INDIAN INSTITUTE OF TECHNLOGY, KANPUR

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PROJECT REPORT

"Effect of interaction among different groups
on Social and Religious prejudices**"**

Submitted by

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CERTIFICATE

Ther is to certify that the project entitled **"Studying the effects of working together on change in Social and Religious prejudices"** *submitted by* **Bhavy Khatri (S170041***) as a part of Summer Undergraduate Research and Graduate Excellence 2017 offered by the Indian Institute of Technology, Kanpur, is a bonafide record of the work done by him under my guidance and supervision at the Indian Institute of Technology, Kanpur from 16th May, 2016 to 14th July, 2016.*

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ABSTRACT

India is a country of ethnic diversity with people of different language, caste and religion living together. There were instances of tension among people of different religion and caste. In 2015, more than 30% crimes were reported in just two states combined, Uttar Pradsesh and Rajasthan, together.   These riots may led to some kind of prejudices among future generation developed by their own family members. Although it is not the only reason for example prejudices in caste may be due to a strict hierarchal feeling of one born "better" than other.The focus of ther project is to see how interaction with people from different social background change these biases. Research not only emphasized on presence of member from different community but also on how increasing that number affects mindset of people. Analysis of peer effect is also included.

Like the bee gathering honey from different flower, the wise person accepts the essence of different scriptures, and sees only the good in all religion

BACKGROUND

The Caste system in India has very deep roots, which dates back from Vedic Period. Caste is an age-old system of rigid social and ritual stratification of Indian society, implying the total exclusion of certain groups from the rights and opportunities for advancement. The most marginalized groups are the Scheduled Castes (SCs or Dalits) and the Scheduled Tribes (STs or tribals living in remote areas, or Adivasis). Caste status is endogamous, rarely can be changed (except through religious conversion) and implies a rigid occupational specialization. The modern day Caste system is subdivided into almost 3,000 jati groupings, that are related in a complex way to the original varna subdivision.

There is no denying that India's rapid economic growth and increase in urbanization have opened new economic and social opportunities for Dalits, who fall at the lowest end of the caste spectrum. Indian economic reform has been "unprecedented success" in terms of economic growth, but an "extraordinary failure" when it comes to improvements in the living standard of general population and social indicators. (Drèze, J. and Sen, A., 2013)Even so, the sad reality is that caste-based discrimination and outright violence against lower castes remain depressingly commonplace in many spheres.

Religion is one another facet of diversity in India, along with Caste. Hinduism largest religion professed by 80.5% people whereas Islam comprises of 14.4% population of India. But there is also a history of Communal violence in India that includes acts of violence by followers of one religious group against followers and institutions of another religious group, often in the form of rioting. Religious violence in India, especially in recent times, has generally involved Hindus and Muslims. Despite the secular and religiously tolerant constitution of India, broad religious representation in various aspects of society including the government, the active role played by autonomous bodies such as National Human Rights Commission of India and National Commission for Minorities, and the ground-level work being out by Non-governmental organisations, sporadic and sometimes serious acts of religious violence tend to occur as the root causes of religious violence often run deep in history, religious activities, and politics of India

INTRODUCTION

Due to these unfavourable conditions described above, such as riots and communal violences, there can be a development of some prejudices among one religious (or Caste) group against other, and vice versa. Prejudices in caste may be due to a strict hierarchal feeling of one born "better" than other. The project focuses on studying the effect of Interaction among different groups on Social and Religious prejudices.

DATA MEASUREMENT AND SETTING

We used a unique data set of ICCSR (Indian Centre for Corporate Social Responsibility), a survey conducted in thirty slum areas of Kanpur District in July 2016. Kanpur has a diverse population with Hinduism as a major religion in Kanpur city with 78.03 % followers. Islam is second most popular religion in Kanpur with approximately 19.85 % following it. There were two phases of the survey: Pre-training and Post-training where women were asked about their opinions on the target group (people not from their caste or religion). For e.g. If the person is from general caste then he was asked about backward caste (OBC, SC/ST). Similarly, Hindus about Muslims, Muslims about Hindus. Scheduled Caste (SC) and Scheduled Tribe (ST) were treated in the same group and asked about people belonging to General and OBC. Respondents had five choices from 1 to 5, with interpretation as follows:

1 - Strongly Disagree,
2 - Disagree,
3 - Neither Agree nor Disagree,
4 - Agree,

5 - Strongly Agree.

The following questions were asked:
• It really upsets me to hear anyone say anything negative about the (target group) people.
• The (target group) people have some very bad characteristics.
• I have a very positive attitude to the (target group) people.
• The (target group) people have done a great deal to make ther country successful.
• Sometimes I think ther country would be better off without so many (target group) people.
• The (target group) people should get much more recognition for what they have done for ther country.
The questionnaire used in the slum areas was translated into Hindi, then back translated to ensure equivalence.

