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Aims and Scope

Journal of Governance & Public Policy is a bi-annual refereed journal published by the Institute of Public Enterprise to provide a forum for discussion and exchange of ideas on Governance (local to global) and Public Policy (including foreign policy and international relations) by policy makers, practitioners and academicians.

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From the Editors' Desk

Governance at the grassroots level has been a tricky issue given the large number of stakeholders from diverse background. The diverse groups – women, farmers, downtrodden sections, under privileged, laborers, etc., have been voicing their concerns and demands from time to time. The struggle towards justice from these sections of the populace has caught the attention of the policy makers and has led to initiatives supposed to ameliorate their living conditions.

The article, 'Fiscal Performance of Indian States – A Comparison of Convex and Non-Convex Frontier Approaches' by Ram Pratap Sinha has focused on the uneven financial performance of the states in India.

The article on 'Grassroots Energy Security for India's Poor and Women Empowerment: An Assessment of Pradhan Mantri Ujjwala Yojana' has elaborated on the benefits for women through this programme.

The article 'Institutional intervention in River Water Management: The Study of Yamuna river sub-basin in India' by Ramakrishna Nallathiga has discussed the need for establishing an exclusive administering agency for ensuring better river water quality and quantity.

The article, 'Panchayats under the PESA Act in Odisha – A Study of Two Gram Panchayats' has focused on how the PESA Act has become instrumental in promoting local development plans and implementing socio-economic development programmes.

The article 'Towards justice and Prosperity in South Asia Gender and Justice' elaborates the issues related to gender and justice with specific reference to South Asia where social and economic disparities are the order of the day. The article points towards the fact that of all girls out of school in the developing world, one third lives in South Asia.

The article 'Fizzle and Success of e-Governance in India: A Priority-based Analysis in Paschim Medinipur District' by Subrata Ghosh, Santanu Dinda and Nilanjana Das Chatterjee has found that the opinion of the success of e-governance is dependent upon the on the user's behavior to adopt the new system as well as making the strategic connection with the Government.

The article, 'Social Marginalisation of Women Textile Workers – A Study on the Textile & Garment Clusters at Coimbatore, Tirupur, Ahmedabad & Surat' focuses on the exploitation of women in textile industry. The women workers are made to work long hours which exceed their working capacity. The wages are so low that it's difficult for them to live on. There are many cases of child labour and forced labour in this industry.

The current issue of the Journal of Governance and Public Policy provides valuable insights into grass roots democracy coupled with gender justice. These issues would enable the readers to changes happening across the country and South Asian region at the bottom of the social and economic order.

Dr Geeta Potaraju
Dr A Sridhar Raj

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Fiscal Performance of Indian States – A Comparison of Convex and Non-Convex Frontier Approaches

Ram Pratap Sinha*

Abstract

The present study is based on the unevenness in financial performance of Indian states. While it is generally agreed upon that the States require more authority in the matter of mobilization of financial resources and perhaps, more generous attitude of the Central government regarding transfer of funds from the Centre to the States, analysis of the internal strength and weaknesses of the States is also equally important. In the past one decade, the central government also linked its assistance to the state governments with the accomplishment of institutional reforms in area of fiscal operations. Against this backdrop, the present study benchmarks the performance of general category states for the period 2009-10 to 2014-15 using DEA, FDH, Order-m and Order-alpha. In the next stage, the impact of outstanding liability and gross capital formation (on the efficiency performance) is estimated in terms of censored regression.

Keywords: Financial Performance, Governments, DEA, FDH, Capital, Formation

Introduction

In India, just as different regions/states exhibit considerable disparity in terms of economic development, the fiscal performance of the states also reveal significant variations. On the revenue side, the fiscal unevenness arises because of wide variations in tax base as well as owing to considerable variations in tax mobilization efforts. On the expenditure side also, there are considerable heterogeneity in respect of the nature and quality of expenditure incurred by the states. While it is generally agreed upon (in the Indian context) that the States require more authority in the matter of mobilization of financial resources and perhaps, more generous attitude of the Central government regarding transfer of funds from the Centre to the States, analysis of the internal strength and weaknesses of the States from the fiscal point of view is also equally important. In order to promote efficiency, the central government, in the past one decade, has linked its assistance to the state governments with the accomplishment of institutional reforms in area of fiscal operations. In this context, the present study benchmarks the performance of non-special category states for the years 2009-10 to 2014-15 using full and partial

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frontier approaches and tries to assess the impact of indebtedness and gross capital formation on the performance of the states.

Organisation of the Paper

The paper is organized in to five sections and proceeds as follows. Section 1 provides an overview of state finances in India. Section 2 discusses the related literature. Section 3 discusses the methodological issues connected with benchmarking of performance in a non-parametric setting and assessment of the impact of contextual variable on the efficiency scores. Section 4 presents and discusses the results. Finally, section 5 concludes.

Fiscal Scenario of Indian States

It is a common knowledge that there are inherent asymmetries in the Indian fiscal structure which led to vertical as well as horizontal imbalances in the fiscal imbalances.

Vertical imbalance implies asymmetric revenue mobilisation power between the central government and the state governments. In India, relative to the central government,states have limited resource mobilisation capacity. The central government retains the entire tax revenue collected from important sources like corporate income. Thus, the central government retains major portion of the tax revenue collected. For example, during 2014-15, Central Government share in the combined revenue of central and state governments was 63% while all states taken together had a share of about 37%. On the other hand, the share of the Indian states in total expenditure was 60%.

Similarly, there are considerable variations in key fiscal indicators across the states implying the presence of horizontal imbalance. Table-1 provides the descriptive statistics (for 2014-15) relating to four important fiscal indicators of the non-special category Indian states:own revenue to total revenue expenditure, development expenditure to total expenditure, interest payments to revenue receipts and committed expenditure to total expenditure. The table shows that the ratio of best performing state to worst performing state is 2.74 in respect of own revenue to revenue expenditure and 1.57 in respect of development expenditure to aggregate expenditure. On the other hand the ratio of worst performing state to best performing state is 5.68 for interest payment to revenue receipts and 2.34 for committed expenditure to revenue expenditure.

Table-1: Descriptive Statistics of Key Fiscal indicators of Indian Non-Special Category States (2014-15)

Descriptive Statistics	Own Revenue/ Revenue Expenditure	Development Expenditure/ Aggregate Expenditure	Interest Payments/ Revenue Receipts	Committed Expenditure/ Revenue Expenditure
Mean	59.5	65.8	12.4	29.8
Median	58.2	67.2	11.3	30.1
Maximum	84	76.2	25	47
Minimum	30.7	48.5	4.4	20.1
Variance	185.2	57.1	29.4	37.9

Source: RBI(2017): State Finances:A Study of Budgets of 2016-17

Fiscal Performance of Indian States-A Review of Literature

Related Research Work

There are relatively fewer number of studies devoted to the fiscal performance of Indian states. Further, a majority of them considered the revenue side only.

Jha, Mohanty, Chatterjee, Chitkara (1999) used stochastic frontier analysis for estimating tax efficiency of fiffteen major Indian states for the time span 1980-81 to 1992-93. The study found that devolution of greater quantum of resources as grants tend to reduce the tax efficiency of states. Thus less poor states are more efficient in respect of tax mobilisation. The tax efficiency rankings of states for the period do not imply convergence. The study computed an index of aggregate tax efficiency and this index has been stagnating over the observed years. The study advocated in favour of increasing the weight placed on tax effort in the formula determining central grants to state governments in order to improve tax efficiency of state governments.

Coondoo, Majumder, Mukherjee and Neogi (2001) compared the relative tax performance of 16 states in India (as measured by tax/SDP ratio) for the period 1986-87 to 1996-97 using a quantile regression approach. On the basis of their study they classified the in-sample states in to four categories: best, medium, declining and worst. Their study showed that the states in southern and western part of India display a superior tax performance relative to the rest. This might be due to a variety of factors such as relatively larger taxable capacity of these states, relatively greater tax effort made by these states or some deep-seated political-economic characteristics shared by them.

Dholakia (2005) provided an alternative to the Fiscal Self Reliance and Improvement Index recommended by the Eleventh and Twelvth Finance Commissions for measuring fiscal discipline of the Indian states. She developed a composite index of performance which she termed as Fiscal Performance Index which was constructed out of three indices-a Deficit Index, an Own Revenue Effort Index and an Expenditure and Debt Servicing Index. Dholakia used the Fiscal Performance Index to rank the performance of Indian states for the period 1990-91 to 2002-03.

Mundle, Chowdhury and Sikdar (2016) compared the governance performance of major Indian states for the years 2001-02 and 2011-12 from the stand points of services,infrastructure,social services, fiscal performance, justice,law and order and quality of legislature. For judging fiscal performance, two indicators were considered: proportion of development expenditure to total expenditure and the ratio of own tax revenue to total tax revenue. They found three high income states (Gujarat, Tamil Nadu and Haryana), two middle income states (Karnataka and Andhra Pradesh) and one low income state (Chattisgarh) as the best performers in the area of fiscal performance.

Garg,Goyal and Pal (2017) estimated the tax capacity and tax effort of 14 major Indian states for the period 1992-92 to 2010-11 applying Stochastic Frontier Analysis. The study applied the Battese-Coelli (1995) model for estimating tax mobilisation efficiency of Indian states. In the model used in the study, the inefficiency term is a linear function of a set of explanatory variables. The study

considered fiscal, administrative and governance, structural and political variables which seek to explain the tax inefficiency of Indian states. The study confirmed the presence of large variations in tax effort indices across states and which increased over time. The econometric analysis used in the study suggested that economic and structural variables have significant influence on the tax capacity.

Research Gaps and Objective of the Study

The existing literature relating to the comparative fiscal performance of Indian states mostly used weighted ratio approach. Only one study used the quantile regression methodology. The objective of the present study is to provide an alternative approach for constructing a comprehensive fiscal performance index based on robust methodology. For constructing the index, four alternative approaches have been considered: Data Envelopment Analysis, Free Disposal Hull Approach, Order-m and Order-alpha.

Methodology

Evaluation of Performance - The Distance Function Approach

For estimating the performance of decision making units, it is essential to formalize the relationship between inputs and outputs. Following Debreu (1951) and Koopmans (1951), the production technology (P_T) is characterized by a set of inputs $X = (x_1, x_2, \ldots\ldots, x_n) \in R_+^n$ which are required to produce a set of outputs $Y = (y_1, y_2, \ldots\ldots, y_n) \in R_+^m$. The inputs and outputs can be functionally related as: $Y = f(X)$ and $X = l(Y)$.

In the present context, Shephard's (1953,1970) distance function approach provides theoretical basis for the derivation of performance evaluation rules. The input set is characterised by the input distance function.The output set is characterised by the output distance function. The efficiency of a productive unit is defined as a distance between the quantity of observed input and output and the quantity of input and output required for the best practice frontier.An input distance function is defined as $D_i = \frac{\|x\|}{\|dx\|} = \frac{1}{\lambda}$ Thus an input distance function indicates the smallest radial contraction of the producer's input vector without making the (producible) output vector infeasible. The reciprocal λ can be considered as the radial measure of input oriented technical efficiency.

In an analogous fashion, the output distance function is defined as: $D_o = \frac{\|x\|}{\|\mu x\|} = \frac{1}{\mu}$. Intuitively speaking, an output distance function gives the maximum amount by which the producer's output vector can be inflated and yet remain feasible for a given input vector. The radial measure of output oriented technical efficiency coincides with the output distance function.

Estimation of the Distance Function

While both parametric and non-parametric methods can be used for the estimation of distance function, we prefer the non-parametric approach over the parametric approach because of the following reasons:

- non-parametric methods can easily handle multiple outputs. While a parametric framework can be used for relating multiple outputs with the inputs, estimation can be done by using mathematical programming methods.

- non-parametric methods do not require knowledge about the parametric functional specification of the relationship between input and output indicators.

In the present context,four non-parametric methods have been used for the estimation of state performance: Data Envelopment Analysis, Free Disposal Hull Approach, Order-m Approach and Order-alpha Approach.

Data Envelopment Analysis is a non-parametric method based on mathematical programming. DEA is frequently used for comparing the relative performances of economic units with two prior assumption on input-output relation: free disposability of inputs and outputs and convexity. The DEA approach constructs a convex efficiency frontier of productive units. Thus using DEA the output oriented efficiency of a productive unit is computed by comparing the observed output (input) with the best practice output (input). The applicable linear program for the output oriented case is:

$$\text{Max } \varphi$$
$$\text{subject to } \varphi y_o \leq \lambda Y, X_o \geq \lambda X, \Sigma \lambda_j = 1, \lambda_j \geq 0$$
$$\textbf{T}\text{echnical Efficiency (VRS)} = 1/\varphi$$

The Free Disposal Hull approach was developed by Deprins, Simar and Tulkens (1984). Like the DEA approach, FDH retains the free disposability of input and outputs. However, unlike the DEA approach, the FDH frontier is not convex. The distinguishing feature of the FDH approach is that efficiency evaluations are based on actual observations only and not on the convex combinations of actual observations. Thus the relative linear program for the output oriented case is:

$$\text{Max } \varphi$$
$$\text{subject to } \varphi y_o \leq \lambda Y, X_o \geq \lambda X, \Sigma \lambda_j = 1, \lambda_j \in \{0,1\}$$
$$\textbf{T}\text{echnical Efficiency} = 1/\varphi$$

The Order-m approach was introduced by Cazals, Florens and Simar (2002). In the input oriented Order-m approach, a decision making unit (x_0,y_0) is benchmarked against the average minimal input used by m peers randomly drawn from the population of decision making units producing at least y_0. The Order-m lower boundary of the input vector X is defined as the expected value of the minimum of m random variables $X_1, X_2,\ldots..,X_m$ drawn from the distribution function of X. Thus mathematically speaking, $\varphi_{m(input)} = E[\min(X_1, X_2,\ldots..,X_m)]$. The value m represents the number of m potential firms (drawn randomly from the population of firms) producing at least the output level of y against which we want to benchmark the observed firm. As m goes to infinity, the Order-m frontier converges to the full frontier.

In a similar manner, in the output oriented approach, benchmarking is done against the average maximal output used by m peers randomly drawn from the population of decision making units using inputs less than or equal to x_0. The Order-m upper boundary of the output vector Y is defined as the expected value of the maximum of m random variables $Y_1, Y_2,\ldots..,Y_m$ drawn from the distribution function of Y. Thus mathematically speaking, $\varphi_{m(output)} = E[\max(Y_1, Y_2,\ldots..,Y_m)]$.

As an alternative to the Order-m frontier, Aragon, Daouia and Thomas-Agnan (2005) introduced the Order-α frontier which is based on conditional quantiles of an appropriate distribution associated with the production process. Here a productive firm (x,y) is benchmarked against 100α firms producing an output level ≥y and using an input level≤ x. The value of α lies between 0 and 1. As α goes to 1, the Order- α frontier converges to the full rontier.

Impact of Contextual Variable on the Performance Scores

An important objective of the study is to assess the influence of contextual/ environmental variable on the efficiency estimates and this is done in terms of econometric analysis. However, since the efficiency scores are bounded (the lower and upper bounds being 0 and 1), regression method can be applied only by imposing restriction on the dependent variable..The censored regression model is effectually an extension of the standard Tobit model. The dependent variable can be either left-censored, right-censored, or both left-censored and right-censored, where the lower or upper limit of the dependent variable can be any number. The censored regression model can be represented as:

$$y^*=z'\beta+u$$

$$y=m \text{ if } y^*\leq 0, y=y^* \text{ if } m<y^*<n \text{ and } y=d \text{ if } y^*\geq 0$$

Where y* is a latent (unobserved) variable and y is the observed variable. z is a vector of explanatory variables. m and n are the lower and upper limits of the dependent variable. β is a vector of unknown parameters and u represents the disturbance term.

Censored regression models are usually estimated by the Maximum Likelihood method. Under the assumption that the disturbance term u is normally distributed with expectation 0 and variance σ^2, the log-likelihood function may be written as:

$$Log\,L = \sum[Im \log\varphi(\frac{m - x'\beta}{\sigma}) + In \log\varphi(\frac{x'\beta - n}{\sigma}) + (1 - Im - In)\{\log\theta(\frac{y - x'\beta}{\sigma}) - \log\sigma\}]$$

where $\varphi(.)$ and $\theta(.)$ denote the cumulative distribution and probability density function respectively of the standard normal distribution and Im & In are the indicator functions with Im =1 if y=m and Im =0 if y>m and In =1 if y=n and In =0 if y>n.

Framework of Study, Results and Discussion

Inputs and Outputs and Model Orientation

Benchmarking of state performance requires specification of input and output indicators. In the previous section a simple framework of analysis was used which showed that the level of income is positively related to government revenue, government spending and therevenue-spending ratio. Taking cue from this, we now make use of three output indicators and one input indicator for the purpose of multi-criteria performance evaluation (Table-4). On the output side, three indicators are taken: own tax revenue, development depending and fiscal performance ratio (total receipts net of fresh borrowing) /total expenditure). Mobilisation of own tax resources is an important indicator of the intention to have fiscal discipline. The quality of spending, on the other hand, is found to be an important facilitator of growth and development and consequently development expenditure has been taken as a proxy for the quality of expenditure undertaken by the states. The numerator of the last output indicator (index of fiscal discipline) includes the total resources mobilized for state from not debt sources including both tax and non-tax sources and consequently depends on the aggregate income of the concerned state. On the input side, GDP is considered. In the second stage, the efficiency scores are regressed on two contextual variables (Outstanding liabilities to State GDP ratio and Log of Gross Capital Formation). Estimation of efficiency is made using

the output oriented approach and under the assumption of operation of variable returns to scale. Computations were made using 'R'.

Table-2: Input and Output Indicators (and Contextual Variable) for Performance Benchmarking

Particulars	Variables
Input	State GDP
Output	own tax revenue, development expenditure & fiscal performance ratio
Contextual variables	Outstanding liabilities to GSDP ratio, Log of Gross Capital Formation

Period of Analysis, Sample Observations and Data Source

The present study is based on observations relating to 16 non-special category States for the period 2009-10 to 2013-14 and for 17 states relating to 2014-15. Data relating to the variables included in the study have been collected from the RBI and Government of India reports. To be specific, data relating to the output and input indicators have been collected from various sources including Report on State Finances (R.B.I.) and Economic Survey (Government of India).

Mean Technical Efficiency Scores

Tables-3 and 4 present the mean technical efficiency scores corresponding to DEA, FDH, Order-m and Order-Alpha Frontier for the period 2009-10 to 2013-14. To be specific, Table-3 presents the outcomes from the two full frontier approaches of estimation (DEA and FDH) whereas Table-4 presents the outcomes corresponding to the two partial frontier approaches (Order-m and Order-alpha).The state wise technical efficiency scores obtained from the estimation (DEA, FDH, Order-m and Order-alpha) are provided in appendix tables.

Table-3: Mean Technical Efficiency scores for DEA and FDH (2009-10 to 2014-15)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
DEA	0.9249	0.9335	0.9471	0.9500	0.9079	0.9631
FDH	0.9631	0.9229	0.9896	0.9933	0.9695	0.9805

Source: Calculated

Figure-1: Mean efficiency of in-sample states – DEA and FDH

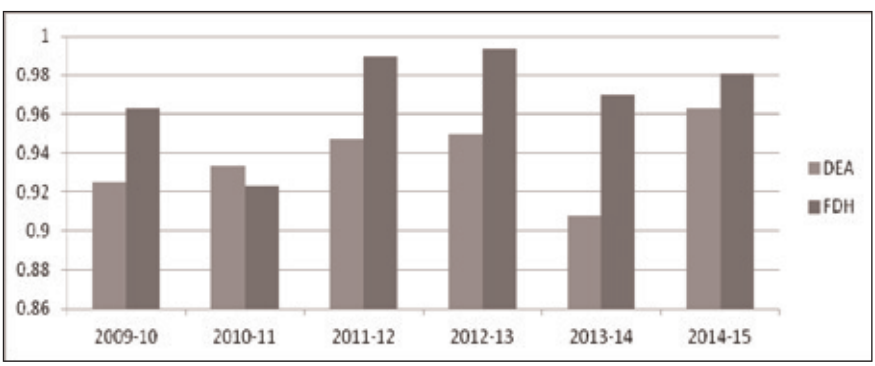


Table-4: Mean Technical Efficiency scores for order-m and order-alpha (2009-10 to 2013-14)

Particulars	Percentage of observations included	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Order-m	25	1.0846	1.1728	0.9896	0.9883	0.9705	1.0023
	50	0.9744	0.9624	0.9896	0.9875	0.9695	0.9848
	75	0.9744	0.9624	0.9896	0.9875	0.9695	0.9848
Order-alpha	25	1.3959	1.5726	1.3972	1.4318	1.5631	1.4241
	50	1.1833	1.1872	1.1789	1.2114	1.2579	1.1842
	75	1.0684	1.0378	0.9896	1.0437	1.0186	1.0303

Source: Calculated

Figure-2: Mean efficiency of in-sample states – Order-m and Order-m (First Quartile)

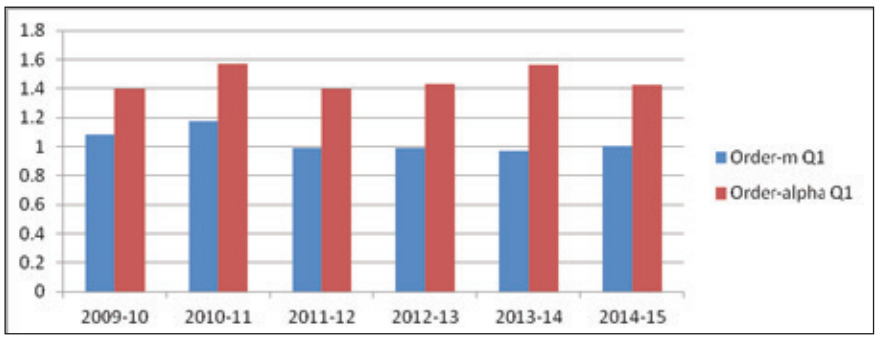


Figure-3: Mean efficiency of in-sample states – Order-m and Order-m (Second Quartile)

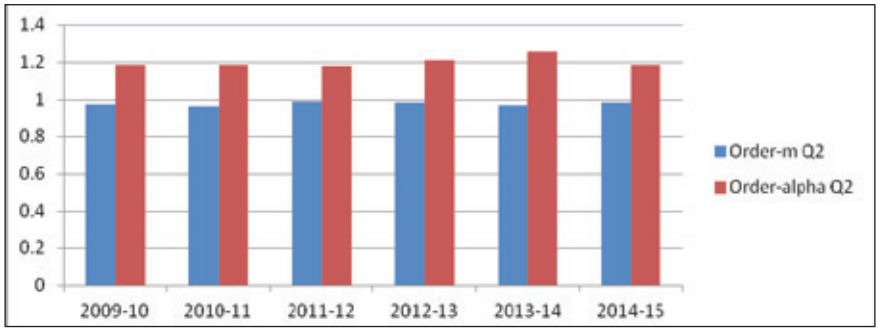
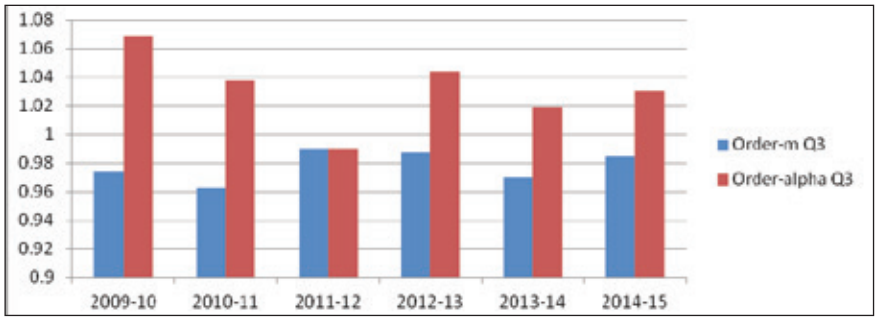


Figure-4: Mean efficiency of in-sample states – Order-m and Order-m (Third Quartile)



Returns to Scale (RTS) Characteristics

Table-5 provides summary information relating to returns to scale exhibited by the states under consideration for the period 2009-10 to 2014-15. The table shows that during the period under consideration, the number of states exhibiting constant returns to scale varied between 3 to 5. For two years (2011-12 and 2012-13) none of the states exhibited increasing returns to scale while for the remaining three years the number varied between 2 and 3. What is worrysome is that most of the states exhibited decreasing returns to scale for the period under consideration. For state wise information consult appendix tables A1 to A24.

Table-5: RTS Classification of Indian States – 2009-10 to 2014-15

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Number of states exhibiting CRS	5	5	3	4	3	5
Number of states exhibiting IRS	3	2	0	0	2	0
Number of states exhibiting DRS	8	9	13	12	11	12

Source: Calculated

Impact of Indebtedness and Gross Capital Formation

The influence of contextual variables on the efficiency performance of the Indian states is estimated using a censored regression framework. Since we have observations for Telengana for only 1 year, the same were dropped for estimation purposed. As indicated earlier, DEA, FDH, Order-m and Order-alpha efficiency scores are taken as the dependent variables and the total outstanding liabilities to State GDP ratio as well as log of gross capital formation are taken as the two contextual variables. However, for estimation purposes, the order-m and order-alpha estimates encompassing 25% and 50% observations have not been considered because they are based on only on a small number of observations. The results (presented in Table-6 through 9) show that in all the cases, the influence of the outstanding liability ratio is significant. However, the influence of gross capital formation on the efficiency performance is significant only in cases of DEA and order-alpha efficiency scores.

Table-6: DEA efficiency and Outstanding Liability-GSDP Ratio

Particulars	Coefficient	Standard Error	Coefficient/ Standard Error	Probability of Type I Error
Intercept	1.21713	0.1688	7.2093	<0.00001
Outstanding Liability-GSDP ratio	-0.0085	0.0029	-2.8717	0.0041
Log Gross Capital Formation	0.0012	0.0099	0.1238	0.9015
Cross-section dummy	0.00009	0.0035	0.0254	0.9798
Time series dummy	-0.0031	0.0111	-0.2756	0.7829

Source: Calculated

Table-7: FDH Efficiency and Outstanding Liability-GSDP Ratio

Particulars	Coefficient	Standard Error	Coefficient/ Standard Error	Probability of Type I Error
Intercept	3.7212	1.06641	3.4894	0.0005
Outstanding Liability-GSDP ratio	-0.0263	0.0102	-2.5787	0.0099
Log Gross Capital Formation	-0.1539	0.0636	-2.4185	0.0156
Cross-section dummy	0.0116	0.0096	1.2190	0.2228
Time series dummy	-0.0095	0.0244	-0.3869	0.6988

Source: Calculated

Table-8: Order-m Efficiency and Outstanding Liability-GSDP Ratio

Particulars	Coefficient	Standard Error	Coefficient/ Standard Error	Probability of Type I Error
Intercept	1.05575	0.0365	28.8883	<0.00001
Outstanding Liability-GSDP ratio	-0.0021	0.00097	-2.1195	0.03404
Log Gross Capital Formation	-0.00241	0.0018	-1.3634	0.1728
Cross-section dummy	-0.0004	0.0010	-0.3908	0.6960
Time series dummy	0.0035	0.0029	1.1755	0.2398

Source: Calculated

Table-9: Order-alpha Efficiency and Outstanding Liability-GSDP Ratio

Particulars	Coefficient	Standard Error	Coefficient/ Standard Error	Probability of Type I Error
Intercept	0.9759	0.10021	9.7386	<0.00001
Outstanding Liability-GSDP ratio	-0.0043	0.0022	-1.9663	0.0493
Log Gross Capital Formation	0.0154	0.0081	1.8925	0.0584
Cross-section dummy	0.0039	0.0027	1.4394	0.1500
Time series dummy	-0.0169	0.0090	-1.8823	0.0598

Source: Calculated

Section 5: Conclusion

The present study attempts to provide efficiency performance of Indian non-special category states (based on several non-parametric tools) for six consecutive financial years. According to DEA based estimates,technical efficiency exhibited an upward trend between 2009-10 to 2012-13 but declined in 2013-14 and again bounced back in 2014-15. The non-convex approaches (FDH, Order-m and Order-alpha) indicate decline in mean efficiency score for 2010-11 (instead of an improvement as suggested by DEA based estimate). However, the rest results are similar.

The study includes a second stage analysis: assessment of the influence two contextual variables on the efficiency score. As indicated earlier, the coefficients of outstanding liability to State GDP is significant across the four approaches used for the estimation of efficiency. This indicates the importance of past borrowings on the efficiency performance. The impact of gross capital formation is, however, contingent on the method chosen for efficiency estimation.

Limitations of the Study and Scope for Future Research

The present study is based on observations for six financial years. In order to get a long term picture, extension of study to a longer period is essential. Secondly, the performance indices generated from the exercise can be made more broad based by including other performance indicators. Finally, more contextual variables can be accommodated.

References

Aragon, Y., Daouia, A. and Thomas-Agnan, C. (2005). Nonparametric frontier estimation: A conditional quantile-based approach, *Econometric Theory*, 21(2), pp:358-389.

Banker, R.D.(1993). Maximum Likelihood, Consistency and Data Envelopment Analysis: A Statistical Foundation, *Management Science*, 39(10), pp:1265-1273.

Banker, R.D., A. Charnes and W.W. Cooper (1984). Some Models for Estimating Technical and Scale Efficiency, *Management Science*, 30(9), pp:1078-1092.

Cazals C., Florens, J.P. and Simar L. (2002). Nonparametric frontier estimation: a robust approach, *Journal of Econometrics*, 106(1), pp:1-25.

Charnes, A., Cooper, W.W. and Rhodes, E. (1978). Measuring Efficiency of Decision Making Unit, *European Journal of Operational Research*, 2, pp:429-444.

Coondoo, Dipankar, Majumder, Amita, Mukherjee, Robin, Neogi, C. (2001). Relative Tax Performances-Analysis for Selected States in India, *Economic and political weekly*, 36(40), pp:3869-3871.

Deprins, D., Simar, L. and Tulkens, H. (1984). Measuring labor-efficiency in post offices. In: Marchand, M., Pestieau, P. and Tulkens, H. (eds.) *The Performance of public enterprises – Concepts and Measurement*, Amsterdam: North-Holland, pp:243-267.

Dholakia, Archana (2005).Measuring Fiscal Performance of Indian States An Alternative Approach, Economic and Political Weekly, 40(30), pp:3421-28.

Mundle Sudipto, Chowdhury, S. and Sikdar,S.(2016). Governance Performance of Indian States 2001-02 and 2011-12, *NIPFP Working Paper No.2016-164*.

Shephard, R.W.(1953). Cost and Productions. Princeton: Princeton University Press.

Shephard, R.W.(1970). Theory of Cost and Productions. Princeton: Princeton University Press.

