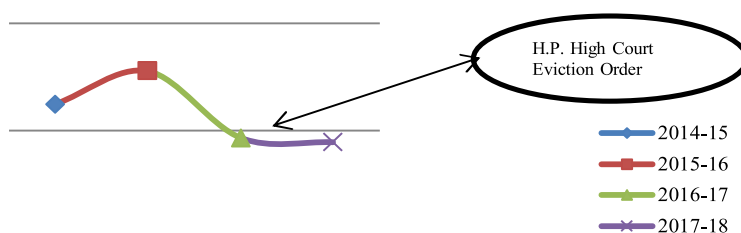
districts like Shimla, Kullu, Kinnaur and Mandi, it has not done for other agriculture and horticultural cash crops' cultivation (Table-6).

Data in the table is indicative of the fact that how much encroachments have been done in apple belt districts? Maximum of the encroachments have been done in these districts, which also have the highest production rate in the field. In Shimla district, from 2008 to 2015, encroachments have been increased by 49.65 per cent. In Kullu, 28.05 per cent and Mandi, these have been 9.80 per cent. In total encroachments from 2008 to 2015, district Shimla's share is high, i.e., 45.49 per cent. The Table also shows how with the increased production of apple, the extent of encroachments has also been increased in the state.

The increasing apple cultivation has also increased the hiatus among its cultivators, giving birth to jealousy towards each other. This problem further led to local conflicts, and one such conflict regarding encroachments ultimately reached to state's High Court in 2008. Its High Court verdict regarding the case finally came out in 2016, and the order has been passed to the eviction of illegal encroachments from governmental lands. This decision has highlighted how many encroachments have been done by the apple cultivators and the maximum of which has emerged in Shimla District. Although this has sorted out the problem (not yet completely) of encroachments, it has also highlighted its paradox.

On the one hand, this decision can stop further deforestation and release forest land, which has been seized illegally. Still, on the other, the state is facing difficulty bearing its decision's economic cost. Soon, after the court's order was implemented, many apple trees were cut down, and the big-big orchards were turned into woodpiles. These orchards were contributors to the state's GDP. As these orchards were selected and few, the consequences were not very visible and adverse. But if the eviction is fully implemented, then the rate of apple production can drastically reduce, impacting the per capita income of its population and the state's GDP. Figure 1 indicates how much the evictions have impacted apple production (Figure-1).

Figure-1
Pattern of Apple Production: before and after HP High Court's Eviction order (2016)



Source: Data collected from the Economic and Statistical Department and Department of Horticulture of Himachal Pradesh and compiled by the authors.

Figure 1 indicates that in the 2015-16 (Himachal Pradesh High Court Eviction Order, 2016), apple production was 7,77,126 MT which reduces to 4,46,574 MT in 2017-18, indicating a reduction of 42.53 per cent. It is important to note here that the reduction in apple production is due to the High Court's eviction orders and other factors like weather conditions (changes in rainfall and snowfall patterns) and seasonal output variabilities linked to other environmental factors. This is evident from the apple production output before the High Court eviction order. The paradox that erupted after evictions of encroachments order caused permanent problems in this sector. After evictions, apple production cannot be revised as it is in other seasonal and (environmental) weather problems that caused a decline in apple production before eviction orders. Before the orders of 2016, apple production declined massively. Still, the emphasis is on how the eviction process further contributed to reducing apple production output and other related impacts, which is a permanent problem and paradox. The Eviction order has been opposed from many fronts, especially from political circles and lobbies, but judicial order has been carried out. Although loopholes have been identified in the order's implementation, the paradoxes that came to light became a serious question. Where one side, problems like encroachments have given birth to the region's environmental problems and ecological health. On the other side, this late consciousness of the state authorities regarding the problem is also impacting the production and growth in this sector.

These paradoxes have highlighted the ongoing dilemma regarding developmental problems, which have various environmental and human impacts. If the same pattern of cultivation and production has to be followed, it can severely affect the region's ecology because of chemical fertilisers, pesticides and insecticides, which affect ecological diversity. Also, the emergence and pursuance of deforestation will change the morphology and, eventually, the region's climate, which will impact the production of apple and other crops. The cultivation of horticultural crops, especially apple, has raised the demand for good road facilities, increasing deforestation, encroachments and then evictions. These will disturb the balance in the mountainous and hilly regions, which can cause environmental and human disasters. The role of state and political parties has also remained questionable in these developments in the area. Time and again, these gave promises to legalise the encroachments and also promise the road facilities without a proper vision and only in haste and difference in road spending and the qualities achieved (Wilkinson, 2006). Rinki Sarkar, by drawing upon the studies Owen (1996), Gardener (2000), Saczuk(2001), Petley et al.(2006), has highlighted that how roads in Himalayan regions have been pursued disregarding its geomorphologic constraints (2010: 69). These developments in the area and the state of Himachal Pradesh can symbolise modern developments and indications of upcoming problems. These developments can be related to environmental disasters and disasters in productive systems due to the changed climatic conditions.

Conclusion

The modern developmental path in terms of capitalist-industrial growth adopted by the Indian state after independence has been followed by hilly-mountainous regions of western Himalaya in the form of horticultural commercialisation, which became an extended ideology of capitalist growth due to the infeasibility of typical industrialism in the western Himalayan region especially in the state like Himachal Pradesh. Production of cash crops such as apple gave a profession to Himachal Pradesh's people. Along with that, it gave birth to many developmental paradoxes like deforestation due to encroachments and decline in apple production after the order of these encroachments' eviction. Where apple cultivation became the source of increasing per capita income of the state's population and GDP of the state, it has also caused severe threats to the state and region's environmental and ecological health. If the state will give a free hand for apple cultivation and not take steps in encroachment evictions, it will be beneficial in the short term. However, it will degrade the environment and imbalance the balanced natural conditions of hills. Another side is if the state will take strict action against these illegal developmental activities, it will harm the state's population's immediate interest but will be beneficial for the longer term. The biggest challenge that now emerged for Himachal Pradesh is reconciling this ongoing dilemma of development. Deforestation for making space for orchards, mono-cropping resulting in soil fertility loss, massive use of strong fertilisers, indiscriminate application of pesticides, and heavy water consumption lead to environmental losses improving our economic credentials. The need of the hour is to direct the state's population to organic cultivation of these cash crops' which is difficult after the introduction and awareness about the use of modern capitalist techniques and tools for high growth. The question in this context would be that why compromise speedy and high growth? Now the state has the responsibility to create, initiate and introduce new organic technology and methods of cultivation and production. Horticulture and apple production are characteristic of the state, but their quality should not be compromised for short-term gains. Its productive capacity should not be degraded by using modern production methods. Many suggestions are coming from experts to make horticulture profitable by taking care of its impacts on the ecosystem, one of which is organic farming. According to experts, growing apples organically would not only be profitable in terms of money, but it would also help restore the ecosystem. Organic cultivation and production through local organic methods and technology can sustain its production capacity and quality. There must be an alternative method that can ensure the development of horticulture in an environment-friendly manner so that neither the income of people decrease nor the health of nature compromised.

References

Alam, Aniket (2008). *Becoming India: Western Himalayas under British rule*. Foundation Books Delhi: Cambridge University Press.