About 80-100 people were contacted in each slum and asked about their interest to join the training about skills of the beauty parlor. Thirty interested people were randomly chosen (with one slum as an exception with 35 people). These were then further divided into 6 groups having 5 respondents in each group. In ther way there were total 905 respondents. These group members worked in collaboration with each other for next four days. Since respondents were randomly assigned into groups thereby eliminating the problem of peers selecting each other based on observable and unobservable characteristics.
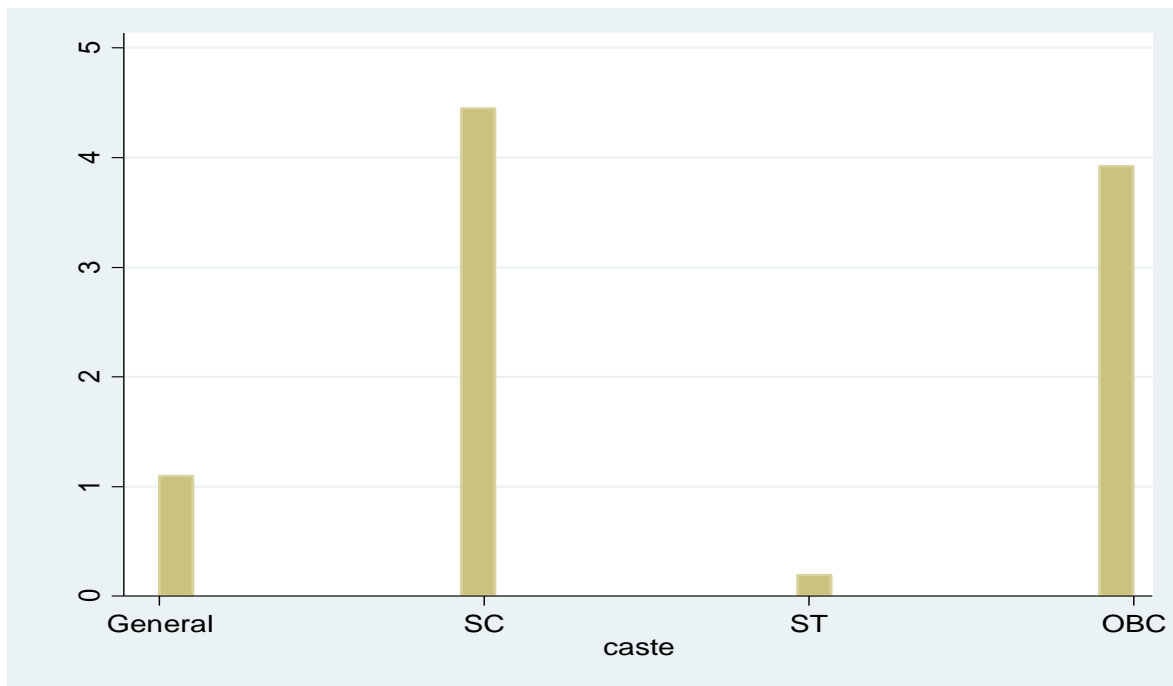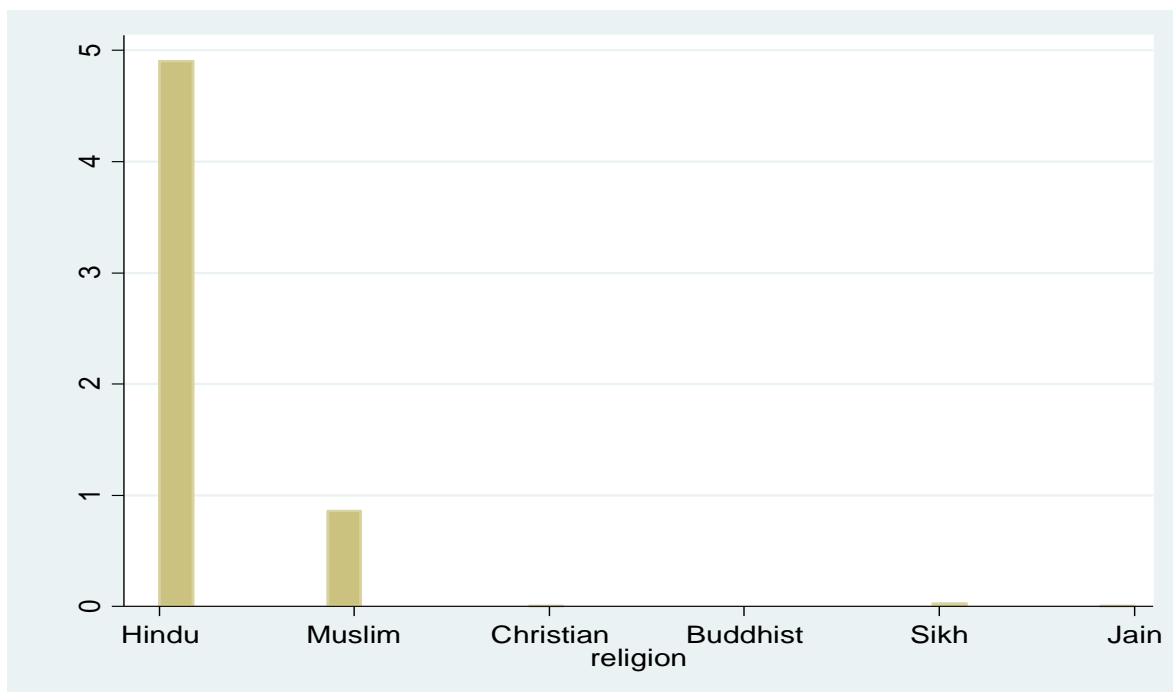
Fig: Distribution of Caste in sample

Fig: Distribution of Religion in sample

Religious Communities - India

Community	%
Hindu	80%
Muslim	14%
Christian	2%
Sikh	2%
Buddhist	1%
	0%
	1%
	0%

Religious Communities-Uttar Pradesh

Community	%
Hindu	80%
Muslim	20%
Christian	
Sikh	

(Source: Census of India)

Sample Survey

Community	%
Hindu	84%
Muslim	15%
Christian	
Sikh	
Jain	
Not stated	1%

Caste Communities - India

Community	%
SC	14%
ST	7%
Others	79%

Caste Communities - U.P.

Community	%
SC	18%
ST	0.1%
Others	82%

Caste Communities - Sample

Community	%
SC	46%
ST	2%
Others	52%

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DATA ANALYSIS

We created an index taking an **equal weighted mean of six Likert items** stated above. The data for question 2 and 5 were changed to get a positive context of the responses because these two questions were giving a negative opinion for the highest value of Likert item.

The major problem was to correctly determine the best regression technique. Ordinal regression is appropriate whenever the dependent variable is ordinal: That is, when we can assume that the levels are in order, but not that the gaps between the levels are equal. But, **if we sum a bunch (of 6) Likert items (each, ranging, 1-5) then our total ranges from 6 to 30 and ordinal regression, while technically correct, will be hard to implement and interpret (there would be a huge number of parameters). In ther case, OLS seems to be a better choice**.

Psychometric Theory **(by Nunnally, J.C. and Bernstein, I.H.)** suggest to treat variable as continuous if it has 11 distinct value. The important thing to note here is that the resolution of any measuring instrument, be it the physicist's or the psychologist's, is finite. Improvements in techniques often increase the precision and therefore the number of categories, but the number remains finite and therefore inherently discrete even though the resulting number of categories may be very large. The same is true for Economic Sciences and other social science subject. The survey is just a tool and it has its own limitations, so we have to draw some line somewhere.

The number 11 is not "magical," but experience has indicated that little information is lost relative to a greater number of categories. Moreover, the law of diminishing returns applies, and so using even 7 or 9 categories does little harm if the convenience' of reporting data as a single digit is important to the application.

Multiple Linear regression with OLS (Ordinary Least Square) technique is used in regression analysis.

$$y = \alpha_0 + \alpha_1 * x_1 + \ldots\ldots \alpha_n * x_n + \varepsilon$$

where y is a dependent variable and αi's are independent variable for $i = 1\ to\ n;$

$$Index = \left(\frac{Q_1 + Q_2 + Q_3 + Q_4 + Q_5 + Q_6}{6}\right)$$

Variables	Description
Pre Caste(Religion) Index	Caste (Religion) Index of respondent before training.
Post Caste(Religion) Index[*]	Caste (Religion) Index of respondent after training.
Group Member Index	Average index of group members other than respondent.
Group Member Index Hindu (Muslim)	Average index of Hindu (Muslim) group members other than respondent.
Different Share Group (Slum)	Number of persons other than her Caste (Religion) in a group (or Slum)
Different Share Hindu (Muslim)	Number of Hindus (or Muslims) in group other than respondent's
Different Share General (Back)	Number of Gen. (or Back.) in group other than respondent's
At Least One Group (Slum)	Binary variable which takes the value 1 if there is at least one member of other Caste (Religion) in a group (or Slum) and 0 otherwise.
At Least One Hindu (or Muslim)	Binary variable which takes the value 1 if there is at least one Hindu (or Muslim) in a group - other than respondent – 0 otherwise
At Least One General(Backward)	Binary variable which takes the value 1 if there is at least one General

	(or Backward) in a group - other than respondent - and 0 otherwise.
Interaction Variables[#]	There are different interaction variable to see the effect of interaction of one variable with another.
Slum Index	Average Index of slum members (contribution from all 5 groups) other than respondent.
Health Index	Equally weighted mean of questions related to health of individual
Satisfaction Index	Equally weighted mean of questions related to satisfaction of life.

