

# **Access to Food, Poverty and Inequality by Social and Religious groups in India: Estimation with Unit Level Data**

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# Background

- Food security under trade liberalisation of agricultural goods is a critical issue even after two decades of initiation of the WTO regime
- The small and marginal landholders are the most affected in terms of food insecurity and poverty in the world (Cruz, 2010).
- In India nearly 60 % of population contributes to 12 % of agricultural GDP and no significant shift of labour from land based activities to manufacturing or services
- More than one-third world's food insecure population lives in India
- Over 10 percent of the total households in India are food insecure

# Literature

- Pal et al (1986): Muslims were poorer than Hindus in most of the states in rural India in 1973-74 (28<sup>th</sup> round NSS)
- Shariff (2001): poverty was marginally higher among Muslims as compared to Hindus in 1994 (50<sup>th</sup> round NSS)
- Srinivasan and Mohanty (2004): roughly similar pattern of deprivation across the religious groups in the country in 1998-99 (NFHS-2)
- No attempt as such in the literature in finding out the effects of household specific factors on wellbeing in terms of food security, poverty and inequality across different castes by religion by utilizing household level survey data in India.
- This study is an attempt in this direction

# Objectives

- Looks into three interrelated issues of wellbeing and relative deprivation:
  - poverty risk
  - inequality and
  - food insecurity
- of the people in different castes and religions in India
- by utilising unit level data taken from 55<sup>th</sup> and 68<sup>th</sup> survey rounds
- The study identifies how the household specific factors are responsible for food security that are not adequately quantified so far.

# The study

- Section 2 describes in short the methodological issues.
- Section 3 is the description of data.
- Section 4 discusses the prevalence of poverty risks across different castes in major religious groups.
- Section 5 deals with consumption inequality among the households in different castes and religions.
- Section 6 estimates the likelihood of food security.
- Section 7 summaries and concludes.

# Caste and religious factors could be important

- Historically, the occupation is closely linked with caste and religion
- Access to education, health and also other social rights are mainly confined to the upper castes
- Ethnic minorities have suffered from social and economic exclusions
- Each religious group in India is highly heterogeneous in terms of socioeconomic characteristics.
- It may be imperative to examine the level of wellbeing of different population groups in different dimensions.
- Observing composition of population by social groups within each religion may enable us to interpret better the poverty and inequality

**Percentage distribution of total population across social and religious groups:  
2011-12**

<b>Religious groups</b>	<b>Hindus</b>	<b>Muslims</b>	<b>Christians</b>	<b>Total population</b>
<b>Social groups</b>				
<b>Scheduled Tribes</b>	8.0	0.1	0.8	<b>8.9</b>
<b>Scheduled Castes</b>	18.0	0.2	0.2	<b>18.4</b>
<b>Other Backward Classes</b>	37.2	5.9	0.7	<b>43.9</b>
<b>General Castes</b>	22.1	6.0	0.7	<b>28.8</b>
<b>Total population</b>	<b>85.3</b>	<b>12.2</b>	<b>2.5</b>	<b>100.0</b>

# Poverty risks

- The Foster-Greer-Thorbecke (FGT) poverty index (at  $\alpha = 0$ ) is estimated at 75 percent of median expenditure of the population distribution as a threshold.
- The thresholds at 75 percent of median expenditure are Rs.360.75 in rural areas and Rs.600.75 in urban areas in 1999-2000, and those for 2011-12 are Rs.951.45 and Rs.1445.63 respectively.
- The risk of poverty was significantly higher in schedule tribes and schedule castes as compared to general castes both in rural and urban economy in India.
- People in Hindu religion in rural areas and Muslims in urban locations suffered more from poverty risk in 2011-12.

## Relative poverty by social and religious groups in India

	Rural		Urban	
	1999- 2000	2011- 2012	1999- 2000	2011- 2012
<b>Caste</b>				
Scheduled tribe	0.35	0.34	0.29	0.32
Scheduled caste	0.37	0.34	0.52	0.47
OBC	0.27	0.28	0.41	0.39
General	0.15	0.21	0.22	0.25
<b>Religion</b>				
Hinduism	0.28	0.30	0.31	0.34
Islam	0.26	0.28	0.47	0.44
Christianity	0.13	0.18	0.14	0.23
<b>All</b>	<b>0.26</b>	<b>0.28</b>	<b>0.32</b>	<b>0.34</b>

## Relative poverty among different social groups within a religion: 2011-12

	Rural			Urban		
	Hinduism	Islam	Christianity	Hinduism	Islam	Christianity
Scheduled tribe	0.46	0.13	0.19	0.44	0.21	0.24
Scheduled caste	0.35	0.45	0.31	0.48	0.48	0.36
OBC	0.28	0.27	0.19	0.38	0.48	0.28
General	0.20	0.30	0.08	0.22	0.41	0.11