- Bres, Wlodzimierz and Barbara Politycka (2016). Contamination of soil and substrates in Horticulture. March 7, Retrieved from, <https://www.intechopen.com/books/soil-contamination-current-consequences-and-further-solutions/contamination-of-soils-and-substrates-in-horticulture>
- Chauhan, Baldev S. (2013). Organic farming in the future of Himachal apples. February 14, Retrieved from, https://www.business-standard.com/article/economy-policy/-organic-farming-is-the-future-for-himachal-apples-106051001055_1.html
- Gadgil, Madhav and Ramachandra Guha (1995). *Ecology and equity: The use and abuse of nature in contemporary India*. New Delhi: Penguin Books.
- Gardener, J.S. (2000). Natural hazard risk in Kullu district: Himachal Pradesh, India. *Geographical Review*, Vol. 92, No. 2, pp 282-306.
- Guha, Ramachandra and Madhav Gadgil (1994). *Ecological conflict and environmental movement in India*. New Delhi: Development and Change.
- Ives, Jack D. and Bruno Messerli (1989). *The himalayan dilemma: Reconciling development and conservation*. New York USA: Rutledge.
- Owen, L. (1996). High roads high risks. *The Geographical Magazine*, January, pp. 12-15.
- Panwar, Tikender Singh (2011). Apple production in Himachal Pradesh: An impending crisis? *Economic & Political Weekly*, Vol. 46, No. 25, pp. 10-12.
- _____ (2019). HP witnessing transformation of a different kind. November 5, Retrieved from, <https://www.newsclick.in/Himachal-Pradesh-Rise-in-Cancer-Patients-Synthetic-Pesticides>
- Petley, D. A., G.J. Hearn, A. Hart, N.J. Rosser, S.A. Dunning, K. Owen, W. A. Mitchell (2006). Trends in landslide occurrence in Nepal. *Natural Hazards*, November.
- Saczuk, E.A. (2001). Has the Kullu district experienced an increase in natural hazard activity over the past 27 years? A case study in risk and land use cover change. *GIS Development*, Vol. 5, No. 10, pp. 34-44.
- Sarkar, Rinki (1998). Understanding sustainability: Study of a hill settlement. *Economic & Political Weekly*, Vol. XXXIII, No 34, pp. 2800-2806.
- _____ (2010). Rural accessibility and development: Sustainability concerns in an ecologically fragile mountain belt. *Economic & Political Weekly*. Vol. XLV, No. 21, pp. 63-71.
- Sen, Vijayshri et al. (2015). Impact of climate variability on apple production and diversity in Kullu valley, Himachal Pradesh. *Indian Journal of Horticulture*, Vol. 72. No.1, March, pp. 14-20.
- Singh, Vir (1989). *Ecological impact of apple cultivation in the Himalaya*. Delhi: Mittal Publications.
- Vinayak, Ramesh (1996). Kinkridevi takes on limestone quarries in Himachal Pradesh. India Today. January 15, Retrieved from, <https://www.indiatoday.in/magazine/cover-story/story/19960115-kinkri-devi-takes-on-limestone-quarries-in-himachal-pradesh-834795-1996-01-15>
- Wilkinson, S.I. (2006). *The politics of infrastructure spending in India*. University of Chicago: Pick Hall.



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ISLAMIC PREDICAMENTS OF PAKISTANI STATE AND CHALLENGES OF VIOLENT RADICALISM

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Abstract: Islamic predicament of Pakistan stems from the ideological claim on which its creation was sought as a separate state by partitioning the Indian subcontinent. The policy of identification with Islam & Muslims was reinforced by the disadvantages that it found itself in on its emergence in August 1947 in relation to India in terms of size, resources and a history to draw upon. However, its, calling out for a degree of solidarity in the name of Islam was not reciprocated with the similar zeal as most of the Muslim states were guided by their own respective concerns and interests. Dawning of this realism did not completely take away its ideological commitment. Its utility for Pakistan would go up and down in relation to balance of forces within the West Asian region. Some of the significant geopolitical developments since late 1970s in the region around it gave Pakistan an added incentive to make greater use of Islam as an instrument of its regional policy. Gradually in the process its, using radicalism as an extension of its regional policy began to impact its internal society. So much so, in recent years the greatest challenge to the Pakistani nation comes from the radical elements within its own population who invoke Islam to undermine social and political stability of the country. Thus instead of its Islamic commitments being a foreign policy advantage many of the present problems of Pakistan on its internal and external front are borne out of this predicament. It is for this reason that for some time now there are some internal pressures on the Pakistani state to adopt a policy of a course correction.

Pakistan, as we know, was demanded in the name of Islam and ostensibly for the sake of securing the interests of Muslims within the Indian subcontinent.ⁱ The movement for the creation of Pakistan was qualitatively different from the anti-colonial nationalist movements in other former colonies. It signified a withdrawal

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from general anti-British nationalist movement in India in order to create a separate state for Indian Muslims. “Until 1947 no other state with a predominately Muslim or Islamic population had been founded as a homeland for coreligionists. Most such states had an earlier cultural or civilizational identity before they became Muslim.... Pakistan was the product of a classic nationalist movement with a geopolitical vision that sought a protected area where Muslims could live unthreatened lives.”ⁱⁱ Therefore, by the very nature of its creation Islam became an important component of its identity, ideology and a vital factor of its foreign policy ever since its establishment in 1947. In a way Pakistan as a state was born with a commitment to the Muslim cause.ⁱⁱⁱ Its identification with the Muslim concerns and countries was a logical outcome of this policy. This policy of identification was further reinforced by the sense of insecurity that it developed *vis-a-vis* India for a number of subjective and objective factors rooted in the manner and the context in which the two gained independence. India and Pakistan emerged together into independent existence in 1947 along with some serious suspicions towards each other. As compared to India’s larger size, inheriting the centuries’ old recognition, Pakistan, born as a new country, found itself diplomatically in a relative disadvantage. “In the first appraisal of her position among the community of self-governing nations Pakistan could find no single country which could be counted as an unfailing friend and ally willing to lend aid and comfort in time of need”.^{iv} The problem was compounded by the fact that on the very inception Pakistan got itself entangled in a serious dispute on Kashmir with India -with which it otherwise shared a common past.^v In such a situation, Pakistani leadership started identifying itself with the rest of the Muslim countries on the specific common ideological basis of Islam, as it appeared to it that ‘Islam was the only bond of belonging in whose name Pakistan could appeal for other nations support’.^{vi}