* Dependent variable

\# See table below

Control Variables: Age, Education, Income.

Interaction variables:

There are two ways of entering the multiplicative (or interaction) terms between dummy variables and another independent variable into a regression. Either to use *partition approach* or *base approach.* The second, and more often used, approach is to include the **'main effect'** variable and the multiplicative terms between and dummy variables. Both approaches give exactly the same coefficient estimates and *t*-statistics of the intercept, capital input and labour input. They also give the same R^2 and other statistics, such as log-likelihood and $F - statistic$. The only difference concerns the interpretation of the interaction and main effect terms (Yip and Tsang 2007). Ther means that they are equivalent in terms of calculation and differ only in terms of interpretation.

Regression equation (1):

$$y = \alpha_0 + \alpha_1 * x_1 + \alpha_2 * (dummy\ inter\ x_1)$$

$dummy\ inter\ x_1 = dummy * x_1$, where dummy takes value 0 or 1.

In graph only change in slope is seen for different values of dummy and intercept remain same.

For dummy $= 1$, slope $= \alpha_1 + \alpha_2$

For dummy $= 0$, slope $= \alpha_1$
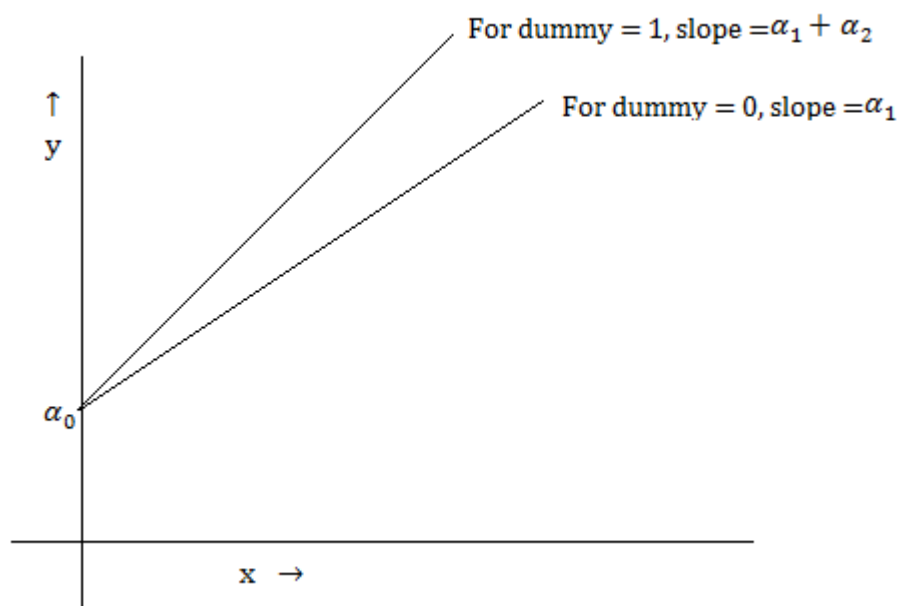
The coefficient α_1 in equation (1) measures the effect of x_1 on y for the base (i.e. dummy = 0), it is not the indicator of main effect which is average weighted effect of both dummy = 0 and 1. If you want to see the main effect of x_1 on y then we should consider the equation $y = \beta_0 + \beta_1 * x_1$ instead of equation (1). **We considered interaction of $Caste$ ($or\ Religion$) on $Different\ Share$ (or $At\ Least\ One$).**

Table I and II contain summary statistics for ther sample. There are about 85% Hindus which is greater than state average and comparable to national average. The mean of Pre Religion Index for 882 observations is 2.981. Some people didn't regularly attended the training and left in between that's why data of only 709 respondents for Post Religion Index was recorded. There were 27% people which interacted with at least one Muslim in their group, at the same time 29% people interacted with member other than their religion. Group Religion Index, which shows the average of group member's index, has an average of 3.010 which is higher than the mean of Pre Religion Index.

Our sample has about 11.13 % general and 88.7% backward. Mean Pre Caste Index is 3.039 for 851 observations. Due to large number of backward caste people there was not a group slum having all general

caste people. Common Parameters include variables common to both Caste and Religion. Average age of respondents was 22.70 showing the active participation of young women in training. 12.03% of woman were illiterates which is lower than national and state average Illiteracy rates.

Table I

Summary Statistics for sample Kanpur Nagar's slum people (Religion)

VARIABLES	(1) N	(2) mean	(3) Standard deviation	(4) min	(5) max
hindu_dummy	892	0.851	0.356	0	1
pre_religion_index	882	2.981	0.525	0.333	4.167
at_least_one	905	0.293	0.455	0	1
diff_share	905	0.519	1.039	0	4
group_rel_index	905	3.010	0.336	1.792	5.167
post_religion_index	709	3.062	0.550	1.167	4.833
mus_dummy	905	0.147	0.354	0	1
at_least_one_hindu	905	0.938	0.241	0	1
at_least_one_mus	905	0.277	0.448	0	1
diff_share_hindu	905	3.355	1.145	0	4
diff_share_mus	905	0.588	1.139	0	4
group_index_hindu_with_miss	849	2.929	0.437	0	3.750
group_index_mus_with_miss	251	2.954	0.667	0	4.167
diff_share_in_slum	905	3.619	6.684	0	29
diff_share_in_slum_hindu	905	24.51	7.804	0	34
diff_share_in_slum_mus	905	4.262	7.697	0	29
slum_index_value	882	2.981	0.131	2.615	3.259

Table II
Summary Statistics for sample Kanpur Nagar's slum people (Caste)

VARIABLES	(1) N	(2) mean	(3) Standard deviation	(4) min	(5) max
pre_caste_index_i_to_vii	851	3.039	0.456	1.500	4.833
pre_roommate_index_i_to_vii	851	3.119	0.316	2.250	3.833
atleast_one	905	0.436	0.496	0	1
diff_share	905	0.782	1.160	0	4
post_caste_index_i_vii	701	3.684	0.667	0.333	5.667
gen_dummy	905	0.113	0.316	0	1
SCSTOBC_dummy	905	0.887	0.316	0	1
at_least_one_gen	905	0.370	0.483	0	1
at_least_one_back	905	1	0	1	1
diff_share_gen	905	0.451	0.653	0	3
diff_share_back	905	3.549	0.653	1	4
group_index_gen_value	291	3.069	0.543	1.333	4.167
group_index_back_value	905	3.029	0.257	1.833	3.833
diff_share_in_slum	905	5.520	7.285	0	31
diff_share_in_slum_general	905	3.291	2.718	0	12
diff_share_in_slum_back	905	25.90	2.844	17	31

Table
Summary Statistics for common parameters

VARIABLES	(1) N	(2) mean	(3) Standard deviation	(4) min	(5) max
family_type	897	1.877	0.338	1	3
age	898	22.70	6.009	15	55
educ	898	9.431	4.923	0	19
income	898	9,167	5,221	0	50,000
health_index	898	1.759	0.460	0	3
satisfaction_index	898	5.727	1.047	2.143	9.214

Random Assignment of Group members

To check whether there was random assignment of members into group or not, Pre Religion (Caste) Index was regressed with Group Religion (Caste) Index.