Appendix 1: State wise Efficiency Scores: (DEA, FDH, Order-m and Order-α)

Table-A1: State wise DEA Efficiency Scores (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1	1	1	1	1	1
Bihar	0.8872	0.9328	0.9438	0.9548	0.9145	0.9873
Chhattisgarh	1	1	1	1	1	1
Gujarat	0.7849	0.8429	0.9271	0.9245	1	0.9576

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Haryana	0.6751	0.7892	0.8769	1	0.7779	0.8521
Jharkhand	0.9171	0.8124	1	1	1	1
Karnataka	0.9970	1	0.9657	1	1	1
Kerala	1	0.9161	0.8556	0.8318	1	0.9711
Madhya Pradesh	1	1	1	0.9503	0.7128	1
Maharashtra	1	1	1	1	1	1
Odisha	0.9767	1	1	1	0.7548	1
Punjab	1	1	0.8312	0.8172	1	0.9051
Rajasthan	0.8776	0.9481	0.9460	0.9343	0.6750	0.9360
Tamil Nadu	1	0.9359	1	0.9674	1	0.9695
Telengana	-	-	-	-	-	0.9389
Uttar Pradesh	1	1	1	1	1	1
West Bengal	0.6826	0.7582	0.8076	0.8193	0.6916	0.8548

Source: Calculated

Table-A2: State wise FDH Efficiency Scores (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1	1	1	1	1	1
Bihar	1	1	1	1	1	1
Chhattisgarh	1	1	1	1	1	1
Gujarat	0.5741	0.5229	0.9818	0.9804	1	0.8010
Haryana	1	0.6835	1	1	1	0.9892
Jharkhand	0.9875	0.9831	1	1	1	1
Karnataka	1	1	0.9983	1	1	1
Kerala	1	1	1	1	1	1
Madhya Pradesh	1	1	1	1	1	1
Maharashtra	1	1	1	1	1	1
Odisha	1	1	1	1	1	1
Punjab	1	1	1	1	1	1
Rajasthan	1	1	0.9879	1	0.7429	1
Tamil Nadu	1	1	1	1	1	1
Telengana	-	-	-	-	-	1
Uttar Pradesh	1	1	1	1	1	1
West Bengal	0.8480	0.5768	0.8656	0.9124	0.7685	0.8777

Source: Calculated

Table-A3: Order-m efficiency scores (25%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1.1966	1.4762	1	1.0008	1.0008	1.0217
Bihar	1.0590	1.0671	1	1	1	1.0009
Chhattisgarh	1	1	1	1	1	0.9124
Gujarat	0.9726	1.0248	0.9818	0.9818	1.0001	1.0020
Haryana	1.0354	0.9389	1	1	1	0.9457
Jharkhand	0.9353	0.8522	1	1	1	1
Karnataka	1.2487	1.5016	0.9983	0.9984	1.0017	1.0570
Kerala	1.1160	1.0706	1	1	1.0001	1.0010
Madhya Pradesh	1.1285	1.2651	1	1.0003	1.0003	1.0240
Maharashtra	1.3550	1.5999	1	1.0089	1.0085	1.0925
Odisha	1.0082	1.0177	1	1	1	1

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Punjab	1.0501	1.1297	1	0.9662	1	1
Rajasthan	1.0508	1.1639	0.9879	0.9879	0.7435	1.0084
Tamil Nadu	1.1660	1.2621	1	1.0019	1.0015	1.0356
Telengana	-	-	-	-	-	1.0028
Uttar Pradesh	1.2001	1.3750	1	1.0014	1.0017	1.0180
West Bengal	0.8313	1.0208	0.8656	0.8656	0.7698	0.9173

Source: Calculated

Table-A4: Order-m Efficiency Scores (50%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1	1	1	1	1	1
Bihar	1	1	1	1	1	1.0000
Chhattisgarh	1	1	1	1	1	0.9039
Gujarat	0.8781	0.8899	0.9818	0.9818	1	0.9911
Haryana	1	0.8489	1	1	1	0.9436
Jharkhand	0.9350	0.8217	1	1	1	1
Karnataka	1	1	0.9983	0.9983	1	1
Kerala	1	1	1	1	1	1
Madhya Pradesh	1	1	1	1	1	1
Maharashtra	1	1	1	1	1	1.0001
Odisha	1	1	1	1	1	1
Punjab	1	1	1	0.9662	1	1
Rajasthan	1	1	0.9879	0.9879	0.7429	1
Tamil Nadu	1	1	1	1	1	1
Telengana	-	-	-	-	-	1
Uttar Pradesh	1	1	1	1	1	1
West Bengal	0.7776	0.8373	0.8656	0.8656	0.7685	0.9026

Source: Calculated

Table-A5: Order-m Efficiency Scores (75%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1	1	1	1	1	0.9039
Bihar	1	1	1	1	1	0.9911
Chhattisgarh	1	1	1	1	1	0.9436
Gujarat	0.8781	0.8899	0.9818	0.9818	1	1
Haryana	1	0.8489	1	1	1	1
Jharkhand	0.9350	0.8217	1	1	1	1
Karnataka	1	1	0.9983	0.9983	1	1
Kerala	1	1	1	1	1	1
Madhya Pradesh	1	1	1	1	1	1
Maharashtra	1	1	1	1	1	1
Odisha	1	1	1	1	1	1
Punjab	1	1	1	0.9662	1	1
Rajasthan	1	1	0.9879	0.9879	0.7429	1
Tamil Nadu	1	1	1	1	1	1
Telengana	-	-	-	-	-	0.9026
Uttar Pradesh	1	1	1	1	1	0.9039
West Bengal	0.7776	0.8373	0.8656	0.8656	0.7685	0.9911

Source: Calculated

Table-A6: Order-alpha Efficiency Scores (25%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	2.0371	2.1744	2.5404	2.7354	2.9345	2.0539
Bihar	1.4721	1.2086	1	1.4613	1.7456	1.1111
Chhattisgarh	1	1	1	1	1	0.9796
Gujarat	1.0914	1.6965	1.6029	1.9128	1.8105	1.5564
Haryana	1.0884	1.1406	1.5687	1	1.3480	1.0102
Jharkhand	0.9350	1	1	1	1	1
Karnataka	1.8635	2.2912	1.7683	2.1094	2.1981	1.9192
Kerala	1.4643	1.2906	1.0216	1.5671	1.3462	1.7769
Madhya Pradesh	1.9232	1.9142	1.8571	1.7955	1.7568	1.7623
Maharashtra	1.7483	2.0647	1.6990	1.6483	1.5551	1.8758
Odisha	1	1	1	1	1	1
Punjab	1	1.5040	1.5157	1.0128	2.1069	1
Rajasthan	1.0195	1.6343	1.0405	1.0363	1.0694	1.1177
Tamil Nadu	2.1164	2.2306	1.4441	1.1899	1.4337	1.9958
Telengana	-	-	-	-	-	1.1429
Uttar Pradesh	1.5759	1.9895	1.3333	1.4406	1.4752	1.8820
West Bengal	1	1.1342	0.9629	1	1.2290	1.0259

Source: Calculated

Table-A7: Order-alpha Efficiency Scores (50%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1.2734	2.1074	2.0626	1.9581	2.1350	1.3077
Bihar	1	1.0108	1	1	1	1
Chhattisgarh	1	1	1	1	1	0.9422
Gujarat	1	0.9446	0.9834	1	1.4671	1.4393
Haryana	1.0676	0.8575	1	1	1	1
Jharkhand	0.9350	0.8217	1	1	1	1
Karnataka	1.7707	1.7960	1	1.1089	1.4646	1.6467
Kerala	1.4643	1.0140	1.0216	1.5671	1.3462	1
Madhya Pradesh	1	1	1.8571	1.7955	1.7245	1.6250
Maharashtra	1.7447	1.8145	1.6185	1.5787	1.4807	1.5513
Odisha	1	1	1	1	1	1
Punjab	1	1	1	1	1	1
Rajasthan	1.0195	1.0101	1	1.0053	1	1.0769
Tamil Nadu	1.3099	1.1555	1.3091	1.1353	1.2050	1.3333
Telengana	-	-	-	-	-	1
Uttar Pradesh	1.5603	1.4627	1.1429	1.3069	1.3425	1.2092
West Bengal	0.7867	1	0.8670	0.9260	0.9615	1

Source: Calculated

Table-A8: Order-alpha Efficiency Scores (75%) (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	1.2734	1.2766	1	1	1	1
Bihar	1	1	1	1	1	1
Chhattisgarh	1	1	1	1	1	0.9302
Gujarat	0.9859	0.8972	0.9818	1	1.0017	1
Haryana	1	0.8489	1	1	1	0.9436

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Jharkhand	0.9350	0.8217	1	1	1	1
Karnataka	1	1	0.9983	1.1089	1	1
Kerala	1	1	1	1	1	1
Madhya Pradesh	1	1	1	1	1	1
Maharashtra	1.6802	1.5703	1	1.4519	1.4153	1.4629
Odisha	1	1	1	1	1	1
Punjab	1	1	1	1	1	1
Rajasthan	1	1	0.9879	1	0.7429	1
Tamil Nadu	1.1952	1.0585	1	1.1022	1.0988	1.1208
Telengana	-	-	-	-	-	1
Uttar Pradesh	1.2376	1.1458	1	1.1109	1.0777	1.0569
West Bengal	0.7867	0.9865	0.8656	0.9260	0.9615	1

Source: Calculated

Table-A9: State wise Efficiency Performance

State	DEA	FDH	Order-m	Order-alpha
Andhra Pradesh	1	1	0.9840	1.0917
Bihar	0.9367	1	0.9985	1
Chhattisgarh	1	1	0.9906	0.9884
Gujarat	0.9062	0.8100	0.9553	0.9778
Haryana	0.8285	0.9455	0.9748	0.9654
Jharkhand	0.9549	0.9951	0.9595	0.9595
Karnataka	0.9938	0.9997	0.9994	1.0179
Kerala	0.9291	1	1	1
Madhya Pradesh	0.9439	1	1	1
Maharashtra	1	1	1	1.4301
Odisha	0.9553	1	1	1
Punjab	0.9256	1	0.9944	1
Rajasthan	0.8862	0.9551	0.9531	0.9551
Tamil Nadu	0.9788	1	1	1.0959
Telengana	0.9389	1	0.9026	1
Uttar Pradesh	1	1	1	1
West Bengal	0.7690	0.8082	0.8510	0.9211

Source: Calculated

Table-A10: State wise returns to scale (2009-10 to 2014-15)

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Andhra Pradesh	Constant	Constant	Constant	Constant	Constant	Constant
Bihar	Increasing	Decreasing	Decreasing	Decreasing	Increasing	Decreasing
Chhattisgarh	Constant	Constant	Constant	Constant	Constant	Decreasing
Gujarat	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Constant
Haryana	Decreasing	Decreasing	Decreasing	Constant	Decreasing	Constant
Jharkhand	Increasing	Decreasing	Constant	Constant	Increasing	Constant
Karnataka	Increasing	Constant	Decreasing	Decreasing	Decreasing	Decreasing
Kerala	Constant	Increasing	Decreasing	Decreasing	Decreasing	Decreasing
Madhya Pradesh	Constant	Constant	Decreasing	Decreasing	Decreasing	Decreasing
Maharashtra	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing

State	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
Odisha	Decreasing	Constant	Decreasing	Decreasing	Decreasing	Decreasing
Punjab	Constant	Increasing	Decreasing	Decreasing	Constant	Decreasing
Rajasthan	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing
Tamil Nadu	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing
Telengana	-	-	-	-	-	Decreasing
Uttar Pradesh	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Constant
West Bengal	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing	Decreasing

Source: Calculated

Table-A11: Order-m-super-efficiency- parameter(m) relationship (values of m)

Percentage of observations included	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
25	8	4	132	55	55	21
50	196	164	292	228	228	134
75	356	356	420	356	368	320

Source: Calculated

Table-A12: Order-alpha-super-efficiency- parameter(alpha) relationship

Percentage of observations included	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
25	0.75	0.66	0.75	0.75	0.74	0.71
50	0.84	0.80	0.85	0.85	0.84	0.84
75	0.90	0.90	0.92	0.90	0.91	0.90

Source: Calculated

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Grassroots Energy Security for India's Poor and Women Empowerment: An Assessment of Pradhan Mantri Ujjwala Yojana

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Abstract

Pradhan Mantri Ujjwala Yojana is an ambitious central government scheme intended to provide five crore free cooking gas connections to all the poor families living below the poverty line in just three year's time i.e. by 2019. LPG connections would also aid in improving the health of women who need to cook food on firewood and hence tend to inhale thick, unhealthy smoke. These Indian poor women spend their entire life in and around these household chores without daring to dream of getting themselves freed from the pitiable 'slavery of energy insecurity', can hope now to be empowered and enjoy social and economic freedom by this scheme. The implementation of the programme has been immensely successful – in just one year from May 2016, 2.2 crore BPL women had received free LPG connections in rural areas, against a target of 1.5 crore. The implementation strategy for the scheme has been well thought out-offering subsidy in the *Jan Dhan* accounts of the family's woman head to curb any corruption; pro-active interest-free loans reaching the doorstep of the customer; use of mass media in advertisements, videos, pamphlets and the LPG *panchayats* along with thousands of safety camps have proven to be highly effective in providing accessibility of the scheme to the poor and acceptance of the scheme among masses. The initial hookups in further refilling, it seems is now overcome as three-fifth of new connections from the poor families have made at least four refills after the first cylinder. But certain challenges still remains like, accessibility to refilling in remote areas, higher cost of refill compared to the biomass and fossil fuels and low affordability of cooking gas because of poor income levels at the bottom. The present paper makes a policy analysis of the PM Ujjwala Scheme along with its achievements and challenges and suggests imminent steps to be taken up to make the programme accessible and affordable among the masses.

Keywords: Pradhan Mantri Ujjwala Scheme, Energy Security, Women Empowerment, LPG Connection, Accessibility and Affordability of Domestic Energy

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Introduction

The *Pradhan Mantri Ujjwala Yojana* –t the free LPG connection scheme for poor – is to be understood in the context of pitiable life stories of rural women, who perpetually depend on forest firewood for their domestic energy needs under hazardous conditions, along with other economic means, and spend a substantial part of their life in smoky kitchens leading to deterioration of their health. The scene of smokeless kitchen in India's poor, deprived and underprivileged BPL families, where the household's women can prepare two square meals a day, without going to the forest and spending half a day in collecting firewood – is a fairy tale story and dream impossible for the poor women to dream in their lifetime. And hundreds of millions of unfortunate poor women in India have spent considerable part of their life in just doing that – amidst thick whitish smoke inside dark clumsy kitchens and bearing the burden of firewood over their heads over a distance of ten to fifteen kilometers at least once in a week. But these may not be enough and one will spend two to three hours daily doing the filthy job of preparing cow-dung cakes for drying in the sun so that it can be used as domestic fuel helping in cooking food. Amidst the thick, pungent and unhealthy smoke of carbon dioxide these women get used to the poisonous indoor pollution and suffer from lungs diseases, asthmatic problems, breathing troubles and sufferings culminating in early death. This is the ageless story of Indian poor women, who have spent their entire life in and around these household chores without daring to dream of getting themselves freed from this pitiable slavery – the slavery of energy insecurity at the grassroots level. It is just unthinkable on their part – and simply unthinkable for others to think for them. This is not only the life of women in India – this is the story of poor women in any third world country in South Asia, Africa or elsewhere.

And the very fact that this has been possible now to free these poor women from this energy slavery from India's rural areas, urban slums and sub-urban shanties is a success story emanated from a social welfare programme of Indian government-known as the *Pradhan Mantri Ujjwala Yojana.* Yet this immensely successful pregame is not much known or discussed in the urban India, nor bothered much in the mainstream media. Reason, the urban India enjoys the LPG cooking gas since much long back and thus they cannot relate with the plight of rural womenfolk's domestic energy problems. And thus this is not a story which is highly consumed in urban India through electronic means and so not much supplied from the media. Yet it is a story which is ambitious and futuristic with potential for securing domestic energy security for the poor and low income groups in India – and thus needed to be talked.

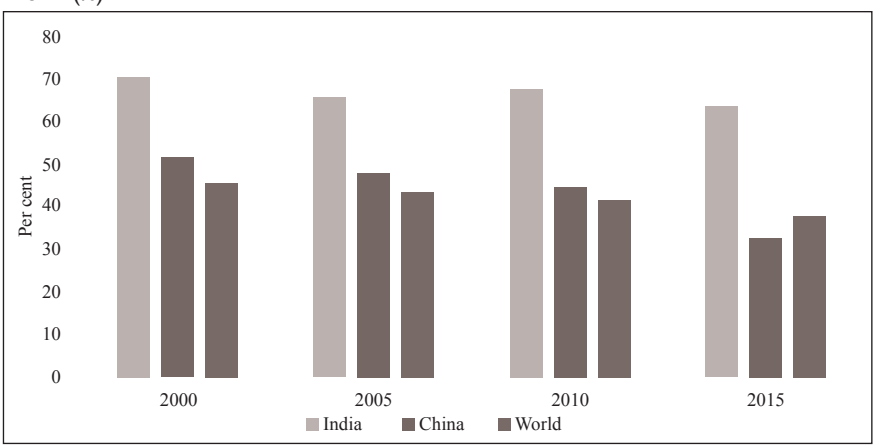
Launched in 2016, the Ujjwala Scheme is an ambitious central government scheme intended to provide five crore free cooking gas connections to all the poor families living below the poverty line in just 3 year's time i.e. by 2019. Serving as a boon for both men and women, the Pradhan Mantri Ujjwala Yojana would include offering subsidy in the Jan Dhan accounts of the family's woman head to curb corruption. LPG gas connections would also likely to lead to improvements in the health conditions of poor women who generally depend on firewood and

bio-mass for cooking food, and thus exposed to inhalation of thick and unhealthy smoke.

As usual in most developing countries including India, the burden of collecting firewood, water and cooking falls mostly on the women and girls. Despite considerable progress in access to clean cooking fuels, the proportion of population without access to clean cooking sources in India stood at about 64 per cent in 2015 vis-a-vis the World average of 38 per cent and China's 33 per cent (OECD/ IEA, 2017 as in Economic Survey 2017-18) (Figure-1).

Women and children directly taking part in cooking activities spend a major proportion of their time indoors and are exposed to unclean indoor air pollution. About 4.3 million people die every year globally from household air pollution alone due to usage of inefficient bio-mass fuels (Watts *et. al*., 2017). Moreover, considerable amount of time is spent in the collection and preparation of these fuels- like firewood, dung-cakes, etc. As per a study, it was found that in India women spend around 374 hours every year on average in collecting firewood (Global Alliance for Clean Cookstoves, 2014 and Economic Survey: 2017-18).

Figure-1: Share of Population without Access to Clean Cooking Fuels in India, China & World (%)



Source: World Energy Outlook Special Report: Energy Access Outlook 2017, OECD/IEA, 2017

Pradhan Mantri Ujjwala Yojana: Salient Features

- Ujjwala Yojana was launched on 1st May 2016 by Prime Minister Narendra Modi in Ballia, Uttar Pradesh
- The Scheme targets to provide 5 crore LPG connections to BPL families, mostly women, by giving a subsidy of Rs.1,600 each in three years i.e. by 2019.
- The Rs.1600 subsidy under the scheme covers following costs: one cylinder, one pressure regulator, one hose pipe and DGCC book. It also includes installation and administrative charges. But this does not cover the cost of Gas Stove and the first refill recharges, which had to be borne by the beneficiary itself.

- An allocation of Rs.8000 crore (US$12 billion) was made for implementation of the scheme.
- Rs. 2,000 crore had been allocated towards the initial expenses of the programme.
- Eligible BPL families for the scheme were to be determined based on Socio-Economic Caste Census of 2011.
- The Government plans to provide direct LPG subsidy to the beneficiaries through its PAHAL Digital Payment Scheme.
- Safety Clinics and Awareness Camps about the usage of LPG, at all villages were set up for providing training to the first time LPG users.
- Digital Platforms are put up to monitor and implement the Ujjwala and PAHAL Schemes and also for selecting new LPG beneficiaries and identifying appropriate location for setting up LPG distribution points.

PM Ujjwala Yojana: A Special Scheme

PM Ujjwala Yojana is a special scheme from a number of point of views, which are discussed as follows:

Relief to Women from Curse of Smoke & Indoor Pollution

Ujjwala scheme is special to the poor women as it can provide relief to them from the prolonged exposure to unhealthy smoke and indoor pollution while cooking. During the budget speech for 2016-17, India's Finance Minister had expressed the concern that Indian women from centuries were facing the 'curse' of smoke during cooking which was equivalent to burning 400 cigarettes in one hour, quoting a World Health Organization (WHO) study. The poorer women also use fossil fuels like kerosene, which potentially can lead to health problems of women and children- respiratory problems, asthmatic tendencies, and sometimes cooking stove bursts cases and resulting injuries. As per WHO, about 5 lakh people die in India from usage of polluting cooking fuels- mostly from non-communicable diseases like heart ailments, chronic pulmonary disorders, stroke and lung cancer. Young children also suffer from severe respiratory problems due to prolonged exposure indoor pollution.

Give It Up Initiative towards Funding the Scheme

Prior to the launch of PMUY scheme, the government had only provided subsidized LPG cylinders in urban/semi-urban areas to the well-off and middle class families. However, rapid economic growth in the country in last decades, had led to the idea to scrap these subsidies from the well off families. So, Indian government launched '*Give It Up' Initiative* for these well-off LPG consumers- to voluntarily surrender their subsidized connections. Responding to the appeal, 1.13 crore LPG consumers voluntarily gave up their subsidies leading to a saving of whopping Rs. 5,000 crore subsidy, which was available for partly funding for the total cost of Rs. 8,000 crore.

Greater Empowerment to Women

Providing LPG connections to poor families is likely to empower the women of such families both in the rural as well as urban areas- emanating from better health, reduced drudgery and stress on collecting firewood and making dung-cakes and so on. Substantial amount of time and toil will be saved from this which will free them for other economic activities leading to their income growth as well.

Creation of Ancillary Jobs

The rural and urban unemployed youth, engaged in the supply chain of cooking gas, will get employment opportunities from the scheme. As the scheme's coverage increases, the number of youth employed is also likely to increase. The entire process can potentially lead to ancillary job creation and income growth at the bottom.

Achievements of PM Ujjwala Scheme

The PM's Ujjwala scheme achieved immense success in extending LPG connections to the poorest households in the country – from 87 lakh (8.7 million) in 2014 to 483 lakh (48.3 million) in 2017. In the year 2016-17, it provided LPG connections to more than 2 crore BPL families and 1.5 crore APL families (together over 3.5 crore connections). This is highest coverage in the country with a registration of 72.84 per cent LPG coverage in 2016-17 against 61.9 per cent in 2015-16. In exactly one year after launch of the scheme, 2.2 crore BPL women from the rural areas had received free LPG connections under the scheme against a target of 1.5 crore, which is a greater achievement (www.thestatesman.com).

By 23 October 2017, total 3 crore LPG connections were extended, 44% of which were distributed to SC and ST families. By December 2017, total connections were 3.2 crore. By 2019, the scheme targets to add 10 crore new connections along with 5 crore BPL families. (Ministry of P & NG, GoI)

A total of 4,718 camps were held during 2014-2017, compared to 37 camps from 2012-14, which benefitted 6.40 lakh disabled beneficiaries under Assistance to Disabled Persons for Purchase/Fitting of Aids/Appliances (ADIP) scheme.

Overall LPG connection in India was growing at 10 per cent rate in the last 3 years, as per Ministry of Petroleum and Natural Gas data. During 1955 and 14 May 2014, India had 14 crore active LPG consumers. By mid-May 2017, India had over 20 crore LPG consumers. (Ministry of P & NG, GoI) At the states level, UP has achieved 75% rise in LPG connections whereas Odisha achieved highest growth from 12% to 33% (www.thestatesman.com).

Around 85% beneficiaries under the *Ujjawala* scheme have booked LPG refills, which includes 38% beneficiaries from SC and ST families. Moreover, as many as 4 LPG cylinders were purchased for refills by about 60% of the 3.2 crore poor beneficiaries of the scheme, by early December 2017. It falsifies the initial reports that poor women were not buying refill cylinders. However, government accepts that there exists some tribal pockets and remote areas where the refill is nil. In those areas the issue of LPG distribution also exists. (Ministry of P&NG, GoI)

LPG fuel was launched in India in 1955 for the first time. About 14 crores

connections were given between 1955 and 2014. This rose to 21.4 crore in three years from 2014-2017. Government plans to cover all households (i.e. over 25 crore) with LPG connections in another 2-4 years from 2017. In 2013-14, India had 16.8 crore registered LPG customers (with 14.85 crore active users in 2014-15), which increased to 25.37 crore by September 2017 (with 21.4 crore active users). Thus, by September 2017 India had 77% LPG penetration, and the government intends to make total penetration in next 2-4 years.

To achieve this target, the government is developing LPG infrastructure, establishing new bottling plants and aiming to raise distributors strength to 25,000 from 19,223 at present within two years, As per government data, PMUY is planning to provide an additional employment to around 1 lakh youths and business opportunity of about Rs 10,000 crore in ancillary activities like infrastructure creation, manufacturing cylinders, gas stoves, regulators and so on.

In June 2015, Indian government launched the 'Housing for All By 2022' scheme, with the aim to eliminate urban slums by constructing 20 million affordable houses for the urban poor. The government is mulling now to club together the Ujjwala and Housing Schemes for their effective implementation.

Effective Nudging and Implementation Strategy

For successful implementation of the program Effective Nudging strategy was adopted by the government. In behavioral economics nudging is meant by positive reinforcement and suggestive inputs for influencing behavioral decisions. To promote the Ujjwala scheme, the government organized 50,000 safety camps, effective mass media was used in advertisements, videos, pamphlets and *LPG-panchayats* were conducted to create awareness about program and dispel fear and myths related to use age of LPG based cooking (www.livemint.com). LPG safety camps were highly successful in dispelling the initial hiccups on adoption of LPG gas over the traditional biomass cooking fuel. Another positive reinforcement strategy adopted for implementation of the program was providing interest free loans delivered at the doorstep of poor consumers. This made accessibility of the scheme a lot easier by reducing the paper work and making it hassle-free.

Moreover, government plans to conduct one lakh *LPG-panchayats* in more than one year's time which will be a strong behavioral reinforcement on rural masses towards adopting the scheme and fulfilling the overall target. Not only nudging the rural masses, effective incentive was also provided to the different officials responsible for implementation and monitoring the scheme. Effective real time monitoring and progress of the scheme was available on a continuous feedback system due to direct exchanges of development between the district nodal officers with the ministry officials. Incentivization of the implementing officials from the government in terms of awards and recognition proved to be highly effective in pushing the officials for efficiently implementing the scheme. (www.livemint.com)

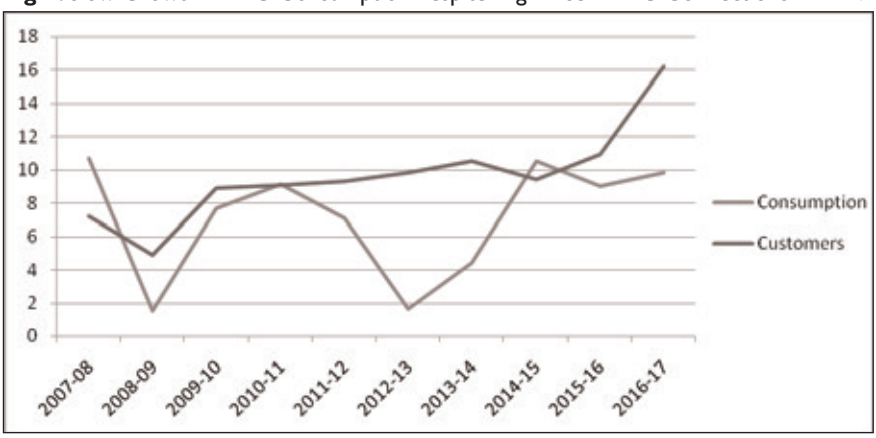
Challenges Before the Scheme

Despite government efforts and substantial progress in enrolling poor families

into the fold of LPG, few roadblocks still remains in terms of accessibility and affordability of cooking gas for them. The 2015 largest rural energy access survey in India conducted by the Council on Energy, Environmental and Water (CEEW) and Columbia University, found that about 95 per cent of poorer households expressed their lack of paying capacity as a barrier to adopting LPG (CEEW, 2015).

Despite Indian government subsidizing on LPG cylinder- its price remains still high at Rs 450 per cylinder. Compared to the cheaper conventional sources of fuel like Kerosene (Rs 20 per liter) or biomass like dung-cake and firewood, LPG is still costly and thus prevents its adoption and usage for the poor families. The overall LPG consumption in the economy in recent times has not increased significantly, despite high growth in LPG connections. The gap between LPG consumption and the customer growth in 2016-17 from CMIE data shows that customers were not buying enough subsequent refills. (Figure-2)

Fig-2: Slow Growth in LPG Consumption despite High Rise in LPG Connections in FY17



Source: CMIE, as reported in Livemint, June 28, 2017

The Government has to Rethink on the Following Issues:

- The Direct Benefits Transfer of LPG (DBTL) subsidy program covering only a part of the cost of refills- is not enough for attracting consumers. The government data of 60% refills of four cylinders in last one year, does not mention the usage of rest 40 per cent families. It raises questions on sustainability of the scheme in the long term.
- The LPG subsidy programme can be made more comprehensive. It will need higher allocation in that case. But the government has not shown any indication to provide more subsidy beyond the initial level of Rs. 1600 connection subsidy and standard LPG subsidy. Government should rethink on this strategy.
- The target of free LPG connections got extended to 8 crore vis-à-vis the previous target of 5 crore in this year's budget. But this does not mention about the allocation required for this. Only ensuring coverage under the scheme will not lead to sustainable use of clean fuel in the economy.

- Merely creating awareness about the usage of clean fuel and its health benefits, though attracts consumers in the initial round, the difficulty in affordability of the cylinders for refills has potential to use LPG as an additional fuel along with the conventional fuels and not fully replacing them. It is seen from past experiences with middle class families that, LPG is used partly to avoid the situation of difficulty in getting firewood or difficulty of cooking in rainy seasons.
- Seeing this reality, the 40 per cent household for whom refill has not become sustainably affordable, the Government can issue smaller LPG cylinders of 2 to 5 kg and can provide more subsidy beyond the standard amount available. It can fix the number of refills it would like to subsidize per year or say a 5-kg cylinder one refill per month could be given with substantial subsidy to the poorest of the poor families. This differential strategy might pay off in making LPG affordable for all.
- Availability of LPG in the rural and remote tribal pockets still remains a problem. Though the government and oil marketing companies have set up a distributor in every block, for remote areas sub-dealers should be set up in one or two centres in the vicinity or village *panchayats* can be used for stocking some cylinders for such areas.
- Adhaar based DBT system, already facing legal challenges, should not be the only mode of providing subsidy transfer to the identified beneficiaries. The *Jan Dhan* bank accounts already opened for financially excluded poor families can be used for it.
- The cost of gas stoves and cost of refills can still be covered if easy money advances are available under existing MUDRA scheme for women. MUDRA scheme should be extended through business correspondent model to the remote rural areas. Already existing EMI scheme for availing refill and gas-stove provides EMI to be recovered by the OMCs from the subsidy on cylinder in next refills. In that case the cost of next refills becomes obviously costlier and preventively unaffordable. Proactive MUDRA advances should tackle this problem.

