

## What influenced differential uptake of Janani Suraksha Yojana in the state of Madhya Pradesh?

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### Abstract:

India launched a national conditional cash transfer (CCT) program, Janani Suraksha Yojana (JSY), aimed at reducing maternal mortality by promoting institutional delivery in 2005. In the state of Madhya Pradesh the programme was supposed to extend its benefit to all the mothers irrespective of their financial or any other status. However the official records suggest that the distribution of programme indicators was not uniform across various districts in the state. Programme performance is likely to be influenced by various spatial and non-spatial determinants of the districts. Some of the documented determinants that influenced the health care programs include non-spatial determinants such as population, standard of living (SOLI), Below Poverty Line(BPL), and spatial determinants such as access to spatial Location, metropolitan cities etc. This paper aims to study the influence of such determinants on the performance of JSY in the state of Madhya Pradesh. For this the data of Govt. records was collected from various sources, like census of India, National Rural Health Mission (NRHM), Sample Registration system (SRS) and District Level Household Survey (DLHS). These data were compiled into one common database and was subsequently attached with spatial database of all the districts of Madhya Pradesh. Spatial data was provided by Survey of India (SOI). The spatial distribution of these determinants and programme outcomes was visualized using thematic maps. The correlations between the independent variables and the programme were explained using mathematical models. Geographical Information system (GIS) was used to assess the database and result provided for making decision easily. Software used for this paper was Arc GIS Desktop 10 provided by ESRI.

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## Introduction

India launched a national conditional cash transfer (CCT) program, Janani Suraksha Yojana (JSY), aimed at reducing maternal mortality by promoting institutional delivery in 2005. In the state of Madhya Pradesh the programme was supposed to extend its benefit to all the mothers irrespective of their financial or any other status. In this paper we have aim to analyze the access to JSY benefits in various districts of M.P. with reference to the important indicators economic status such as proportions of people who are **Below Poverty Line** ( B.P.L), have low Standard of Living index, residing in Rural areas and JSSK ranking using GIS tools as well as statistical model.

### **Below Poverty Line (BPL):**

BPL is an economic benchmark and poverty threshold used by the government of India to indicate economic disadvantage and to identify individuals and households in need of government assistance and aid. It is determined using various parameters which vary from state to state and within states.

### **Standard of Living Index (SLI):**

The level of wealth, comfort, material goods and necessities available to a certain socioeconomic class in a certain geographic area. The standard of living includes factors such as income, quality and availability of employment, class disparity, poverty rate, quality and affordability of housing etc. The standard of living is closely related to quality of life.

### **Urban Unit:**

All places with a municipality, corporation, cantonment board or notified town area committee, etc. (known as Statutory Town)  
All other places which satisfied the following criteria (known as Census Town):

- A minimum population of 5,000;
- At least 75 per cent of the male main workers engaged in non-agricultural pursuits; and
- A density of population of at least 400 per sq. km.

### **Janani-Shishu Suraksha Karyakram (JSSK)**

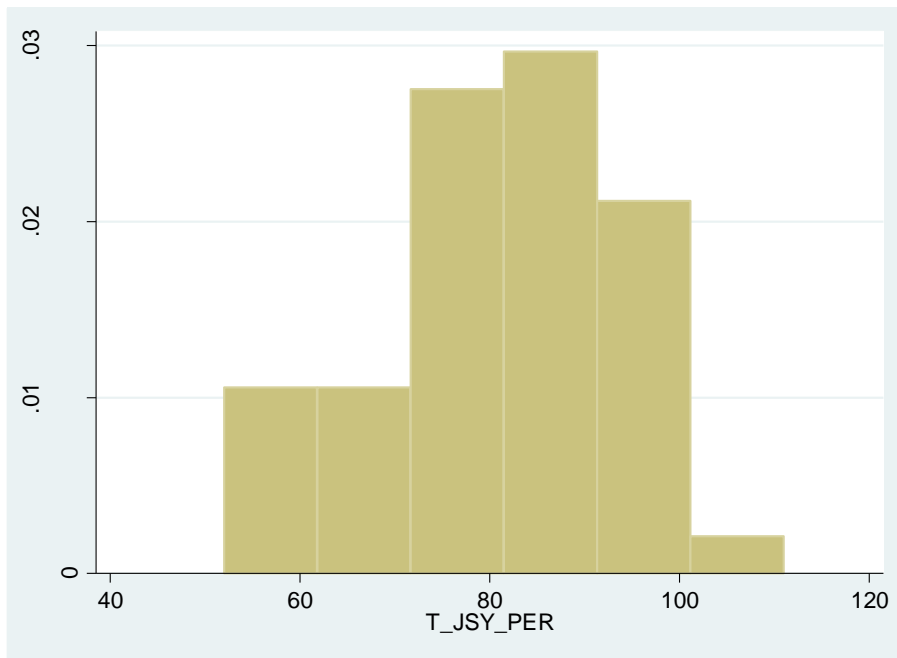
JSSK supplements the cash assistance given to a pregnant woman under **Janani Suraksha Yojana** and is aimed at mitigating the burden of out of pocket expenses incurred by pregnant women and sick newborns. Besides it would be a major factor in enhancing access to public health institutions and help bring down the Maternal Mortality and Infant mortality rates.