Therefore, Pakistan from the early days of its creation, started working for Islamic solidarity with a missionary zeal. It pleaded that all problems facing Muslim world could be solved with greater degree of cohesion and cooperation among Muslim countries. Pakistan, because of its relatively better trained manpower, economic infrastructure, strategic location and size, could expect a leading role for itself within such a grouping and thereby help herself gain a certain leverage regionally. As early as 1949 it seriously campaigned for a congress in which official delegations from Muslim states participated but had no immediate success.^{vii} However, it had success in making Pakistan a hub of pan-Islamic activities that had good response from various Muslim countries and communities at non/semi-official level. Leading members of the Pakistan cabinet and important functionaries of its government took leading role in these initiatives and activities. Only in the second year of its emergence, Pakistan initiated attempts to revive, practically defunct organization, *Mo’tamar al-Alam al-Islami* (World Muslim Congress). It had been founded in Mecca when first of

its session was held on the initiative of King Abdul Aziz Ibn Saud on June 1926, few months after he had declared himself the King of Saudi Arabia.^{viii} The Second Congress had been convened at Jerusalem on 26 July, 1931.^{ix} Since then, the Congress had practically gone to oblivion. After the creation of Pakistan it was reactivated and it started functioning from its newly established permanent headquarters in Karachi. Subsequently, Karachi hosted its session that was attended by delegates from 19 countries but all in their non-official capacities. In the sequence of the *Mo'tamar* conferences, it was the third after Mecca and Jerusalem sessions. The fourth session of the World Islamic Congress, the second after the creation of Pakistan, was also held in Karachi during February 9-11, 1951 with the blessings of the Government of Pakistan. With the exception of the USSR and India, the Congress was attended by delegates from all countries having a significant number of Muslims living as its subjects, including China.^x Pakistan's Prime Minister, Liaqat Ali Khan, inaugurated the Congress by stressing the Islamic basis of Pakistan. He argued:

‘It is, therefore, part of the mission which Pakistan has set before itself to do everything in its power to promote closer fellowship and cooperation between Muslim countries. The world is in sore need of light. I have no doubt that light can be provided by Islam.’^{xi}

As a symbolic gesture to lend greater respectability to Pakistan's effort and emphasise its link with the first two congresses, the Grand Mufti of Jerusalem was made to preside over the Congresses. The Mufti endorsed Liaqat Ali Khan's call for unity and asked for the creation of a Muslim bloc cooperating in matters of culture, economy, politics, and defense.^{xii} Addressing the Congress on its third day, Pakistan's Minister for Industries, Chowdhry Nazir Ahmad, summed up the results of the Congress. While endorsing the call for unity, he added that mere conferences were not enough. These sentiments must be translated into practical achievements, “so that all Muslim countries become part of an integrated whole capable of rendering active service to each other in times of need”.^{xiii}

In addition to the political rhetoric, Pakistan had also initiated attempts to enlist the cooperation of Muslim states in more tangible areas of economy. At the end of 1949, a new semi-official organization, namely International Islamic Economic Conference, was founded on the initiative of Ghulam Mohammad, the then Finance Minister of Pakistan. The organization held its first session in November 1949 at Karachi. Pakistani Prime Minister, Liaqat Ali Khan, in his inaugural speech, declared that “Pakistan has only one and only one ambition ... to serve Islam and humanity as we all belong to the great brethren of Islam. Islam alone can solve some of the problems facing the world today.”^{xiv} It was a well-organized and elaborately prepared conference, ostensibly sponsored by a number

press conference, *Dawn* (Karachi) in its editorial reflected the changed popular mood in Pakistan. It wrote:

The time has come for Pakistan's intelligentsia to realise that Pakistan is not adding to its prestige in the international field by running after other countries which are economically and otherwise in a far less stable position than Pakistan itself and which can really be of little help to us. If we concentrate on building up our resources and our strength... the day will come when many will be candidates for our friendship without our chasing them. Let us not forget that we in Pakistan constitute a Muslim world in ourselves. We say to our nation to give up sloganism and be realists.^{xx}

Thus, Pakistan realised that its call for solidarity in the name of Islam was not being reciprocated by most of the Muslim countries of the time with any degree of enthusiasm. It did associate with such moves in future but that was more for pragmatic political reasons of foreign policy and not because of ideological commitments of the Pakistani State. Thus 1952-53 marked a turning point in Pakistan's foreign policy. It never afterwards committed itself to Islamic unity with any missionary zeal and paid only lip service to the cause of Islamic solidarity.^{xxi} This was a time when secular and nationalist leadership dominated the Arab-Muslim world with which India had more comfortable relationship. It found stronger allies like Nasser in Egypt. Pakistan in such a situation failed to find takers for its drive for an Islamic Summit. So, after the initial about six years of its existence, during which Pakistan tried to maintain a neutralist position towards the two power blocs, its leadership began to realise the need for stronger allies. Thus, it marked the beginning of its quest to join the Western alliance system under the guardianship of the United States. Therefore, in a quick succession, Pakistan in 1954 February accepted military aid from the United States, joined the Southeast Asian Treaty Organisation (SEATO) in September 1954 and became a party to the Baghdad Pact in September 1955. Both the SEATO and Baghdad Pact were the Western sponsored alliance systems.^{xxii} From then onwards for some time, Pakistan paid only lip service to the cause of Islamic solidarity. However, Baghdad Pact later renamed as CENTO (Central Treaty Organisation) allowed Pakistan to gain greater proximity with two important Muslim countries in the region Turkey and Iran. In fact, Pakistan tried to project this alliance as something being essentially Muslim. However, this relation had more than religious-political foundations reinforced by the similar strategic context and the security perception that the three shared particularly in relation to the former Soviet Union. But it is also a fact that the relationship among Turkey, Iran and Pakistan in certain respects outlived the Cold War imperatives and retained a momentum of its own for quite some time. The three countries also formed a sort of regional organisation called Regional Cooperation for Development (RCD).^{xxiii} After the breakdown of the Soviet Union, the RCD was

of private businessmen and was attended by official observers from all the Muslim countries.^{xv} The organiser, Ghulam Mohammad, in his presidential address envisaged Islamic unity and cooperation leading to the formation of a third bloc comprising Muslim countries. He emphasized the features common to Muslim countries, such as culture, faith and underdevelopment. The conference recommended greater economic cooperation, mutual exchange of knowledge and expansion of trade among the brotherly Muslim countries. It declared the establishment of a commonwealth of Muslim Nations as its goal. The conference ended with a lot of optimism for achieving greater economic cooperation among Muslim nations as a prelude to political integration.^{xvi} A permanent Secretariat was established. The conference was to meet annually and Tehran was chosen as the venue of the next conference that was held in 1950.^{xvii} Pakistan followed by attempts to host another conference that it wanted to be attended by the official delegates from the Muslim states. Its efforts continued and by the end of 1952, its role in promoting neo-pan-Islamism had been at its zenith. The headquarters of two organizations were located in Karachi (the then capital of Pakistan).

However, it had little success in its effort of convincing the Muslim countries for the need of coming together and meeting in a conference at official level. Pakistan's enthusiasm for such an initiative was not reciprocated with equal zeal by many other Muslim states. In 1952, Pakistan made a serious attempt and its foreign minister Sir Zaffarullah Khan travelled to different Muslim Capitals to invite heads of states and governments to attend such a conference but failed to enlist agreement of the other Muslim states to organize an inter-governmental conference. Some of them were even sceptical about Pakistan's intentions in this regard and several motives were attributed to Pakistan's initiative to organize such a conference. It may be noted that none of the three conferences that Pakistan had hosted earlier were at the governmental level. Some of the Islamic countries showed a somewhat contemptuous attitude towards Pakistan's initiative. Some of the Arab Muslim states could not possibly accept the idea that a non-Arab Muslim State should call them for conference in the name of Islam. For example, King Farooq of Egypt is reported to have ridiculed Pakistan's pan-Islamic concern, saying, "Don't you know that Islam was born on August 14, 1947" (Referring to the Pakistan's date of birth).^{xviii} Several motives were attributed to Pakistan's initiative for such a conference. In an interview on May 2, 1952, Pakistan's Foreign Minister, Sir Mohammad Zafarullah Khan, described such allegations as mischievous rumours. But despite his earnest explanation that Pakistan had no other motive in calling the conference than to serve 'humanity and Islam', the Muslim countries still held back and the proposed conference at governmental level failed to materialise.^{xix} This failure became a turning point in changing the outlook of the Pakistan government and people towards the issue of Islamic solidarity in early 1950's. Only two days after the Foreign Minister's

expanded to include newly liberated Muslim states of central Asia and Afghanistan under a new name called ECO (Economic Cooperation Organisation) however of little impact because of the more powerful players being operative in the region.^{xxiv} But at the larger level there was no worthwhile success in the direction of initiative for Muslim unity.