Union Budget 2018-19 and Women Empowerment

For meeting the target of Ujjwala Scheme, the government has earmarked budgetary provisions this fiscal as follows below. Moreover, a number of parallel programmes for empowerment of rural and urban poor are being clubbed together for effective improvement of quality of life of the beneficiaries.

- The Indian government has set higher targets for coming fiscal for *Ujjwala, Saubhagya and Swachh Bharat* schemes, to provide free LPG connections, electricity and toilets to the lower & middle income groups.
- The target of free LPG connections got extended to 8 crore vis-à-vis the previous target of 5 crore in this year's budget. However, government does not mention the amount of allocation required for this. (Sahoo and Panda, 2018)
- The government is clubbing electricity, toilets and other basic amenities along with the free provisioning of LPG gas. An outlay of Rs.16,000 crore

is earmarked under *Saubhagya* scheme to provide electricity to 4 crore poor households. Moreover, the government targets to build more than one crore houses by 2019 in rural areas under the 'Housing for All by 2022' project. Under *Swachh Bharat Mission,* already 6 crore toilets are constructed for poor families. (Union Budget 2018-19)

- To improve health situation for rural and urban poor, more than 3 thousand *Jan Aushadhi Centers* are set up and more than 800 medicines are being sold at low price.
- For the benefits of women exclusively, Gender Responsive Budgeting (GRB) system was adopted since 2005-06 with earmarking funds for women-specific schemes in two ways: with 100% allocation and minimum 30% of allocation. Gender Budget allocation for FY 2018-19 is put at Rs 121,961 crore compared to Rs 117,222 crore (RE) in 2017-18 in absolute terms, which is just 4% rise. Despite the rise in GRB allocation in absolute terms, it hovers at 5% level of total expenditure like past years. (Union Budget 2018-19)
- Allocation of Rs. 3 lakh crore was made for MUDRA scheme for coming FY19, about 20 per cent rise over last year's allocation of Rs. 2.44 lakh crore. A part of this allocation can be utilized for accessibility of gas stoves and refills for those families who are unable to afford them- though the government has not thought over it yet.

These programmes of women-centric benefits thus will need more funds for their effective empowerment. Thus, health, sanitation, cooking fuel, electricity and so on must be effectively implemented keeping women usage in mind and their effective participation in those programmes.

Conclusion

Grassroots energy security for India's poor families matters much in relation to the basic empowerment of disadvantaged women. The PM Ujjawala scheme is an ambitious scheme which strives to achieve that. Considerable progress has happened in enrolling people into the free clean cooking fuel connection, due to the committed implementation strategy and effective nudging methods adopted. Energy security ant the grassroots level is critical to ensuring and attaining Sustainable Development Goals (SDGs) targeted to be achieved by 2030. Energy security for poor women but is one way of ensuring gender equality and women empowerment. Freedom from slavery of energy insecurity stems from getting freed from unclean and unhealthy cooking gas and debilitating indoor pollution. Few roadblocks still remains in achieving affordability and accessibility of clean energy for masses, as sustainability of refills critically depend on the paying capacity of the poorer families which again depends on the income growth of rural and urban poor. The government has to derive maximum leverage of the existing schemes, like *MUDRA, Jan Dhan Yojana, Swachh Mission*, housing, electricity as well as ensure higher and proper allocation of resources towards attaining these goals.

References

Council on Energy, Environment and Water (CEEW) (2015). *Access to Clean Cooking Energy and Electricity: Survey of State,* New Delhi.

Global Alliance for Clean Cookstoves, (2014), *Gender and Livelihoods Impacts of Clean Cookstoves in South Asia.* [Available at *https://cleancookstoves.org/binary-data/RESOURCE /file/000/000/363-1.pdf*].

GoI, Economic Survey 2017-18, Ministry of Finance, Government of India, [Available at www.mofapp.nic.in].

GoI, Pradan Mantri Ujjwala Yojana, Ministry of Petroleum and Natural Gas, Government of India. [Available at *www.pmujjwalayojana.com*].

Gulati N., "Union Budget 2018: Gender Budget Allocation Has Increased, But Merely Funds Are Not Enough." *Hindustan Times*, February 1, 2018.

India's poor are not using LPG cylinders they got under Ujjwala scheme*, Livemint*, June 28, 2017.

O'Dell K., S. Peters & K. Wharton (2014). *Women, Energy, And Economic Empowerment: Applying A Gender Lens To Amplify The Impact Of Energy Access.* [Available at https://www2.deloitte.com/insights/ us/en/topics/social-impact/women-empowerment-energy-access.html#end-notes].

PMUY scheme: 10 things to know about Ujjwala Yojana, *The Statesman*, May 7, 2017.

Press Information Bureau, *Highlights of Budget 2018-19*, February 1, 2018. [Available at *http://pib.nic.in/newsite/PrintRelease.aspx?relid=176063*].

Sahoo, M. K. & P. C. Panda, (2018), *'Union Budget 2018-19: Neither Populist nor Popular',* Biz Odisha, February 5. [Available at http://bizodisha.com/2018/02/union-budget-2018-19-neither-populist-nor-popular/].

Ujjwala Scheme: Are cleaner cooking fuels affordable and accessible?, Down to Earth, August 31, 2017; [Available at: http://www.downtoearth.org.in/coverage/india-steps-on-the-gas-58502]

Ujjwala: The Nudge Story*, Livemint*, Nov 14, 2017.

Watts, N. et. al. (2017). *The Lancet Countdown: Tracking Progress on Health and Climate Change,* The Lancet, 389(10074), pp: 1151-1164.

60 per cent of Ujjwala scheme beneficiaries bought 4 LPG refills: Dharmendra Pradhan, *The Economic Times*, 5 Dec, 2017.

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Institutional intervention in River Water Management: The Study of Yamuna river sub-basin in India

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Abstract

Water is a primary resource for several human activities, and rivers are a major source of water in several parts of India. Unfortunately, rivers also becoming a major sink of wastes that flow into them. River water management is an important area of natural resource management that crosses several disciplines, and, in order to be more effective, it requires public intervention through appropriate institution and an action plan approach. River water authority is normally set up for assuming the managerial function of river water administration (mostly at regional/ basin level), particularly with regard to the sharing/allocation of river water. The allocation of river water in itself is a contentious subject, especially when it flows through several states; a similar problem arises now with regard to its pollution across them.

This paper makes an attempt to highlight the status of water of an inter-state river (river Yamuna), and discusses the need for establishing an exclusive administering agency for ensuring better river water quality and quantity. It first analyses the critical state of Yamuna river water resource in the past and the impending need for public intervention; the use of economic values of water as one of the guiding principles of prioritization and allocation of water to uses and jurisdictions is also discussed. It also takes stock of the performance of the implementation of Yamuna Action Plan (YAP) as an institutional approach towards river water management, and attempts to identify the alternate institutional arrangements and appropriate policy instruments for achieving the objectives within a broad management framework.

Keywords: River Water Management, Water Pollution, Public Intervention, Economic Valuation, Institutional Mechanism

Introduction

Environmental problems have been emerging across the world at various levels, to different extents and in different forms. Often, this is attributed to the rising

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levels of human population, urbanization and economic activities. These exert pressure on the natural resources as well as result in the damages to ecosystems, upon both of which future human sustenance rests. Water resource is one such natural resource that has been coming under severe pressure in the recent times in developing countries due to human population growth and economic activities, which prompts some social scientists to warn that we will experience wars on water at local to global levels in coming years.

Riverine water resources, in particular, are becoming vulnerable to quantity decline (with shrinking influent water) and quality degradation (with rising wastewater discharges) due to human activities, more so in a country like India, which has as many as fourteen rivers and several cities alongside them. River water sources are increasingly coming under the threat of getting reduced to become the carriers of water of extremely poor quality in several stretches, particularly along the major cities wherein domestic and industrial wastewater also enters them to a great degree, thereby deteriorating further. Water is a primary resource for several human activities like agriculture, industries and domestic use, and rivers are a major source of surface water in several parts of India. Unfortunately, rivers are becoming a major sink of wastes that flow into them.

River water management is an important area of natural resource management that crosses several disciplines, and, in order to be more effective, it requires public intervention through appropriate institution and an action plan approach. River water authority is normally set up for assuming the managerial function of river water administration (mostly at regional/ basin level), particularly with regard to the sharing/allocation of river water. In India, they are set up in the form of Boards to undertake this function. The allocation of river water in itself is a contentious subject, especially when it flows through several states, as each State has its own criteria of arguing for better allocation to itself. Fixing water allocation among different areas and people itself has been a contentious issue with large political agenda attached to it.

A similar problem arises now with regard to river water pollution across the States. Here, the challenge is not that of water distribution but burden-sharing of pollution treatment and river water quality maintenance, which also involves coordinated and co-operative action in order to be effective. The rationale for public intervention towards conservation of river water quality is laid down in this section and then the strategy for achieving it is discussed. Subsequently, the case of river Yamuna is discussed further and the water pollution in it is analysed with the help of data from several secondary sources. Finally, the Yamuna Action Plan is reviewed before laying down an institutional approach towards managing the water quality of river Yamuna.

Rationale for Public Intervention

River water management, therefore, involves balancing of water quantity and quality through a choice of appropriate policy instruments and appropriate institution. Although independent actions of individuals can make some difference,

public intervention through appropriate institution and suitable policy mix is more effective than individual level action towards river water management for various reasons:

- First, most of the resource management problems are due to the public goods nature of environmental resources and the associated externality problems i.e., resources are shared by several people and their consumption leads to some unintended effects on others. In the case of common property resources, in particular, externalities and free rider-ship lead to the misuse of resources rather than their optimal use. Under such conditions, no incentives exist for individuals to organize their actions so as to avoid or minimize the externality effects of their actions. The lack of incentives may arise from institutional constraints and/or economic rationality.
- Second, the regulation of use and maintenance, as a trustee of planet earth and its ecosystems is desirable; the lack of it leads to, quite often, non-compliant or free-riding behaviour, which in turn exacerbates the resource degradation and decline, resulting in what is popularly known as 'Tragedy of Commons'. Therefore, sustainable resource use requires their management through policies for conservation, monitoring of resources and ensuring compliance from the behavioural changes brought-in. An exception is when monitoring and compliance are either costly or not practical, in which case getting a correct regime of property rights of environmental resource use has theoretical possibility of delivering better given the risk of high monitoring costs.
- Finally, the conflicts among various user groups with regard to their rights of use (over abstractive and in-stream water uses), especially when river water flow changes over space and time, calls for an agency that balances these interests in setting the allocative criteria of water to various uses. This is so when consumptive uses e.g., drinking and irrigation, tend to prevail upon non-consumptive uses e.g., recreation, navigation and environmental services, and when there is uneven balance of river water quantity and quality in upstream and downstream areas.

Public Intervention Strategies

When it comes to the formulation of policy in case of river water, a multitude of factors comes in to picture. Often, policy maker is confronted by the various operational aspects of water management - complementing and conflicting - to be covered by the policy. Here, instead of allowing such confusion to prevail, the policy maker needs to understand the body of policy making in order to formulate appropriate strategies to implement the policy. For formulating such strategies, policy maker needs to pose few questions first pertaining to effectiveness, goals, monitoring, evaluation, and review of policy, which are discussed hereunder. Here, public participation of various forms is essential at all levels for effective outcomes. The body of policy making consists of:

- Formulation of goals and objectives

- Analysis and Design of strategies
- Monitoring and Review of outcomes

Goals

Goals are possible questions that the policy maker is concerned about in the policy. Water resources management has physico-chemical, engineering, biological, socio-economic, and even psychological dimensions. Often, professionals in these disciplines pose questions. However, given the constraints of resource scarcity, only few of these questions could be stated as goals of the policy. While setting goals, it is important to give attention to whether some questions have already been covered by other policies in order to avoid confusion that the policy may bring out.

Further, a goal that transcends more than one discipline will be more effective than the one which is narrowed to a discipline. However, it has to be taken with caution that the goal is not too generic, as it becomes more difficult to assess its effectiveness at a later stage. Hence, the goal needs to transcend one discipline, but shall remain focused in structure. When there are multiple goals, they need to be prioritized to identify the key goal (s) that should be addressed first. Such prioritization can be done using various operations research methods. Finally, goals should not overlap or counteract each other, if so, some conflict resolution mechanism or goal priority setting needs to be resorted. *In the case of water resources policy, often improvement in water quality or quantity with improvement in net social payoffs is the common goal.*

Effectiveness

The effectiveness of policy will be more when it is made with little or no ambiguity i.e., when it is well specified and clearly stated. Besides statement, the effectiveness of policy is also determined by the understanding of the operational system (monitoring, evaluation, implementation, and taskforce), and there might be some inherent problems that necessitate very different approach. For example, the control of point Vs non-point source pollution (Stonehouse et al 1997). When controlling of one or a few pollutants based on specific and identifiable sources of pollution, mostly based on the regulatory policy instruments and supplemented by litigation and penalties, is the policy objective, it is effective in case of point source pollution; and it is more difficult to do so in case of non-point source pollution. River water is confronted by both point and non-point source pollutants. Hence, the policy shall target only one of them first in order to make it effective to control water pollution. Further, the policy effectiveness can also be judged based upon how well the net social payoffs are maximized. This entails inclusion of any onsite (or private) benefits and costs, as well as offsite (or public) benefits and costs, of abatement policies. Moreover, in addition to increasing net payoffs, policy goals may be set to include attainment of social equity, societal acceptability, and administrative feasibility.

Monitoring

The issue of monitoring relates to the capacity to enforce and measure the effectiveness of the policy, which renders to a more pragmatic dimension to policy making. The choice of policy making also depends on the strength of monitoring. Policies involving monitoring of pollutant in trace amounts requires considerable equipment and effort, and thus, increase the cost, whereas, measurement of a more common representative pollutant avoids it. A typical example is reducing trace metal pollutants in water. Policy to control them will require monitoring on a large scale across the river water and its analysis, whereas policy that aims at reduction in a parameter like Biochemical Oxygen Demand (BOD) or Dissolved Oxygen (DO) requires measurement at regular intervals and thus can be monitored effectively.

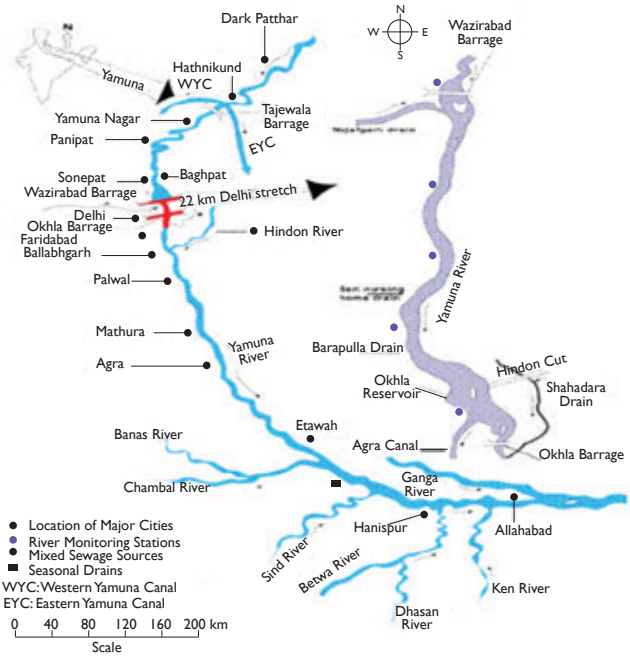
Evaluation

Evaluation refers to the assessment of policy intervention in tangible/deducible terms, so as to decide whether the policy is efficient and economically sound. Evaluation is necessary because, public policy renders public investments made in monitoring and execution. Benefit-cost analysis is widely used for evaluation of projects, plans, and recently policies (Chichilinsky 1997). Thus, measurement of benefits and costs (both, onsite and offsite) becomes crucial in identifying whether the policy is effective in attainment of stated goal. Targeting conservation or abatement situations that provide best use of scarce funds (resources) also requires public benefits be carefully identified and measured for each situation. This, in turn, entails evaluation of a number of different physico-chemical, engineering and socio-economic variables using a comprehensive methodology with multidisciplinary approaches.

The Case of River Yamuna

River Yamuna is one of the major rivers in India and also a major tributary to river Ganges, the largest river in India. Both of these rivers cater to the vital human needs of the states in North India. River Yamuna originates from Yamunotri in Himalayas and traverses through Himachal Pradesh and Uttaranchal in the upper stretch of 200 Km drawing water from several major streams. It enters the plains at Dak Pathar in Uttranchal, where the river water is regulated through weir and diverted into canal for power generation. It then reaches Hathnikund/Tajewala in Yamuna Nagar district of Haryana state, where the river water is diverted into Western Yamuna canal and Eastern Yamuna canal for irrigation. During dry season, no water is allowed to flow in the river downstream to Tajewala barrage and the river remains dry in some stretches between Tajewala and Delhi. The river regains water because of ground water accrual and contributions of feeding canal through Som nadi (seasonal stream) upstream of Kalanaur. Figure-1 shows the river Yamuna and its course until it meets river Ganges at Allahabad.

Figure-1: Location and Traverse of River Yamuna



River Yamuna enters Delhi near Palla village after traversing a route of about 224 Km. The river is again tapped at Wazirabad through a barrage for drinking water supply to Delhi. Generally, no water is allowed to flow beyond Wazirabad barrage in dry season, as the available water is not adequate to fulfill the demand of water supply of Delhi. Whatever water flows in the downstream of Wazirabad barrage is the untreated or partially treated domestic and industrial wastewater contributed through several drains along with the water transported by Haryana Irrigation Department from Western Yamuna Canal (WYC) to Agra Canal via Nazafgarh Drain and the Yamuna. After 22 Km downstream of Wazirabad barrage there is another barrage, Okhla barrage, through which Yamuna water is diverted into Agra Canal for irrigation. No water is allowed to flow through barrage during dry season. Whatever water flows in the river beyond Okhla barrage is contributed through domestic and industrial wastewater generated from East Delhi, Noida and Sahibabad and joins the river through Shahdara drain. The Yamuna after receiving water through other important tributaries joins the river Ganga and the underground Saraswati at Prayag (Allahabad) after traversing about 950 Km.

Yamuna river can not be designated as perennial river, as it flows very low in dry season (almost 9 months), but can be segmented into five distinguished independent segments due to characteristic hydrological and ecological conditions. The catchment of Yamuna river system covers parts of Uttar Pradesh, Uttranchal, Himachal Pradesh, Haryana, Rajasthan, Madhya Pradesh & Delhi states. The tributaries contribute 70.9% of catchment area and balance 29.1% accounted for direct drainage into the Yamuna river or to the smaller tributaries (CPCB 1978).

On the basis of area, the catchment basin of Yamuna amounts to 40.2% of the Ganga Basin and 10.7% of total land mass of the country. River Yamuna water has some key functional uses identified as:

- Irrigation
- Drinking water
- Bathing water
- Livestock use
- Navigation
- Aesthetics and Recreation
- Religion and Culture

Irrigation is the major use with the net irrigated area in the basin has gone up from 47,000 sq km to 110,000 sq km during 1950-90, although there has been a shift from traditional canal irrigation to ground water irrigation (which is replenished by river Yamuna and rains) (Narula *et al* 2001). While extractive uses like irrigation have major share of water use in upstream States of Haryana and Himachal Pradesh, water for drinking and other domestic uses dominates in the middle stream States of Delhi and Uttar Pradesh. Further downstream, the stream uses like navigation, religious and aesthetic uses The population of the basin has grown from 51 million to 131 million at 2.4 per cent during 1950-1990 and Delhi, in particular, has grown at 4 per cent, while level of economic development in the basin is high and diverse (Narula et al 2001). Water use has risen from 1000 MCM to 4000 million cubic metre (mcm) during this period. Drinking water is the next most important use and the rising population discussed above reflects the rapid rise in domestic and drinking uses. Likewise, industrial use has also risen as a result of rapid rise in number of large and medium scale industries, which numbered to almost 10,000 by 1990s (Narula *et al* 2001). These uses are representatives of several functions that the river renders as a continuum of water. Besides acting as a supportive resource for use, river Yamuna also renders service as a sink by assimilating wastes originating from domestic, agriculture and industrial activities.

Water Quality Degradation in River Yamuna

Water Quality Changes

Most of the water in the region is drawn from river Yamuna for various uses, predominantly for agriculture and drinking purposes, through various diverging canals in the upstream parts of the river basin. These uses draw good amount of water from river Yamuna. For example, the total water use in the capital, where drinking is the predominant use, was 1,027.84 mcm in 1992, which increased by almost 30% in three years to 1,330.04 mcm in 1995 (NEERI 1997). At the same time, the total water use in the basin, where agriculture uses a majority of water, was 44,926 mcm in 1992, which rose to by 10% to 50,437 mcm in 1995 (NEERI 1997). Such rapid rise in use by increasing drawal from river over years has resulted in a drastic reduction of river water to a level that the river can no longer offer any ecological and other services/ functions.

An important observation to be made is the reduction in annual river water flow from 10 mcm/y to 5 mcm/y (CPCB 1978). The low self-purification capacity of the river Yamuna is due to the want of minimum flow in the river and discharge of heavy municipal and industrial pollution load emanating from Delhi. Even though Delhi constitutes only 2% of the catchment of the Yamuna basin, yet it contributes to about 80% of the pollution load. There are 16 drains which discharge treated and untreated waste water/sewage of Delhi into the Yamuna. The municipal sector is the main source of water pollution in terms of volume. Approximately 1,900 million litres per day (mld) of waste water is discharged from municipal sector and 320 mld from industrial sector. The installed capacity for treatment is 1,270 mld. At the same time, the existing capacity for treatment is not up to the desired secondary treatment level. Thus, substantial quantity of untreated sewage and partially treated sewage is discharged into Yamuna every day. The Najafgarh drain contributes 60% of total waste water and 45% of the total BOD load being discharged from Delhi into the Yamuna. The municipal waste water increased from 960 to 1,900 mld and treatment capacity enhanced from 450 to 1,270 mld during 1977-97 (NEERI 1997).

Water Quality Status

A healthy river should contain at least 5mg/l of Dissolved Oxygen (DO) and a maximum of 3mg/l of Biochemical Oxygen Demand (BOD) in its water. Pathogens or the disease causing bacterias indicated by faecal coliforms counts should not exceed 500 per 100 ml of water. When sewage or industrial effluents containing pollutants (organic matters) are dischaged into river, these draw oxygen from the river water for oxidation of organic matters. Continuous discharge of pollutants results in depletion of DO in river water adversely effect the flora and fauna of eco-system. Untreated sewage also contains pathogenic or faecal matters gives rise to disease causing bacterias in the river water. When people take bath in the river pathogenic bacteria get transmitted to the human body impacting on their health.

The effluents flowing into river Yamuna comprise municipal and industrial wastes. The Central Pollution Control Board (CPCB) monitors the water quality of Yamuna at the upstream of Wazirabad and at Okhla. Upstream of Wazirabad, the dissolved oxygen (DO) level is 7.5 mg/l and biochemical oxygen demand (BOD) level is 2.3 mg/l, whereas, downstream at Okhla, the DO level declines to 1.3 mg/l with the BOD at 16 mg/l, indicating considerable deterioration in water quality in the stretch due to discharge of sewage and industrial effluents (MoEF 2003). The stretch between Wazirabad and Okhla is designated as bathing quality standard in terms of its water use. The coliform count at Wazirabad is 8,506/100 ml whereas at Okhla, it increases to 3,29,312/100 ml, as against prescribed standard of 500/100 ml (MoEF 2003).

Water Quality Status

Accompanied by this, there is an increase in the wastewater flows into river Yamuna. Industry is the largest polluter; strong effluents of high pollutant concentration are discharged into it, while also, agricultural farm return flows and livestock use

constitute yet another major source of pollution. Wastewater discharges in the capital alone have increased from 745.03 mcm in 1992 to 835.34 mcm in 1995 (NEERI 1997). The result is that the river no longer serves as a stream of water. The river clearly shows a declining trend of water quality measured on several parameters soon after it enters Delhi as shown in Table-1. The decline in river water flow and degradation of water quality of river flowing have effects varying from the loss of various services (including ecological services) rendered by the river in the stretch of NCT-Delhi to the negative effects on the public health due to contamination and spread of vector borne diseases.

Table-1: Water Quality in Polluted Stretch of River Yamuna

(Average values of three successive years 1995-97)

	Location		
Parameter	**Talla (u/s Delhi)**	**Nizamuddin (Delhi)**	**Agra canal (d/s Delhi)**
pH	8.2	7.6	7.6
DO	8.6	1.9	1.5
BOD	2.7	12.2	16.4
COD	25.6	50.2	60.9
TC	5878.0	319573.7	251568.0
FC	2529.3	220245.7	178326.0
TKN	1.1	919.0	13.4
Temp	25.2	26.4	25.8
Ammonia	0.4	8.0	9.8

Source: Calculated from MoEF (2003)

DO = Dissolved Oxygen, mg/l
FC = Faecal Coliform (of Bacteria), no./100 ml
BOD = Biochemical Oxygen Demand, mg/l
TKN = Total Kjeldahal Nitrogen, mg/l
COD = Chemical Oxygen Demand mg/l
Temp = Water Temperature, oC
TC = Total Coliform, no./100 ml
Ammonia = Ammonia, mg/l

River Yamuna, over time, lost good use of several of its functions and reduced itself to almost a drain flowing through capital, thereby causing severe public health problems. In the Fifth State of India's Environment report of the Centre for Science and Environment, it was observed that the river has become more filthy, and it is a drain of waste water which chokes and dries up in summer. The major causes of river water pollution are urbanization, industrialization, withdrawal of water, agricultural runoff, and improper religious and social practices (CSE 1999). Likewise, the Central Pollution Control Board (CPCB) has also identified that the river flowing through capital has very low river flows and associated by it the water quality in the stretch is very poor for any direct use as evident in Table-2 by the class of existing water quality vis-à-vis desired water quality. Table-3 shows the designated best use classes.

Table-2: Water Quality in Polluted Stretch of River Yamuna

Location	Desired class	Existing class	Critical parameters
Hathnikund, Haryana	A	B	E-Coli
Panipat, Haryana	C	C	
Wazirabad, Delhi, CPCB	C	C	
Okhla Bridge (Inlet of Agra Canal)	C	E	DO, BOD, E-Coli, Ammonia
Delhi			
Mathura U/S, U.P.	B	D	BOD, E-Coli
Agra U/S, U.P.	C	D	BOD, E-Coli
Agra D/S, U.P.	C	D	BOD, E-Coli
Etawah, U.P.	C	D	BOD, E-Coli
Allahabad D/S, (Balua Ghat) U.P.	B	D	E-Coli
Hindon			
Saharanpur D/S, U.P.		E	

Source: CPCB (1998)

Table-3: Primary Water Quality Criteria for Designated-Best-Use-Classes

River Water Class	*Designated-Best-Use*	*Criteria*
A	Drinking water source without conventional treatment but after disinfections	1. Faecal Coliforms organism MPN/ 100ml shall be 50 or less 2. pH between 6.5 and 8.5 3. Dissolved oxygen 6mg/l or more 4. Biochemical oxygen demand 5 days 20°C 2mg/l or less
B	Outdoor Bathing (Organized)	1. Faecal Coliforms organism MPN/ 100ml shall be 500 or less 2. pH between 6.5 and 8.5 3. Dissolved oxygen 5mg/l or more 4. Biochemical oxygen demand 5 days 20°C 3mg/l or less
C	Drinking water source after conventional treatment and disinfections	1. Faecal Coliforms organism MPN/ 100ml shall be 5000 or less 2. pH between 6 to 9 3. Dissolved oxygen 4mg/l or more 4. Biochemical oxygen demand 5 days 20°C 3mg/l or less
D	Propagation of wild life and fisheries	1. pH between 6.5 and 8.5 2. Dissolved oxygen 4mg/l or more 3. Free Ammonia (as N) 1.2mg/l or less
E	Irrigation, Industrial cooling, controlled waste disposal	1. pH between 6.0 to 8.5 2. Electrical conductivity at 25°C micro mhos/cm max. 2250 3. Sodium absorption ratio max. 26 4. Boron Max. 2mg/l

Source: Central Pollution Control Board

Yamuna Action Plan – A Review

The CPCB Study (1978) established that a major cause of pollution was the discharge of domestic wastewater into river from nearby towns and habitations which contribute about two-thirds of the pollution load, the remaining one-third contributed by industries and agriculture activities. Organic pollutants can be removed or minimised by proper treatment of sewage and treated sewage needs to be disinfected to kill the pathogenic bacteria before it is finally discharged into a water body. Based on the CPCB study and the subsequent studies of NEERI, the Government of India decided to take up pollution control measures for Yamuna river and requested the Government of Japan in 1990 for a loan assistance for the implementation of Yamuna Action Plan (YAP). It was proposed that the YAP would be on the lines of the ambitious project Ganga Action Plan (GAP).

The Government of Japan had sent a fact finding mission in 1991 to assess the contents of the YAP proposal and its suitability vis-à-vis actual site conditions. Based on the suggestions of the Japanese mission, the Japan Bank for International Cooperation (JBIC) decided to arrange for a feasibility study to be conducted through consultants appointed by it before agreeing to the loan. The feasibility study was conducted in 1992. Yamuna Action Plan was launched in 1993 with the objective of improving the Water Quality of River and restoring it to the Desired Bathing Class. It was implemented in two phases:

Yamuna Action Plan-I (YAP-I) was implemented by the National River Conservation Directorate (NRCD) of the Ministry of Environment and Forests in 21 toons since 1993. The JBIC provided soft loan assistance of about Rs 700 crores for implementation in 15 of the 21 towns in the sub-basin and the Government of India provided the funds for the remaining 6 towns. It focused on reducing the discharge of untreated domestic wastewater and other wastes into the river from the towns located along the banks of river Yamuna. These towns were to collect sewage from domestic sources in the towns and treat it before final disposal into river Yamuna.

At the request of GOI, Government of Japan agreed to extend the loan for another two years (2000-2002) and the project was termed as **Yamuna Action Plan II (YAP – II)**. During the extended period, ongoing works would be completed along with some remedial works to enhance the effectiveness of the project. In particular, several intercepting sewerage lines were to be built alon the banks of river Yamuna to trap the waste water that was being discharged and divert into treatment plants for subjecting it to treatment before disposal.

Yamuna Action Plan (YAP) was framed to prevent the pollution of river Yamuna. Its main objective was to improve the water quality of river and restore it to the desired bathing class. It envisaged pollution abatement schemes in 21 towns of 3 states. Pollution from domestic sewage was to be tackled under Yamuna Action Plan, whereas pollution of industries was to be monitored and controlled under the existing environmental laws. The main focus under YAP was on:

- Laying of trunk & intercepting sewers, for diversion of sewage outfall into the river
- Construction of Sewage Treatment Plants to treat the captured sewage
- Non point sources of pollution to be addressed by:

- Providing electric/improved wood based crematoria to minimize the river pollution on account of disposal of unburnt dead bodies
- Constructing low cost toilets so that public resist from resorting to open defecation.

