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Exploring the India's population diversity with respective to minority and majority transition
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ABSTRACT

- ❖ Over the last few decades there are remarkable changes in Indian population parameters.
- ❖ The current changes in the religious structure and the growth rates brings back into the debate of the population growth.
- ❖ The total share of Muslim did not vary much from the 2001-2011
- ❖ The diversity of religion between intercensal period didn't change in India.
- ❖ South Indian states has different cohort mix growth as compared to north Indian states.
- ❖ Overall National effect on each states seems to be positive

INTRODUCTION

- ❖ India has witnessed a large population growth since independence even after collective efforts of different sectors to bring down the population growth.
- ❖ The growing population is always been the centre of the debate when it comes to the population issues in India
- ❖ During 2001 to 2011 the Indian population grew at a rate of 17.6% (RGI,2011), with this growth rate it will take just 40 years to double the population in India.
- ❖ The current changes in the religious structure and the growth rates brings back into the debate of the population growth
- ❖. This current debate is not on the overall population growth but on the debate of changing religious population growth in India.
- ❖ These questions relating to the religious debates are always has to be studied intensively

OBJECTIVE

- ❖ To examine the change in geographical pattern of population in states of India
- ❖ To examine the contribution of growth for each state in India

DATA SOURCE AND METHODOLOGY

Data Source:
- This paper uses data from census 2001 and 2011 at national, state on different religions in the country.
- In India the population is grouped into sub-categories as religion.
- In this paper th religion groups are categorised into Hindus, Muslims, Christians and Others. These four groups are mutually exclusive and exhaustive groups.
- In this exercise it is assumed that this change of identities by conversion or by voluntary opting of a social group is ignored as they contribute very less in number.

Methodology:
- ➢ This paper used different methodologies, in first a diversity measure called interaction index is used in order to examine the heterogeneity of a group across a region. And a shift-share analysis method is used, which enables to know the change in growth rate linked to the national, cohort and regional change.
- ➢ The interaction index is calculated as follows:

$$I_j = 1 - \sum_{i=1}^{n}(Pi/P)^2$$

Where P is the total population of an are j and Pi is the sub-category population in area j. This index varies from 0 indicating that all the population belongs to one category and 1 indicating a perfect heterogeneity in the Js area population.

- ➢ As it already noted that the growth of different religion differs at each states, so there may be some state specific growth rates of a religion which are growing at more rapid face as compared to the national.
- ➢ So there are three components
  - ➢ National : national effect is the increase in cohort population if the growth of a particular state is same as the nation.
  - ➢ Chorot mix :The cohort mix effect captures the change in the population due to faster growth or slower of a particular community at the national
  - ➢ The last effect the competitive effect will measure the state-specific characteristics make a overall change in the population change during the period.

RESULTS

Intercensal Population Growth in India
- ❖ During 1991-2001 there is high growth rate among the Muslims, during this inter-census period the growth rate of Muslims observed to be 36 percent whereas as among Hindus it is 20.8 percent.
- ❖ During 2001-2011 the overall decadal growth rate for India is 17 percent for Muslims it is 24.6 percent and for Hindus it is 16 percent.
- ❖ During both the inter census the growth rate of Muslim population is high as compared to Hindus but the decline in the growth rate of Muslim growth rate is drastic during 2001-2011 in Muslim population as compared to Hindus.
- ❖ Despite the large variation in the growth rate of Hindu, Muslims, there is no significant variation in the share of total population between the religions.

Diversity in Religion
- ❖ The diversity of religious population between two census of India level has remained unchanged that is 0.33 in 2001 and 0.34 in 2011 indicating no much variations in terms of the population heterogeneity in India.
- ❖ State of Manipur has been observed as the highest diversified states with a interaction index of 0.65 followed by Arunachal Pradesh (0.64) and Kerala (0.59) and the least diverse state is Himachal Pradesh (0.09) followed by Chhattisgarh (0.10) and Odisha (0.11). But in 2011 Punjab state has been observed as more diversified states with an index of 0.85 followed by Arunachal Pradesh (0.82) and Sikkim (0.66).