Table
OWN PRETREATMENT CHARACTERISTICS REGRESSED ON
GROUP MEMBER PRETREATMENT CHARACTERISTICS
EVIDENCE OF THE RANDOM ASSIGNMENT OF GROUP MEMBERS

VARIABLES	(1) Pre Religion Index	(2) Pre Caste Index
Group Religion Index	0.0964 (0.0633)	
Group Caste Index		-0.0503

		(0.0495)
Observations	882	851
R-squared	0.0026	0.0012

H₀: There is no effect of Group Religion (Caste) Index on Pre Religion (Caste) Index.

Since no statistically significant result is obtained, **Null Hypothesis is not rejected.** It means that statistically significant result is not obtained to show the effect of Group Religion (Caste) Index on Pre Religion (Caste) Index
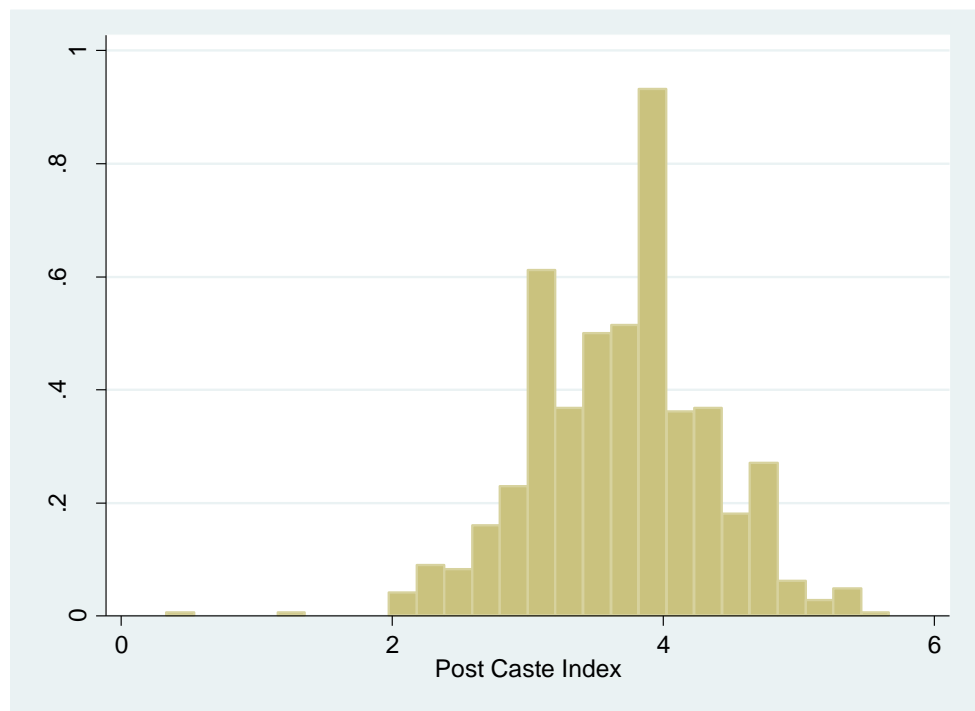

Fig: Distribution of Post Caste Index after training.
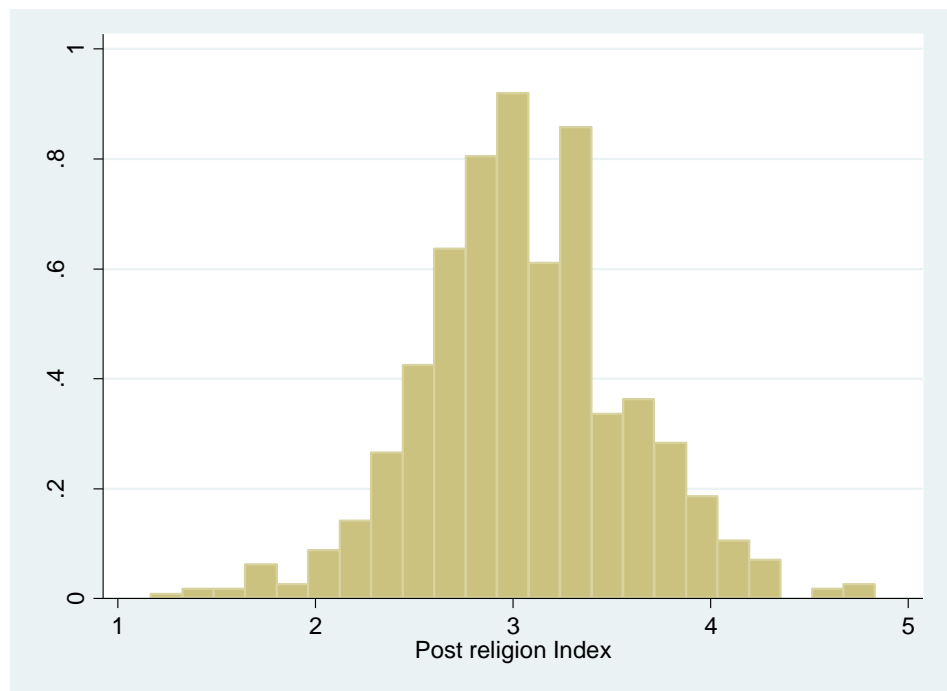
Fig: Distribution of Post Religion Index after training.