The Free Entitlements under JSSK would include: Free and Cashless Delivery, Free C-Section, Free treatment of sick-newborn up to 30 days, Exemption from User Charges, Free Drugs and Consumables, Free Diagnostics, Free Diet during stay in the health institutions – 3 days in case of normal delivery and 7 days in case of caesarean section, Free Provision of Blood, Free Transport from Home to Health Institutions, Free Transport between facilities in case of referral as also Drop Back from Institutions to home after 48hrs stay. Free Entitlements for Sick newborns till 30 days after birth similarly include free treatment, free drugs and consumables, free diagnostics, free provision of blood, Exemption from user charges, Free Transport from Home to Health Institutions, Free Transport between facilities in case of referral and free drop Back from Institutions to home.

### **JANANI SURAKSHA YOJANA (JSY):**

JSY is a safe motherhood intervention under the National Rural Health Mission (NRHM) being implemented with the objective of reducing maternal and neo-natal mortality by promoting institutional delivery among the poor pregnant women.

- The Yojana, launched on 12<sup>th</sup> April 2005, by the Hon'ble Prime Minister, is being implemented in all states and UTs with special focus on low performing states.
- JSY is a 100 % centrally sponsored scheme and it integrates cash assistance with delivery and post-delivery care. The success of the scheme would be determined by the increase in institutional delivery among the poor families



**Fig 1:**

**Methodology:**

In this study we require both spatial and non-spatial Data. Spatial data used for this study are obtained from Survey of India (SOI) such as district boundary. Non spatial data are collected from various Government department such as NRHM, Bhopal Census population. Both spatial and non-spatial data are collected and they are combine together for generating Maps.

**Data management and Analysis:**

Non spatial data procured from various Government departments and they are modified according to the study requirements. All these non-spatial data are combined with the spatial data of Survey of India with Arc GIS software. Layers are added and charts are prepared with for visualization in Map and comparison made for performance of JSY. After the Map visualization a mathematical model prepared to see the statistical Analysis. Statistical Analysis results are displayed in table format and give us the statistical scenario of our data. Then comparison made between GIS and statistical model and result are displayed showing both of them are equal.

By comparing both the mathematical as well as spatial thematic mapping decision can be made. Both of the model suggest there is no correlation in any of the above described indicators. Therefore it can be prove by both the model that JSY uptake is taken without any discrimination of Economic Indicator factor. GIS model is more effective in decision making as it is clearly visible the pattern of association among various district of M.P.