In addition, activities such as river front development, plantation along the river and public participation and awareness works have been taken up under the programme. The action plan had a strong focus on actions rather than activities that achieve the objectives in long term. Therefore, YAP was a one-time intervention project executed in a time-bound manner and its focus was on intercepting wastewater discharged into river. The polluting industries and other activities e.g., agriculture and livestock breeding, were not targeted under the YAP. While such projects serve purpose during the intervention period, the river water deteriorates subsequently due to the lack of action on a continuing basis. Therefore, a dedicated institution of public in nature that takes holistic approach to river water management is required here. The recent court decisions to consider Yamuna and Ganga rivers as living beings, bestowing on them same legal rights as a person (Hindustan Times 2017), is perhaps a step in right direction towards rejuvenation of rivers and revitalising their ecological and environmental functions.

Institutional Approach to River Water Management

The Government of India had enacted the River boards Act, 1956 under which a Board may be formed for any specified inter-State river or river valley to serve as an advisory body to the State Governments so as to resolve conflicts among them and achieve the development activities such as conservation of water resources, promotion and operation of schemes, promotion and control of navigation and afforestation (including control of soil erosion), prevention of pollution of river water and any other such matters. Such Board shall also workout the schemes, estimate costs and their allocation, and monitor the progress. In spite of such empowerment by law, only few of them have been constituted (only ten such Boards exist now). Even these boards have confined to water allocation and development activities but not to the activities of pollution prevention and control explicitly. The effectiveness of the Act is clouded by a lack of clarity in terms of institutional objectives, fragmentation of basins by State boundaries and lack of cooperation among State and intense political lobbying (Ananda 2009).

The Natonal Water Policy 2002 also emphasizes on the need to reorient existing water-related institutions. The main thrust of the policy shifted to a participatory multi-sectoral approach leading to the establishment of River Bain Organisation (RBO), which advocates hydrological boundaries for water governance. Therefore, there is a need for establishing a River Water Authority (RWA) for river Yamuna using the empowering Act while also expanding the functions of such RWA to include the prevention and control of river water pollution. Further, according to the Act, the Board members are appointees of the Government and are governed by its rules. Such bureaucratic settings of the river Board need to be modified to include the members who represent water resource professionals, non-government organisations and other persons of eminence. The Yamuna RWA shall undertake the activities that lead to an improved river water management in medium to

long term. The learning from ineffectiveness of YAP with regard to its inability to prevent and control river water pollution should serve as useful feedback. It may also undertake the assistance from other agencies and organisations towards conserving river water quality and also maintaining river water flows (minimum environmental flows).

Yamuna River water authority (RWA), modeled on the lines of river basin authority, needs to be set up by Central government under the Central Water Commission to function independently but in coordination with State and Central government agencies in terms of ensuring the undertaking of the activities and monitoring the progress. The Yamuna RWA shall take care of the river water quality and quantity by taking a regional approach and use economic approaches to policy making with wider stakeholder participation based on the scheme outlined and discussed later. Nallathiga and Rambabu (2003) discuss such regional approach towards water resource management in Yamuna river sub-basin. The authority shall, thus, formulate goals, and set objectives, evaluate various options for water management, and evaluate them and their alternatives in a benefit-cost analysis framework using economic valuation as a major tool to measure, implement action plan using various policy instruments to bring in effective action. The following are some guide posts to it.

Water Quality Improvement

Water quality is an important aspect of river water resource (which has multiple parameters, measures and standards) and the conservation of it needs to be justified through benefit-cost analysis (after defining water quality goals, parameters and approaches in measurable or practical terms). Multiple objectives/ targets for improving water quality are difficult to achieve and simple practical measure such as BOD or DO makes the whole process easy to take to implementation level. While measuring the benefits and costs of water quality improvement, public benefits appear as formidable to identify and measure, more so, when public policies are aimed at improving status of water resources - qualitatively or quantitatively. This is because of many biophysical, engineering, and socio-economic attributes that affect public benefits form such improvement, which include (Stonehouse *et al* 1997):

- existing water quality, according to a well defined criteria prior to implementing abatement policy
- actual or planned uses of the water together with any standards or levels of quality associated with each use
- the actual or potential number of users of water identified for each use
- the extent of improvements in water quality made by the abatement policy
- the value placed on the water quality improvements by the water using public, otherwise known as willingness of public to pay for water quality improvements

Water Quantity Allocation and Waste Water Discharge Control

The dry weather flow in the river Yamuna along Delhi is nearly zero, which resulted in almost total depletion of the self cleansing capacity of the river of Wazirabad (MoEF 2003). Pollution in river Yamuna cannot be controlled fully

unless a minimum flow is maintained in the river. It is mentionworthy that sewage treatment plants are designed for reducing the pollution in sewage to a certain economically achievable level only. The rest of the pollution is controlled by the dilution available in a water body. To maintain the water quality of the river within the bathing class standard, nearly 10 times the discharge of the fully treated municipal waste water is required.

The principal activities for controlling water pollution in Delhi include (MoEF 2003):

- Designing a strategy for augmentation of water resources in the upper stretches of Yamuna and for conserving water both in domestic and irrigation use (by Ministry of Environment & Forests/Governments of Uttar Pradesh/Haryana/ Delhi).
- Maintaining minimum flow in the river Yamuna (by Central Water Commission/ Upper Yamuna Board).
- Controlling pollution discharges in the upper stretches of the river Yamuna and the western Yamuna Canal (by Government of Haryana/Haryana State Pollution Control Board).
- Construction of sewage treatment plants upstream of Delhi at Yamuna Nagar, Karnal, Panipat, & Sonepat, etc. (by Ministry of Environment & Forests/ Government of Haryana).
- Pumping of sewage to the full capacity of existing sewage treatment plants and regular maintenance of sewers and pumps (by Delhi Water Supply & Sewage Disposal Undertaking).
- Construction of sewage treatment plants to meet effluent treatment requirements (by Delhi Water Supply & Sewage Disposal Undertaking).
- Statutory regulation of ground water (by Ministry of Water Resources/Ground Water Board).

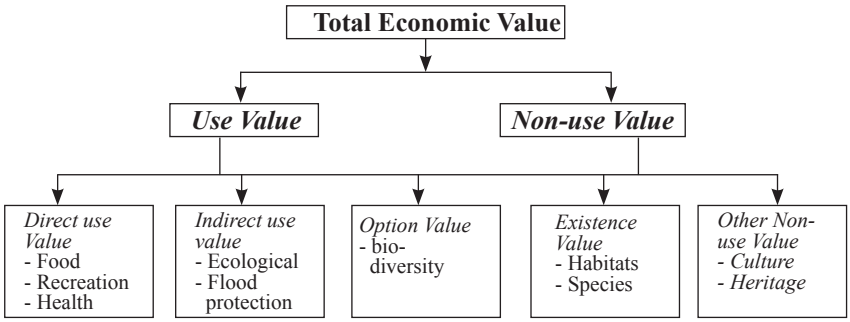
Economic Valuation of River Water

The river water authority could explore several options for improvement of river water, which are not only economically efficient in terms of pooling resources and using them optimally in meeting the objectives. This process can be implemented with the help of various stakeholder groups. The setting up of such authority in an integrated framework shall be a first step towards improving river water quality and quantity on part of government, while effective functioning of the authority shall be brought in by various mechanisms. The present classification of river stretches based on use quality can be a first method of choice that could be expanded later on to include several other parameters. Moreover, the authority needs to consider economic as well as technical / engineering parameters in making appropriate choice, which brings forth importance of economic valuation.

Economic Valuation takes a careful approach towards the resource and the question of measurement in money terms; first, it undertakes a careful study of the services/functions of rendered by the resource, and next the value of such services are assessed by various methods in literature (Figure-2 illustrates Taxonomy of economic values). The usefulness of economic valuation to decision making at

national and regional level has been discussed well in Parikh *et al* (1992). Further, the usefulness of water resource accounting as a means towards better water management has also been demonstrated in Nallathiga and Rambabu (2003) and Nallathiga (2004).

Figure-2: Taxonomy of Economic Values

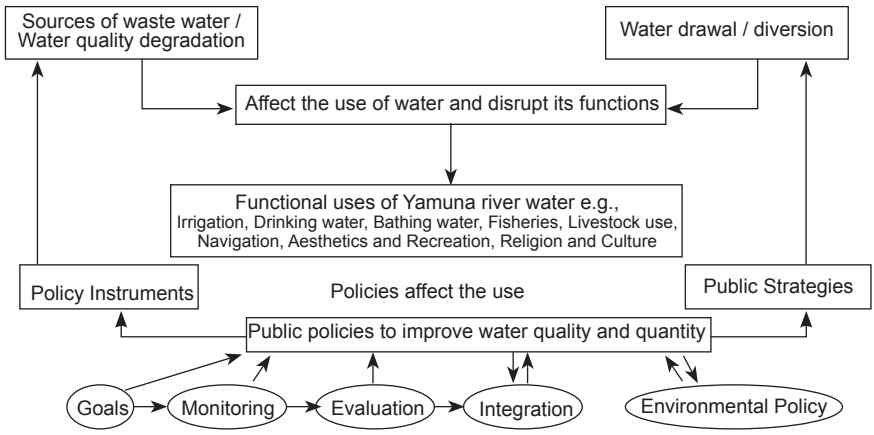


Source: Munasinghe (1995)

Framework for River Water Management

The key tasks for the river authority shall be regular monitoring of water resources and review of implementation, and ensuring key stakeholder participation i.e., industry, non-governmental organization, local community and other representative groups, into the decision making at all levels. The public intervention will become true and meaningful with such action. Water resources management in Yamuna river basin within the above framework is shown in Figure-3. The policy instruments identified above shall be used appropriately to distinguish the varying approach in case of point sources (e.g., industry) vis-à-vis non-point sources (e.g., agriculture), different taxation principles (e.g., pollution taxes or permits in case of industrial waste water, and pricing or taxation in case of domestic water consumption).

Figure-3: Framework for Public Intervention to Improve Rive River Water Quality



Source: Nallathiga (2004)

Policy Instruments

Environmental management involves application of several policy instruments that lead to the attainment of goals such as improved water quality and flows. Taxation of public goods or bads is most resorted policy option in case of environmental resource management. An alternative policy instrument commonly referred to in literature is permits/ quotas that are tradeable (not the administered quotas), which are considered to be efficient than 'command and control' policies of pollution control (Baumal and Oates 1975). This is an alternative approach to the riddle due to non-marketed nature of environmental bads, which tries to establish a market for these bads through market institutions. The fixed up amount of bad (or pollution) helps in setting up treatment capacity for the assessed amount of bads. This approach, takes into consideration of thresholds of river water resources quality and quantity, beyond which damages will take place and which may be irreversible in both technology and cost or reversible either after substantial amount of damage has taken place or involve huge costs.

Thus, thresholds serve as upper limits set based on eco-toxicological or carrying capacity methods, or standards reflecting it can be set based upon several criteria identified. Once the standards are laid down, it is easy for a policy maker to fix pollution permits or quotas, which equal to the set limits to comply with standards. Subsequently, the quotas/permits can be made tradable in a market among polluting uses/users. This tradable permits mechanism fulfils the objective of environmental conservation in two ways: on one hand, it creates market for public bads such as pollution through the permits/quotas, on other hand it brings in incentives for rational behaviour on part of polluters to tradeoff the costs of pollution permits with abatement costs (with implicit knowledge of costs). An increasing demand for permits makes them costly in long run and thus abatement becomes more acceptable option to firms. This leads to the economically efficient method of achieving the objective (improved river water quality and quantity).

Conclusions

This paper has emphasized upon the institutional intervention in Yamuna river water management – both on theoretical grounds and empirical analysis. The case of river Yamuna pollution and the relatively less effective intervention of Yamuna Action Plan gives grounds for establishing a River Water Agency (RWA) for river Yamuna to take care of the river water management as the primary responsibility to act upon at a regional level (river basin level). The provisions under existing River Water Boards Act 1956 can also be used for setting up RWA but the constitution of the Authority has to go beyond that of the River Board to mimic the River Basin Organisation in terms of wider representation. The paper also has also laid down an approach for the functioning of the RWA (based on policy goals, strategy, monitoring and evaluation) and also suggested that it needs the technical backing of organisations like CPCB and NEERI. Therefore, the paper argued for such an institution comprising wider stakeholder representation on its body to take progressive steps towards river water management based on the principles of environmental economics and valuation. The paper also suggested establishing a

permit mechanism for pollution control so that the same are tradable and capacity can be established to meet with the set levels of pollution.

References

Ananda, J (2009). Chapter 6: Water Institutions in India: An Institutional Design Perspective. In: Lin Crase and Vasanat P Gandhi (Eds) *Reforming Institutions in Water Resource Management: Policy and Performance*, London: Earthscan, (pp: 100-122).

Baumol, W. J. & Oates, W. E. (1975). *Economics, Externalities, Public Outlays, and Quality of Life*. New Jersey, USA: Prentice-Hall Publishers.

Chichilinisky, G. (1997). The Costs and Benefits of Benefit-Cost Analysis, *Environment and Development Economics*, Vol. 2, pp: 195-221.

CPCB [Central Pollution Control Board]. (1978). *The Ganga basin, Part I: The Yamuna subbasin*, Central Board for Prevention and Control of Water Pollution, New Delhi, India.

CPCB [Central Pollution Control Board]. (2006). *Water Quality Status of Yamuna River*, Central Pollution Control Board, Ministry of Environment and Forests, New Delhi, India.

CSE (1999). State of India's Environment: The Citizens' Fifth report - Part 1. In: Anil Agarwal, Sunita Narain, and Srabani Sen (Eds), New Delhi: Centre for Science and Environment (CSE), India.

GoI (1956). *The River Boards Act, 1956*, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India (GoI), New Delhi [Available at: http://lawmin.nic.in/ld/P-ACT/1956/A1956-49.pdf].

GoI (2002). *National Water Policy 2002*, Ministry of Water Resources, River Development and Ganga Rejuvenation, Government of India (GoI), New Delhi [Available at: http://www.nationalwatermission.gov.in/?q=national-water-policy-2002].

MoEF (2003). White Paper on Water Pollution in Delhi, Ministry of Environment and Forests (MoEF), Government of India, New Delhi (Available at: http://envfor.nic.in/divisions/cpoll/delpolln.html].

Munasinghe, M. (1995). Environmental Economics and Sustainable Development, *World Bank Environment Paper No. 3*, Washington DC, USA: The World Bank.

NEERI (1997). Natural Resources Accounting in Yamuna River Sub-basin: Volume 2: Water Resources, National Environmental Engineering Research Institute (NEERI), Nagpur.

Nallathiga, R. & P Rambabu (2003). Resource accounting for Regional Water Resource Management: A Case Study of Yamuna river sub-basin. In: Annual Convention of COSMAR at Indian Institute of Sciences. Bangalore on September 19-21.

Nallathiga, R. (2004). Water resource accounting as tool for urban water management: An illustration in NCT-Delhi, *Journal of Indian Water Works Association,* 38 (4), pp: 21-27.

Narula, K. K.et al. (2001). Water resources development in the Yamuna river basin in India, *Journal of Environmental Studies and Policy,* 4(1), pp: 21-33.

Parikh, K. S. et al. (1992). *Natural Resource Accounting: A Framework for India*, Report prepared for Ministry of Environment and Forests, Indira Gandhi Institute of Development Research, Mumbai, India.

Stonehouse, P. D. et al. (1997). Holistic policy approach to natural resource management and environmental care, *Journal of Soil and Water Conservation*, Vol. 52, pp: 22-25.

Uttarakhand HC declares Ganga Yamuna living entities, gives them legal rights, *The Hindustan Times*, March 22, 2017.

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Panchayats under the PESA Act in Odisha – A Study of Two Gram Panchayats

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Abstract

The functioning of Panchayats in the tribal areas has received fresh impetus due to increasing role played by these institutions in the matters of local decision making, planning and implementation of the development programmes. It is observed that in the case of tribal areas, the Panchayats under the framework of PESA Act has become instrumental in promoting local development plans and implementing socio-economic development programmes. The Palli Sabhas and the Gram Sabhas are emerged as the key institution for fostering peoples' participation in the matters of structural arrangements and functioning of these institutions. Further, in the context of the enactment of the PESA Act, these institutions have been enjoying powers of managing natural resources, controlling land alienation, controlling the selling of intoxicants, controlling money lending and above all planning and implementation of the development programmes.

Considering the above stated issues, this paper tries to examine the institutional arrangement and functioning of panchayats in two GPs in the districts of Sundargarh and Koraput of Odisha. It further tries to unravel institutional arrangements and functioning in the context of enactment of the PESA Act. In order to understand the above issues, data were collected from the villages through the process of Focus Group Discussion (FGD) and in-depth interview through interacting with various stakeholders. The result of data analysis shows that the institutional arrangements and functioning of the Palli Sabhas and Gram Sabhas have largely influenced by the active participation of people particularly the tribals. Such process has been contributed to a great extent towards the effective functioning of Panchayats under the provision of PESA Act, though there are area related variances. However, the process of institutionalisation and outcome of the functioning of the Panchayats under the framework of the PESA Act has diluted the many provisions of the Act.

Keywords: PESA Act, Panchayats, Institutionalisation, Tribal Areas, Odisha

Introduction

The Panchayats have been emerged as part of decentralised governance in the rural areas for the effective implementation of the development programmes while ensuring equity in planning and decision making processes. These institutions

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have also become an important means of ensuring participation of the socially and economically weaker section of people like the Tribals. Towards this end, the issue of inclusion (Political, Social and Economic) has been emerged as a key thrust area of the panchayats in order to dispense equity and social justice in the matters of planning and implementation of the socio-economic development programmes. Such situation has been contributed a lot towards highlighting the larger development goals of the panchayats. Examining the functioning of panchayats towards promoting equity is the key to understand the process of evolution and institutionalisation of these institutions and their achievements and failures. In the context of understanding the process of participation it is also equally important to understand the nature of institutionalisation and functioning of these institutions. However, since last three decades and more, scant attention has been given by the researchers to shed light on the issues of institutionalisation and functioning of panchayats in the tribal areas. Particularly the role of panchayats as institution of promoting peoples participation through addressing the issue of inequity has rarely focused by the researchers. In the context of the enactment of the PESA Act in 1996, it has become apparent to understand the functioning of panchayats in the tribal areas of various PESA states including Odisha.

Democratic governance in scheduled areas broadly refers to the institutionalisation and functioning of the Panchayati Raj Institutions (PRIs) in the areas defined under the 5th and 6th schedule of the constitution of India. Beginning from the pre-independence period, the evolutions of the Panchayats in the tribal areas have been examined through the various approaches and methods. The pre-independence period analysis shows the origin of 'village republic' in tribal areas and the system of self-governance, method of self-determination and the nature of decision making processes involved within the traditional village committees in the tribal areas in India. Furthermore, the evolution of the local self-governance system during the different period of time also presented the era of democratic governance and beginning of creating the institutions.

The post-independence era of evolution has marked a new phase with the passage of various legal provisions. The provisions like the birth of the 'Scheduled Areas' and 'special development initiatives under the framework of the Tribal Sub-Plan(TSP) can be attributed as important land marks in the evolution of panchayats in the scheduled areas in India and also in Odisha. In the case of tribal areas of Odisha, the evolution of the concept of the 'Scheduled Areas' and the extension of the PESA Act to these areas can be regarded as a new phase towards the path of strengthening self-governance and promoting inclusive development. Summarising the process of evolution and functioning of Panchayats in tribal areas, Sharma (2006) observes that "special plans were prepared for tribal areas on the same lines as the general areas with higher financial outlays under the scheme of Tribal Development Blocks keeping in view the stage of their respective economies and such other factors like, remoteness, difficult terrain. The basic issue of governance, however, did not claim the attention it deserved. It was largely because of lack of appreciation of the intricacies involved in the process of change that had to be virtually mutational. The result was not commensurate with the avowed objectives".

Currently the panchayats in tribal areas of Odisha are functioning under the provisions the PESA Act that was enacted in 1996 by the Indian Parliament. Based on Bhuria Committee Report, the Panchayat Extension to Scheduled Areas Act (PESA), 1996, was passed by Parliament and came into effect on 24th December 1996. The act extends to the tribal areas of nine states, namely Andhra Pradesh, Jharkhand, Gujarat, Himachal Pradesh, Maharashtram Madhya Pradesh, Odisha, Rajasthan and Chhatisgarh. The Parliament passed the PESA Act, with the political class acknowledging the dire need to protect the rights and resources of the communities in Scheduled V areas, by recognising and upholding their right to self-governance. The Panchayats (Extension to Scheduled Areas) (PESA) Act 1996 has made it mandatory for the state having scheduled areas to make specific provisions for giving wide ranging powers to the tribals on matters relating to decision-making and development for their community.

Since decentralisation of governance aims to enhance people's participation in the process of governance, institutions, planning and implementation, so it is indeed important to understand the nature of functioning of these institutions as per the provision of the act. Without understanding the nature of functioning of these institutions and the environment they have created for enhancing the participation of the tribals in the process of decision making and implementation of such decisions, it is indeed difficult to draw conclusions about the contribution of these institutions towards promoting self-governance and enhancing inclusion. Based on this argument, the paper conceptualised to understand both the process of functioning of political institutions and traditional institutions not only from the perspective of mere structural-functional issues but also effects of such process on making Panchayats inclusive.

The most key aspect of understanding the functioning of panchayats is to shed light on their evolutions through the method of historical analysis. Furthermore, how the evolution of these institutions reflected in the case of tribal areas and to what extent the legal provisions are supported towards institutionalise and functioning of these institutions in tribal areas are the key to understand the process of evolution. Further, with regard to the effects of such process at the ground level, the result of empirical findings presented based on the data gathered from the various stakeholders such as elected members, traditional leaders and government officials regarding the structural and functional issues of the Panchayats.

This paper focuses on the evolution of the tribal areas of Odisha during the pre-independence era and different legal provisions that were framed to institutionalise and functioning of panchayats during the post-independence period. Considering the present discourse involved within the PESA Act and its extension to the tribal areas in Odisha, the paper further tries to examine the various issues associated with the process of enactment and functioning of the panchayats in the study area. Further, the nature of institutional arrangements and process and outcomes of the interfaces between the modern political institutions (panchayats) and traditional customary institutions have summarised based on the data gathered from the two sampled panchayats.

The scheme of the paper is divided into five broad sections. While section 1 discusses about the objectives of the present study and profile of the study area,

section 2 discusses about evolution of Panchayats in the scheduled areas during the pre-independence and post-independence era. Similarly section 3 discusses the enactment of the PESA Act in the state and process of institutionalisation. Section 4 highlights the summary of the findings and underlies conclusion.

Objectives of the Paper: The objectives of the present paper are based on the issues raised through the above discussions.

- To examine the evolution and functioning of the Panchayats in the tribal areas in Odisha and various legal provisions framed during the different period of time in the state.
- To explore the current status of the PESA Act in the state and the process of institutionalisation and functioning of PRIs under the provision of this Act in Odisha.
- To highlights the process of institutional change taken place because of the enactment of the Act and suggests suitable policy recommendations.

Methodology and Data Collection

The study shows the result of the data gathered from the two tribal Gram Panchayats of the Districts of Sundargarh and Koraput in Odisha. The database is also based on the analysis of secondary data, and interactions with the key persons such as Sarpanches, Tribal council leaders, Govt. Officials and selected people from the study panchayats. The study has particularly tried to examine the evolution of the legal provisions with regard to the functioning of the panchayats in the tribal areas in the state. It has also focused on measuring the perception of the key informants on (i) institutionalisation and functioning of panchayats as per the PESA Act, and (ii) the overall perception of the tribal people on changing nature of functioning of panchayats in these areas and their implications towards promoting the participation of tribals in the process of institutionalisation and functioning of panchayats in the tribal areas under the framework of PESA Act.

The study was carried out using a set of research methods such as analysis of secondary data and interview-the secondary data were collected from the state's Panchayati Raj department, District Panchayat Offices, public libraries, and libraries of different research institutions. Apart from this, data were also collected through in-depth interview with the PRI Members, Panchayatiraj Department Officials, NGO functionaries; and people from academic institutions, media and knowledgeable persons..

Table-1: Profile of the Sampled Villages and Respondents

Districts	Blocks	Panchayat	Villages	Respondents		
				PRI Members	Traditional Leaders	Govt. Officials
Sundargarh	01	01	02	3	2	2
Koraput	01	01	02	4	2	1
Total	2	2	4	7	4	3

Source: Field Survey ,2014

Panchayats in Tribal Areas of Odisha and Legal Provisions – A Review

Odisha, since the last few decades have taken-up several initiatives for institutionalising the panchayats in the scheduled areas in the state. The evolution of panchayats is strongly linked with the political history of the state. Starting from the ancient era to the modern period, the evolution and functioning of panchayats in Odisha has proceeded through the various stages while focusing on the aspects of institutional arrangements and functioning of these institutions. These include devolution of powers to these institutions, elections and ensuring peoples' participation through organising periodic meetings of these institutions. Under these efforts, special attention has been laid down to enhance the participation of tribals in the process of institutionalisation and functioning of panchayats.

With regard to the functioning of panchayats in the scheduled areas referred in clause (I) of Article 244 of the Indian Constitution, Odisha has taken a number of initiatives in introducing this system since the post-independence period. Nevertheless, the effects of these provisions on strengthening institutions and enhancing the participation of the tribals in such institutions remain doubtful. The current pattern of the functioning of panchayats and nature of the participation of tribals raised many questions on the effective functioning of the panchayats in the tribal areas in the state. Our study also shows a similar kind of trends. In many cases, the institutions like Palli Sabhas and Gram Sabhas are functioning on paper and the actual rational of their functioning has not been able to yield fruitful result.

Table-2: Profile of Tribal Areas of Odisha

Sl	District	Coverage of Area under PESA	Area (in Sq.km)		Blocks		Gram Panchayats	
			Total	Scheduled	Total	Scheduled	Total	Scheduled
1	Sundargarh	Whole District	9712	9712	17	17	262	262
2	Mayurbhanj	Whole District	10418	10418	26	26	382	382
3	Koraput	Whole District	8379	8379	14	14	226	226
4	Rayagada	Whole District	7585	7584.7	11	11	171	171
5	Nobarangpur	Whole District	5294	5294	10	10	169	169
6	Malkangiri	Whole District	5791	5791	7	7	108	108
7	Kendujhar	Part of District	8303	6935.60	13	10	287	218
8	Sambalpur	Part of District	6702	2367.30	9	3	148	55
9	Balasore	Part of District	3634	223.60	12	1	257	25
10	Kandhamal	Whole District	7649	7649	12	12	153	153
11	Kalahandi	Part of District	7920	1323.30	13	2	273	37
12	Ganjam	Part of District	8071	912.00	22	2	475	39
13	Gajapati	Part of District	3850	3574.40	7	5	129	96
Total	13	7 Fully and 6 Partly	93307	58402.1	173	120	3040	1941

Source: (i) District Statistical Handbooks of the Districts, 2007(ii) Economic Survey Report, Odisha, 2013-14.

During the pre-independence period, the tribal areas of Odisha were kept under the provision of the 'partially excluded areas' as per the provisions of the government of India Act, 1935. During the post-independence era, the governance and development of scheduled areas emerged as part of the constitutional reforms process while adding special provisions for governance and administration of these areas. The case of declaration of scheduled areas in the state occurred in 1974 with the emergence of the Tribal Sub-Plan in the context of the fourth five year plan. However, the issue of governance and development of the scheduled areas and socio-economic development of the STs continued to be a priority of the state government.

With regard to the functioning of the local self-government system in the scheduled areas referred into clause (I) of Article 244 of the Indian Constitution, Odisha has framed a number of legal provisions in introducing this system since the post-independence period. Nevertheless, the effects of these provisions on the governance of the tribal areas and development of the tribal people remain doubtful.

The Orissa GP Act, 1948: The Government of Odisha enacted the Orissa Gram Panchayat Act in 1948 which was made specific provisions for the Tribals with regard to the seat reservations. The provision was made to promote politico-economic inclusion among the STs in order to enhance their effective participation in the local democratic system, governance processes and the economic development programmes.

The Orissa Act 1959: In 1959, the Orissa Panchayat Samiti and the Orissa Zilla Parishad Acts enacted in the state for the strengthening the local self-governance system at the intermediary level and district level. These two historic acts were laid the foundation stone for the introduction of the three tier local self-governments in the state which became a reality in 1961. The Orissa Panchayat Samiti Act was extended to the whole state of Odisha while providing specific provisions for the weaker sections, particularly the STs in the form of seat reservations in the different tiers. Similarly, the Orissa Zilla Parishad Act also provided special attention for the STs with an objective to ensure their inclusion through political and economic participation. The most enduring features of these acts were that "for the first time the three tier PR system was implemented in the entire state".

The Orissa GP Act, 1964: The Orissa Gram Panchayat Act of 1964 was a major initiative which included specific provisions considering the constitutional mandate of the fifth schedule of the Indian Constitution. The original act, while enacted in 1964 extended the application of the provisions of the act to the entire state including the areas comes under the clause(I) of the 244 of the 5th schedule of the Indian Constitution. However, the amendment made in 1994 restricted the application of the provisions to the scheduled areas based on the provision of the 73rd amendment act which summarizes that "nothing in this act shall apply to the scheduled areas referred to in clause (I) of Article 244 of constitution." However, the provisions of this act became applicable to the scheduled areas in 1994 with a separate notification dated 21st April, 1994 as per the Government Order no 438.

The Orissa Zilla Parishad (Amendment) Act, 1991: The Zilla Parishad Act of 1991 was enacted in the state with an objective to revive the Zilla Parishads which were abolished in 1969. The section 1 of para 5 of this act was mentioned that "Nothing in this act shall apply to the scheduled areas referred to in clause(1) of Article 244 of the Constitution". However, the provisions of this act extended to the scheduled areas in 1993 based on a separate notification[1]. The similar provisions were also added into the Orissa Panchayat Samiti (Amendment) Act in 1994 following the mandates of the 73rd amendment of the Indian constitution.

The Constitutional Reforms of 1992: The enactment of the 73rd amendment act made in 1992 as matter of which the institutionalisation of the Panmchayats in the scheduled areas received a special importance. Such process was contributed into the enactment of the PESA Act in 1996. The implementation of the provisions of the PESA Act was a historic moment for the people in the state at large, particularly the tribals, who are traditionally associated with the democratic form of governance through the *samabhs* and *samajs.* The provision of (Extension to the Scheduled Areas) Act, 1996 came into force on the 24th December, 1996 (Dash, 2011). As per the provision of the PESA Act of 1996, Orissa Gram Panchayat Act, 1964, Orissa Panchayat Samiti Act, 1959 and Orissa Zilla Parishad Act, 1991 were amended to ensure the process of extension of this act. With regard to the scheduled areas, the provisions of this act were extended with a separate notification in 1997. Further, seat reservations for the STs were made in accordance to their population. One-third seats were also reserved for the women of the STs.