Shift-Share analysis
- Summary state–level results are shown in Table 1 Where the total population change between 2001 and 2011 is shown as national, mixed and competitive effect
- For all cohorts, the total national effect is positive – and, indeed, is positive for all cohorts in all states – as this component measures solely the potential growth attributable to national population growth

| States | National Effect | | | | | | | | | | | |
| | Excepted | | | | Specialisation | | | | NATIONAL | | | |
	Hindus	Muslims	Christians	Others	Hindus	Muslims	Christians	Others	Hindus	Muslims	Christians	Others
ANDAMAN & NICOBAR ISLANDS	50769	8477	1477	2378	-7079	-3292	12197	-1825	43690	5185	13674	553
ANDHRA PRADESH	10863616	1813995	316098	508844	1155383	-576095	-106691	-472597	12018999	1237900	209407	36247
ARUNACHAL PRADESH	156514	26134	4554	7331	-89198	-22471	31864	79806	67315	3663	36418	87137
ASSAM	3799703	634470	110560	177975	-735194	825565	64240	-154611	3064510	1460035	174799	23365
BIHAR	11831307	1975579	344255	554170	407438	455633	-334840	-528231	12238744	2431212	9415	25939

| States | Mixed Effect | | | | | | | | | | | |
| | Excepted | | | | Specialisation | | | | Mixed | | | |
	Hindus	Muslims	Christians	Others	Hindus	Muslims	Christians	Others	Hindus	Muslims	Christians	Others
ANDAMAN & NICOBAR ISLANDS	-2368	2027	-1688	-88	0	0	0	0	-2368	2027	-1688	-88
ANDHRA PRADESH	-506775	433828	-361306	-18915	-144747	50204	335448	13119	-651522	484032	-25858	-5796
ARUNACHAL PRADESH	-7301	6250	-5205	-273	3652	-4818	708	-13661	-3649	1432	-4497	-13934
ASSAM	-177252	151737	-126372	-6616	11132	419151	104787	2880	-166120	570889	-21584	-3736
BIHAR	-551916	472471	-393490	-20600	-111517	478158	392327	16452	-663434	950629	-1163	-4148

| States | Competitive Effect | | | | | | | | | | | |
| | Regional Effect | | | | Regional cohort mixed effect | | | | Total Regional | | | |
	Hindus	Muslims	Christian	Other	Hindus	Muslims	Christian	Other	Hindus	Muslims	Christian	Other
ANDAMAN & NICOBAR ISLANDS	-26776	-3178	-8380	-339	3161	-887	201	-358	-23614	-4064	-8180	-696
ANDHRA PRADESH	-5E+06	-470477	-79587	-13776	187964	-155900	-156095	323174	-4E+06	-626376	-235682	309398
ARUNACHAL PRADESH	31567	1718	17078	40863	-73293	-443	164185	-69802	-41725	1275	181263	-28939
ASSAM	-112038	-53379	-6391	-854	-902048	461189	32454	28958	-1E+06	407810	26063	28103
BIHAR	5322874	1057383	4095	11282	103582	-603463	63763	154232	5426456	453920	67858	165513

- States that experienced higher rates of population growth during this period tended to have positive values for the competitive effect
- In terms of the cohort mix effect, which rewards states that 'specialise' in cohorts growing faster than the national average, some states are allocated a positive effect and other a negative.
- There appears to be a geographic pattern to the cohort mix.

CONCLUSION & LIMITATIONS

- This paper considers a range of descriptive geographical measures to assess population composition, distribution, and change in the states of India.
- First Diversity index didn't change between census, indicating the a spatial homogeneity in distribution of religion across India
- Second states that growing faster and south Indian states are shrinking as compared to national level growth. Tables shows only limited states due to space constraints.