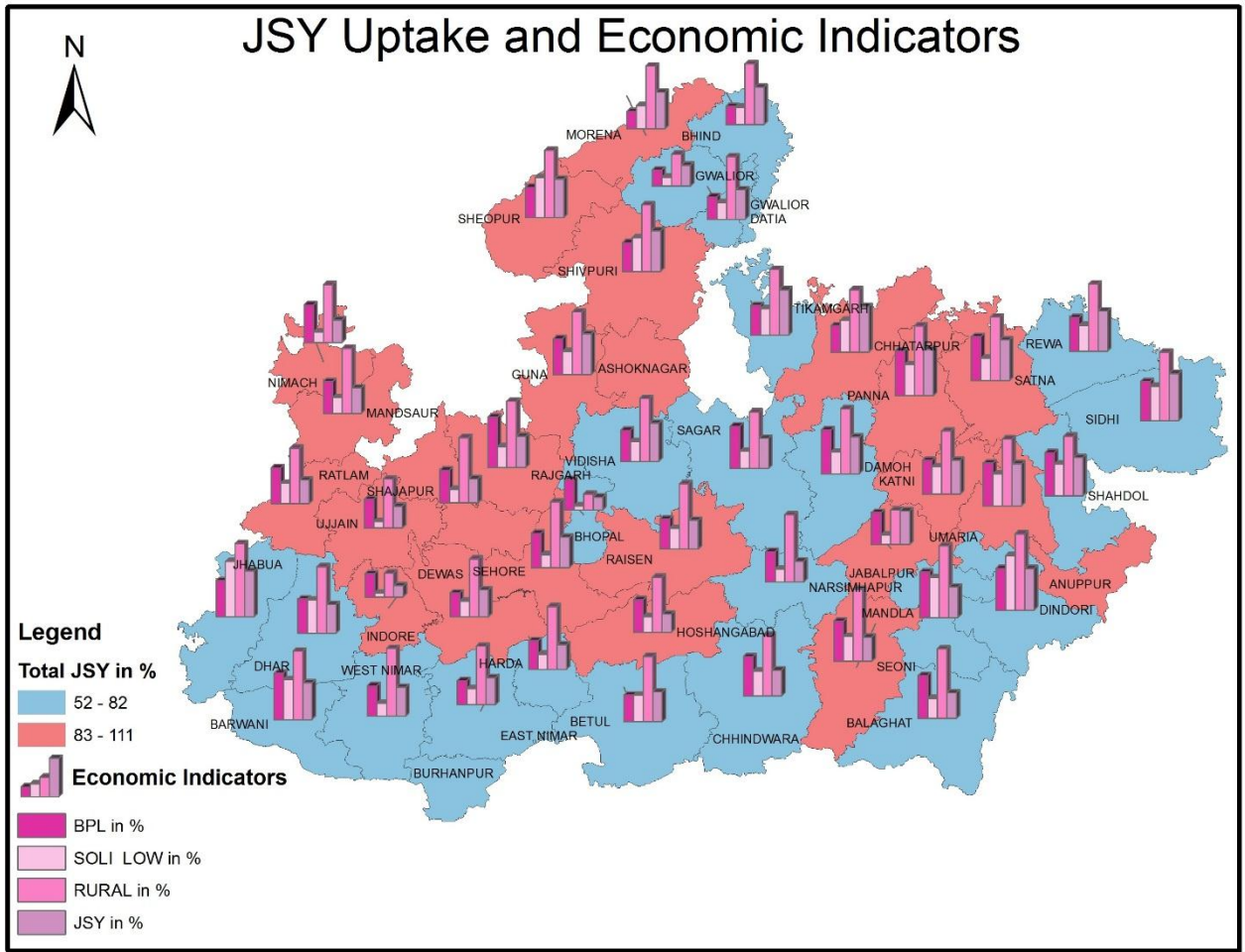


Fig: 2 – JSY Uptake and Economic Indicators

Table 1: Mathematical Model

Equation	Obs	Parms	RMSE	R-sq	F	P
T_jsy	48	5	.5068925	0.0793	.9258759	0.4573

	Coef.	P> t	95% Conf. Interval	
T_jsy_per Bpl	-.0036886	0.598	-.010321	.0176981
Soli_low_	-.0116417	0.136	-.0271121	.0038286
Jsk_rank	.0008583	0.362	-.0010213	.0027378
Urban_perc	-2.59e-07	0.227	-7.80e-07	1.90e-07
_cons	.6203966	0.014	.1345026	1.106291



## Results:

- Fig 1 show that the JSY uptake was normally distributed with a mean and sd of mean and T\_JS\_Y\_PER.
- When the uptake was correlated with the economic indicators in LR. it was observed that they are not significantly associated with jsy uptake (table 1). Fig 2 shows that the districts with above median JYS uptake are clustered in certain regions of the state.

## Conclusion:

Uptake of JSY was not associated with the indicators of economic development included in the study. This indicated universal distribution and uptake of the programme irrespective of economic indicators. But GIS revealed clustering of the districts by JSY uptake. There is need to explain this distribution with other developmental indicators.

## References:

1. Madhya Pradesh Health Bulletin India <http://www.mp.gov.in/health/bulletin.htm> access on date 18th Nov 2012
2. BPL definition [http://en.wikipedia.org/wiki/Below\\_Poverty\\_Line\\_\(India\)](http://en.wikipedia.org/wiki/Below_Poverty_Line_(India))
3. JANANI SURAKSHA YOJANA <http://pib.nic.in/newsite/erelease.aspx?relid=72433> access on 17<sup>th</sup> Nov 2012

## Acronyms:

BPL: Below Poverty line in percentage;

SOLI: Standard of Living Index Low in percentage

Rural: Population in Rural areas in percentage

JSY: Janani Suraksha Yojna in percentage

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