The enactment of the PESA Act in the state has also led to the amendments in the state subject acts. The Orissa Schedule Areas transfer of immovable property (by scheduled tribes) regulation of 1956 has been amended by regulation of 2002 (Regulation 1 of 2002). The Orissa Scheduled Areas money-lenders' regulations, 1967(Regulation of 1968) has been amended. A Watch dog role has been given to Gram Panchayats under the amended money lending regulation to enable the community to protect the individual tribal from exploitation by money lenders. The Orissa Government has also enacted the Orissa Minor Forest Administration Rules in 2002 with an objective to vest the rights of ownership of the minor forests products to the PRIs in the state. The Bihar and Orissa Excise act, 1915 has been amended while vesting the powers to the Gram Panchayats in the scheduled areas regarding the issuance of license.

The functioning of the local self-governments in the scheduled areas in the state in the recent period has witnessed significant changes in institutionalization and implementation of the development programmes. The Government of Odisha has also framed the PESA Rule (Orissa PESA Rule,2010) which is under the process of receiving legislative approval.

The PESA Act and Functioning of Panchayats in Odisha

The PESA has been recognised by many activists and scholars as 'progressive' law, because it gives some crucial rights to village level communities to manage their lives and resources.(Choubay, 2015). Recognising the importance of this piece of legislation, many researchers highlight it as an instrument of promoting radical

1 Notification No.26701, December 1993 published in E.O. No. 1664 dated the 23rd December, 1993.

governance in the tribal areas. Mukul (1996) projected the future perspective of this act as "….. will strengthen the tribal people's struggles on issues of natural resources, mega projects, displacement and self-governance". Recognising the importance of the act, KB Saxena, then secretary, ministry of rural areas and employment, hypothesised that, "the act will create tremendous pressures in the states to enact laws according to its spirit. The ministry will also monitor as to whether the state governments are going in the right direction or not. And it will be difficult, almost impossible, for the rulers to ignore the implementation of various provisions of law". Upadhyay (2010) emphasising the role of this act mentions that"it offers a great opportunity to provide equitable governance in tribal-dominated backward areas". However, there are many issues involve within the implementation of this act. Though the act has aptly recognised the *Gram Sabhas* and *Gram Panchayats* as two main pillars of institutions that are created for promoting self-governance and ensuring socio-economic development, in many cases it has not been happened at ground level. The functioning of Gram Sabhas and Gram Panchayats received many obstacles from the various angels.

Table-3: Profile of PRIs in Tribal Areas of Odisha

Three-Tier PRIs	Total in the State	In Scheduled Areas
Zilla Parishads	30	13
Panchayat Samities	314	120
Gram Panchayats	6234	1941
Wards	87542	24734

Source: Department of Panchayati Raj, Govt. of Odisha, 2014

The Panchayats (Extension to Scheduled Areas) (PESA) Act 1996 has made it mandatory for the state having scheduled areas to make specific provisions for giving wide ranging powers to the tribals on matters relating to decision-making and development for their community. It empowered villages to protect community resources, control social sector functionaries, own minor forest produce, manage water bodies, give recommendations for mining lease, be consulted for land acquisition, enforce prohibition, identify beneficiaries for poverty alleviation and other government programmes and have a decisive say in all development projects in the villages. The act not only accepts the validity of "customary law, social and religious practices and traditional management practices of the community resources", it also directs the state governments not to make any law which is inconsistent with these.(Mukul, 1997).

The act emphasises on the process of strengthening grass root institutions such as the Gram Sabhas and Gram Panchayats. The act has given legislative powers to the Gram Sabhas, specifically in matters of planning for development, management of natural resources, and adjudication of decisions in accordance with prevalent traditions and customs (Upadhya,2010). It defines Gram Sabhas as institution of promoting self-governance in the tribal areas not merely an administrative organ of the panchayats(Choubey,2010). The provisions of this act also further spelled out the role of the Gram Sabhas in matters pertaining to: (i) the approval of plans for the village Panchayats, (ii) identification of beneficiaries for the schemes under the poverty alleviation, and other programmes, and (iii) the issuance of certificates for

the utilisation of funds by the Panchayats. Further, while formulating the plans for the village Panchatays, the Gram Sabhas must provide adequate emphasis on the available community resources as well as the customary laws, traditions, customs, and cultural identity of the tribal people. However, after 18 years of implementation of the progressive legislation (PESA), there is a growing realisation that the role of the institutions like Gram Sabhas has been subverted through many ways which makes this institution as a mere administrative wing of the government. Our study also shows that while the Gram Sabhas are functional in the study areas, but their actual functions are being controlled by the government departments.

In the case of Odisha, the extension of this act to the fifth scheduled areas of the State came into force in 1997 as per the Odisha Panchayati Raj Amendment Act (Odisha Gram Panchayat Amendment Act (1997), Odisha Panchayat Samiti Amendment Act (1997) and Odisha Zilla Parishad Amendment Act (1997). However, the State could not be able to make a full fledged State specific rule keeping the spirit of this act in mind, notwithstanding constant demand raised by academic and civil society circle(NGOs) in the State. But, keeping the spirit of this act in mind, the State Government currently drafted the State PESA Rule which is expected to get legislative accord soon.

It is believed that the act has been implemented in the State, notwithstanding the absence of a full-fledged state specific rule with regard to that act. However, it is argued that despite the implementation of this act, the tribal areas are continuously thriving under the shadow of poverty, hunger & maladministration which raised the question of functioning of this act in the tribal areas as well as functioning of PRIs. As regards working of Gram Sabhas in these areas as per the provision of PESA Act, it is observed that the Gram Sabhas except the selection of beneficiaries, not involved in any aspect of implementation of development programs, even they are not fully aware about important aspects like land alienation, minor forest produce, regulation of village market, which are regarded as the enabling factors of tribal economy. The Gram Sabhas are not performing for the larger benefit of the people in the villages and the community as a whole. (Ota, Patnaik & Gamango, 2010). The tribal development programs implementing through ITDAs and allied Tribal development agencies are not planned involving the Gram Sabhas and the PRIs have a little stake over such development programs (Samal:2001). Low level of awareness among the PRIs regarding the different provisions of this act has further worsened the scenario of implementation of this act.

Under the provision of this act, powers have been vested to panchayats and gram sabhas with regard to planning and implementation of development programmes. However, researchers observe that "reluctance of the state to devolve powers to panchayats in scheduled areas hampered the process of planning and implementation of the development programmes" Summarising this, Kurup (2008) mentioned that "PESA mandated the states in peninsular India to devolve certain political, administrative and fiscal powers to local governments elected by the tribal communities in their jurisdiction. The act was hailed as one of the most progressive laws passed since independence, granting tribal communities radical powers to preserve their traditions and entrusting them with the authority to manage their community resources. But after a decade, it is apparent that PESA

is clearly not achieving those objectives. Blatant violation of tribal interests and the reluctance (in some cases, sheer procrastination) of the state administrations to cede authority have compelled the tribes to reassert their identity and rights." The priorities of the state and its reluctance devolve power along with the competitiveness of economic development, are gradually eroding the very edifice on which state structure is built-the village assembly.(Upadhyay, 2010).

In the case of two Gram Panchayats, we observe that the functioning of panchayats and gram sabhas provided certain new trends with regard to institutionalisation and functioning of the panchayats. The tribal people in both the panchayas are participating in the process of elections and voting, meetings of the palli sabhas and gram sabhas, process of planning and process of implementation of the various schemes and programmes. The non-participation or lukewarm participation of tribals in the Gram Sabhas influenced by the factors such as distance of the meeting venue, timing of the meetings, biasness in selecting beneficiaries and personal work.

In the case of Palli Sabhas and Gram Sabhas, the process of institutionalisation and functioning of this institution in the study areas reveals that "in many cases their functioning and decision-making power has been influenced by the social, economic and political factors". However, Gram Sabha as a peoples' institution has received enormous importance from the people particularly the tribal people. The functioning of Gram Panchayats in the study areas show that "functioning of this institution has witnessed a change since the enactment of the PESA Act. The meetings of the Gram Panchayats have been held in regular interval. There are issues like planning and implementation of development programmes, management of various activities, functioning of institutions such as schools and health centers have discussed in these meetings.

Major Findings

The study summarises the following findings:

Traditional Self-Governance system in the Study Area: The PESA Act has recognised the traditional pattern of the self-governance system in the tribal areas, though it is believed that many of the provisions have not been implemented in letter and spirit. Our data collected from the four study villages show that the traditional self-governing institutions form an important aspect of the village self-governance system despite the emergence of the Panchayats. These institutions strongly linked with the cultural, social and religious matters of the people of the villages-both tribals and non-tribals.

With regard to the tribals, there are various caste based institutions called as "the Samaj"[2] in Sundargarh District and "Gaon Committee" (Village Committee) in Koraput District functioning in the study villages. However, in the context of the emergence of Panchayats, the functioning of these institutions and leadership has been witnessed transition, which also affected their overall functions. In the case of Koraput, the Gaon Committees (Village Committee) which still actively functioning under the leadership of *Nayak* (head of the Committee), have been

2 For example for *Bhuyan* there is *Bhuyan Samaj*, for *Oram*-the *Oram Samaj*, for *Gond*-the *Gond Samaj*

playing an important role with regard to the management of the village governance system (social, cultural and political system) in traditional manner. However, in the case of Sundargarh, these institutions are quite stratified based on the existence of various caste or groups in the villages. So in Sundargarh, there is no village level apex institution. The functions of the caste or group leader are confined within their respective social group or caste only.

Participation of Tribals in the Functioning of Traditional Institutions: With regard to the tribal governance institutions and issues of participation, it was revealed that the participation of tribals form an important part of the functioning of these institutions. On the meeting days, the senior members (may be one member or more than one member) from each tribal household come to attend the meetings, though there is a restriction for the women in these meetings. In these meetings, the issues of discussion usually based on the socio-cultural matters such as the organisation of festivals, celebration of various rituals, settlement of disputes related to caste such as inter-caste marriage, inter and intra caste conflicts, performing various religious practices such as Puja and Prayer, and overall matters related to the caste or social groups.

However, in the recent period, the meetings of the tribal institutions and issues raised and discussed in these institutions witnessed a shift. Along with the socio-cultural issues, developmental issues also being raised and discussed in the meetings. Our interaction with the various tribal leaders in Koraput and Sundargarh revealed that, issues such as education, health, drinking water, and various development programmes and their status of implementation are being discussed in these meetings which show the nature of shift in the functioning of these institutions.

Enactment of the Act and Awareness of people on PESA: In the case of Odisha, the extension of this act to the fifth scheduled areas of the State came into force in 1997 as per the Odisha Panchayati Raj Amendment Act (Odisha Gram Panchayat Amendment Act (1997), Odisha Panchayat Samiti Amendment Act (1997) and Odisha Zilla Parishad Amendment Act (1997). However, the State till today has not been able to make a full fledged State specific rule based on the basic premise of the act.

With regard to the knowledge of the respondents on various provisions of the PESA Act, it was revealed that in many cases the respondents are aware about their villages and Panchayats as part of the tribal area (5^{th} schedule area), through they are unaware about the various constitutional and legal provisions enacted for the governance of the tribal areas. In the case of PESA Act, the respondents particularly government officials and Panchayat Members are aware about the various provisions of this act, while in the case of the traditional leaders, their awareness level is quite low.

Functioning of Panchayats and their interfaces with Traditional Institutions: From the field study, we observe that the role of the panchayats is quite ambiguous in many cases be of planning for economic development or management of natural resources. The tribal people are more aware about the role of the Panchayats as

institutions of distributing PDS items, pensions and other schemes and programmes and less aware about its role as institution of promoting self-governance through upholding tribals rights over natural resources, protecting cultures and customs and recognising traditional and customary practices.

With regard to the interface between the traditional governance institutions and Panchayats, the respondents opined that 'in many cases the traditional self-governing institutions have been discussed the issues of the Panchayats, functioning of the Palli Sabhas and Gram Sabhas, planning and processes of the implementation in their meetings'. However in the case of Koraput, the traditional leaders highlighted that "the emergence of the Panchayats have diluted the many activities of the traditional institutions, through they opined that in the socio-economic development matters, the Panchayat leaders usually take their suggestions related to planning and implementation of the development programmes".

Functioning of Palli Sabhas and Participation of Tribals: With regard to the functioning of the Palli Sabhas in the study villages, it was observed from the discussion that the meetings of the Palli Sabhas are taking place twice in a year, though in some cases it is once in a year. These Sabhas have become instrumental in promoting participatory democracy in the villages while discussing a number of issues related to socio-economic development such as education, health, agriculture, road connectivity, implementation of MGNREGA, and selection of beneficiaries.

With regard to the participation of people, particularly the tribals in the Palli Sabha meetings, it was observed through the process of discussion that the participation and non-participation issues are associated with the various factors such as expectation of achieving personal benefits. In some cases odd timing (unsuitable time) in organizing palli sabha meetings also hindered many people to participate in these meetings.

Functioning of Gram Sabhas and Participation of Tribals: It is observed that in many cases, the role of the Gram Sabhas as institution of promoting direct democracy, managing community affairs and promoting development has been ignored in various ways. The functioning of Gram Sabhas in the study area observed many dilutions of their core functions. Our study shows that the functioning of Gram Sabhas are being hampered by (i) irregular meetings, (ii) ignorance to overall tribal development issues, (iii) restricted functioning, (iv) ad-hoc and irregular discussion on management of natural resources(v) odd timing in conducting meetings, (vi) distance of the venue from the villages, and (vii) prevailing political biasness and interferences. Such scenario has been seriously jeopardized the functioning of the Gram Sabhas.

The participation of tribals in Gram Sabhas in the study areas shows that "the overall trend of participation in the terms of numbers enhanced over the period of time. Both the tribals and non-tribals are participating in the various meetings of the Gram Sabhas. However in many cases their participation only confined within mere physical presence".

Conclusion

The enactment of the act has no doubt provided impetus towards the functioning of panchayats in the tribal areas. However the actual functioning of these institutions with regard to promoting peoples participation in the process of decision-making has not been observed much from the study. In many cases, the process of institutionalisation and functioning are confined within organising meetings and developing plans based on schemes and programmes sponsored by the central government and state government. But the real rationale of promoting panchayats, Palli Sabhas and Gram Sabhas as institutions of self-government not achieved the desire result. With regard to the functioning of traditional institutions, the nature of interface of these institutions with Panchayats based on prevailing socio-political scenario in which PESA Act is strictly connected with this process. In this context, there is a need to relook the existing legal framework and operational modalities of the Panchayat Institutions based on the provisions of the PESA Act.

References

Choubey, K.N. (2015), Enhancing PESA-The Unfinished Agenda, *Economic and Political Weekly*, 50(8), pp:21-23.

Das, Achyut (2005), Governance in Tribal Areas-myths and realities, *AGRAGAMEE*.

Dash, S.K. (2011). PESA-Conformity and operational issues: A case study of Orissa, *Orissa Review*, February-March, pp: 41-45.

Joseph, S. (2001). Democratic Good Governance, New Agenda for Change, *Economic and Political Weekly*, pp: 1011-1014.

Kurup, A. (2008). Tribal Law in India: How decentralised administration is extinguishing tribal rights and why autonomous tribal governments are better, *Indigenous Law Journal*, 7(1).

Mukul (1997). Tribal Areas-Transition to Self-Governance, *Economic and Political Weekly*, 32(18), pp: 928-929.

Ota AB, Patnaik KK and Gamango AK(2010). PESA Act and it implementation in the tribal areas of Odisha: An Empirical Evaluation, SCSTRTI, Bhubaneswar, Odisha.

Samal.A, (2001). Tribal Development Administration: Case Study of a District in Orissa, Institute for Social and Economic Change, Bangalore.

Sharma, B.D. (2006). Report of the Sub-Committee appointed by the Ministry of Panchayati Raj to draft Model Guide Lines to vest Gram Sabhas with Powers as Envisaged in PESA, August.

Upadhyay, S. (2010). Scheduled Areas needs a fresh legal perspective, *Economic and Political Weekly*, 45(41), October, pp: 25-26.

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Towards Justice and Prosperity in South Asia – Gender and Justice

The Myth, The Realities and The Forward Looking Areas[1]

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Abstract

'Gender justice' does not mean equity for only girls or women, it has to enshrine the spirit of equality for all sexes including the transgender population. Our sub-region has shown many ways out, many pioneering ventures in promoting human potential development over the years. With strong political commitment, appropriate strategies, meaningful partnership and adequate resources it can definitely provide ways and means of ensuring gender justice at least in our own region.

Keywords: Gender Justice, Equality for all Sexes, Political Commitment, Adequate Resources

Introduction

It is well recognized that "Gender" is a social construct although the degree of understanding the concept and the dimension of its use in different socio-cultural context vary a lot. The variation in understanding gender is often attributed to the fact that it is kind of 'abstract', can't be seen or touched or felt like people can see or feel about men or women, boys or girls. People often think that "gender" is something to do with women or girls only, that also depends on the situation and status of men and women in a particular socio-cultural setting, political context and geo-physical environment.

The understanding and use of 'Justice' also depends on the particular country situation, power structure and geo-political context. As per the *Universal Declaration* of *Human Rights of 1948,* 'Justice' should be considered as universal, should work beyond national boundaries and should be acknowledged as "blind", unbiased. But the hard reality is that 'justice' is often understood and interpreted by the power elites as they deem fit. There are hundreds of examples throughout the world across centuries that powerful groups and leaders have often abused

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"justice "to fulfill their own agenda. They could use state mechanisms, power structures and public machineries to abuse people - men and women - in the name of ensuring justice !!

Prof. Amartya Sen has compellingly argued in *The Idea of Justice* that far from being a "value-neutral term, justice is a relative one, with competing claims made on it by different parties in any given context".

Concerns with' justice' and what this might entail for South Asia in the sense of delivering' "fairness and equitable treatment" goes beyond a focus on the narrow legalistic sense of the term, yet simultaneously returns to the ideas and practices of law.

Alongside the issues of discrimination and injustice, the subject of South Asian women's social, cultural, religious and economic position has also historically been identified both within and outside the subcontinent as an area particularly deserving attention.

Recent literature on this topic have come up with evidence that notions of 'eternally oppressed South Asian women' have been- and are still used as a pretext to justify a plethora of conservative viewpoints about this region, both at home and abroad.

Although the Universal Declaration of Human Rights 1948 has emphatically mentioned that "these rights belong to everybody; whether we are rich or poor, whatever country we live in, whatever sex or whatever color we are, whatever language we speak, whatever we think or whatever we believe "but conception of 'rights', a subject closely aligned to that of 'justice', are not static and universal even when absent, but are instead moulded by specific historical and geographical concerns. As a number of social anthropologists have demonstrated, there are profound tensions between the rule of law and the adherence to or rejection of local 'custom', including constructions of gender and sexuality, in shaping cultural, social and legal processes.

Gender and Justice: The South Asian Context

South Asia is one of the most interesting sub-regions on planet earth. With almost one fourth of the global population, rapidly expanding economic base, heavy industrial growth, technological advances, infrastructure development and unabated military expansion have made South Asia not only an interesting sub–region but also a big land mass with huge diversity in terms of economy, socio-cultural trends, population dynamics and power games. It is such an area which, in combination with culture and diversity, presents a challenging context in any presentation like this one.

However, this paper has not attempted to provide an elaborate context of the socio-cultural, political and economic aspects of the South Asia Sub region which itself could be an interesting agenda for discussion anywhere in any forum.

But, an attempt has been made to focus on specific aspects of the sub-region with a focus on gender-based diversity and its multi-dimensional manifestation that helps or hinders justice within specific geographical and socio-cultural contexts.

We know that from Nepal to Afghanistan, from India to Pakistan to Srilanka,

from Bangladesh to Bhutan - it's a fascinating landscape, an interesting economic scenario and above all, an unparallel diversity that could match the wildest imagination of any human being on earth! With the continuing double digit economic growth rate of India, interesting social development features of a small but populous country like Bangladesh followed by many other such examples, our sub region has all the features of a fascinating landmass. We have, on the one hand, countries like India pursuing GDP focused growth while on the other, we have the welfare Kingdom of Bhutan pursuing its dream of achieving Gross National Happiness (GNH).

This region has been blessed to have great thinkers, religious leaders, litterateurs and social reformers like Buddha, Atish Dipankar, Vivekananda, Mahatma Gandhi, Rabindranath Tagore, Raja Ram Mohon Roy, Begum Rokeya, Kazi Nazrul Islam, Amartya Sen, Dr. Muhammad Yunus and many others. We had women reformers, the not so recognized "rebels" like Begum Rokeya who was born in British India. She never had the chance to receive any formal education but had the courage to portray, in her writings, the harsh realities of women's live and demanded rights and justice for them. There are many stories of hundreds and thousands of such woman leaders who not only fought for human dignity and gender justice but also sacrificed their lives. Their role and contribution have enriched our culture and added new dimensions to the social norms and practices including some kind of recognition of "Women's rights as human rights".

Another dimension of the South Asian scenario is that since time immemorial this sub region has been plagued by natural calamities, man-made disasters and political upheavals in different countries at different periods. Conflicts and confluence, peace and war, development and under-development are the continuing features of this region. It has mature democracies like India, emerging ones like Myanmar and at the same time it has fragile democracies like that of Afghanistan, torn by militancy and factionalism. Most of South Asia was colonized at different periods. This had heavy impact on our life and living, culture and heritage, economy and politics and shaped and reshaped our thoughts and actions and inaction on gender and justice.

Cultural Diversity and its Impact on Gender and Justice

Against the backdrop of such a scenario, a discussion on "Gender and Justice" has to focus on the history and the contemporary context of women and men's status in the sub-regional setting keeping in mind the geography, history and culture that have been contributing to its fascinating diversity.

It is becoming evident that when it comes to gender justice South Asia becomes a sub-region where progress in reducing the gender gap is as much visible as the lack of equity focused action agenda. Although women make almost half of the total population, they have been subjected to lot of exploitation and deprivation over centuries. They are still expected to play a role which often undermines and endangers their identity as human beings with equal rights and status. The history of this subordination of women has long been the subject of research and literature as well. Women are, as the norm goes, expected to play the role of a

"docile daughter, coping wife and submissive mother" during different periods of their life cycle.

Even the mother of our great poet Rabindranath Tagore, despite being a member of a progressive, elite family of the-then Bengal during the British Raj, had to abide by the social norm of performing the "Purda" (seclusion from outsiders)! Its still persisting across the sub-region and among all levels of population, rich and poor, urban and rural.

Furthermore, our sub-region has been plagued by certain negative norms and practices like dowry, early marriage and polygamy which undermine the role and contribution of women and men as well. Incidence of violence against women has been on the rise. Many women in the sub region experience physical violence from their intimate partners. The recent figures released by the Bureau of Statistics, Bangladeh have revealed that more than 80% women in the country had faced physical abuse at home at any given time in their lives.

An emerging threat to effective justice based gender neutral norms is the rise of "obscurantism" or religion-based fundamentalism in our sub-region – from Pakistan to Afghanistan to India to Bangladesh – our women are being subjected to certain "code of conduct" by obscurantist forces that essentially undermines their human dignity and obstructs justice. These restrictions, imposed in the name of protecting religious values, range from "dress code" to "honor killing!" It's been more than 80 years since the death of Rokeya, the woman revolutionary of our sub region but our lives are still conscripted by the choices and decisions of the men in their lives. Over a 100 years after *Sultana's Dream* was first published, the "zenana" still exists, not physically, but in the mindsets and attitudes of people. Over a century since Rokeya was born, a religious leader in Bangladesh crudely compares women to tamarind while another in India smugly declaims that women are fit only to deliver children and can't withstand crisis situations. *How can gender justice be ensured in such a scenario is a million-dollar question.*

It is also frustrating to note that violence against women, coercion and deprivation of legal and other protections, honor crimes, dowry or bride price, forced and early marriages and transgender persons have all been justified by reference to "traditional values". But customs, tradition or religious considerations must not be tolerated to justify discrimination and violence against any human being – men, women and girls, whether committed by State authorities or by non-state actors.

However, the silver lining is that despite the changes and the challenges, women's participation in all spheres of life – economy, society, politics – are not only becoming visible but also gaining recognition both at home and by the state.

The Hard Realities

- Of all girls out of school in the developing world, one third lives in South Asia. However, the silver lining in the cloud is that in almost all the countries except Afghanistan primary school enrolments are continuously rising and gender gaps falling or disappearing.
- In South Asia more women die in child birth than any other part of the world except Sub-Saharan Africa.

- Reproductive health is also considered a big issue in South Asia with its above average maternal mortality rate. Weak political commitment, inadequate resources, persistent discrimination against women and girls and a general unwillingness among the general mass to openly and comprehensively address issues related to sexuality have repeatedly stalled progress.
- Only one fourth of women in South Asia are in non-agriculture wage employment, the lowest among the world's regions.
- Moreover, nearly 50% women are still concentrated in agriculture. Unpaid work on family agricultural enterprises accounts for more than 30% of informal employment for women even in a country like India.
- Gender inequality in wage differentials remains entrenched with women's typical earning 70 % - 90 % less of the male wage (50% in Bangladesh).
- South Asia's record is also not very encouraging when it comes to representation of women in Parliament and local government bodies. The Gender Inequality Index (2015) of UNDP found women lagging behind in all dimensions particularly in parliamentary representation, education and labor force participation.
- The Scenario has been well presented in the "Global Gender Gap Index 2017" which has showed that with an average remaining gender gap of 34%, South Asia is the second-lowest scoring region ahead of the Middle East and North Africa and behind Sub-Saharan Africa.
- Bangladesh and the Maldives have come out as the top-ranked countries in the sub-region, having closed just under 72% and 67% of their overall gender gap, respectively, while the lowest-ranked countries are Bhutan and Pakistan, having closed just under 64% and 55% of their overall gender gap, respectively. Only one country in the region, Maldives, has fully closed its 'Educational Attainment' gender gap; and only one country, Sri Lanka, has fully closed its 'Health and Survival' gender gap.
- However, the region is also home to Nepal, one of the top five climbers over the past decade on the overall "Gender Gap" Index and on the 'Educational Attainment sub index'. However, the Silver Lining in the cloud is that from a low base, South Asia has made the fastest progress on closing its gender gap than any of the world's other sub-region region.
- Of the seven countries from South Asia included in the 'Global Gender Gap Index' in 2017 three countries (Bangladesh, Maldives and Nepal) have increased their overall score compared to last year, while four have seen their scores decrease.

Gender and Justice: The Other Side of the Coin

It can't be over emphasized that a huge number of people, men and women, still live in daily conditions of injustice and inequality. While girls are less likely to enter school in the first place in many countries, a GEM Report paper (June 2018), *"Don't forget the boys",* shows that boys are also at risk globally of not progressing and completing their education. They also perform less well in

reading assessments worldwide. We won't achieve gender equality in education if we ignore one half of the story.

Of course, these figures vary per region. Girls are at a distinct disadvantage from primary through to upper secondary school in sub-Saharan Africa, for example. Meanwhile boys are falling far behind in each of the education levels in Latin America and the Caribbean.

In some countries, there have been some surprising changes. In India, Bangladesh and Nepal, for example, where there were far fewer girls enrolled in secondary school than boys in 2000, the situation by 2016 had reversed leaving boys behind. The GEM Report 2018 shows that ensuring both girls and boys complete at least secondary school is the key for achieving gender justice across society. A survey in Brazil, Chile, Croatia, India and Rwanda showed that men who had not completed secondary education were more likely to express discriminatory views on gender. The survey also demonstrated that less educated men were also more likely to be physically or sexually violent in Bangladesh, Papua New Guinea, Indonesia and Cambodia. Paternal education is linked with stronger immunization uptake for children, even after taking maternal education into account.

This is what we have to take into account – 'gender justice' does not mean equity for only girls or women, it has to enshrine the spirit of equality for all sexes including the transgender population. Our sub-region has shown many ways out, many pioneering ventures in promoting human potential development over the years. With strong political commitment, appropriate strategies, meaningful partnership and adequate resources it can definitely provide ways and means of ensuring gender justice at least in our own region.

References

Advancing Gender Equality in Bangladesh, Routledge Publications, 2017.

Amartya Sen. *The Idea of Justice.* Routledge Publications.

CAMPE, Education Watch 2015 Moving *from MDG to SDG Accelerate Progress for Quality Primary Education.*

CAMPE, Education Watch 2016 *Literacy, Skills, Lifelong Learning SDGs in Bangladesh: Where Are We.*

CAMPE, Education Watch 2017 *Ethics and Values in School: Capturing the Spirit of Education.*

Guttmacher – Lancet Commission Report(*2018). Accelerate Progress: Sexual and Reproductive Health and Rights for All Report.*

Padma Anagol & Daniel J. R. Grey (2017). Rethinking Gender and Justice in South Asia, 1772-2013. Routledge Publications.

Rokeya's unrealized Dream, The Daily Star, December 2015.

United Nations. *Universal Declaration of Human Rights, 1948.*

World Economic Forum. *The Global Gender Gap Report 2017.*

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Fizzle and Success of e-Governance in India: A Priority-based Analysis in Paschim Medinipur District

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Abstract

Information and communication technology (ICT) creates an opportunity to the Government for providing better, cost-effective and efficient services to the citizens. The success of e-Governance is basically based on user-oriented approach and depends on the user's satisfaction. Opportunities, availabilities, and capabilities are the key factors that determine the e-governance. The government of India emphasizing e-Governance by 'Digital India' with encapsulates citizen centricity, service orientation, and transparency. The aim of this research is that is rural India can achieve the status of 'Digital India'? This article highlights the user's perception and a satisfaction based on priority analysis using Analytic Hierarchy Process (AHP) to determine as well as validates the efficiency and advantages of e-Governance. A block-wise future e-Governance potentiality map has been prepared for this purpose. This paper developed an assessment methodology that could be used in developing countries to justify investments in e-Government, citizen suitability as well as to establish a performance benchmark for future sustainability.