However, towards the second part of the 1960s the conservative forces within the Muslim world started reasserting because of changing geo-strategic context in the West Asia that altered the balance of power in that region in favour of non-secular conservative forces.^{xxv} It was in this context that King Faisal of Saudi Arabia launched the campaign for pan-Islamic unity within the Muslim world. As a result of the Arab defeat in the 1967 Arab Israeli war, situation in the Muslim world changed drastically to the disadvantage of secular-nationalist forces. In the changed situation, the conservative forces under the leadership of Saudi Arabia, supported by its increasing financial clout, started gaining the role of leadership in the Arab Muslim affairs.^{xxvi} On its initiative the first Islamic Summit Conference at Rabat, convened in 1969 in the wake of arson in al-Aksa, proved to be of historic significance. It was here that the foundation of the Organisation of Islamic Conference (now renamed as Cooperation, OIC) was laid. This marked the beginning of a routine, periodical convening of Summit and Foreign ministers level conferences of Muslim countries.^{xxvii} The creation of the OIC gave Pakistan a convenient diplomatic platform to use *via-a-vis* India and deal with it diplomatically in relation to a number of bilateral issues. The first diplomatic encounter within the OIC between India and Pakistan started in the first Islamic Summit at Rabat on the issue of India's membership of this emerging grouping. Pakistan through a diplomatic manoeuvre was able to prevent India from becoming a full-fledged member of the organization, which latter aspired for on the strength of its third largest concentration of Muslim population in the world.^{xxviii}

Thus, the establishment of the OIC was an important development in the context of the Muslim world and general Muslim affairs at the international level. Its emergence and the subsequent operation facilitated Pakistan reemphasising the Islamic factor in its foreign policy with some tangible economic and political advantages. Its relation with some energy and cash rich gulf countries gave it significant economic advantage. Its role within the OIC helped it pursue its foreign policy agenda particularly in relation to India on Kashmir. More importantly in the context of the 1971 military debacle, the OIC came handy to Pakistan and its leadership in helping it to regain diplomatic initiative in international affairs. After having faced a humiliating defeat in 1971 war with India that resulted in its division and substantially weakened its political, economic and military strength, OIC played important role in its political and diplomatic rehabilitation. It was in the context of post-1973 Arab-Israeli war that on the one hand broken the myth of Israeli invincibility and pushed up Arab oil

nationalism that benefitted the oil rich Arab states. It particularly helped the Gulf Muslim states to substantially increase their oil revenues. This generated a new situation of hope and confidence that began to characterise the Arab and Muslim World. It was further reinforced by the fact that King Faisal of Saudi Arabia with his diplomatic and economic clout gained the status of an undisputed leader of the grouping. It was within this favourable context and with the support of the Saudi King Faisal that Bhutto seized the initiative to host an Islamic Summit Conference at Lahore that was second such conference after the summit at Rabat in 1969. Pakistan aimed at using the presence of Islamic leaders in its land mainly to restore its national pride and regain self-confidence which had been shattered in during 1971 war when East Pakistan separated from it to become the new state of Bangladesh, and to regain the initiative in international affairs. Pakistan mobilized all its diplomatic resources to make conference a major success. The result was that it turned out to be 'one of the largest and most impressive Islamic gatherings in modern times.'^{xxxix} From the Pakistani point of view, the conference also helped it to bring about a rapprochement with the State of Bangladesh that had separated from it to emerge as an independent State.^{xxx}

The Conference, on the eve of its inauguration was confronted with the sensitive issue of membership of the state of Bangladesh, the main hurdle for which was its still estranged and strained relations with the host Pakistan. The dichotomy was that Bangladesh, having emerged as the second largest Muslim majority state in the world, could not be permanently kept out of the organisation created in the name of Islam. It was for this reason that from the beginning of its emergence as an independent state, several Muslim states had tried to bring about its rapprochement with Pakistan but had failed.^{xxxi} Nevertheless, the member-states did not give up their efforts in this direction till the Lahore Summit succeeded in bringing the two sides closer. The Foreign Ministers Conference, which preceded the Summit Conference and was held on February 21, 1974, decided to form a group of seven members under the chairmanship of the Kuwaiti Foreign Minister. The group was deputed to Dacca on a goodwill mission to bring about its reconciliation with Pakistan, the host of the summit, necessary to ensure its membership of the summit.^{xxxii}

The mission of 'reconciliation', as it was officially named, flew from Lahore to Dacca in a Kuwaiti plane to iron out the differences between the two states as well as to ensure Bangladesh's attendance at the Summit. The mission, as was disclosed later, was authorised to offer Pakistan's recognition of Bangladesh in return for Mujib (the then Prime Minister of Bangladesh) agreeing to abandon the proposed trial of 195 Pakistani prisoners-of-war. The mission was a complete success; Shiekh Mujib personally came over to Lahore to attend the conference. Pakistan, in return for the assurance for the release of its prisoners-of-war accorded full diplomatic recognition to the state of Bangladesh. The task of Prime Minister Bhutto's recognition of Bangladesh in the midst of injured

sentiments of Pakistanis was facilitated by the sentiment of solidarity and enthusiasm for Islamic unity generated by the presence of prominent leaders of Muslim States within Pakistan. Zulfikar Ali Bhutto declared in his address, "Big countries have advised us to recognize Bangladesh, but I never bow to the pressure from the Super Powers or from India. But at this important time, when Muslim countries are meeting, we cannot say we are under pressure. It is not our opponents who advise us to take this decision but our friends and brothers."^{xxxiii} The reconciliation between the two estranged Muslim states was in itself a great achievement of the Conference.^{xxxiv}

The creation of the OIC also allowed Pakistan the membership of a group (the OIC) within which it did not have to contend with India in the pursuit of its diplomatic standing, influence and agenda. However, tied down by the terms of the Shimla agreement, Kashmir was rarely raised by Pakistan in the initial 20 years of the OIC's existence (i.e., 1969-1989). Therefore, during all this intervening period the OIC was of little concern to the Indian diplomacy. But in the context of India's nuclear test at Pokhran in May 1974, Pakistan at Fifth Conference of Foreign Ministers held in Kuala Lumpur in June 1974 pressed that India's test has not only created security concerns for it and changed the balance of power in the region but it has also opened up the prospects for further proliferation of the nuclear weapons in the world. However, it failed to convince members for passing a stronger resolution that identified India by name. It was because many member countries were appreciative of India's assertion that its 'nuclear programme was purely for peaceful purpose'. Therefore, the resolution that was passed made only a passing reference to India's explosion. So, it did not succeed in getting OIC to go beyond this symbolic reference to India.^{xxxv} However, as a policy challenge to the Indian position on the nuclear issue, on the initiative of Pakistan, OIC only made ceremonial reference to declaring the South Asia as a nuclear free zone. The resolution to this effect continued to be passed in subsequent conferences as well.