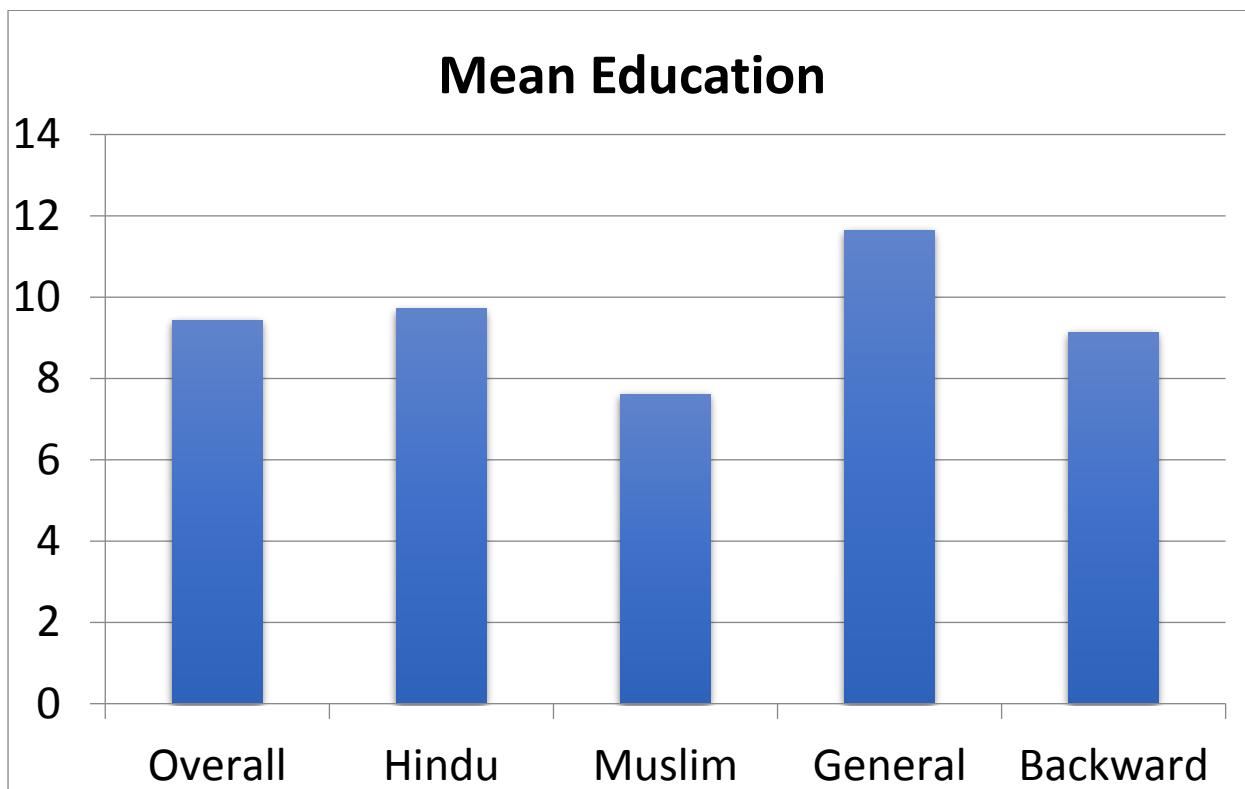# Mean Education

Fig: Mean education of woman for different social and religious groups.

Chart above compares mean education for religious and social groups of India. From the above we can see that Muslims and Backward woman are far less educated than their Hindus and General counterpart.
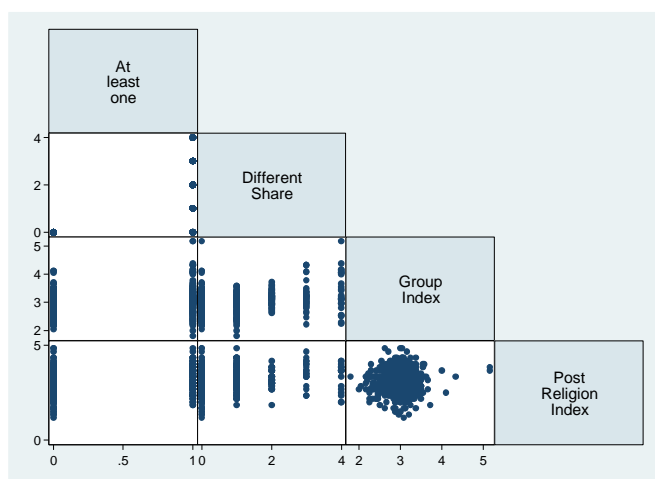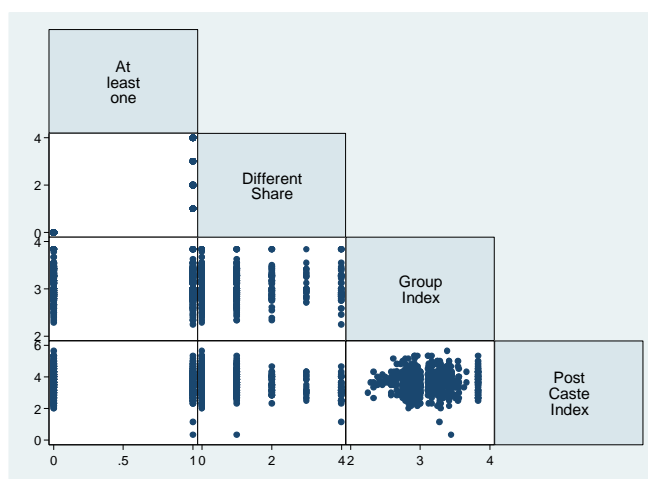

Fig: Scatter plot graph matrix for Religion

Fig: Scatter plot graph matrix for Caste

• RELIGION (HINDUS ↔ MUSLIMS)   **Total Observations: 702**

Table I

VARIABLES	(1) post_religion_index	(2) post_religion_index	(3) post_religion_index	(4) post_religion_index
pre_religion_index	-0.00821	-0.0128	-0.0103	-0.0186
	(0.0280)	(0.0259)	(0.0332)	(0.0292)
at_least_one	0.275***	0.643***		
	(0.0747)	(0.141)		
hindu_inter_atlo		-0.523***		
		(0.132)		
age	-0.00554	-0.00332	-0.00481	-0.00292
	(0.00340)	(0.00338)	(0.00366)	(0.00350)
educ	-0.00602	-0.00220	-0.00390	-0.000188
	(0.00653)	(0.00609)	(0.00568)	(0.00512)
2.family_type	-0.0425	-0.0175	-0.0618	-0.0367
	(0.0520)	(0.0509)	(0.0535)	(0.0495)
3.family_type	0.186*	0.296***	0.306***	0.354***
	(0.0966)	(0.0666)	(0.0530)	(0.0531)
health_index	-0.0253	-0.0487	-0.0280	-0.0579
	(0.0540)	(0.0506)	(0.0493)	(0.0467)
satisfaction_index	0.0121	0.0128	0.00532	0.00619
	(0.0283)	(0.0264)	(0.0251)	(0.0224)
at_least_one_hindu			0.0871	0.482
			(0.325)	(0.327)
at_least_one_mus			0.303***	0.291*
			(0.0858)	(0.147)
hindu_inter_atlohindu				-0.441**
				(0.194)
hindu_inter_atlomus				-0.143
				(0.159)
Constant	3.196***	3.140***	3.136***	3.141***
	(0.195)	(0.198)	(0.340)	(0.313)
Observations	702	702	702	702
R-squared	0.055	0.107	0.060	0.122

HYPOTHESIS TESTING
(Statistical Significance test for multi variables using F statistics)

		Prob > F
Case (2)		
H_0: Hindu inter atlo = 0, At Least One = 0	$F(2, 29) = 11.06$	0.0003***
Case (3)		
H_0: At Least One Hindu = 0, At Least One Mus = 0, Hindu inter atloHindu = 0, Hindu inter atloMus = 0	$F(4, 29) = 20.02$	0.0000***