Keywords: e-Governance, User Perception Analysis, Analytic Hierarchy Process (AHP), Priority Analysis, Potential e-Governance Accessibility Index

Introduction

The execution of e-Governance through Information and Communication Technology (ITC) became key objectives of any governmental strategic programs which help to improve democracy (Harder and Jordon 2013). The word 'e' in

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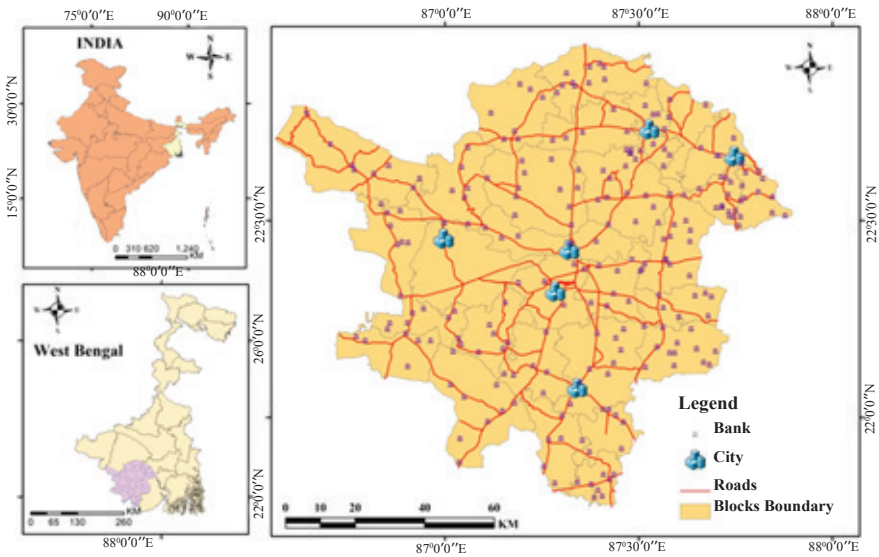
'e-Governance' stands for 'electronic'. Thus, e-Governance is basically associated with carrying out the function and achieving the results of governance through the utilization of ICT (Information Communication Technology). While Governance relates to safeguarding the legal rights of all citizens, an equally important aspect is concerned with ensuring equitable access to public service and the benefits of economic growth to all. It also ensures government to be transparent in its dealings, accountable for its activities and faster in its responses as part of good governance. Not only to improve accountability, transparency, and efficiency of government processes, but also facilitate sustainable and inclusive growth. E-Governance enhance of public services to the marginal segments of the society in the remotest corners, without having to deal with intermediaries (Yadav and Tiwari 2014)**.** E-governance is the effective use of Information & Communication Technology (ICT) to improve the system of governance that is in place and thus provide better services to the Citizens. E-Governance is considered as a high priority agenda in India, as it is considered to be the only means of taking IT to the "Common Public". Developments in e-Governance provide opportunities to harness the power of Information and Communication Technology (ICT) to make the business of governance inexpensive, qualitatively responsive, and truly encompassing (Dwivedi and Bharti 2006; Chakraborty 2010). The use of internet not only delivers the services faster but also brings more transparency between the government and the citizens. The government of India has already been implemented the process of electronic governance. There have several projects has been launched for e-governance purpose. The Ministry of Information and Technology has entrusted the study of developing frameworks for assessment of e-governance services (www.india.gov.in)[1]. However, e-government refers to an innovative way of Governance. Recently Governments around the world are motivated to promote to public interaction because of the accessibility and affordability of ITCs (Lai et al. 1999; Bengt et al 2003). But the usability of e-government service in developing countries has become a critical research area due to the massive failure of e-governance service in developing countries (Heeks 2003; Gunawong et al. 2010; Dwivedi and Bharti 2016;). Many researchers were highlights some factors lagging the usability of e-governance services (Mittal and Kaur, 2013; Malik et al 2014). In India, the usability of e-governance has been varying with a rural and urban area and it is considered that there are several factors such as language difficulties, a variation of literacy especially in core rural area; low IT literacy, lack of integrated services etc. were responsible for these (Ranganathan and Bhatnagar, 2010). The objectives of this study are to assess the usability of e-governance services, user's perception on e-Governance and its future application as well as the level of acceptance and their geographical pattern.

Study Area

We select Paschim Medinipur district as the study area. Paschim Medinipur is the district of West Bengal and it was formed on January 1, 2002. The district has four subdivisions: Kharagpur, Medinipur Sadar, Ghatal, and Jhargram. Paschim Medinipur lies to the south west of the state of West Bengal. Geographically it is

extended from 22°46` N to 22°57` N and 86°33`E to 87°44`E. The total number of the block is 29 and sub-division is 4. The total area of Paschim Medinipur is 9295.28 sq. km. (Figure 1). The population of the district was 5,943,300 as per census 2011. The population density per square kilometre is 636. Sex ratio was 960 per 1000. Its population growth rate over the decade 2001-2011 was 14.44%. A South-eastern part of the district is mainly tribal dominated area and has a low literacy than the district average. There are six small towns in the district and another area is under so-called rural area. Now the question arises that, Paschim Medinipur district can adopt e-government services. It is an important district of West Bengal with a literacy rate of 79.04% and a significant combination of rural and urban population. In this background, the study on the applicability of e-governance services is more rational in the present context.

Figure-1: Location of the study area extending from 22°46` N to 22°57` N and 86°33`E to 87°44`E



Database and Methodology

Assessment of priority is defined as the systematic analysis of the lasting or significant changes positive or negative, intended or not in people's lives brought about by a given action or series of actions (Roche, 1999). In the initial, this study tends to develop a framework for assessment by defining the variables on which impact would be measured and a methodology for measurement in a developing country context. A literature review of the broader theme of the evaluation was carried out to draw broad input for the development of a framework. The present study was formulated through a concrete and contiguous research design including direct observation, user's interview, secondary database, statistical operation and decision making technique with GIS mapping. The primary data were collected from different areas of whole districts using predesigned questioner (Bhatnagar

and Sing, 2010). There was 300 respondents' view composed of different target groups in both rural and urban area. The sample size was determined on the basis of the number of service delivery centres to be selected, the number of locations (cities, towns, or villages) within the catchment area of each service centre from which users were to be selected, and the number of users from each location in the process of random sampling as we are trying to collect information in more or less every places of the entire area. The resonances are from different categories such as property owners, employees, vendors, urban dwellers, village dwellers students etc. Block level literacy data were collected from District Census Handbook (2011) to highlights the variation of literacy status among tribal dominated blocks to others blocks. The availability of e-governance service centre called 'Tathyamitra Kendra'of each block were collected from governmental portal (www.sahajcorporate.com)[2] showing the distribution of e-governance facilitation centre within the study area. For the significance of e-governance service, an interview based perception analysis has been done using some selected e-governance projects. These are e-district (www.edistrict.wb.gov.in)[3], e-seva (www.eservice.wb.gov.in)[4], e-bhumi (www.bangalbhumi.gov.in)[5], e-registration (www.wbregistration.gov.in)[6], employment bank (www.employmentbank.wb.gov.in)[7]. The analysis of data in the present study is based on user perception based study as well as complex decision technique (Benenson, 2004) using Analytic Hierarchy Process (AHP) (Saaty, 1990; Niemiraa and Saaty, 2004; Tesfamariam and Sadiq, 2006; Muralidharan et al, 2006; Saaty, 2008). The workflow chart is represented in Figure-2.

Analytic Hierarchy Process (AHP) based decision making

The field survey was done using interview method and their priority were enlisted for analysis and 8 main criteria and 26 sub-criteria were selected for study for priority analysis. Several methods were applied by the various researchers and planners to measures the decision making and priority analysis such as Simple additive weighting method (SAW) (Tesfamariam and Sadiq, 2006) the order of preference by similarity to ideal solution (TOPSIS) (MacCrimmon, 1968). Stepwise weight assessment ratio analysis (SWARA) (Hwang and Masud, 1979), Analytic hierarchy process (AHP) (Saaty, 1990; Keršuliene et al. 2010; Muralidharan et al, 2006; Saaty, 2008). In this analysis we used AHP as it more convenient (Saaty, 2008) to determine the priority analysis among the users. The process of AHP involves the evaluation of priority weights of the set of criteria which are used in decision making from a pairwise comparison matrix $W = [w_{ij}]$, which is reciprocal of positive if the judgement, is consistent. The order of priorities of each matrix was represent as Eigenvector. Here we introduced the content validity ratio (CVR) for the validation of selected criteria that those are suitable for analysis (Lawshe, 1975). It is a method of agreement of experts' opinion that related indicator is suitable for analysis. The CVR can be expressed as:

$$CVR = \frac{Ni - \frac{N}{2}}{\frac{N}{2}} \qquad (1)$$

Where, N_i represent numbers of experts to support a particular criteria and N is the total number of experts.

This determination can be represented by the introduction of an appropriate scale (Saaty, 2008) (Table 1) and is used to build and explain judgment matrix A, as expressed by the following matrix:

Matrix containing weights

$$A = \begin{pmatrix} A_1/A_1 & A_1/A_2 & \ldots & A_1/A_n \\ A_2/A_1 & A_2/A_2 & \ldots & A_2/A_n \\ A_3/A_1 & A_3/A_2 & \ldots & A_3/A_n \\ . & . & . & \\ . & . & . & \\ A_n/A_1 & A_n/A_2 & \ldots & A_n/A_n \end{pmatrix} \quad (2)$$

Thus the Eigenvectors and Eigen values are expressed by following equation:

$$(W - \lambda . I) . \omega = 0 \quad (3)$$

Where W is pair wise comparison matrix, ω is the eigenvectors of matrix W and λ is maximum Eigen value. The consistency ratio (CR) of the entire decision matrix should be verified with consistency relation which is determined as a ratio of consistency index and the random index and expressed as:

$$CR = \frac{CI}{RI} \leq 0,1 \quad (4)$$

Where CI is the consistency index and RI is the random index and depends on matrix size (Table 2). The CI is calculated as:

$$CI = \frac{\lambda max - n}{n-1} \quad (5)$$

Where λmax represent the value of largest Eigenvectors and n represent the order of decision matrix.

Table-1: Relative importance in Analytical Hierarchy Process

Scales of relative importance	Definition	Explanation
1	Equal importance	W_i is equally important to W_j
3	Moderate importance of one over another	W_i is slightly more important than W_j
5	Essential or strong importance	W_i is more important than W_j
7	Very strong importance	W_i is much more important than W_j
9	Extreme importance	W_i is substantially more important than W_j
2, 4, 6, 8	Intermediate values between two adjacent judgments	Intermediate values between adjacent scale values

Table-2: Average random index (RI) based on matrix size (adapted from Saaty, 1980)

Size of matrix (n)	1	2	3	4	5	6	7	8	9	10
Random consistency index (RI)	0	0	0.52	0.89	1.11	1.25	1.35	1.4	1.45	1.49

User Perception Analysis

The users' perception study has been done on the computerized system and dominant manual system study of difference e-governance service was highlighted and marks their preferences as they would select computerized or manual system for their various service purposes. The perception of different age group, sex, and the different educated person also had been enlisted in field survey. Preference level has been given according to some selected criteria (using 5 points Likert's scale) and these are- user cost for availing the service, waiting time for both of the service, error rate comparison in terms of computerized and manual system, agent dependency for availing the service, distance of service centre and design and layout of the process.

Potential e-governance Accessibility Index

Future potentiality means the probability of acceptance and accessibility in future. We are trying to a potential e-governance accessibility index for assessment of e-governance priority. Future potentiality of adopting e-governance service is determined by three selected parameters- Block wise literacy rate, numbers of e-service centre and distance from District centre. It is considered that proper knowledge and facilities enthuse to the citizen for choosing e-services, and if the distance is more from responding Government offices, then a tendency to use e-Governance facilities corresponding. Normalised the selected parameters using Standard Score (z-score) and make a Composite Score to obtain block-wise Future Priority Zones (FPZ). A z-score can be calculated by the following formula:

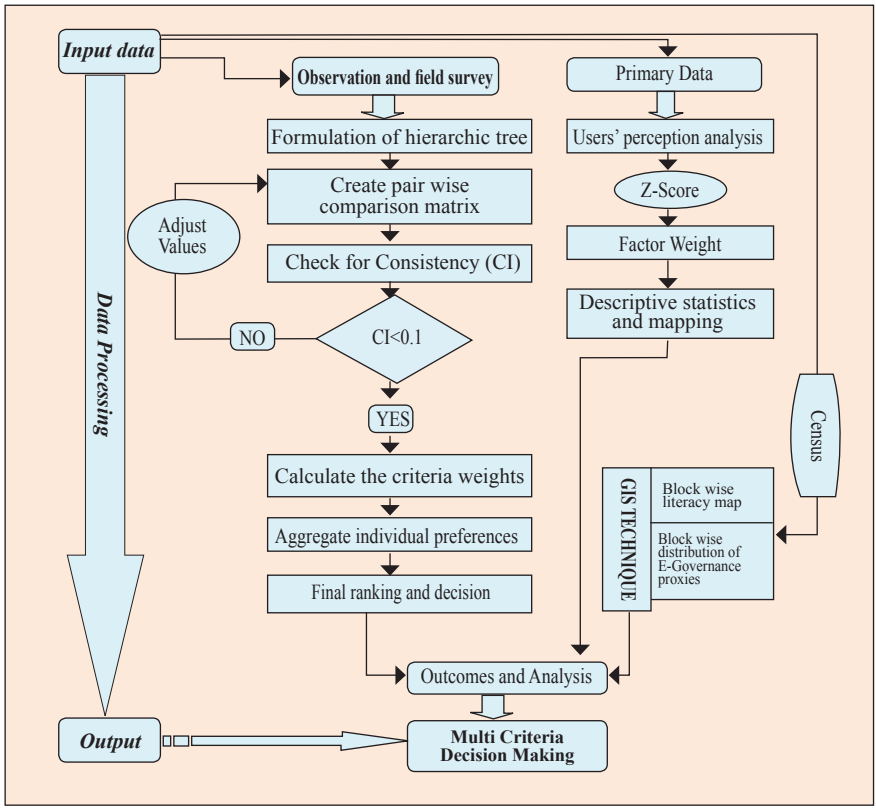
$$z = (X - \mu) / \sigma \qquad (6)$$

Where, z is the z-score, X is the value of the element, μ is the population mean, and σ is the standard deviation which is calculated as:

$$\sigma = \sqrt{\frac{\sum_i^N (x_i - \bar{x})^2}{N}} \qquad (7)$$

Where, σ represent Standard deviation, x_i represent individual value of the dataset, $\bar{x}$ represent mean, and N represent the total number of data points.

Figure-2: Methodological flowchart showing database, processing and output



Result and Discussion

Analysis of user perception

New information and communication technologies can make a significant contribution to the achievement of good governance goals. This e-governance can make governance more efficient more effective. As the e-governance offer some attractive deal to the citizens such as automation process of work i.e., reducing current human excluded information process, supporting decision making, communication, and decision implementation; Transformation from human executed information process to ICT executed information process etc. Government demand their innovation called e-governance is a cheaper more than previous, quicker, better than earlier and more innovation. But this proposition

does not properly match with our study area. We are trying to highlight the view of e-governance and its applicability using five selected existing e-governance applicability project in West Midnapore. It is shown that many users are gone preference on the computerized system but they are not entirely accepted or used the e-governance system. According to respondent's, in the manual system, average time would be travel for a single purpose, but in computerized system, it reduced less than half times. But it is various from different work purpose, such as e-seva, e-bhumi, etc take more trips than average. The overview of the difference between computerized and manual system is shown in the Table-4.

Table-3: Percentage of users, their categories and preference on e-Governance.

Age Group			Sex			Literacy		
	1	2		1	2		1	2
15-30	57	38	Male	66.73	41.2	Secondary	10	31
30-45	24	28	Female	33.27	58.8	Senior secondary	24	18
45-60	17	20				Graduate	37	13
>60	2	16				Post Graduate	29	5

Code: 1- Computerised, 2- Manual

Source: Field survey, 2017

The results of AHP indicate the validation of the above said connotation (Table-6). In this area, there has a great inequality of service centres providing the e-benefit and thus most of these services providing by providing service centre with high internet handling charges especially in rural areas. Thus it shows that the reduction of cost e-governance is usual than the previous manual system. The variation of use of e-governance is differing from various age groups. It is shown that 15 to 45 years aging people generally prefer to use computerized system aged people have a tendency to use direct or so-called manual method (Table 3). Among them, male respondent is more preferences on use of e-services (Figure 5). In contrast, female and aged respondents are usually so much interested in the use of e-governance facilities. (Figure 5 and Figure 6). Education status is a prime factor in effectiveness and use of e-governance. It is shown that respondent belongs to graduate and postgraduate are more utilize of e-governance facilities (Figure 3) and knowledge of Information and Computer Technology is a motivation for that.

Figure-3: Education level of users and their response to e-Governance

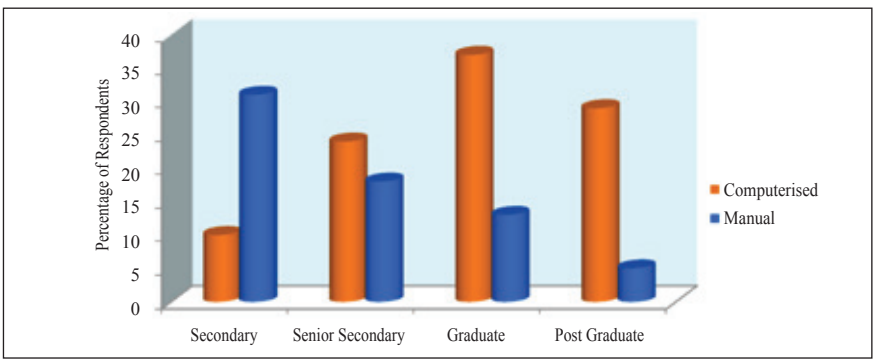


Figure-4: Age groups and response of users

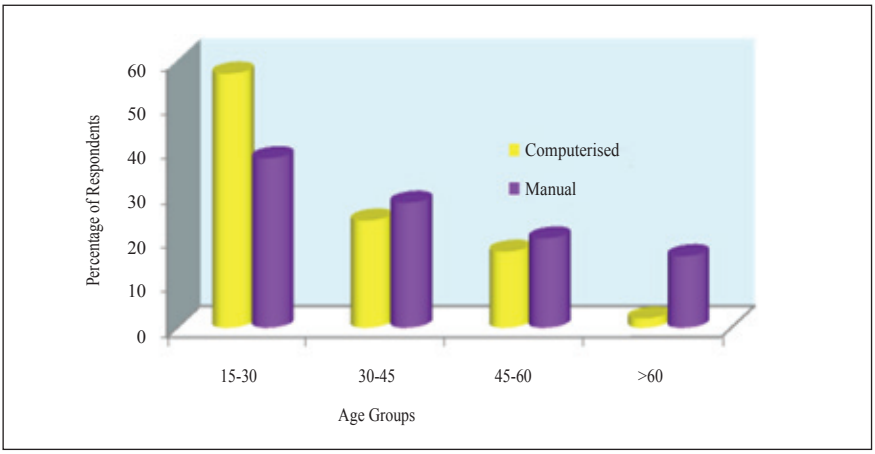
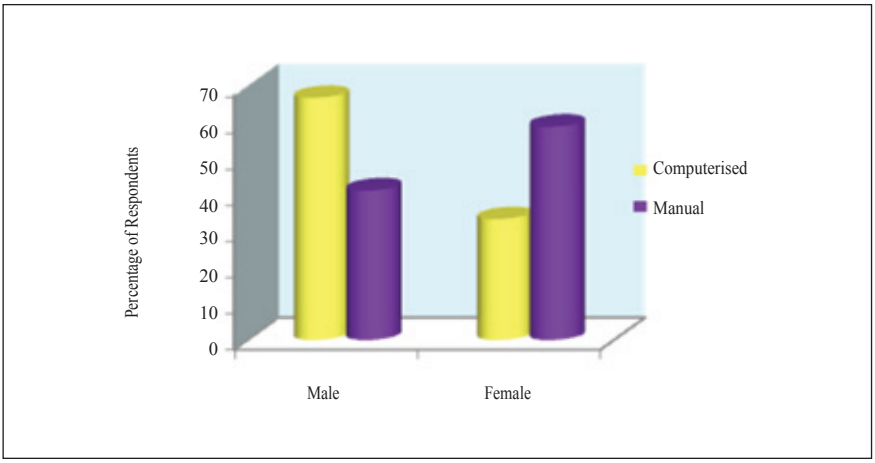


Figure-5: Sex category and response of users



Priority Analysis

A multi-criteria decision-based priority study had been done using AHP for analysis the important factor for consistency and potentiality of e-governance in future. There have 8 principle criteria's and 26 sub-criteria had been selected for analysis of matrix, pairwise comparison and measurement of criteria weight and consistency index. It is shown that less waiting time is the more important factor on the acceptability of e-governance. Maximum weight is assigned on less waiting time and simplicity of process (Table-6 & Table-7). The overall consistency index is 0.0085 and consistency ratio is 0.0057 and it is established that the ranking is more consistency (as CR<0.10) (Table-7). The importance of selected criteria has been established through the analysis of difference sub-criteria and consistency level of sub-criteria has been established using consistency ratio (CR). The analysis shows that cost of the services has been reduced than the traditional manual

system. In contrast, the simplicity nature, the degree of accuracy, waiting time and low level of corruption is gaining the highest weighting among the others sub-criteria (Table-7). Moreover, the application of AHP is applied to validate the user perception and also determined the factors for giving importance on prioritization of e-governance system.

The major outcomes of the AHP based analysis concerning e-Governance system are-

Less Waiting Time

Reduction of waiting time is a great advantage of e-governance system. The study shows that waiting time was reduced from average two hours to half an hour for the computerized system (Table-4). The result of AHP given maximum weight to the reduction of waiting time under Consistency Index (CI) of 0.014 and Consistency Ratio (CR) of 0.0250 (<0.10). In that parameter have three sub-criteria and among them highest weight achieve for sub criteria less than 30 minute waiting time (Table-7).

Agent dependency

The dependency of agents on different services is a negative dimension of both computerized and manual system. User's perception had been taken on paying bribes for getting difference services, for manual cases, as per their opinions, the rate of paying bribes on dependency agent more than new e-governance system about 68.98 percent respondent was acknowledging to pay bribes, but in the new system, it reduced only 19.67 percent (Table-4). The weight more low to medium dependency sub-criteria shows as an advantage and utility of the e-governance. In contrast, high dependency for multiple services draws a weakness of the new e-governance system (Table-7). The constancy of the sub-criteria is validated under Consistency Ratio (CR) 0.0471 (<0.10).

Error rate comparisons

The degree of accuracy has been measured through user perception analysis. The degree of accuracy, consistency of response time, alternative service delivery in case of system breakdown etc is the main issue of comparisons analysis. According to the user, there has some error in different cases and its results about 28.44 percent error for the computerized system, but in case of the manual system, the error percentage is only 15.84 percent. Basically, in the rural area are facing some problems for availing the e-governance services for their poor ICT infrastructure especially in the south western part of our study area. The AHP weights on error rate comparison are given maximum on sub-criteria on error-free transaction is 0.714286 under the Consistency Ratio (CR) 0.001575 (<0.10) (Table-7).

Distance from the service centre

The availability of service centre is important parameters for efficiency measurements of e-governance. The service centre mainly, the government recognized service centre knows as Tathya Mitra Kendra is considered for study through there have many private service centre, personal facility etc are

also available, but the affordability and stability of e-governance measures by the availability of registered service centre. Though there has some disparity of availability of service centre, indifferent blocks (discuss later), but according to user's opinion most of the service centre are within 2km, but an increase of manual system, not a single offices could be found within 2 km from user resident place. At the same time, the maximum weights (0.581264) given on the sub-criteria of 1 to 5 km. distance from the resident under the Consistency Ratio (CR) 0.002172 (<0.10) (Table-7).

Advance Design and layout of the process

The system of e-governance provides as useful, the advance process of the transaction, and application. The process of application and its output such as forms and other documents are well designed and user-friendly. According to 79.79 percent users, appreciate the system of e-governance, but rest are preferred existing manual system. Lack of computer literacy, age barrier etc are the main drawback of fewer preferences to e-governance. The result of AHP indicates the design and layout process of e-governance system is average in respect to existing manual system (Table-7).

Figure-7: Dominant factors on prioritizing e-Governance

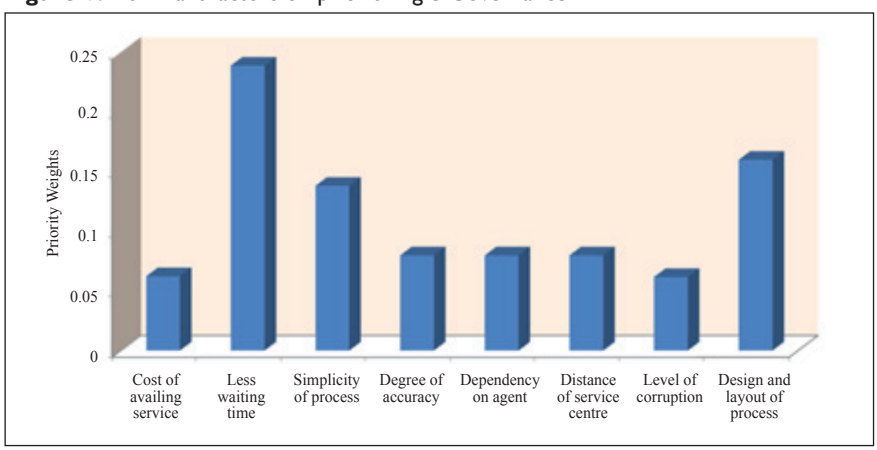


Table-4: User perception on difference e-Governance system including different criteria

List of selected project	Cost to users (No. of trips)		Waiting time (Minutes)		Error rate comparison (Percentage)		Agent dependency (Percentage)		Distance of service centre (Km from resident area)		Design and layout (Percentage)	
	1	2	1	2	1	2	1	2	1	2	1	2
e-district	1.59	4.22	22.5	189.3	49.63	26.35	25.31	78.36	2.31	19.63	70.35	56.34
e-seva	2.48	4.56	14.3	49.21	36.27	11.36	6.78	62.31	3.52	18.36	75.09	46.52
e-bhumi	2.36	4.45	37.4	118	33.01	22.36	45.36	89.36	5.63	25.34	65.12	24.69
e-Registration	2.12	4.39	5.43	127.47	21.78	10.3	24.38	78.62	3.54	15.98	84.62	56.45
Employment Bank	1.41	2.44	21.5	173.07	17.2	19.35	2.16	45.63	7.63	16.32	86.34	69.42
SD	0.47	1.01	37.3	51.153	12.774	5.933	19.621	19.131	1.967	4.355	9.791	18.880
Mean	2.09	3.96	32.1	116.930	28.444	15.843	19.670	68.980	5.080	19.000	77.793	49.270

Code: 1- Computerised, 2- Manual Source: Field survey, 2017

Figure-6: Role and importance of sub-criteria (A) Cost of availing service, (B) Waiting time, (C) Simplicity of process, (D) Degree of accuracy, (E) Dependency on agents, (F) Location of service centre, (G) Level of corruption and (H) Design and layout of process.

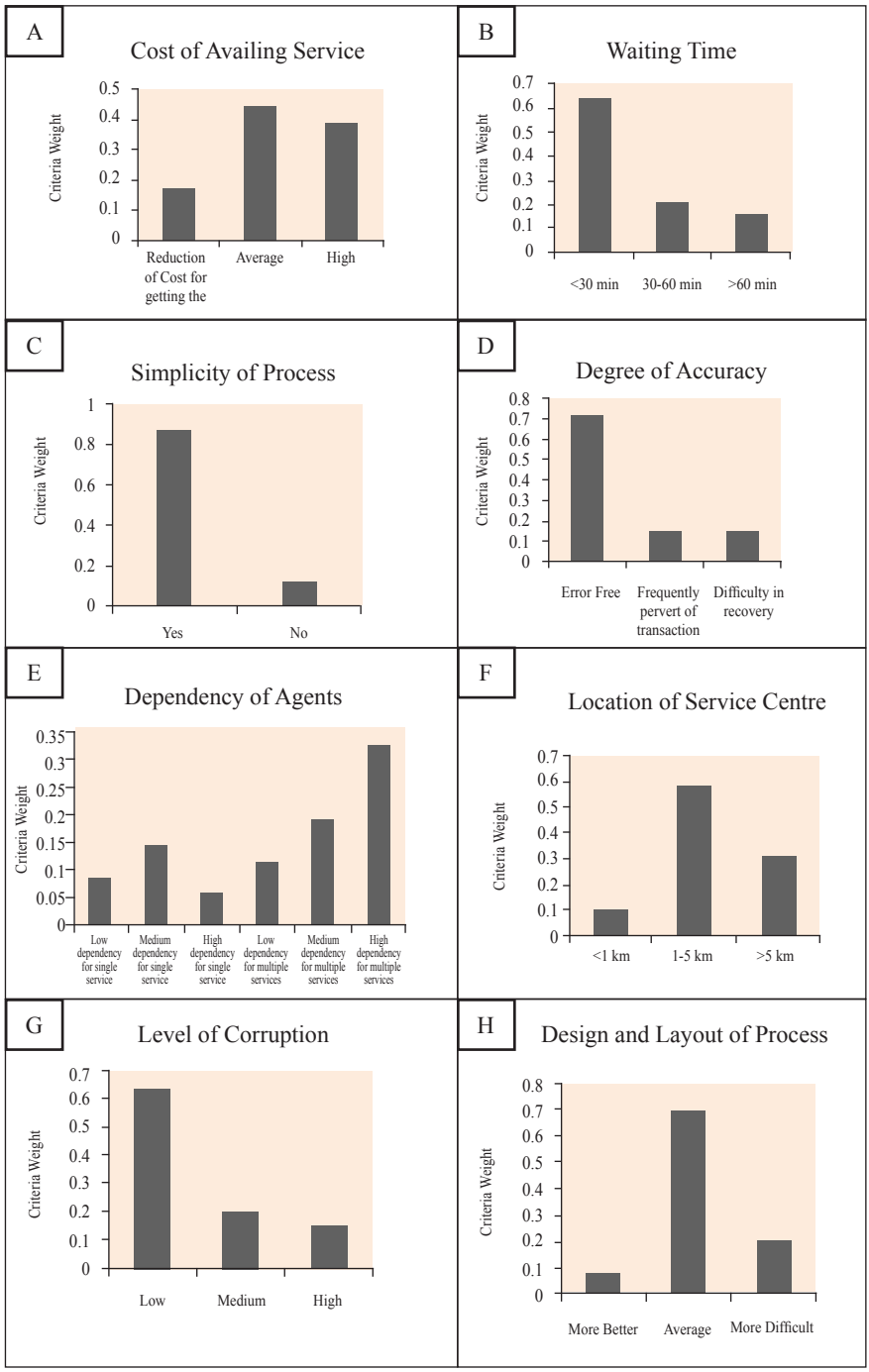


Table-5: Criteria Comparison Matrix based on Saaty's Ratio scale

	Cost of availing service	Less waiting time	Simplicity of process	Degree of accuracy	Dependency on agent	Distance of service centre	Level of corruption	Design and layout of process
Cost of availing service	1	0.11	0.14	0.2	0.2	0.2	0.33	2
Less waiting time	9	1	2	4	4	4	6	0.14
Simplicity of process	7	0.5	1	2	2	2	4	0.2
Degree of accuracy	5	0.25	0.5	1	1	1	2	0.33
Dependency on agent	5	0.25	0.5	1	1	1	2	0.33
Distance of service centre	5	0.25	0.5	1	1	1	2	0.33
Level of corruption	3	0.17	0.25	0.5	0.5	0.5	1	1
Design and layout of process	0.5	7	3	3	3	3	1	1

Source: Field survey, 2017

Table-6: Normalised Criteria Comparison Matrix including Consistency Index (CI) and Consistency Ratio (CR)

	Cost of availing service	Less waiting time	Simplicity of process	Degree of accuracy	Dependency on agent	Distance of service centre	Level of corruption	Design and layout of process	Criteria weight	Ws	Consistency vector	CI	RI	CR
Cost of availing service	0.028	0.012	0.018	0.016	0.016	0.016	0.018	0.374	0.062	0.497	7.984			
Less waiting time	0.254	0.105	0.253	0.315	0.315	0.315	0.327	0.027	0.239	4.292	17.968			
Simplicity of process	0.197	0.052	0.127	0.157	0.157	0.157	0.218	0.037	0.138	1.689	12.233			
Degree of accuracy	0.141	0.026	0.063	0.079	0.079	0.079	0.109	0.062	0.080	0.680	8.528			
Dependency on agent	0.141	0.026	0.063	0.079	0.079	0.079	0.109	0.062	0.080	0.610	7.641	0.0085	For n = 8, RI = 1.51	0.0057
Distance of service centre	0.141	0.026	0.063	0.079	0.079	0.079	0.109	0.062	0.080	0.494	6.196			
Level of corruption	0.085	0.017	0.032	0.039	0.039	0.039	0.055	0.187	0.062	0.212	3.432			
Design and layout of process	0.014	0.735	0.380	0.236	0.236	0.236	0.055	0.187	0.160	0.080	0.500			
Average(λ)											8.060			

Potential e-governance Accessibility Index and its Spatial Disproportion

AHP based analysis helped to find out the actual acceptances of e-governance. But at the same time, it should be understood as geographical perspective a question is arise that each block has the same situation or not? A geospatial analysis had been done for this study to show the existing pattern of acceptance of e-governance in different blocks of the study area. Basically, the district is situated in the southern part of the state, West Bengal has been always in focus because of perpetual underdevelopment in the western part. As there has only six small census town are present and other areas are under rural area. Thus, there has some radical barrier to adopting this digital facility. However, this present study critically evaluates how the citizen of the area dilutes the digital environment.