However, it is only from 1990 onwards that Kashmir has been part of the proceedings of the OIC, and continues to remain so as a full-fledged issue on its agenda. Till then Kashmir figured occasionally in the OIC sessions, simply as a passing reference in the statements of the Pakistani representatives. Pakistan's diplomatic success in getting Kashmir issue on the OIC agenda since 1990 has been for the deteriorating objective situation in that state. With the rise of militancy and a pro-independence uprising in Kashmir, the conference for the first time in its history witnessed a thorough debate on the issue during the nineteenth conference of Islamic Foreign Ministers held in Cairo from 1 to 5 August 1990.^{xxxvi} Pakistan now took advantage of the ongoing unrest in Kashmir to mobilise support for its position not only to secure a debate on the issue but also to get a resolution passed. In fact, Pakistan had been successful to get a statement issued on Kashmir by the OIC Secretariat as early as 22 May 1990.^{xxxvii}

This happened in spite of the fact that with the Iraqi invasion of the Kuwait in the midst of the ongoing conference, issues like Kashmir were relegated to the background. Since then, Kashmir regularly figured as part of the OIC agenda in all its subsequent conferences held either at summit or at the foreign ministers' level. During the twentieth Session of foreign ministers, (Istanbul, August 1991) Pakistan again succeeded in getting the conference endorse its position. It also asked the Secretary General to constitute a three-member fact-finding mission to visit Jammu and Kashmir.^{xxxviii} All this meant granting certain amount of international legitimacy to the Pakistani position on Kashmir issue.

Later in the same year (December 1991) at the Summit Level Conference (6th) at Senegal, Kashmir was one of the prominent issues in the agenda. It was reported that prior to the Summit, Pakistan had done extensive campaigning to secure the support of the member states. At the summit, the Pakistan Prime Minister, Nawaz Sharif, suggested that the dispute on Kashmir was the "greatest single threat to peace and security in South Asia." He pleaded for an urgent resolution of the problem, particularly in view of the human rights violations there. The Pakistani position got forceful endorsement from some of the Muslim countries. For example, in one of the initial speeches at the Summit, the Amir of Kuwait, as the outgoing chairman, referred to what he called "state-sponsored repression" in Kashmir of "the predominantly Muslim population of the state struggling for self-determination".^{xxxix} The Summit adopted a resolution on Kashmir in line with the one passed at the previous Foreign Ministers Conference at Istanbul with a slight change in wording.^{xl} Henceforth, in all the subsequent conferences, the OIC has been regularly passing resolutions on Kashmir on the same lines. These resolutions broadly deal with following three aspects:

1. Asking India and Pakistan to resolve the problem in accordance with the UN resolutions and as agreed under the Simla agreement;
2. Impressing India to respect the human rights of the Kashmiri People and condemns the violation of such rights;
3. Asking India to allow the OIC's fact finding mission to visit Kashmir and allow it to undertake an on the spot, study of the situation there.^{xli}

This is being repeated in spite of the fact that India had already rejected the OIC's plea in this regard. In such a situation the organization was accepting and endorsing Pakistan's position on the issue almost in its totality.

However as stated earlier, along with these relative successes, there were issues and situations that in the long run created problems and predicaments for Pakistani State in relation to Islamic commitments both on internal and external front. Particularly since late 1970's there, emerged a number of challenges internationally that undermined the basis of Muslim solidarity with direct bearing on Pakistan. Soviet invasion of Afghanistan in 1977 was first of its kind that in

terms of response divided the Muslim countries within. However, because of its front line significance, Soviet invasion of Afghanistan came in a way handy to Pakistan as it helped it to get reconnected with some dominant external powers and secure support to rebuild its military and economic strength after its near collapse and division as a result of the 1971 war with India.^{xlii} Pakistan gained front line status vis-a-vis Soviet presence in Afghanistan that became the basis of its new alignment with the United States in the context of what came to be known as the new cold war, drawing economic, military and diplomatic advantages to it. This also helped Pakistan reinforce its ties with some of the powerful oil rich Muslim states like Saudi Arabia.^{xliii} It also helped Pakistan as a state, to add to its stature and gain a reasonably prominent position within the OIC. Pakistan with its relative internal stability and prominence with the front-line status in Afghanistan began to get it a sort of leading role within the OIC. It was in this context in 1980 the OIC unanimously decided to request President Zia ul Haq of Pakistan to address the 35th session of the UN General Assembly on its behalf to mark the 15th century of Hijra. In Pakistan it was projected as a unique honour to the country and its president.^{xliv} While Afghanistan bestowed a certain advantage to Pakistan until Soviet expulsion from that country and for a while after that, but the post 9/11 situation in that country has had a seriously negative implication for Pakistan as a society and state. It has not only pushed Pakistan into very serious crises as a society and state but it also created tremendous strategic disadvantages for it. Today as we see it is being challenged internally by radical forces in the name of Islam that were in some respects by products of the “Afghan Jihad”.

The revolution in Iran in 1979 in the long run became another problem for its foreign policy. Till then Pakistan was able to have politically very good, economically useful and strategically a very dependable relations with all oil rich Gulf States particularly with Iran. Iranian revolution created a number of new challenges to its domestic and foreign policy. Iranian revolution had a destabilizing impact on the gulf conservative monarchies and it polarized this region from within posing difficulties to Pakistan foreign policy in terms of balancing its relationship. Even though it in a way reinforced its relations with conservative gulf monarchies, Pakistan lost Iran that had been its dependable strategic ally in its immediate vicinity helping it in situations of difficulty. Iran had supported Pakistan even during its wars with India. For example, in 1965 war, Pakistani fighter jets were often sent to Iran for fuelling and other tactical purposes. Iran also supplied Pakistan with American military weaponry and spare parts after America cut off its military aid to it.^{xlv} During the 1971 war, Pakistani planes were sent to Iranian bases in Zahedan and Mehrabad for protection. Since the revolution, Pakistan has never been able to restore its relations with Iran to pre-revolution level. Iranian revolution had even destabilizing impact on the Pakistani society also as it under Zia-ul-Haque began to invoke Sunni consciousness so as to limit impact of the Iranian revolution and to counter the

heightened Shia consciousness invoked by it. This led to polarization within the Pakistani society on sectarian lines. This polarisation was further consolidated by Iran - Iraq war that started in September 1980 and continued almost for a decade till August 1988. Because of this Shia-Sunni polarisation at the level of larger West Asian region, the polarisation within Pakistan continued to be promoted by the external forces and factors so much so that internal conflict became proxy for larger Shia Sunni divide with the West Asian Region. All this meant that Iran instead of being a dependable strategic ally became strategic concern for the country particularly because of its growing proximity with India since 1990s. The weakened relations with Iran caused a serious strategic disadvantage for Pakistan particularly in its relationship with India. During 1990s, Iran began to build up more profound strategic relations with India that had implication for Pakistan's security.^{xlvi}

Further, the dissensions within the Muslim world that began with Iraq-Iran war were reinforced more effectively by the Iraqi invasion and occupation of Kuwait in 1990. This divided even Sunni side of the West Asian region which till the beginning of the invasion had exhibited a higher degree of solidarity vis-a-vis Iran that because of the revolution had invoked Shia consciousness. The destabilizing impact of these two conflicts took away whatever little autonomy had been enjoyed by Muslim countries vis-a-vis the West. These two developments made the conservative Gulf monarchies increasingly dependent on the US for their survival. This kind of complete capitulation to the West has been one of the important factors responsible for the growth of Muslim radicalism within the Muslim lands in general and Af-Pak region in particular. The growth of Islamic radicalism greatly undermined the OIC and its legitimacy. Thus, Islamic factor began to have a negative impact rather than positive bearing on Pakistan's foreign policy, in spite of the fact that it used this factor in Afghanistan reasonably effectively till the 9/11 developments brought new type of irritants into the region constraining its options in foreign, regional and domestic policy.