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table II

VARIABLES	(1) post_religion_index	(2) post_religion_index	(3) post_religion_index	(4) post_religion_index
pre_religion_index	-0.00730	-0.00523	-0.0106	-0.0129
	(0.0278)	(0.0257)	(0.0306)	(0.0270)
diff_share	0.132***	0.176**		
	(0.0466)	(0.0641)		
hindu_inter_diffshare		-0.112*		
		(0.0615)		
age	-0.00342	-0.00272	-0.00462	-0.00292
	(0.00341)	(0.00337)	(0.00358)	(0.00335)
educ	-0.00458	-0.00317	-0.00269	-0.000459
	(0.00662)	(0.00644)	(0.00550)	(0.00505)
2.family_type	-0.0268	-0.0113	-0.0683	-0.0395
	(0.0512)	(0.0543)	(0.0547)	(0.0512)
3.family_type	0.325***	0.336***	0.260***	0.324***
	(0.0525)	(0.0520)	(0.0664)	(0.0668)
health_index	-0.0277	-0.0391	-0.0464	-0.0619
	(0.0537)	(0.0527)	(0.0452)	(0.0467)
satisfaction_index	0.0135	0.0145	-0.00200	0.00409
	(0.0281)	(0.0279)	(0.0242)	(0.0219)
diff_share_hindu			-0.0515	0.107
			(0.0629)	(0.0903)
diff_share_mus			0.0553	0.0525
			(0.0951)	(0.108)
hindu_inter_diffshindu				-0.157**
				(0.0650)
hindu_inter_diffsmus				-0.0176
				(0.0990)
Constant	3.134***	3.107***	3.507***	3.391***
	(0.195)	(0.198)	(0.268)	(0.239)
Observations	702	702	702	702
R-squared	0.054	0.065	0.053	0.101

HYPOTHESIS TESTING
(Statistical Significance test for multi variables using F statistics)

Case (2) | | Prob > F
H0: Diff Share = 0, Hindu inter diffshare = 0 $F(2, 29) = 4.13$ 0.0263^{**}

Case (3)
H0: Diff Share Hindu = 0, Diff Share Mus =0, Hindu inter diffsHindu =0, Hindu inter diffsMus = 0 $F(4, 29) = 3.21$ 0.0267^{**}

H0: Diff Share Hindu = 0, Hindu inter diffsHindu =0 $F(2, 29) = 3.61$ 0.0398^{**}

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

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Table III

VARIABLES	(1) post_religion_index	(2) post_religion_index	(3) post_religion_index	(4) post_religion_index
pre_religion_index	0.00219	-0.0104	0.00340	-0.00760
	(0.0287)	(0.0266)	(0.0278)	(0.0254)
group_rel_index	-0.0326	0.0850		
	(0.103)	(0.0986)		
age	-0.00429	-0.00268	-0.00502	-0.00315
	(0.00390)	(0.00381)	(0.00398)	(0.00410)
hindu_inter_groupIndex		-0.154**		
		(0.0761)		
educ	-0.00493	0.000503	-0.00536	0.000344
	(0.00723)	(0.00538)	(0.00735)	(0.00562)
2.family_type	-0.0315	-0.0375	-0.0284	-0.0331
	(0.0599)	(0.0578)	(0.0604)	(0.0570)
3.family_type	0.250***	0.319***	0.253***	0.321***
	(0.0548)	(0.0596)	(0.0587)	(0.0598)
health_index	-0.0295	-0.0672	-0.0303	-0.0656
	(0.0541)	(0.0461)	(0.0520)	(0.0465)
satisfaction_index	0.00668	-0.000542	0.00444	-0.00115
	(0.0292)	(0.0243)	(0.0279)	(0.0241)
group_index_hindu			-0.111	-0.0673
			(0.110)	(0.101)
group_index_mus			0.0105	0.0934
			(0.0457)	(0.0813)
hindu_inter_groupIndexHindu				-0.0184
				(0.0954)
hindu_inter_groupIndexMus				-0.129
				(0.0862)
Constant	3.332***	3.437***	3.557***	3.589***
	(0.338)	(0.334)	(0.435)	(0.341)
Observations	702	702	702	702
R-squared	0.005	0.089	0.013	0.088

SUMMARY OF RESULTS

• When I regressed Post Religion Index with At Least One, Pre Religion Index and Group Religion Index. I obtained statistically significant result for coefficient of at least one. It means that if there is at least one member of other religion in the group then Post Religion Index increases by 0.275. **Attitude of member towards member of other religion is getting better.**

• After ther, I included interaction term of Hindu with At Least One then increase in Post Religion Index for Muslims was 0.643 while for Hindus it was only 0.120. It signifies that if the respondent is Muslim in the group then increase in Post Religion Index will be 0.523 points greater than for Hindu. I also checked for Null hypothesis of both the coefficient 0 and obtained significant results. **Opinion of Muslim member is getting much better towards Hindus than that of Hindus towards Muslims if there is at least one member of other religion**.

• Now, I divided At least one into At least one Hindu and At least one Muslim in the group. We obtain statistically significant result for At least one Muslim which signifies that if there is at least one Muslim member in the group then Post Religion Index increases by 0.303. No significant results were obtained for At least one Hindu member in a group. **At Least One Muslim member in the group changes the attitude of one religious group towards other.**

• While considering the interaction term we obtained some interesting results, coefficient of At least one Hindu was not significant which means that we cannot deduce anything about Post Religion Index for Muslim and Hindus members. But we can figure out difference between Hindus and Muslims, that is when respondent is Hindu then Post Religion Index will be 0.441 less than for Muslim. Increase for Muslims is more than increase for Hindus. **Muslims perception becomes more positive towards Hindus than that for Hindus toward Muslims**. **Result is significant when there is at least one Hindu member in group.**

• Now, I replaced At Least One dependent variable with Different Share (Different members of other Religion) keeping other variables same. If different share of another religion is increased by 1 then Post religion Index increase by 0.132, with p value < 0.01. **Ther result suggests that the more people of different religion in group will increase the positive opinion.**

• The Null hypothesis was not rejected for coefficient of Different share of Hindus and Different Share of Muslims .**No statistically significant results were obtained if we increase number of Hindus and number of Muslims in group.**

• Statistically significant result was obtained only for Interaction of Hindu with Different share of Hindus. If Hindus in the group is increased by one then Post Religion Index for Hindus will be 0.158 points lower than Muslims. **On increasing number of Hindus in group Muslims perception becomes more positive towards Hindus than that for Hindus toward Muslims.** Important thing to note here is that what we do not know is the effect of increasing no of Hindus in her group (whether it can be positive, negative or no effect) but what we can say for sure is that Muslims will have more positive opinion towards Hindus than Hindus toward Muslims.

• Table III above illustrates peer effect in Religion. Group Index is what her group members think about people of other religion (positive or negative). We addressed the question of what is the effect of having positive group members in the group? Will it also change her perception for good if there are more such people? But no significant results were obtained for effect of Group Index on Post Index.

