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A STUDY ON THE SEX RATIO OF MIZO IN MIZORAM

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A Study on the Sex Ratio of Mizo in Mizoram

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Abstract – The paper examines the sex ratio of Mizoram and Mizo in Mizoram since 1911 and also traced the causes of sex ratio reversal in 1971. The paper employed the SPSS package for analyzing the data and fitted the cubic model of regression for prediction of the sex ratio. The paper concluded that there are more female member than male among the Mizo tribe and predicts that the sex ratio of Mizoram will be 105.62 in 2021 census.

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1. INTRODUCTION

Mizoram is one of the states of India, sandwiched between 92°15' E to 93° 29' E longitudes and 21°58' N to 24°35' N latitudes. It is bounded by Myanmar in the east and south, Bangladesh and Tripura state in the west, Assam state and Manipur state in the north. It has an international boarder of 404 km and 318 km with Myanmar and Bangladesh respectively. The length of its inter-state boarder with Assam, Tripura and Manipur are 123 km, 66 km and 95 km respectively. The state has a geographical area of 21,081 Sq.km with a population of 10,91,014 in 2011.

3. Sex Ratio: Sex ratio is the number of females per 1,000 males. The gender imbalance may arise as consequences of various factors like poverty, natural factors, exposure to pesticides and environmental contaminations, war casualties, gender- selective abortions and infanticides, aging and deliberate gender ide.

It is biologically proved that female foetus is stronger than male foetus which implies that women may live longer than male (Rudder Datt and Sun haram KPM: 1999). As a result, in the advanced western countries, the sex ratio is very high (Annexure I). In a developing economy, high infant mortality, extremely poor or nonexistent medical facilities, extremely unhygienic conditions of living, absence of pre-natal and post-natal care, high death rate among female are all manifestations of the abjectly low level of living of the people. In the absence of old age security schemes, the son is considered to be an insurance against old age, which is reinforced by allotment of good diet to the son. This resulted in a higher proportion of male over female.

4. Objective of the paper: The paper try to – (i) Identify which gender – male or female is more than

the other, (ii) Find the main cause of sex ratio reversal of Mizoram in 1971, and (iii) Estimate the projected sex ratio in 2021.

5. Tools and methodology: Simple tools like ratio, absolute number, graphs, Z-test for difference of proportion, SPSS and Chi-square are employed. All the sources are secondary in nature, however, as the sources are assumed to be reliable, errors are considered to be minimal.

6. Indian scenario: All India average sex ratio is 940 in 2011. There are 18 states/ UTs above the National average while there are 17 states/ UTs below the average. The highest sex ratio is Kerala with 108.4 females per 100males, followed by Pondicherry (103.8), Tamil Nadu (99.5), Andra Pradesh (99.2) and Chhattisgarh (99.1). The lowest ratio is 61.8 from Daman & Diu, followed by Dadra & Nagar Haveli (77.5), Chandigarh (81.8). Detail sex ratio is depicted in annexure II.

7. 1.Temporal sex ratio of Mizoram: Even during the primitive type of economy, Mizoram has a higher proportion of females over males as shown in table 1. The state recorded sex ratio higher than 100 till the 1961 census. The ratio was lower than 100 since 1971 and further deteriorates in 1981, but started to pick up from 1991. The year 1971 is remarkable as the sex ratio is reversed.

Table 1 (Sex ratio of Mizoram since 1901)

year	1901	1911	1921	1931	1941	1951	1961	1971	1981	1991	2001	2011
Sex ratio	111.3	111.9	110.9	110.1	106.8	104.0	100.8	94.5	91.9	92.1	93.5	97.5
	5	6	4	9	7	9	6	8	4	4	4	7

Source: Statistical Abstract of Mizoram – 2011

7.2. District wise sex ratio of Mizoram: There are 8 administrative districts in Mizoram and the district wise statistic is available from 1971 only, ie, the 'year of sex ratio reversal'. Out of 40 sex ratio, only 5 ratios show a ration higher than 100 (Table 2). The Chi-square test gives the calculated Chi-square of 2.902 which is significant for 24 df at all levels. From the analysis of district wise sex ratio, males are more in numbers than females in Mizoram. However, the objective is to analysis the sex ratio among Mizo tribe only. Therefore, from the sex ratio of Mizoram conclusion cannot be drawn regarding the sex ratio of Mizo tribe.