Today for all practical purposes, the Muslim World is pitted within and against itself, countries against each other, societies within. More particularly Pakistani society is torn apart by the increasing radicalization of its society. Today the greatest challenge to the Pakistani state comes from the radical elements within its population who invoke Islam against their own state. Islamic assertion and identity instead of being an asset has turned out to be a liability and a foreign policy disadvantage for the state of Pakistan.^{xlvii} This constitutes a difficult predicament for its foreign policy. Delegitimizing of Muslim radicalism in post 9/11 and it being constrained to join the "war on terror" has also pitted it against some of the radical forces that it at one time encouraged and would have wanted to use to further its own foreign policy agendas both in relation to Afghanistan and India. These forces have gradually emerged as a liability for its

foreign policy. Many of the present day, problems in Pakistan are born out of this predicament. Radicalization of its society internally has emerged as a great challenge to the social and political stability for Pakistan with serious implications for its economy and diplomatic standing. Today even within its traditional allies, conservative monarchies of the Gulf region, Pakistanis are being seen as a security risk compared to by and large what would be apolitical Indians. Therefore, there are more Indian workers working within the conservative Gulf States than from Pakistan. In 1980s, Pakistanis constituted the largest work force within these states. Pakistan because of these predicaments has lost almost all of its dependable allies either in the West or within the Muslim world. Pakistanis who in early decades of Pakistan's creation would be welcome in the US and the United Kingdom are seen with greater suspicion in these states, rest of Europe and the rest of the world. Even the nationals of its all-weather friend China became victims of the radical elements within the Pakistani society thereby putting strains on its relations with that country. It is in spite of the fact that all these states require and would like to have a strong Pakistan as a factor of stability in relation to their security concerns that they perceive in relation to potentially a nuclear Iran in the region.

Therefore, for past few years now, Pakistani state seems to be on the path of a course correction. The turning point came in December 2014 when Tahreeki Taliban Attacked an Army run school in Peshawar killing 141 people including 132 children. This sent shockwaves across Pakistan prompting Pakistani military and civilian establishment to act against radical forces. But still there is lot more to be done to make Pakistan safe and develop it into a modern enlightened democratic society capable of living in peace and harmony internally and in relation to the world outside.^{xlvi} It is apprehensive of the sectarian wedge that is being promoted in West Asia for it can further polarise the already fragile social relations within the society. These elements are undermining its internal stability and external acceptability.

To sum up, all Islamic predicament of Pakistan stems from the ideological claim on which its creation was sought as a separate state by partitioning the Indian subcontinent. Therefore, in the given context, Pan-Islamism became important elements of its foreign policy. Its utility for Pakistan would go up and down in relation to balance of forces in and around the region within the Muslim West Asia. Some of the significant geopolitical developments since late 1970s in the region around it gave it an added incentive to make greater use of the increasingly growing radical manifestations of Islam as instrument of its regional policy. In the process using radicalism, it began to impact its own internal society. Gradually radicalism and sectarianism began to creep deeper into the Pakistani society. So much so today the greatest challenge to the Pakistani nation comes from the radical elements within its own population who invoke

Islam in order to undermine social and political stability of their own country. These radical tendencies in the name of Islam are undermining its stability as society and polity and have turned out to be a major foreign policy disadvantage. Many of the recent problems of Pakistan on its internal and external front are born out of this predicament. So much so, Pakistani state seems to be on a course correction for some time now.^{xlix} Most important in this has been the pressure applied by the international Financial Action Task Force (FATF) on money laundering for terrorist purposes on it in recent years.ⁱ It is under this pressure that Parliament has passed a bill in January 2020 that allows Pakistani government a freer hand in handling radical forces and in exchange of information and of criminals with outside countries. This was done to meet as important requirement of the FATF.ⁱⁱ Thus for addressing the menace of radicalism and terrorism in its multifaceted dimensions requires a long, consistent and concerted effort on the part of the Pakistani civil society and the state with all its agencies of power.

Endnotes

ⁱ Ishtiaq H Qureshi, *The Struggle for Pakistan*, (Karachi: Karachi University Press, 1969).

ⁱⁱ Stephen Philip Cohen, *The Idea of Pakistan*, (New Delhi: Oxford University Press, 2004) p. 161.

ⁱⁱⁱ Cuyler Young, "Pan-Islamism in Modern World" in Harris Proctor, (ed.), *Islam and international Relations* (London: Full Hebb Press, 1965), p.198.

^{iv} Keith Callard, *Pakistan: A Political Study*, (London: Allen and Unwin, 1957), p. 303.

^v Sisir Gupta, *Kashmir: A Study in India-Pakistan Relations*, (Bombay: Asia Publishing, 1966).

^{vi} Sisir Gupta "Islam as factor in Pakistan Foreign Relations", *India Quarterly* (New Delhi) Vol. 18 No. 1, January-March, 1962., p. 234.

^{vii} Aslam Siddiqui, *Pakistan Seeks Security* (London: Longman, 1960), p. 17.

^{viii} For a Detailed analysis of the Congress and the background in which it was held see Arnold Toynbee, "The proclamation of Sultan Abdul Aziz, B. Saud as King of Hejaz and the Islamic Congress at Mecca" (1926) in *Survey of International Affairs*, (London: Royal Institute of International Affairs, 1927), pp.308-9.

^{ix} For a detailed account see Noor Ahmad Baba, *Organisation of Islamic Conference: Theory & Practice Of Pan Islamic Cooperation*, (New Delhi: Sterling Publishers, 1994) pp.26-27.

^x *Pakistan News*. February, 8, 1951.

^{xi} *Dawn*, (Karachi), February, 10, 1951.

^{xii} For a detailed account of the Congress see, "World Muslim Congress", *The Islamic Review*, (London) vol. 39, July 1951. Pp. 24-36.