• **Strong Evidence was found that when we include such less biased members in her group then Muslims woman will have much affirmative effect than Hindus woman.**

Table IV

VARIABLES	(1) post_caste_index_i_vii	(2) post_caste_index_i_vii	(3) post_caste_index_i_vii	(4) post_caste_index_i_vii
pre_caste_index_i_to_vii	0.0566	0.0655	0.0628	0.0810
	(0.0530)	(0.0502)	(0.0555)	(0.0536)
at_least_one_gen			-0.0808	0.0584
			(0.0880)	(0.166)
at_least_one_OBC			0.00140	-0.198
			(0.104)	(0.184)
at_least_one_SC			-0.0631	-0.405**
			(0.136)	(0.185)
back_inter_atloGen				-0.151
				(0.176)
back_inter_atloOBC				0.247
				(0.174)
back_inter_atloSC				0.393**
				(0.161)
age	0.00340	0.00389	0.00261	0.00295
	(0.00500)	(0.00510)	(0.00487)	(0.00494)
educ	0.00194	0.00524	0.000161	0.00404
	(0.00689)	(0.00714)	(0.00658)	(0.00724)
health_index	0.0308	0.0391	0.0223	0.0312
	(0.0625)	(0.0630)	(0.0595)	(0.0590)
satisfaction_index	-0.00905	-0.0119	-0.0160	-0.0109
	(0.0236)	(0.0252)	(0.0230)	(0.0236)
2.family_type	0.116	0.105	0.127	0.108
	(0.0847)	(0.0925)	(0.0820)	(0.0904)
3.family_type	-0.133	-0.190	-0.115	-0.186
	(0.106)	(0.115)	(0.127)	(0.140)
atleast_one	-0.186**	-0.525***		
	(0.0791)	(0.129)		
back_inter_atlo		0.430***		
		(0.132)		
Constant	3.397***	3.341***	3.457***	3.301***
	(0.315)	(0.307)	(0.290)	(0.269)
Observations	667	667	667	667
R-squared	0.027	0.057	0.013	0.055

HYPOTHESIS TESTING
(Statistical Significance test for multi variables using F statistics)

			Prob > F
Case (2)			
H_0: At Least One =0, Back inter atlo = 0		$F(2, 29) = 8.30$	**0.0014*****
Case (3)			
H_0: At Least One Gen =0, Back inter atloGen=0, Back inter atloBack=0		$F(3, 29) = 6.60$	**0.0016*****

Robust standard errors in parentheses
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Note: There was not a single group in sample which had all general members in a group. That is for **all the observations At Least One Back has value 1**. That's why variable At Least One Back is omitted every time**.**

Table V

VARIABLES	(1) post_caste_index_i_vii	(2) post_caste_index_i_vii	(3) post_caste_index_i_vii	(4) post_caste_index_i_vii
pre_caste_index_i_to_vii	0.0651	0.0710	0.0674	0.0729
	(0.0515)	(0.0507)	(0.0537)	(0.0514)
diff_share_gen			-0.0353	-0.0352
			(0.0710)	(0.111)
diff_share_obc			0.0356	-0.0567
			(0.0797)	(0.0890)
diff_share_sc			0.0139	-0.151*
			(0.0698)	(0.0849)
back_inter_diffsGen				0.00438
				(0.0944)
back_inter_diffsOBC				0.107*
				(0.0575)
back_inter_diffsSC				0.183***
				(0.0539)
age	0.00398	0.00398	0.00260	0.00360
	(0.00505)	(0.00512)	(0.00476)	(0.00481)
educ	0.00502	0.00532	0.000260	0.00561
	(0.00719)	(0.00712)	(0.00660)	(0.00728)
health_index	0.0305	0.0349	0.0218	0.0335
	(0.0626)	(0.0619)	(0.0616)	(0.0611)
satisfaction_index	-0.00895	-0.0114	-0.0157	-0.0130
	(0.0256)	(0.0256)	(0.0246)	(0.0259)
2.family_type	0.0978	0.101	0.127	0.0985
	(0.0913)	(0.0927)	(0.0832)	(0.0939)
3.family_type	-0.187	-0.196	-0.134	-0.204
	(0.116)	(0.118)	(0.115)	(0.124)
diff_share	-0.129***	-0.146***		
	(0.0331)	(0.0334)		
back_inter_diffs		0.0826		
		(0.0648)		
Constant	3.359***	3.322***	3.297***	3.184***
	(0.314)	(0.310)	(0.436)	(0.415)
Observations	667	667	667	667
R-squared	0.051	0.056	0.013	0.061

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

HYPOTHESIS TESTING
(Statistical Significance test for multi variables using F statistics)

Case (2) — Prob > F
H_0: Different Share = 0, Back diffshare = 0 — $F(2, 29) = 9.59$ — **0.0006***

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Different share general and Different share backward was collinear with each other since number of general plus backward in the group is constant. Ther was not the case for religion as there were more than two religions. Here there are two castes but questionnaire asked general about backwards and backwards about general

Table VI

VARIABLES	(1) post_caste_index_i_vii	(2) post_caste_index_i_vii
pre_caste_index_i_to_vii	0.0703	0.0747
	(0.0549)	(0.0516)
pre_roommate_index_i_to_vii	0.0206	-0.141
	(0.0853)	(0.0906)
back_inter_groupMemberIndex		0.159***
		(0.0384)
age	0.00286	0.00368
	(0.00510)	(0.00512)
educ	0.000199	0.00479
	(0.00651)	(0.00701)
2.family_type	0.136	0.110
	(0.0853)	(0.0945)
3.family_type	-0.131	-0.199
	(0.112)	(0.122)
health_index	0.0243	0.0360
	(0.0621)	(0.0626)
satisfaction_index	-0.0164	-0.0148
	(0.0247)	(0.0265)
Constant	3.276***	3.249***
	(0.445)	(0.423)
Observations	667	667
R-squared	0.009	0.054

SUMMARY OF RESULTS

• The regression analysis was performed between Post Caste Index and At Least One, Pre Caste Index and Group Caste Index. I obtained statistically significant result for coefficient of at least one. It means that if there is at least one member of other Caste in the group then Post Caste Index decreases by 0.186. **Attitude of member towards member of other Caste is getting worse.**

• At least one was divided into At least one General, At least one OBC, At least one SC. No evidence was found for non-linear associations between Post Caste Index and any of these variables.

• However, if interaction term of Backward caste is included then the results were different. For general caste decrease in post Index was 0.450 while for backward it was only 0.012. **Note that just by the presence of SC member in her group the coefficient for backward woman is significantly lower than upper caste. Opinion of General member is getting much worse towards Backwards than that of Backwards towards Generals if there is at least one SC member** .

• After replacing At Least One independent variable with Different Share (Different members of other Caste) and keeping other variables same, we obtained similar results. If different share of another caste is increased by 1 then Post Caste Index increase by 0.129, with p value < 0.01. **This result suggests that the more people of different caste in group will increase the negative opinion.**

• Now considering Interaction term of Backward with Different Share we observed no statistically significant result for interaction. **We can only predict that increase in different share lead to decrease in post religion index for General woman.**

• Different Share was then further divided into different share of Gen, OBC, SC. But no significant was found. **However, if different share of SCs in respondent's group is increase then backward would have greater Post index than general by 0.183.**

• Table VI above illustrates peer effect in Caste. Group Index is what her group members think about people of other religion (positive or negative). We addressed the question of what is the effect of having positive members in her group? Will it also change her perception for good if there are more such people? But no significant results were obtained for effect of Group Index on Post Index.