Figure-7: Weights of sub-criteria and their Consistency

Criteria	*CR*	*Sub-criteria*	*Criteria weights*	λ_{max}	*CI*	RI	*CR*
Cost of availing service	0.0057 (CR<0.10, The rankings are consistence)	Reduction of cost for getting the service	0.1698	3.018	0.0091	0.58	0.015784
		Average	0.4428				
		High	0.3873				
Waiting time		<30 min	0.6404	3.029	0.0145	0.58	0.0250
		30-60 min	0.2058				
		>60 min	0.1536				
Dependency on agents		Low dependency for single service	0.0889	6.292	0.0584	1.24	0.0471
		Medium dependency for single service	0.1483				
		High dependency for single service	0.0609				
		Low dependency for multiple service	0.1170				
		Medium dependency for multiple service	0.1942				
		High dependency for multiple service	0.3254				
Level of corruption		Low	0.6404	3.048	0.0243	0.58	0.0420
		Medium	0.2058				
		High	0.1536				
Location of service centre		<1 km	0.1095	3.005	0.0012	0.58	0.0021
		1- 5 km	0.5812				
		>5 km	0.3091				
Simplicity of process		Yes	0.875	2.000	0.000	0.000	0.00
		No	0.125				
Design and layout of process		More better	0.0853	6.0325	0.0162	0.58	0.0280
		Average	0.7014				
		More difficult	0.2132				
Degree of accuracy		Error free	0.7142	3.001	0.0009	0.58	0.0015
		Frequently pervert of transaction	0.1428				
		Difficulty in recovery	0.1428				

Source: Field Survey, 2017

Generally, literacy rate, availability of e-governance facilitation centre and distance from the district headquarter are main factors to determining the acceptability and controlling the e-governance service. Three consecutive hypotheses have been established for this study. First, if the literacy rate is more than a tendency to use more e-services. Second, if there have proper facilities for e-governance, then, a propensity to use more e-services. Third, if the distance is more from the district centre, then tend to use more e-services. These three hypotheses are fit for this study area. The average literacy of the district is 79.04 percent (Census, 2011), but some block have is below 70 percent such as Nayagram, Gopiballavpur-I, Binpur-I etc. and some have more than 80 percent such as Dantan-II, Mohanpur, Pingla, Sabang etc. The user efficiency depends on the educational knowledge and thus the use of E-Governance system is differing from one block to another (Figure.

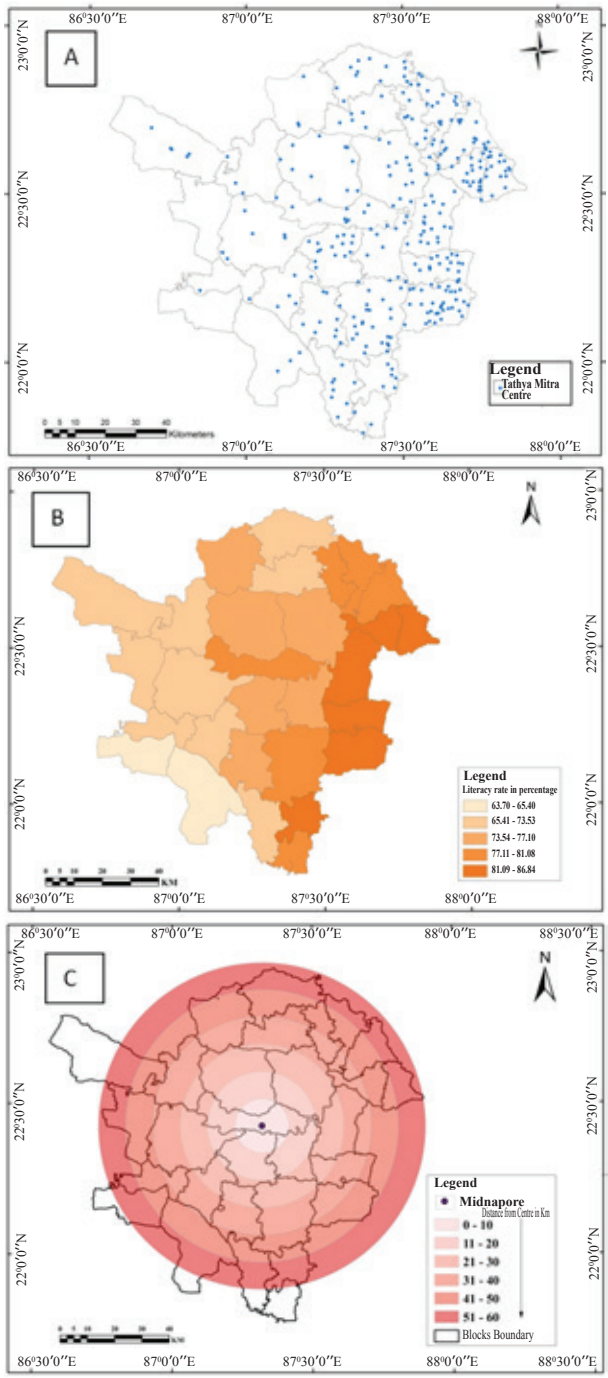
8B). The availability of service centre can be downloaded from an official website (http://kprb.kolkatapolice.gov.in) and location of each service centre converted to raster format using Google Earth and ArcGIS 10.2. Generally, the Government recognized e-service centre (Tathyamitra Kendra) was under consideration. A block-wise distribution map (Figure. 8A) were generated and it is shown that some blocks have not a single service centre within its areas, such as Gopiballavpur-I and Jamboni. Distance is an important parameter where with increasing of distance from district head quarter, to reducing travel cost and loss of time, users provide a priority on used of e-services (Figure. 8C).

Table-8: Block wise Composite score of the study area using z-score

BLOCK	Literacy[1] (%)	Score	Numbers of Tathyamitra kendra[2]	Score	Distance from District head quarter to Blocks mean centre[3]	Score	Σ Score	Composite Score (EPZ)
Nayagram	63.7	-2.1752	3	-0.9656	51.9	0.8325	-2.3083	-0.7694
Gopiballavpur-I	65.4	-1.8834	0	-1.3406	55.28	1.0522	-2.1719	-0.7240
Gopiballavpur-II	71.4	-0.8547	2	-1.0906	44.69	0.3639	-1.5814	-0.5271
Sankrail	73.35	-0.5197	6	-0.5906	32.7	-0.4154	-1.5256	-0.5085
Jhargram	72.23	-0.7121	6	-0.5906	29.02	-0.6546	-1.9573	-0.6524
Jamboni	72.6	-0.6485	0	-1.3406	47.63	0.5549	-1.4342	-0.4781
Binpur-I	69.74	-1.1399	2	-1.0905	34.6	-0.2919	-2.5225	-0.8408
Binpur-II	70.46	-1.0162	6	-0.5905	65.46	1.7138	0.1070	0.0357
Kharagpur-I	77.1	0.1247	16	0.6595	13.79	-1.6445	-0.8602	-0.2867
Kharagpur-II	76.1	-0.0471	8	-0.3406	15.44	-1.5373	-1.9249	-0.6416
Keshiary	76.78	0.0696	9	-0.2155	33.5	-0.3634	-0.5094	-0.1698
Narayangarh	78.3	0.3305	24	1.6596	33.12	0.0551	2.0451	0.6817
Dantan-I	73.53	-0.4882	7	-0.4655	55.06	1.0379	0.0842	0.0281
Dantan-II	82.45	1.0427	8	-0.3405	51.77	0.8240	1.5262	0.5087
Mohanpur	80.51	0.7097	3	-0.9656	65.95	0.1097	-0.1462	-0.0487
Pingla	83.6	1.2401	17	0.7845	33.41	-0.3693	1.6553	0.5518
Sabang	86.84	1.7961	33	2.7846	40.67	0.1026	4.6833	1.5611
Debra	82	0.9655	20	0.2845	27.86	-0.7300	0.5199	0.1733
Garbheta-I	72.2	-0.7165	13	0.2845	50.03	0.7109	0.2789	0.0930
Garbheta-II	75.87	-0.0866	4	-0.8406	35.33	0.0587	-0.8684	-0.2895
Garhbeta-III	72.2	-0.7164	6	-0.5906	43.06	0.0716	-1.2354	-0.4118
Salbani	74.87	-0.2582	12	0.1595	20.03	0.0333	-0.0654	-0.0218
Keshpur	75.2	-0.2016	13	0.2845	22.4	0.0372	0.1202	0.0401
Medinipur sadar	78.4	0.3476	8	-0.3405	0	-2.5408	-2.5337	-0.8446
Chandrakona-II	76.96	0.1005	9	-0.2155	39.49	0.0259	-0.0892	-0.0297
Chandrakona-I	78.93	0.4386	18	0.9095	49.41	0.6706	2.0188	0.6729
Ghatal	81.08	0.8076	19	1.0345	47.25	0.5303	2.3724	0.7908
Daspur-I	83.99	1.3070	19	1.0345	42.69	0.2339	2.5754	0.8585
Daspur-II	85.62	1.5867	20	1.1595	52.12	0.8468	3.5931	1.1977

Source: [1]Census of India (2011), [2]http://kprb.kolkatapolice.gov.in, [3]Calculated from ArcGIS 10.1.

Figure- 8: The three dominant factors on adopting e-Governance system are (A) Availability of service centre knows as Tathyamitra Kendra, (B) Literacy status and (C) Distance from District centre.

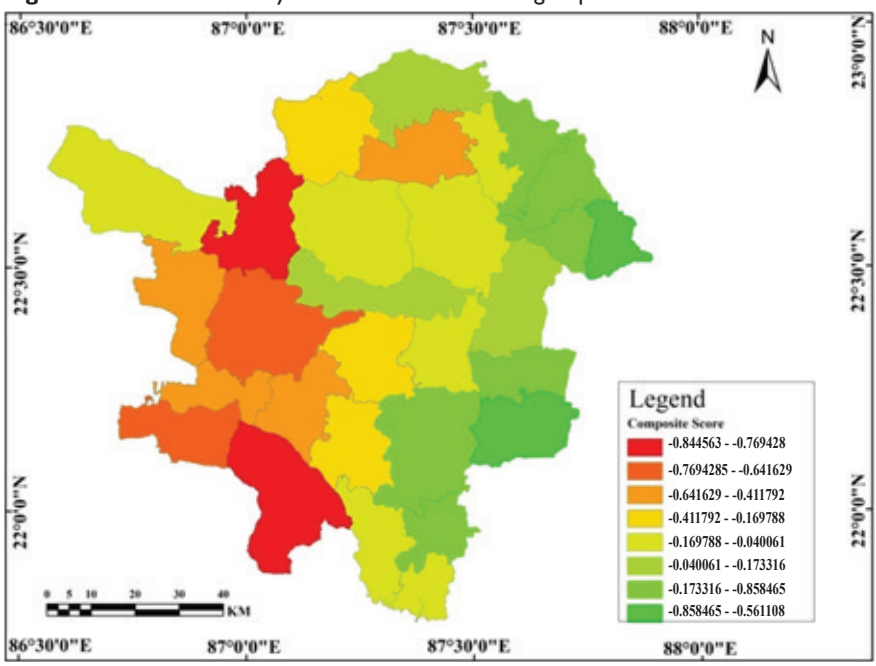


All these parameters have been normalized using Z-Score and produced a Composite Score each of the blocks and prepared a Future e-governance priority zones (FPZ) (see Figure 9). It can be expressed as:

$$FPZ = \sum \frac{1}{N}(SLR + SSC + SD)$$

Where SLR represent Score of literacy rate of each block, SSC represent Score of the available service centre, SD represent Score of distance from District centre, and N represent Numbers of variables.

Figure-9: Future Potentiality of e-Governance and its geospatial variation



Three variables are tested using z-test at 95% confidence level and value of alpha is 0.005 and p-value are <0.0001, and the result accept the alternative hypothesis (Ha) i.e. it can be concluded that there a positive relationship with literacy rate, availability of service centre and distance from the District centre with future prioritisation of adopting e-governance.

Conclusion

In Paschim Medinipur district consist of 29 blocks and out of them have only 6 Census towns. The major part of the area is under primitive tribal dominance and literacy rate is lower than the district average. The availability of recognized e-governance service centres are also unavailable and unequally distributed in each block. The opinion of users has been analyzed and it is said that the success of e-governance inherent is not only so-called literacy, distance or service centre but also depend on the user's behavior to adopt the new system as well as making the strategic connection to the Government. Recently the Central Government

gave importance to making the digital transformation and State Government of West Bengal also uphold established e-services under a single window operation (www.eservices.wb.gov.in). The success of e-governance can be creating educational empowerment, managing process performance and active connection in Government. The connecting of citizen trough e-service includes a broader remit such as to support information and accurate transformation to the citizen and improving public services. Moreover, e-service makes an opportunity to the young entrepreneur as a different business line (Bhatnagar and Vyas, 2001).

Figure-10:
Overlapping domains of e-Governance

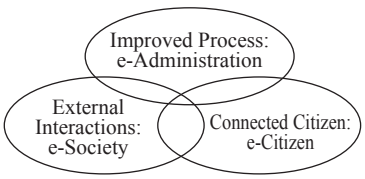
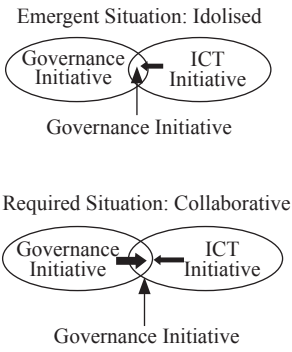


Figure-11:
Difference situation of e-Governance



Overall, the essence of this work lies in the fact that it explores the user's preferences, opportunity and benefit analysis, potential priority, efficiency and applicability of e-governance. There have three domains (Figure-10) of e-governance that should be overlapping for future efficiency of e-governance in the study area. The challenges of e-governance not only the user-centric, but there have some administrative failure hinder e-governance system. Governance initiative and different ITC initiative should be collaborative for the success of e-Governance. Thus planners and policymakers should be active on adopting strategy and policy for e-governance with legitimizing and mapping current reality, customization to match realities and creates 'Hybrid managers' (Heek, 2003) who reduced the gap between Government and technology. Moreover, the design-reality gap should be reduced to the success of e-Governance and the same way era of e-Governance will be swing from e-Governance to i-Governance i.e, called Integrated Governance or, perhaps, Intelligent Governance.

Notes

1. For more information about e-governance services in India, visit www.india.gov.in
2. For data, visit www.sahajcorporate.com
3. For more information about e-governance in West Bengal state www.edistrict.wb.gov.in
4. For more information about e-governance services see www.eservice.wb.gov.in
5. For more information about project visit www.bangalbhumi.gov.in

6. See activity centres, visit www.wbregistration.gov.in
7. For more information visit www.employmentbank.wb.gov.in

References

Alawneh, A., Al-Refai, H. & Batiha, K. (2013). Measuring user satisfaction from e-Government services: Lesson from Jordan, *Government Information Quarterly,* 30, pp: 277-288.

Benenson, I. (2004). Agent-Based Modelling: From Individual Residential Choice to Urban Residential Dynamics.' In: M. F. Goodchild, D. G. Janelle (eds.) 'Spatially Integrated Social Science: Examples in Best Practice, *Oxford University Press*,4, pp: 67-95.

Bengt, G., Gulliksen, J. & Boivie, I. (2003). The usability design process–integrating user cantered systems design in the software development process, *Software Process: Improvement and Practice,* 8(2), pp: 111-131.

Bhatnagar, S.C. & Singh, N. (2010). Assessing the Impact of E-Government: A Study of Projects in India, *USC Annenberg School for Communication & Journalism*, 6(2), pp: 109-127.

Bhatnagar, S. C. & Vyas, N (2001). Gyandoot: Community – Owned Rural Internet Kiosks, Washington DC: World Bank.

Census of India, West Bengal State (2011). Office of the Registrar General and Census Commissioner, India. [Accessed on 26th May 2017].

Chakraborty, A. (2010). Scenario Planning for Effective Regional Governance: Promises and Limitations, *State and Local Government Review,* 42(2), pp: 156-16.

District Census Handbook, Paschim Medinipur District. (2011). Office of the Registrar General and Census Commissioner, 20 :(12-B), India.

Dwivedi, S.K. & Bharti, A.K. (2006). E-Governance in India – Problems and Acceptability, *Journal of Theoretical land Applied Information Technology,* 17(1), pp: 37-43

Gunawong, P. & Gao. P (2010). Understanding e-Government Failure: An Actor-Network Analysis of Thailand's Smart ID card Project, Pacific Asia Conference on Information Systems, *Proceedings of Association for Information System,* pp: 773-784.

Harder, C. T. & Jordan. M.J. (2013). The transparency of county websites: A content analysis, *Public Administration Quarterly*, 37(1), pp: 103-128.

Heeks, R. (2003). Most e-Government-for-development projects fail: how can risks be reduced? *Manchester Institute for Development Policy and Management*, University of Manchester, (4), pp: 1-17.

Hwang, C. L. & Masud, A. S. M. (1979). Multiple Objective Decision Making - Methods and Applications. *Lecture Notes in Economics and Mathematical Systems,* (164), pp: 358-362.

Keršuliene, V., Zavadskas, E. K. & Turskis, Z. (2010). Selection of rational dispute resolution method by applying new step-wise weight assessment ratio analysis (Swara), *Journal of Business Economics and Management*, 11(2), pp: 243-258.

Lai, V.S., Robert, P., Trueblood, R.P & Bo. K. Wong. (1999). Software selection: A case study of the application of the analytical hierarchy process to

these lection of multimedia authoring system, *Information and Management*, 36, pp: 221-232.

Lawshe, C. (1975). A Quantitative Approach To Content Validity, *Personnel Psychology*, (1), pp: 563-575.

MacCrimmon, K. R. (1968). Decision making among multiple – attribute alternatives: A Survey and Consolidated Approach, California: Arpa Order.

Malik, P., Dhillon, P. & Verma. P (2014). Challenges and Future Prospects for E-Governance in India, *International Journal of Science Engineering and Technology Research*, 3(7).

Mittal, P. & Kaur, A (2013). E-Governance – A challenge for India, *International Journal of Advanced Research in Computer Engineering & Technology*, 2(3), pp: 1196-1199.

Muralidharan, C., Anantharaman, N. & Deshmukh, S.G. (2006). A Multi-Criteria Group Decision-making Model for Supplier Rating, *Journal of Supply Chain Management,* 38(3), pp: 22-35.

Niemira, P. M. & Saaty, T. L. (2004). An Analytic Network Process model for financial-crisis forecasting. *Michael International Journal of Forecasting,* 20, pp: 573-587.

Ranganathan, K & Bhatnagar, S. (2010). E-governance for development: A focus on rural India, *Information Technology for Development*, 16(2), pp: 81-83.

Roche, C. (1999) Impact assessment for development agencies: Learning to value change, United Kingdom: Oxfam Publication.

Saaty, T.L. (1990). How to make a decision: The Analytic Hierarchy Process. *European Journal of Operational Research,* 48, pp: 9-26.

Saaty, T.L. (2008) Decision making with the analytic hierarchy process, *International Journal of Services Sciences,* 1(1), pp: 83-98.

Tesfamariam, S. & Sadiq, R (2006). Risk-based environmental decision-making using fuzzy analytic hierarchy process, *Stoch Environ Res Risk Assess,* (21), pp: 35-50

Yadav, K. & Tiwari, S. (2014). E-Governance in India: Opportunities and Challenges, *Advance in Electronic and Electric Engineering*, 4(6), pp: 675-682..

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Conflict of Interest

The authors declare that they have no conflict of interest.

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Social Marginalisation of Women Textile Workers – A Study on the Textile & Garment Clusters at Coimbatore, Tirupur, Ahmedabad & Surat

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Abstract

The article is aimed at finding out the discriminatory employment practices, work conditions, knowledge of employment rights of socially marginalized women employees in the textile & garment sector, in the areas of Coimbatore, Tirupur, Ahmedabad & Surat.

Methodology: This study was based on primary sources. Secondary data was also collected for some aspects of the study. Data pertaining employment practices of socially marginalized women employees in the textile & garment sector, in the areas of Coimbatore, Tirupur, Ahmedabad & Surat was collected through a structured questionnaire or an Interview Schedule. A separate questionnaire/ Interview schedule was prepared to collect data from the textile & garment companies with regard to their employment practices. Percentage analysis and chi square tests were used to analyse the data.

Implications: The findings of the study have wider implications on the policy makers and Institutions involved in the area of Protection of Women's rights. A comprehensive research on the employment and work conditions under which the marginalized women employees work will provide a solution to this social issue. The study will bring to light the various schemes under which the socially marginalized women employees are lured by the textile and garment companies which resort to such unfair employment practices.

Originality / Value: The paper brings out the social issues faced by the women textile workers in the textile clusters through primary data.

Keywords: Social Marginalisation, Sweat Shops, Quota System, Women's Rights

Introduction

The Indian textile Industry is the largest employer (after agriculture) of workers either directly or indirectly**.** It is a large provider of foreign currency and it is a major source of employment, generating work for more than 35 million people

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(Maid in India April, 2012)[1]. After China, India is the largest exporter of textile yarn, apparel items. India holds third place, after China and Bangladesh. The apparel sector has over 25000 domestic manufacturers, 48,000 fabricators and around 4000 manufacturers/exporters. Over 80% of these are small operations (less than 20 machines) and are proprietorship or partnership firms.

As in the case of Agriculture the textile sector also has an abundance of illiterate work force. Any illiterate workforce with lack of education is bound to get exploited. The workers are not aware of their rights, labour rules, minimum wages that they are supposed to get, maximum number of hours they are supposed to work etc.

China for example has a number of sweatshops, where workers are forced to work for long hours, without breaks and proper working conditions. A similar work culture prevails in Textile clusters of India such as Coimbatore, Tirupur, Ahmedabad, and Surat.

A large number of workforce is sourced from the marginalized sections of society. In this the most vulnerable are women.

Profile of the Indian Textile Industry

- India is the second largest producer of textiles and garments, only second to China
- Textile sector is the second largest employer in India, after agriculture
- The Indian textile sector contributes significantly to the GDP of the country
- The Indian textile industry is highly an unorganized sector.

Structure of India's Textile Industry

The textile sector in India is one of the largest in the world. The textile industry is classified into three segments:

- Cotton Textiles
- Synthetic Textiles
- Other like Wool, Jute, Silk etc.

All segments have their own place but even today cotton textiles continue to dominate with 73% share. The structure of cotton textile industry is very complex with co-existence of oldest technologies of hand spinning and hand weaving with the most sophisticated automatic spindles and loom. The structure of the textile industry is extremely complex with the modern, sophisticated and highly mechanized mill sector on the one hand and hand spinning and hand weaving (handloom sector) on the other in between falls the decentralized small scale powerloom sector. Unlike other major textile-producing countries, India's textile industry is comprised mostly of small-scale, non-integrated spinning, weaving, finishing, and apparel-making enterprises. This unique industry structure is primarily a legacy of government policies that have promoted labour-intensive, small-scale operations and discriminated against larger scale firms. Unlike other major textile-producing countries, India's textile industry is comprised mostly of small-scale, non-integrated spinning, weaving, finishing, and apparel-making enterprises. This unique industry structure is primarily a legacy of government policies that have promoted labour-intensive, small-scale operations and discriminated against larger scale firms."[2]

The Tamil Nadu Textile and Garment Industry

Tamil Nadu is the largest producer of cotton yarn within India and home to 44% of all bigger Indian spinning mills and 80% of the smaller mills. The concentration of available services (spinning, weaving, dyeing and garmenting) makes Tamil Nadu one of the most competitive production centres in India. Companies from Tamil Nadu have some of the popular brands in the world as their clientele fashion brands like Ralph Lauren, Tommy Hilfiger and Diesel; (fast) fashion retailers including Inditex and Primark and buying houses such as Crystal Martin to name a few.

The Gujarat Textile and Garment Industry

The textile industry of the city of Ahmedabad in the state of Gujarat in India dates back to the 19th century, when the city and the industry were established under the British Raj. Textile mills employed thousands of people from across the state and the cotton garments manufactured were exported across the world. The prosperity of the industry was the mainstay of the city's economy. Surat is another prominent city in the state of Gujarat which is known for its textile and garment companies.

Overview of the Literature

Rehman Azhar in his report "Trapped in textile"[3] brings out the issues faced by women in the textile industry post 2005 particularly based in Coimbatore, Tirupur, Karur and Erode where they are subjected to exploitation at the hands of their employers. He explains how the female workers are often lured by false promises (like "sumangali" scheme) and money at a young age. The need for labour and competition has led employers to introduce such schemes. For the women workers are concerned, their poverty, caste and socio economic status makes them vulnerable to exploitation. The paper explains the serious violation of basic human rights.

Nirmala Banerjee in her book "Indian women in a changing industrial scenario"[4] presents an absorbing account of the sexual division of labour in India. This volume analyzes how the organization of production in capitalist industries – whether in large scale or small scale manufacturing adapts to optimize the exploitation of a particularly vulnerable group of workers – women.

SOMO – Centre for research on Multinational Corporations and ICN – Indian committee of the Netherlands in their report – "Captured by Cotton"[5] provides statistical data and information regarding the exploitation of dalit girls (post MFA) employed in garment industry in India for European and US markets. It clearly explains the health issues of the workers in the garment / textile industry and how they are prone to harmful diseases. The report also documents abusive labour conditions and throws light on shocking information about serious labour rights violations and recommends implementation of labour laws, alternate employment opportunities to combat the issue.

Gomathi Palanikumar in her report – "Textile mills of Tamil Nadu and that weird employment offer" presented to Action Aid India[6] explains the pathetic situation of women working in the garment industry (post 2005) particularly in the state of Tamil Nadu. In her report she points out how dowry is linked to forced labour. It also gives information about the "Middle Man" or the labour brokers who identifies and lures massive workforce in rural areas. It also provides information

about the hectic work that the employees in the garment industry need to put in to meet the demands of a voracious global economy and the insensitivity of the global markets towards the contribution of the women.

Dr Ludgera Klempand Bernd Reddies in their report – "Women Textile Workers Demand Justice" published by Friedrich Ebert Foundation[7] gives an insight to various issues faced by women working in the textile industry. It states that predominance of small firms, low qualification of work force, limited trade union presence have led to the exploitation of women work force in the garment industry.

International Labour Organization in their report – "Wages and Working Hours in the Textiles, Clothing, Leather, and Footwear Industries"[8] provides ample data and statistics (post 2005) that clearly indicates the poor condition of women workers in garment industry. Inappropriate payment, long and unpredictable working hours, various forms of violence, abuse (including sexual), and harassment by the employers has been cited as the reasons for the plight.

Sudeshna Saha in his report – "Women Employees in Garment Industries – A Case Study"[9] reveals significant differences in the nature and conditions of work, income between men and women in work place. The report outlines the worse conditions of work that women face leading to even suicides. Due to their low educational qualifications and skills, the women workers have less access to better working conditions, promotions, leave facilities etc. unlike their male counterparts.

Dr A Ravi and A Madeswaran in their research report – "Young Women Exploitation in Tirupur Textile and Garment Industries with reference to Sumangali Scheme"[10] explains the "Sumangali Scheme" and the various forms of women exploitation under Sumanagali Scheme. It explains how young unmarried women are lured by fake promises and later on exploited. Poverty, lack of proper education, prevailing social and economic situations are some of the reasons. It emphasises the NGOs and other social organizations to come forward and adopt retrieval measures so as to prevent exploitation of women working in garment/ textile industries.

FIDH (International Federation for Human Rights) in their research report – "Behind The Showroom: The hidden reality of India's garment workers"[11] identifies serious human rights concerns (post 2005) on textile factories' work-floors and hostels. It explains that disproportionate use of contract labour and apprenticeship, stripping workers of legal protections and benefits as well as overtime work and salaries below minimum wages are common in textile/garment industry. It highlights gender discrimination and also points out the flaws in the sumangali scheme which is often used to lure unmarried women into the garment industry. The report recommends international brands and retailers sourcing in India to refrain from entering into commercial relations with businesses suspected of practicing Sumangali or other such schemes.

CEC (Centre for Education and Communication) in their report – "Understanding the Indian Garment Sector in the post MFA context" [12] reveals the fact that in the wake of stiff global competition in the garment industry, often women who forms the majority of the work force are employed on a monthly basis and under heavy subcontracting as a result of which often they don't come on record and hence are vulnerable to exploitation. The report states that women working in garment industry face considerable amount of discrimination, harassment and torture and were made to work for long hours even during pregnancy. It strongly recommends

NGOs and trade unions to converge their activities to ensure transparency and thereby prevent such exploitation.

Michiko Hayashi in his paper – "Trade in Textiles and Clothing Priority Issues for Women in the post – ATC"[13] states that post-ATC poses a serious challenge for women in the textiles and clothing sector in developing countries as they could be adversely affected by the rigors of the post ATC adjustments and modernization of industries. He is of the opinion that the impact of women should not be used as an excuse for continuing the discriminatory and distorting international trade regime of textiles and clothing. He strongly recommends the national governments and international community to be sensitive to the needs of the women in these sectors in the post – ATC phase as the industry welfare is directly depended on the welfare of the women in developing countries.

Mahoo Lyimo in his report – "Sexual Harassment: An insight into the Indian Garment Industry"[14] throws light on the discrimination and systematic abuses such as the lack of proper labour rights, poor pay and sexual harassment that the women workforce in the garment industry has to face. He suggests women organizations, NGO's and trade unions to jointly come forward to prevent such exploitation of women who form the majority of work force in textile and garment industry.