- xiii *The Islamic Review*, Ibid. p. 11.
- xiv *Dawn*, November, 26, 1949.
- xv Boris Pasternak, "Pan-Islamism" in Arif Hussain, ed., *Pakistan: Its Ideology and Foreign Policy*, (London: Frank Cass and Co. Ltd., 1966), p. 136.
- xvi *The Islamic Review*, vol. 37, no. 5, (1949) pp. 32-37.
- xvii Pasternak, "Pan-Islamism" n. 15, p137.
- xviii S. M. Burke, *Pakistan's Foreign Policy: A Historical Analysis*, (London: Oxford University Press, 1973), p.67.
- xix *Dawn*, 3 May 1952.
- xx *Dawn*, 4 May, 1952.
- xxi See Shirin Tahir-Kheli, "In Search on an Identity: Islam and Pakistan's Foreign Policy, in Adeed Dawisha, ed. *Islam in Foreign Policy* (Cambridge: Cambridge University Press 1983). p. 68.
- xxii Gupta, "Islam as factor in Pakistan Foreign Relations", n. 6, p. 243.
- xxiii Rolf-Roger Hoepfner, "The Future Course of the RCD-Iran, Pakistan, Turkey" *Aussen Politik*, (Hamburg) Vol. 28, No.2. pp. 227-236.
- xxiv Economic Cooperation Organization (ECO), was established in 1985 by Iran, Pakistan and Turkey for the purpose of promoting economic, technical and cultural cooperation among the Member States. ECO is the successor organization of Regional Cooperation for Development (RCD) which remained in existence from 1964 up to 1979.
- In 1992, the Organization (ECO) was expanded to include seven new members, namely: Islamic Republic of Afghanistan, Republic of Azerbaijan, Republic of Kazakhstan, Kyrgyz Republic, Republic of Tajikistan, Turkmenistan and Republic of Uzbekistan that raised the number of its total membership to ten from the above mention original three founding members ie Iran, Pakistan and Turkey.
- xxv Noor Ahmad Baba, Saudi Drive for Islamic solidarity: A quest for security, *Political Science Review*, (Jaipur, University of Rajasthan), Vol.24, Nos.1&2. January 1985.
- xxvi Baba, *Organisation of Islamic Conference...*, n.9, pp. 38-62.
- xxvii *ibid*, pp. 63-67.
- xxviii See Ram Dhamiji, "The Rabat Episode", *India and Foreign Review*, (New Delhi) November 1, 1969 pp.11- 12 and 24.
- xxix For a detailed account of the conference see Baba n. 9. pp 99-104.
- xxx *Ibid*.
- xxxi *Morning News*, (Karachi), March 19, 1972.

xxxii For the composition of the Good Will Mission see Baba, , *Organisation of Islamic Conference: Theory & Practice Of Pan Islamic Cooperation*, n. 9. P. 140, fn. 10.

xxxiii *ibid.* P. 100.

xxxiv *Ibid.*

xxxv *Ibid.* p. 106

xxxvi *Asian Recorder* 13-19 August 1990, p. 21296.

xxxvii Noor Ahmad Baba, "OIC and Pakistan's Foreign Policy: Its Indian Dimension" in Rajendra M. Abhyankar (ed.), *West Asia and the Region: Defining India's Role*, (New Delhi: Academic Foundation, 2008). pp 669-684.

xxxviii *ibid.*

xxxix "Pakistan's OIC Tool" *Patriot*, (New Delhi), 13 December 1991.

xl Baba, *Organisation of Islamic Conference...*, n. 9.,p. 191. This invited a strong protest from India, both official and non-official levels. See "OIC Decision on J&K Protested" *Indian Express*, (New Delhi) 5 December 1991. And various National dailies of the day.

xli Baba, "OIC and Pakistan's Foreign Policy: Indian Dimension" n. 45., p. 679.

lii Since it marked the New Cold War, Pakistan got into a fresh alignment with the US drawing economic, military and diplomatic benefits.

liii This was the time when Pakistani military came to be stationed in some conservative Muslim states particularly within the Gulf who also because of Iranian revolution gained increasing sense of insecurity and vulnerability.

liv See Baba, *Organisation of Islamic Conference...*, n. 9. p 125.

lv Barry Rubin. *Paved With Good Intentions*. Oxford University Press, 1980. pp. 116. Even, as we saw above, during Rabat Summit in 1969 Shah of Iran resolutely stood by President Yahya Khan of Pakistan in opposing India's entry to the Summit that became instrumental in the creation of the OIC.

lvi Jajati K. Patnaik, "Prospects for Indo-Iranian relations," *The Pioneer*, 12 October 1994 and Abdul Amir Jorfi, "Iran and Iran: Age Old Friendship" *India Quarterly*, October-December 1994, vol. 48. no 4., (New Delhi, Indian Council of World Affairs).

lvii See Subhash Kapila, "Pakistan's Foreign Policy Predicaments Post 9/11: An Analysis", South Asia Analysis Group paper, paper no. 564. 12-12-2002.

lviii "Obama says Pakistan 'can and must' do more against Terrorism" Dawn, Karachi. <http://www.dawn.com/news/1235106/obama-says-pakistan-can-and-must-do-more-against-terrorism> Accessed on Jan. 27, 2016.

lix On 16 December, 2014, six gunmen affiliated to TTP, entered an Army school in Peshawar, Pakistan, killing around 150 children. It shook Pakistan to depths. Not just Pakistan, the entire world rattled in horror. Pakistan – state and society - came face to face with the monster it fed for decades.

ⁱ The Financial Action Task Force (on Money Laundering) (**FATF**), also known by its French name, 'Grouped' action financière (GAFI), is an intergovernmental organization founded in 1989 on the initiative of the G7 to develop policies to combat money laundering. In 2001 its mandate expanded to include terrorism financing.

ⁱⁱ See “Pakistan gets Parliament nod to meet FATF deadline, sparks Opposition outcry” *Hindustan Times*, Jan.7, 2020. <https://www.hindustantimes.com/world-news/pakistan-gets-parliament-nod-for-bill-to-meet-fatf-deadline-sparks-opposition-outcry/story-9QUUdc1RDTm6Yb5Stzg2kO.html> accessed on 9/12/2020.

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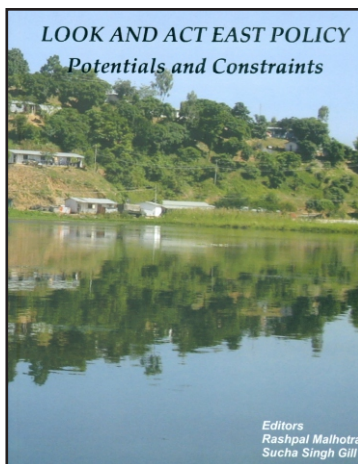
Rashpal Malhotra and Sucha Singh Gill (Eds.), 2017, pp. 358, Rs. 600/-



The book contains speeches of Indian dignitaries and research papers of scholars on dynamics of cooperation between South Asian and Central Asian countries, which bring out complementarity between these two regions with long history of economic, cultural, spiritual and religious exchanges. The contributors provide alternative ways to overcome the difficulties to realize the opportunities of expanding cooperation between these two regions. Along with the large varieties of issues discussed, the contributors also bring out the future issues of research and analysis to build cooperation for benefit of the state and society. The analysis is largely focused from Indian perspective of building cooperation between countries for mutual benefit sharing and establishing peace and prosperity in the world

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Rashpal Malhotra and Sucha Singh Gill (Eds.), 2015, pp. 286, Rs. 500/-

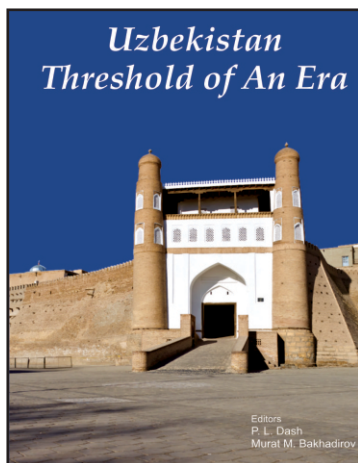


The book brings out that India's Look and Act East Policy and India's improving relations with Bangladesh, Myanmar and cordial relations with Bhutan and Nepal have created a situation where North East India is poised for a big leap forward in its social and economic development. This region has the potentials to be transformed from a peripheral region to central region of the country and act as bridge between South Asia and South East Asia. Although the constraints of its connectivity to South East Asia are getting removed yet many more hurdles have to be crossed and apprehensions of the people to be removed.