• **Strong Evidence was found that when we include such less biased members in her group then backward woman will have much affirmative effect than general woman.**
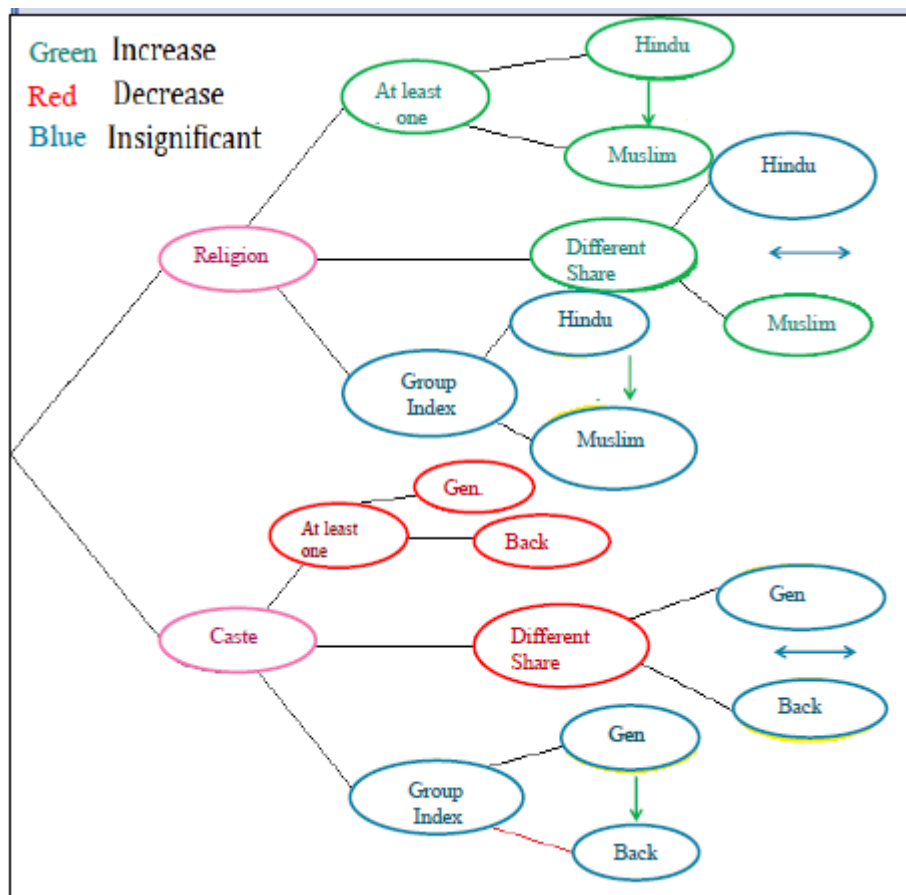
Fig: Summary of Result.

INFERENCES:

RELIGION

- Respondent's behavior towards other Religious group is getting better if there is at least one member of other religion in her group.

- Attitude of Muslims toward Hindus improved more than Hindus toward Muslim. Similar result was obtained, if there was at least one Hindu member in her group.

- Perception is changing for good if there are more number of people from other Religion in her group.

- Muslims improvement is again better if more Hindu women are included.

- No significant results are obtained for Peer effects (what her group members think about other religion). But, whatever may be the effect Muslim woman broke the stigma of religion more than their Hindu counterpart.

- Interestingly, women who don't live with their family have shown statistically significant results. After training their attitude towards other was better than those who live in joint family.

CASTE

- Respondent's behavior towards other Caste is deteriorating if there is at least one member of other caste in her group.

- Attitude of Backwards toward General deteriorated less than General toward Backwards. Similar result was obtained, if there was at least one SC member in her group.

- More number of people from different caste in her group is worsening the situation. Interestingly, Negative effect for general woman is more than overall effect.

- More number of SC woman changed the perception of backward woman for better than general woman.

- Highly significant results are obtained for interaction of backward with her peers. If more positive peers are in the group then backwards will have better index than general.

CONCLUSION

Study has shown that working together with people from different social and religious background changes their perception about them. In case of religion it is getting better while for caste it is worsening. Therefore, we can conclude that religious stigma is less deeper than caste stigma and such communication can help to break the ice. Change in attitude for Muslims and Backwards is better than Hindus and General. The results for caste are surprising, yet strongly significant, that after training their attitude becomes more negative towards each other.
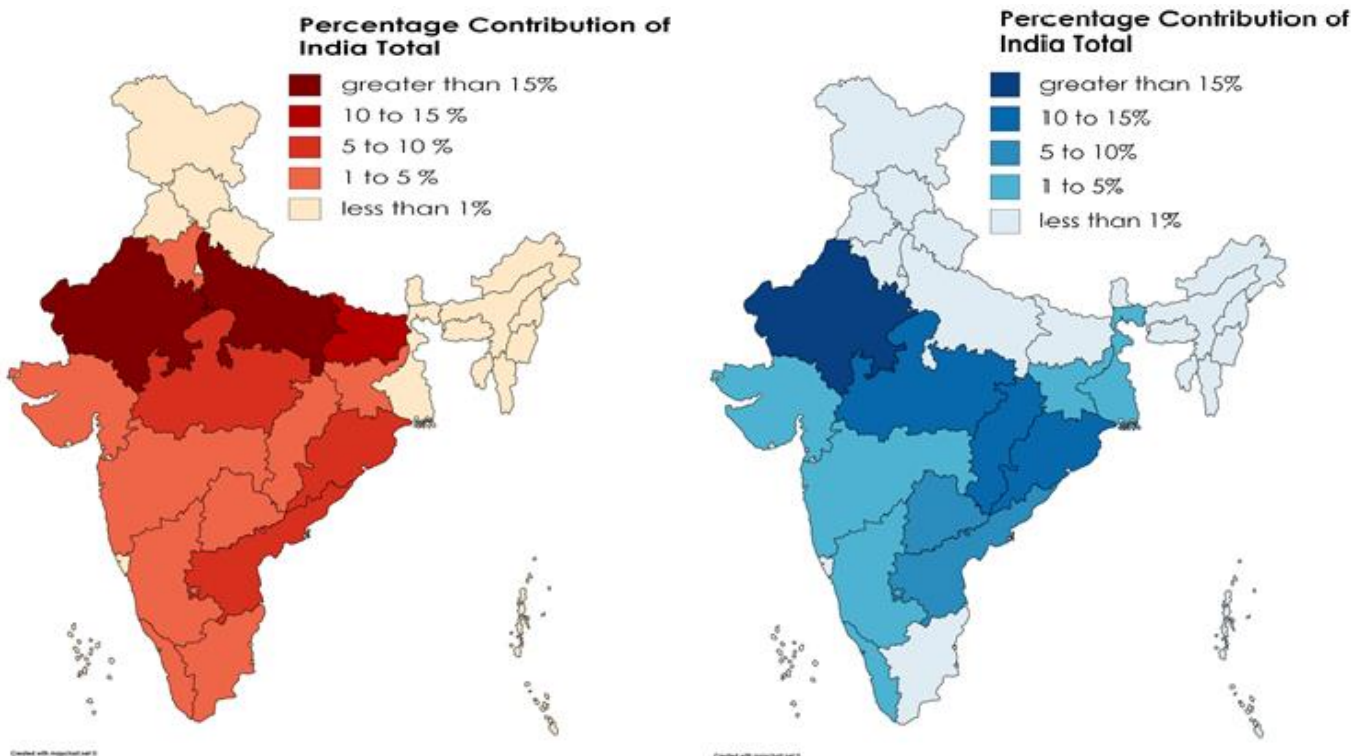

Fig 1: Number of crimes committed against schedule caste in 2015. Fig 2: Number of crimes committed against schedule Tribes in 2015. Source:- NCRB (National Crime Record Bureau)

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