# Consumption inequality

- Gini index of food and nonfood expenditure for each social group in Hindus, Muslims and Christians separately both in rural and urban areas in India in 2011-12
- Inequality in nonfood items was significantly higher than inequality in food consumption
- Consumption inequality for both food and nonfood items varied across the social groups in each religion

## Gini index across different casts by religions: 2011-12

Religions	Castes	Rural		Urban	
		Food expenditure	Non-food expenditure	Food expenditure	Non-food expenditure
Hinduism	Scheduled Tribes	0.27	0.36	0.27	0.48
	Scheduled Castes	0.26	0.36	0.25	0.40
	Other Backward Classes	0.27	0.37	0.26	0.42
	General Castes	0.28	0.40	0.28	0.42
	<b>All Groups</b>	<b>0.28</b>	<b>0.39</b>	<b>0.28</b>	<b>0.44</b>
Islam	Scheduled Tribes	0.23	0.26	0.30	0.38
	Scheduled Castes	0.19	0.23	0.23	0.36
	Other Backward Classes	0.26	0.40	0.27	0.39
	General Castes	0.27	0.39	0.27	0.38
	<b>All Groups</b>	<b>0.26</b>	<b>0.39</b>	<b>0.27</b>	<b>0.39</b>
Christianity	Scheduled Tribes	0.22	0.33	0.28	0.36
	Scheduled Castes	0.28	0.34	0.23	0.33
	Other Backward Classes	0.24	0.42	0.25	0.46
	General Castes	0.27	0.45	0.27	0.48
	<b>All Groups</b>	<b>0.28</b>	<b>0.49</b>	<b>0.26</b>	<b>0.47</b>

# Incidence of food insecurity

- FAO defined food insecurity as the partial or complete denial of access to sufficient food to meet dietary needs for an active and healthy life of a person.
- We define
  - chronic food insecurity if family members within a household manage to take one meal or less per day,
  - transitory food insecurity for number of meals taken lies between one and two,
  - no insecurity in food when they able to take three meals or more a day.

# Incidence of food insecurity

- We have constructed independently pooled cross section
- number of households in the pooled sample is 2, 21,653
- less than 1 percent chronic food insecure households
- little less than 40 percent transitory food insecure households
- nearly 60 percent are not food insecure households

# The model

- Food insecurity level  $y^*$  depends on household specific characteristics:

$$y_i^* = \alpha + \sum_k \beta_k x_{ik} + \varepsilon_i$$

- $y_i^*$  is non-observable latent variable.
- What is observed is the ordinal variable  $y$  related to  $y^*$  defined as
  - $y_i = 0$ , if number of meals taken per day is 1 or less
  - $= 1$ , if number of meals taken per day 2 or less but more than 1
  - $= 2$ , if number of meals taken per day more than 2
- We assume that  $\varepsilon$  has standard logistic distribution.
- As the dependent variable is ordered categories we apply ordinal logit estimation

	Coefficients	Marginal effect*	z-statistic	P>z
hhs	0.08	-0.0003	42.91	0
D_year	0.25	-0.0010	17.15	0
D_rural	0.47	-0.0020	50.97	0
D_pds	0.24	-0.0010	19.37	0
D_F	0.08	-0.0003	4.13	0
D_muslim	-0.27	0.0012	-14.82	0
D_st	-0.63	0.0032	-33.24	0
D_year_F	-0.08	0.0003	-2.74	0.006
D_muslim_year	-0.18	0.0008	-6.58	0
D_year_st	-0.14	0.0006	-5.11	0
D_year_pds	0.41	-0.0014	21.89	0
D_below_Primary	0.43	-0.0014	24.95	0
D_Primary	0.36	-0.0012	22.42	0
D_Middle_school	0.32	-0.0011	23.84	0
D_secondary	0.19	-0.0007	16.78	0
C <sub>1</sub>	-4.43			
C <sub>2</sub>	0.67			
Log likelihood	-148139.30			
LR $\chi^2(15)$	13376.36			
Pseudo R <sup>2</sup>	0.04			

# Conclusions

- The lack of economic access to food has been the main reason for persistence of poverty among different castes in different religions at different rates.
- The prevalence of undernourishment and poverty risks were higher among Dalits than other social groups in Hindu religion.
- Dalits are socially excluded and have unequal access to labour markets because of lack of human capital and other resources for historical reasons.
- Being excluded from social relations they are likely to suffer other types of deprivations as well.
- Thus social protection mechanisms are needed for them through formal and informal institutions.