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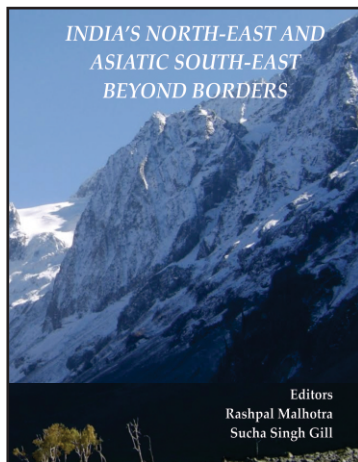
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Rashpal Malhotra and Sucha Singh Gill (Eds.), 2015, pp. 302, Rs. 500/-



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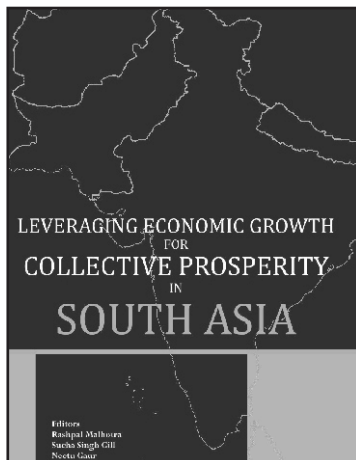
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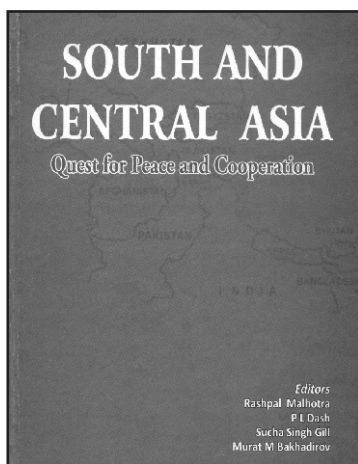


The book contains selected papers of experts from South Asia providing the perspective of sharing collectively the prosperity among the countries of the region. The book is expected to enhance our understanding of the South Asia as a region and provide fresh ideas on promotion of cooperation especially issues related to trade, investment, connectivity, security and Afghanistan conundrum.

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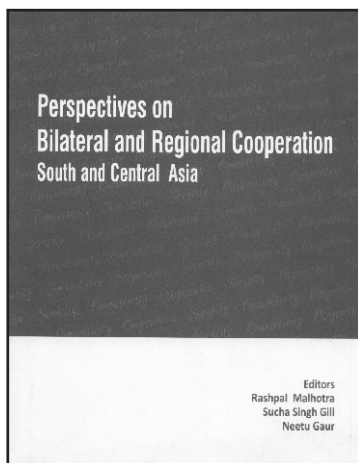
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Behest with the challenges of development dynamics and laden with the legacy of the Russian colonial past, the Central Asian countries have learned the hard way 'peace, security and development'. This book brings forth common perspective in understanding the process and factors contributing to development of cooperation, establishment of peace in order to bring prosperity to the South and Central Asian countries.

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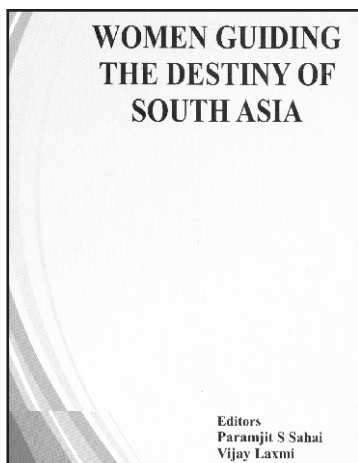


The book contains speeches of Indian dignitaries and selected papers of experts from India and abroad which provide a clue of interaction and cooperation between countries of South and Central Asia from Indian, bilateral, and regional perspective. The book provides comprehensive coverage on diverse socio-political and socio-economic problems concerning the region. It highlights road blocks emanating from global, regional and domestic situations. Many locations for connectivity between South and Central Asia are indicated.

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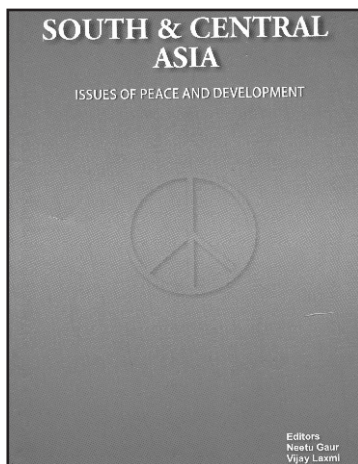
Paramjit S. Sahai and Vijay Laxmi (Eds.), 2010, pp. 136, Rs. 450/-



There is a need for connecting countries and peoples for building peace, cooperation and development in South Asia. The media, in particular women journalists can play a stellar role in becoming bridge builders through generating greater awareness and correct images, as people realize the benefit of a shared and common destiny. The book is focussed on women's role in changing the mindset, to generate positive climate and ethos for development in South Asia.

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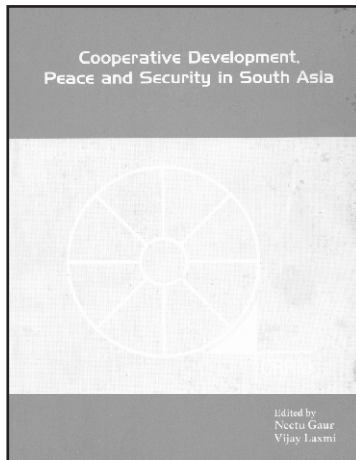


As a global threat, terrorism is said to emanate from specific countries of South-Central Asia. While this threat has diverted the development drive of the world community towards a fight against terrorism, it is imperative to find how the countries of South and Central Asia are coping with such a situation. What do they need to do at a collective level? This calls for an in-depth comprehension of the problems and prospects of regional cooperation within South and Central Asia. The book is an effort to meet such a need.

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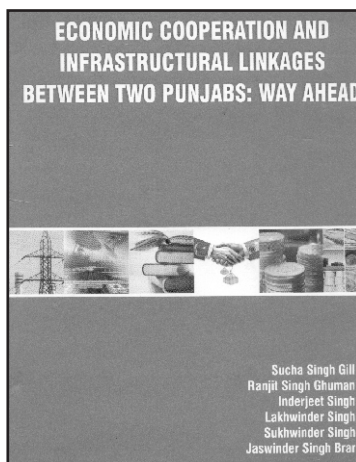
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The publication reflects diverse dimensions of cooperative development peace and security in South Asia by addressing issues related to trade and investment, connectivity, and infrastructural linkages. The deliberations devolve on the possible areas of cooperation and explore the instrumentalities to materialise the same for better and secured economic future.

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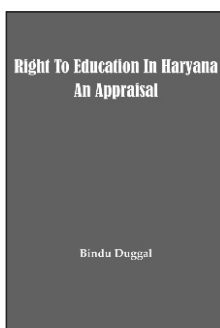


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