Solidaridadand Fair Labour Association in their report – "Understanding the Characteristics of the Sumangali Scheme in Tamil Nadu Textile and Garment Industry and Supply Chain Linkages"[15] identifies and confirms a range of labour law violations in the Tamil Nadu textile industry, who are contracted according to Sumangali or similar employment schemes. It explains the need to find mutual solutions, build trustworthy partnership and implement sustainable strategies that will contribute to the welfare of the workers and improve business conditions and the image of the sector globally.

Homeworkers Worldwide in their report – "Forced Labour in Tamil Nadu's textile and garment industry"[16] clearly establishes the fact that the poor conditions of women in the garment industry are endemic in nature. It clearly states that the demand from multinationals for cheap clothes, produced quickly to meet the fast fashion trends, places great pressure on manufacturers and workers have to pay the price and are often exploited. It suggests that the garment industry in India needs to face these problems and improve conditions, but ultimately the multinational retailers need to accept responsibility for creating the conditions which drive this exploitation.

JayatiGhosh in her report – "The impact of government policies on the textile and garment industries of India"[17] explains the circumstances that lead to the exploitation of women working in the garment/textile industry. It also gives information about how the women workers are denied their basic rights and are exploited. Social prejudice, low educational qualification and poverty are the reasons for this plight.

One of the oldest industries in the history of the Indian Economy dated back to the Harrapan civilization. It is one of the largest contributors to the Indian exports amounting to 15% of the total exports made. The Indian textile industry is a labour-intensive industry, employing 45 million people directly and 20 million people indirectly - becoming one of the largest sources of employment generation in the country[18].

The size of India's textile market in 2016 was around US$ 137 billion, which

is expected to touch US$ 226 billion market by 2023, growing at a CAGR of 8.7 percent between 2009-23E[19].

Women Workers

Approximately 80% of workers in the textile industry are women working at the bottom line. This is because, women who are below poverty line, who need to earn for their bread and butter would be ready to do any kind of work so are to run their families. And this is an advantage for the textile industries employers as it is easy to manipulate the women workers in doing more amount of work at a very cheap price[20].

The women workers are made to work long hours which exceed their working capacity. The wages are so low that it's difficult for them to live on. There are many cases of child labour and forced labour in this industry. In Tamil Nadu, young women between the ages of 15-18 years are tricked into bonded labour through a practice called 'Sumangali Scheme' - Soft Trafficking[21]. Here, the girls are hired on a contract basis for 3 to 5 years, during which they are paid wages along with lump sum money as dowry for their marriage. This practice started in Coimbatore in the 1990's. The targeted girls are from poor families where the employers come and talk to the girl and her parents regarding the benefits of the scheme.

Once the girls are hired, they are trained to work long hours ranging from 12-18 hours a day. This sometimes extends to night shifts and overtime - with very low wages ranging from 35 to 45 rupees a day. The bonus promised to them is also not paid. The girls are subjected to physical and verbal abuse and are not permitted to visit their families. Most of the girls undergo a lot of trauma, get injured and wear out. And if by any chance they try to voice out to the unions, they will be fired immediately without any prior notice.

Sweatshops and the Textile Industries around the World

Sweatshop is a workplace in a factory popular in the textile industry - originated between 1830's and 1850's, where the working conditions are socially unacceptable.

The main characteristics of sweatshops are:

- Unhygienic working environment
- Unfair wages
- Long working hours (ranging between 18-20 hours a day)
- Gender discrimination
- Physical harassment of workers.
- Demand to complete a task with a certain period of lime

This is a popular practice in the giant textile industries as these brands have to match with their competitors in terms of production and exports. The management believes that if the workers are given leisure time the efficiency level will reduce which will ultimately lead to low productivity. Although manufactures deny its existence, sweatshops are still in practice, even in the United Nations which stands first in developed nations list.

The workers in the sweatshops have no voice in the management or the government as they generally come under the below poverty line group. Sweatshops not just have an unfair effect on women workers and child labour but also on the environment around.

"Women's rights groups Sisters for Change" in their report "Eliminating violence against women at work" [21] states that one in every seven women working in the garment industry in southern city of Bengaluru have been raped or forced into a sexual act at work. The report, based on surveys of women workers, indicates that hardly any cases were reported to the authorities and also provides solid evidence of the extent of abuse. It also throws light on shocking facts related to the sexual abuse and harassment of female garment workers. The report urges the government to ensure compliance with the law and increase the frequency of factory inspections, with sexual harassment as a prime focus.

Centre for Research on Multinational Corporations (SOMO) and the India Committee of the Netherlands (ICN) in their report "Flawed Fabrics"[22] shows that women workers are facing appalling labour conditions that amount to forced labour in the export-oriented Southern Indian textile industry. The report provides ample data which states that women and girls who work in the spinning mills of Tamil Nadu, some as young as 15, are mostly recruited from marginalized Dalit communities in impoverished rural areas and are forced to work long hours for low wages. The report brings out various issues including physical and sexual exploitation faced by women garment workers.

Ambedkar Institute for Labour Studies in their research paper titled "Current Recruitment and Employment Processes in South Indian Textile Industry"[23] which was commissioned by Ethical Trading Initiative focuses on the working conditions of mill workers in South India. The report reveals that informal channels (which are brokers, agents, or contractors, who are either workers themselves or independent contractors) are the most popular means of recruitment used by employers to source workers, as well as by workers to locate employment opportunities. The report states that exploitation occurs mainly due to a significant lack of awareness regarding conditions of employment by workers, especially young women and their parents and also their poverty makes it difficult to insist on clear and written documents from either the brokers or employers and thus fall prey to exploitation by both.

Dr P Mala in her report titled "Socio-Economic profile of women working in textile units of Tirupur district in Tamil Nadu"[24] brings out various critical issues faced by women working in textile industry. The report explains how Dalit women are lured by false promises and money at a young age and subjected to sexual harassment and abuse by their supervisors. It also provides ample data and statistics to establish these facts. Poverty, caste and poor socio-economic status of Dalit women make them vulnerable to exploitation. According to the report, human rights framework and labour standards provide protections but the rights are still violated.

Kamala Kanta Mohapatra in her paper titled "Women workers in informal sector in India: Understanding the occupational vulnerability"[25] focuses on the exploitation of women workers in India. Poverty, low economic status, little or no bargaining power, lack of control over earnings, little or no access to institutional credit, training and information and unequal gender relations have been cited as the reasons for the plight. It recommends the need to develop a holistic strategy that provides political empowerment allied with economic empowerment so as to find a solution to the problem of exploitation faced by women workers.

Fathima Adeela Beevi TKS in her report titled "Problems and prospects of the

unorganized sector in Kerala: Reference to sales women in textiles"[26] throws light on the various problems and exploitation faced by women working in the textile/garment industry. The study report reveals the fact that majority of women working in the textile industry are extremely dissatisfied with the poor working conditions and wages being offered to them. However they continue to work hard for long continuous hours because of various factors like poverty, lack of access to education, and inadequate health facilities etc. Moreover in rural areas the labour force is highly stratified on caste and community considerations which make the problem worse for the poor women workers.

ASK (Association for Stimulating Know How) in their report titled "Addressing Modern Slavery in Tamil Nadu Textile Industry – Feasibility Study Report"[27] provides ample information about the continued evidence of human rights violations in the textile industry in Tamil Nadu. Problems faced by women workers in textile industry includes bonded labour and forced labour, child labour, human trafficking, physical and sexual exploitation and the like. Lack of proper education, ignorance of rights, poverty, caste and poor socio-economic conditions make them vulnerable to exploitation. The report urges the NGOs, trade unions, and the government authorities to come together and take necessary steps and actions so as to combat the problem of exploitation of women workers in textile/ garment industry.

Association Analysis

Association analyses were done to understand the relationship of variables. Here, the Chi Square test was done on the categorical variables for all the four cities in Gujarat and Tamil Nadu.

Table-1: No. of Working Hours per Day and Type of Industry in Tamil Nadu

		No. of Working Hours per Day								TOTAL	
		Up to 8 hours		8-10 hours		10-12 hours		12 hours and above			
		No.	%	No.	%	No.	%	No.	%	No.	%
Type of industry	Small	17	2.8	47	7.8	535	89.2	1	.2	600	100.0
	Medium			2	.3	174	29.0	424	70.7	600	100.0
	Large	4	.8	6	1.2	390	78.0	100	20.0	500	100.0
TOTAL		21	1.2	55	3.2	1099	64.6	525	30.9	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	779.325	6	**

** - Significant at 1% level (P<0.01)

* - Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

The table above shows the distribution of respondents who have different hours of work are grouped and distributed across Small, Medium and Large scale industries.

From the table it is seen that among Small Industries most of the respondents, that is majority of the respondents (89.2%) work for 10-12 hours where as in the Medium industries only 29% work for 10-12 hours but, about 70.7% work more than 12 hours. In the large industries also the percentage of respondents working for 10-12 hours are higher (78.0%) and only 20% of the respondents work more than 12 hours.

In order to find whether the hours of work is significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 779.325 which is found to be significant at 1% level. Hence it can be inferred that the hours of work is significantly associated with the type of industry.

Table-2: Does the Management Grant Leave, When You Need? - Tamil Nadu

		Does the Management Grant Leave, When You Need?				TOTAL	
		Yes		No			
		No.	%	No.	%	No.	%
Type of Industry	Small	75	12.5	525	87.5	600	100.0
	Medium	51	8.5	549	91.5	600	100.0
	Large	56	11.2	444	88.8	500	100.0
TOTAL		182	10.7	1518	89.3	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	5.202	2	Ns

** – Significant at 1% level (P<0.01)

* – Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

Does the Management Grant Leave, When You Need?

The above table the distribution of respondents on the base of management granting leave when they need are grouped and distributed across Small, Medium and Large scale industries.

From the table we have seen that majority of respondents are not satisfied with the management. 89.3% of workers said that management don't grant leave when they needed. And only 10.7% are satisfied with the management for granting leave when they needed.

In order to find whether the leaves are significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 5.202 which is found to be significant at 5% level. Hence it can be inferred that management granting leave when employee needed is not significantly associated with the type of industry.

Table-3: Do You Get the Same Salary as Shown in the Salary Slip: Tamil Nadu?

		Do You Get the Same Salary as Shown in the Salary Slip?				TOTAL	
		Yes		No			
		No.	%	No.	%	No.	%
Type of industry	Small	143	23.8	457	76.2	600	100.0
	Medium	431	71.8	169	28.2	600	100.0
	Large	153	30.6	347	69.4	500	100.0
TOTAL		727	42.8	973	57.2	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	325.218	2	**

** – Significant at 1% level (P<0.01)

* – Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

Do You Get the Same Salary as Shown in the Salary Slip

The above table the distribution of respondents on the bases whether they are getting same salary as shown in salary slip are grouped and distributed across Small, Medium and Large scale industries.

From the table we have seen that majority of respondents regarding salary 42.8% of workers said that they are getting the same salary as shown in salary slip and 57.2 % said that they are not getting the salary as shown in the salary slip.

In order to find whether granting of leaves is significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 325.218 which is found to be significant at 1% level. Hence it can be inferred that salary that they are getting in salary slip is significantly associated with the type of industry.

Almost 23.8% from small scale industry,71.8% in medium scale industry, and 30.6% from large scale industry employees said that they are getting same salary that is shown in their salary slip in Tamil Nadu. It is observed that majority no of employees are not getting the salary that is shown in their salary slip .57.2% said that they don't get same salary that is show in the salary slip.

Table-4: No. of Working Hours per Day and Type of Industry in Gujarat

		No. of Working Hours per Day						TOTAL	
		Up to 8 hours		8 – 10 hours		10 – 12 hours		No.	%
		No.	%	No.	%	No.	%		
Type of industry	Small	75	12.5	361	60.2	164	27.3	600	100.0
	Medium	41	6.8	198	33.0	361	60.2	600	100.0
	Large	115	23.0	179	35.8	206	41.2	500	100.0
TOTAL		231	13.6	738	43.4	731	43.0	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	189.466	4	**

** – Significant at 1% level (P<0.01)

* – Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

The above table the distribution of respondents who have different hrs. of work are grouped and distributed across Small, Medium and Large scale industries.

From the table it is seen that among Small Industries most of the respondents, that is majority of the respondents (60.2%) work for 8-10 hours where as in the Medium industries only 33% work for 8-10 hours but, about 60.2% work for 10-12 hours. In the large industries also the percentage of respondents working for 8-10 hours are higher (35.8%) and only 41.2% of the respondents work for 10-12 hours. In order to find whether the hours of work is significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 189.466 which is found to be significant at 1% level. Hence it can be inferred that the hours of work is significantly associated with the type of industry. It is observed that workers working in between 8-10, 10-12 hours in equal percentage in Gujarat.

Table-5: Does the Management Grant Leave, When You Need? - Gujarat

		Does the management grant leave, when you need?				TOTAL	
		Yes		No			
		No.	%	No.	%	No.	%
Type of industry	Small	25	4.2	575	95.8	600	100.0
	Medium			600	100.0	600	100.0
	Large			500	100.0	500	100.0
TOTAL		25	1.5	1675	98.5	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	46.517	2	**

** – Significant at 1% level (P<0.01)

* – Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

Does the Management Grant Leave, When You Need?

The above table the distribution of respondents on the base of management granting leave when they need are grouped and distributed across Small, Medium and Large scale industries.

From the table we have seen that majority of respondents are not satisfied with the management. 98.5% of workers said that management don't grant leave when they needed, and only 1.5% are satisfied with the management for granting leave when they needed.

In order to find whether the leaves are significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 46.517 which is found to be significant at 1% level. Hence it can be inferred that management granting leave when employee needed is not significantly associated with the type of industry. The responses received for the above is similar in Ahmedabad and Surat, hence only a combined table for Gujarat is only mentioned.

Table-6: Do you Get the Same Salary as Shown in the Salary Slip? - Gujarat

		Do you Get the Same Salary as Shown in the Salary Slip?				TOTAL	
		Yes		No			
		No.	%	No.	%	No.	%
Type of industry	Small	405	67.5	195	32.5	600	100.0
	Medium	535	89.2	65	10.8	600	100.0
	Large	451	90.2	49	9.8	500	100.0
TOTAL		1391	81.8	309	18.2	1700	100.0

Chi-Square Test

	Value	df	Sig.
Chi-Square	128.110	2	**

** – Significant at 1% level (P<0.01)

* – Significant at 1% level (P<0.05)

Ns – Not Significant (P>0.05)

Do You Get the Same Salary as Shown in the Salary Slip: Gujarat?

The table above shows the distribution of respondents on the bases whether they are getting the same salary as shown in salary slip, are grouped and distributed across Small, Medium and Large scale industries.

From the table we have seen that majority of respondents regarding salary 81.8% of workers said that they are getting the same salary as shown in salary slip and 18.2 % said that they are not getting the salary as shown in the salary slip.

In order to find whether the leaves are significantly associated with the type of industry, the chi-square test was conducted and the result shows that the calculated chi square value is 128.110 which is found to be significant at 1% level. Hence it can be inferred that salary that they are getting in salary slip is significantly associated with the type of industry. Almost 67.5% from small scale industry 89.2% in medium scale industry, and 90.2% from large scale industry employees said that they are getting same salary that is shown in there salary slip in Gujarat. It is observed that majority of employees are getting the salary that is shown in their salary slip. Only 18.2% said that they don't get same salary that is show in the salary slip.

Table-7: Demographic Profile & Percentage Analyses of the Women Textile Workers in Coimbatore, Tirupur, Ahmedabad and Surat

Level of Education

		State				Total	
		Tamil Nadu		Gujarat		No.	%
		No.	%	No.	%		
Level of education	Primary	1563	91.9	929	54.6	2492	73.3
	High school	137	8.1	767	45.1	904	26.6
	12th and above			4	.2	4	.1
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 91.9% of the sample are educated only till primary level and 8.1% are educated up to high school. The figures for Gujarat stand at 54.6% at Primary level and 45 % at high school.

Table-8: No. of Family Members

		State				Total	
		Tamil Nadu		Gujarat		No.	%
		No.	%	No.	%		
No. of Family Members	2	162	9.5	603	35.5	765	22.5
	3-5	1362	80.1	888	52.2	2250	66.2
	Above 5	176	10.4	209	12.3	385	11.3
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 80% of the sample have a family size of 3-5 members and 10% with more than 5 members and 10% with 2 members or less. The figures for Gujarat stand at 52% with a family size of 3-5 members and 36% at less 2 or less and 12% with a family size of more than 5 members.

Table-9: No of Earning Members in the Family

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
No. of earning members	1	112	6.6	473	27.8	585	17.2
	2	1566	92.1	1149	67.6	2715	79.9
	3	22	1.3	76	4.5	98	2.9
	More than 3			2	.1	2	.1
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 92% of the sample have a two earning members in the family and with 68% with two earning members, 28% with only one earning member and 4% with more than 3 working members.

Table-10: Source of Employment

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
Through which source did you get employment?	Brokers	42	2.5	57	3.4	99	2.9
	Advertisements	15	.9	30	1.8	45	1.3
	Word of Mouth	1641	96.5	1594	93.8	3235	95.1
	Others	2	.1	19	1.1	21	.6
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 97% of the sample got employment through word of mouth and in Gujarat 95% of sample got employment through word of mouth.

Table-11: Circumstances of Taking Up Employment

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
You have taken up this employment by?	Choice	1688	99.3	1642	96.6	3330	97.9
	Force	12	.7	58	3.4	70	2.1
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 97% of the sample have taken up the employment by choice and not by force and 98% of sample in Gujarat have got employment by choice.

Table-12: Who Influenced You to Take Up Employment by Force?

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
If by force, who forced you?	Parents	12	100.0	58	100.0	70	100.0
Total		12	100.0	58	100.0	70	100.0

Table-13: Working Hours

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
No. of working hours per day	Up to 8 hours	21	1.2	231	13.6	252	7.4
	8 – 10 hours	55	3.2	738	43.4	793	23.3
	10 – 12 hours	1099	64.6	731	43.0	1830	53.8
	12 hours and above	525	30.9			525	15.4
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that 65% of the sample is working 10-12 hours in a day. 54% of the employees in Gujarat are working 10-12 hours per day.

Table-14: Do You Work Overtime?

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
Do you work overtime?	Yes	1636	96.2	661	38.9	2297	67.6
	No	64	3.8	1039	61.1	1103	32.4
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that 96% of the sample said that they work overtime in Tamil Nadu and in Gujarat 67% of the sample said that they work overtime and 32% said they don't work overtime.

Table-15: Compensation for Overtime

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
If yes, does the management pay extra compensation?	Yes	1626	99.4	635	96.1	2261	98.4
	No	10	.6	26	3.9	36	1.6
Total		1636	100.0	661	100.0	2297	100.0

The above table shows that 99.4% of the sample said that they get extra compensation when they work overtime in Tamil Nadu and in Gujarat 98.4% of the sample said that they get extra compensation when they work overtime. However in Gujarat, most of them said that the management does not request for overtime usually unlike Tamil Nadu.

Table-16: Employee Satisfaction with regard to Compensation

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
Are you happy with the compensation paid by the management?	Yes	564	33.2	546	32.1	1110	32.6
	No	1136	66.8	1154	67.9	2290	67.4
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 67% of sample are happy with the compensation paid and 33% are not happy with the compensation. 68% of sample is happy and 32% are not happy with the compensation paid by the management in Gujarat.

Table-17: Entitlement of Maternity Leave

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
Are you entitled for maternity leave?	Yes	34	2.0	2	.1	36	1.1
	No	1666	98.0	1698	99.9	3364	98.9
Total		1700	100.0	1700	100.0	3400	100.0

The above table shows that in Tamil Nadu 98% of sample said that they don't have maternity leave and in Gujarat almost 99% of the sample said that they don't have maternity leave.

Table-18: Salary During Maternity Leaves

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
If Yes, do you get paid maternity leave?	No	34	100.0	2	100.0	36	100.0
Total		34	100.0	2	100.0	36	100.0

The above table shows that in both the sates 100% of the sample said they don't get paid maternity leave.

Table-19: Total Experience in the Organisation

		State				Total	
		Tamil Nadu		Gujarat			
		No.	%	No.	%	No.	%
Since when you are working?	Less than a year	1576	92.7	254	14.9	1830	53.8
	1 - 3 years	124	7.3	1424	83.8	1548	45.5
	3 - 5 years			22	1.3	22	.6
Total		1700	100.0	1700	100.0	3400	100.0

Major Findings

- From the survey it was found that there are no discriminative practices in employment based on caste, gender etc.
- No discrimination with regard to salary, and work timings.
- No sweatshop culture found in textile companies across all four cities.
- Most of the women workers are on contract and hence companies don't give certain essential benefits such as maternity leave.
- Women employees take up jobs voluntarily. The role of intermediaries/ brokers was not found.
- Wages paid are not adequate and does not match with the inflation.
- From the survey it is observed that women are not subjected to any sexual exploitation in employment.
- As most of the companies run with hectic time schedules, they don't allow the employee to avail basic leaves which they are eligible.
- Most of them are not aware of their employment rights and do not belong to any trade union.

Other Findings

- In Tamil Nadu 91.9% of the sample are educated only till primary level and 8.1% are educated up to high school. The figures for Gujarat stand at 54.6% at Primary level and 45 % at high school.
- Though the literacy rate in Tamil Nadu is second only to Kerala at 90% in India, the sample surveyed have poor education levels.
- In Tamil Nadu 99.4% of the sample said that they get extra compensation when they work overtime in Tamil Nadu and in Gujarat 98.4% of the sample said that they get extra compensation when they work overtime. However in Gujarat, most of them said that the management does not request for overtime usually unlike Tamil Nadu.
- 97.5% of the sample in Tamil Nadu said that there is no discrimination in

salary based on the caste. The responses were similar in both Coimbatore and Tirupur. In Gujarat also 94.4% of the sample said that there is no discrimination in salary based on the caste. The responses were similar in both Ahmedabad and Surat.

In Tamil Nadu almost 100% of the sample said they get only one day holiday in a week and in Gujarat 98% of sample are said they get one day holiday in a week.

- In Tamil Nadu 98% of sample said that they don't have maternity leave and in Gujarat almost 99% of the sample said that they don't have maternity leave. Many who answered this question have not availed maternity leave but were confidently answering that they don't have and when they apply they said that the management would somehow find a way to keep them off the contract. The responses recorded in all the four cities were similar. This aspect needs to be monitored as companies within the framework of laws somehow find a loophole to get away.
- 95% of the sample in Tamil Nadu said they work in shifts, but in Gujarat 14% of sample said they work in shifts. Women working in night shifts are very common especially in Tirupur. However in Gujarat the system of night shift is less.
- 99% of sample in Tamil Nadu said they are provided with proper sanitation facilities in their work place and 98% of sample in Gujarat said they are provided with proper sanitation facilities in their work place and 3% are not provided with proper sanitation. However, the researcher observes that the women are not aware even if adequate no of toilets are not available. They have a tendency to adjust.
- In Tamil Nadu 86% of the sample said they have separate toilet facilities for women and 15% do not have separate toilet facilities for women and in Gujarat 90% of sample said they have separate toilet facilities for women.
- It is inferred that 99.9% of the sample surveyed in Tamil Nadu and 98.6% of the sample surveyed in Gujarat said that they did not undergo any sexual abuse or exploitation in workplace.

  There is no instance of companies engaging workers for than 12 hours of work in both Coimbatore and Tirupur. Workers working more hours are paid extra compensation.

Suggestions

- Though on the face of it everything looks good, there are several improvements that companies need to make. The working conditions for women need drastic improvements. The no of toilets for women should be more in no compared to that of the other gender
- The researcher observed that most of the sample surveyed is not able to continue in the job for a longer period of time because of health related reasons. The occupational hazards of working in a textile company are very high. Hence the government should ensure that the employers are responsible for their employees medical care
- The Government must ensure that the minimum wages improve drastically
- The Government must ensure that the daily wage / contract employment

should be abolished and all of them, especially women textile workers should be brought under regular employment system. A women holding a stable job improves her quality of life and ensures better standard of living for the family.

Conclusion

Textile sector is one of the largest employment providers in India. It is growing at an impressive pace and women contribute to a substantial part of the workforce. The study was conducted to understand the problems faced by the women especially in the backdrop of a lot of negative news in the media about the discriminatory employment practices and the plight of the socially marginalized women workforce. There were reports that women are kept as bonded labour by force by the employer in the textile sector. There were a lot of reports about the various exploitative schemes deployed by the employers to lure them in to the job, such as the sumangali scheme in the Tirupur and Coimbatore area where brokers/ agents are engaged by large scale companies to lure young girls at the age of 14-15 and they are kept as bonded labours till the age of 21 and when they leave the job the employer takes care of the wedding expenditure of the girl. This scheme is a huge incentive to families which belong to the lower segment in the social class as even today they consider girl children as a burden. There were reports about the sexual exploitation that women employees are subjected to apart from discrimination in employment on the basis of caste, gender, etc.

From the study it is observed that there is very little truth in many of the points mentioned above. In all the four cities i.e. Coimbatore, Tirupur, Ahmedabad and Surat there were reports of discrimination in employment or any form of harassment. Except for a few aspects such as the employers ability to avoid granting maternity leaves in such a manner that most companies recruit women who are not going to get married immediately or women who are married and have children, other major aspects of are not much.

Most of the women workers are not aware of the employment rights / rules etc. This is due to the fact that most of them are educated till the primary school level.

From the study it is concluded that there is no social marginalization of women in the textile sector in Coimbatore, Tirupur, Ahmedabad and Surat. However, the concerned authorities have to ensure that the companies extend basic provisions to women employees such as the maternity leaves, working hours, better sanitation facilities etc.

From the study it is understood that in all the four cities the attrition rates of employees are very high and employees prefer to shift from one company to that of another for better pay. When the researcher interviewed a few textile company owners they said that the employees leave the job at the drop of the hat. So the exploitation is curtailed greatly because of this factor, but this also means that the wages they earn are so less that they don't mind leaving the job. The wages they receive is considerably low, compared to the hardship one has in the job.

A few company officials said that they prefer getting workforce from the north-eastern states as they have a better stamina to work for long hours and have reasonable salary expectations.

The researcher also feels that there is little scope for exploitation as the companies in all the four cities mostly cater to export markets; there is limited scope for the employer to exploit, as the buyers insist on CC TV footage of the work area for a given period of time to ensure acceptable employment practices are ensured. Apart, from this there are frequent surprise inspections done by the third party.

In all the four cities i.e. Coimbatore, Tirupur Ahmedabad and Tirupur, the employment practices are reasonably good and there is no incidence of sweatshop work culture which is highly prevalent in countries such as China and Bangladesh. No incidence of child labour seen in both the states. Room for improvement in employment practices exit, however the state Government of Gujarat and the state Government of Tamil Nadu have done a commendable job in protecting the rights of the vulnerable sections to a large extent.

References

A Ravi and A Madeswaran (2013). Research Report titled Young Women Exploitation in Tirupur Textile and Garment Industries with reference to Sumangali Scheme, *IJEMR*, 3(5).

Ambedkar Institute for Labour Studies (n.d.). Current Recruitment and Employment Processes in South Indian Textile Industry.

Association for Stimulating Know How (2014). Addressing Modern Slavery in Tamil Nadu Textile Industry – Feasibility Study Report.

Audet, Denis. (2004).Structural Adjustment in Textiles and Clothing in the Post-ATC Trading Environment, *OECD Trade Policy Working Paper No. 4*

Captured By Cotton (2011). SOMO – Centre for research on Multinational Corporations and ICN – Indian committee of the Netherlands.

Centre for Education and Communication (2006). Understanding the Indian Garment Sector in the post MFA context.

Fathima Adeela Beevi (2014). Problems and prospects of the unorganized sector in Kerala: Reference to sales women in textiles.

Gomathi Palanikumar (2013). Textile mills of Tamil Nadu and that weird employment offer, *Action Aid India*.

Home workers Worldwide (2014). Forced Labour in Tamil Nadu's textile and garment industry.

International Federation for Human Rights (2013).The Showroom: The hidden reality of India's garment workers, July.

International Labour Organization (2014). Wages and Working Hours in the Textiles, Clothing, Leather and Footwear Industries.

Jayati Ghosh (n.d.). The impact of The impact of government policies on the textile and garment industries of India.

Kamala Kanta Mohapatra (2012). Women workers in informal sector in India: Understanding the occupational vulnerability.

Ludgera Klempand Bernd Reddies (n.d.). Women Textile Workers Demand Justice, Friedrich Ebert Foundation.

Made in India (2012). SOMO-Young Dalit Women Continue to Suffer Exploitative Conditions in India's Garment Industry.

Mahoo Lyimo (2010). Sexual Harassment: An Insight into the Indian Garment Industry.

Michiko Hayashi (2004). Trade in Textiles and Clothing Priority Issues for Women in the post – ATC.

Ministry of Textiles (2017-18). Indian Textile Journal, Department of Industrial Policy and Promotion, Press Information Bureau, Reference from An Article from the Thomson Readers Foundation News.

NCP report (n.d.). Implementation of the OECD Guidelines in the textile and clothing sector,

Nirmala Banerjee (n.d.). Book on Indian Women in changing Industrial Scenario, Sage Publications.

P Mala(2016). Socio-Economic profile of women working in textile units of Tiruppur district in Tamil Nadu

Rehman Azhar (2013). Report titled Trapped in Textile, *The New Jurist*.

Solidaridadand Fair Labour Association (2012). Understanding the Characteristics of the Sumangali Scheme in Tamil Nadu Textile and Garment Industry and Supply Chain Linkages.

(SOMO) and (ICN) (2016). Flawed Fabrics.

Sudeshna Saha (2014). Women Employees in Garment Industries – A Case Study, 3(3).

Women's rights groups Sisters for Change (2016). Eliminating violence against women at work.

(2010). Wearing Apparel manufacturing report – Anything Research India, Emerging markets offer growth opportunities for apparel retailers battling declines in domestic consumer spending Incan brief history of Textile industry In India, History of Textile Industry Report

(2011). Guiding Principles on Business and Human Rights, UN, New York and Geneva: Office of the Commissioner for Human Rights.

(2011). OECD Guidelines for Multinational Enterprises, Paris: OECD.

(2013). French National Contact Point for implementation of OECD Guidelines for national enterprises

(2014). Tailored Wages UK, Labour behind the label, P.98.

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4	Digital and Social Media Marketing	Jan 23-24, 2019	Mr A Rakesh Phanindra
5	Strategic Management in PSUs for Success	Jan 23-24, 2019	Dr MLN Rao and Mr SN Mantha
6	6th International Conference on 'Corporate Social Responsibility'	Feb 4-5, 2019	Dr Shulagna Sarkar
7	Business Analytics	Feb 18-19, 2019	Dr Shaheen
8	10th International Conference on Corporate Governance: Governance & Integrity [in collaboration with Accounting Research Institute, UTiM]	Feb 21-22, 2019	Ms J Kiranmai and Dr Swetha Mahrotra
9	Cyber Security	Mar 6-7, 2019	Mr AS Kalyana Kumar and Mr A Rakesh Phanindra
10	Workshop on 'Reservation Policy for SCs, STs & OBCs in Central Government, CPSEs, SLPEs and Banks'	Mar 7-8, 2019	Prof RK Mishra and Ms J Kiranmai
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