Table 2 (District wise sex ratio)

District /Year	1971	1981	1991	2001	2011
Mamit	87.8	86.7	89.1	89.6	92.4
Kolasib	98.4	90.1	91.8	90.8	95.6
Aizawl	95.4	92.1	91.9	95.2	100.9
Champhai	105.4	100.3	97.1	94.4	98.1
Serchhip	96.0	100.4	95.0	96.7	97.6
Lunglei	83.7	88.1	91.0	92.2	94.4
Lawngtlai	97.3	88.1	90.1	90.9	94.5
Saiha	102.9	93.2	92.6	95.0	97.8
Mizoram	94.58	91.94	92.14	93.54	97.57

Source: Director of Census Operations Mizoram

8. Mizo tribe and Christianity nexus: Mizoram is predominantly dominated by the Mizo tribe. 94.45% and 86.97% of the population is tribal and Christian respectively in 2001. Almost all Mizos (may be up to 99.99%) are Christian, and almost all the Christian are Mizo with an exception of a negligible size of Non-mizo Christians. The Christian statistics may be found in the Church statistic. The total members of 8 major Churches was 8,92,753 in 2011 which was 81.36% of the state's population. Therefore, from the principle of regression estimation, it is safe to use the population of the 8 major Churches as the Mizo tribe statistic.

Table No. 3 (Sex ratio of 8 major Churches)

Sl. No	Church	2010-11		2011-12	
		Male	Female	Male	Female
1	Presbyterian	234444	238396	239450	244983
2	Baptist	73390	72941	75640	75947
3	UPC(NE)	45964	45856	46601	47588
4	UPC(MZ)	20514	21044	22102	24362
5	ECM	19696	20687	19635	19849
6	Seventh Day	9172	10063	9887	10904
7	Salvation Army	28009	27782	28928	29234
8	LIKBK	12376	12419	12971	12692
	Total	443565	449188	455214	465559

Source: Statistical Abstract of Mizoram – 2011

Out of the 8 major churches, 7 churches have more female's members than males in 2011-12 while 5 churches have more female members in 2010-11. Females are more than males by 5,623 in 2010-11 and by 10,345 in 2011-12, which is an increase of 83.97% over the previous year.

A hypothesis is tested using Z- statistic for difference of proportion to see if the gender difference is significant or not. The calculated Z statistic is -10.78 which is significant at all levels. Therefore, it can be concluded that females are significantly more than males in the Church statistic.

9. FINDINGS:

- (i) The reason for decline in sex ratio is exogenous in nature. The Mizo National Front (MNF) initiated an independent movement from the Indian Administration on March 1, 1966 as a result of which the state experienced military insurgency for 20 years. Many Mizo youths were underground and excluded in the census 1971, due to closure of many schools many male youths went out of Mizoram to continue education which were excluded in the census again, and to counter the MNF cadre, many Indian paramilitary personnel entered Mizoram and these were included in Censuses. These resulted in the reversal of sex ratio in 1971. The year 1971 may be known as 'year of sex ratio reversal'.
- (ii) Considering Church Statistic as a representative of Mizo tribe, it is found that females are more than males among Mizo Tribe. Before the massive entry of central paramilitary forces in Mizoram, the sex ratio always cross 100 which is in conformity with the present sex composition of pure Mizo tribe Christian statistic.
- (iii) The regression line for 1981 – 2011 data fitted to cubic model is $Y = 91.51 + 1.022X - 0.83X^2 + 0.238X^3$ with $R^2 = 1$ (annexure IV). The

fitted regression model predicts that the sex ratio of Mizoram will be 105.62 in 2021 census, which will be one of the highest in India.

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Annexure – I

(Sex ratio of certain advanced countries)

Sl. No	Countries	2005	2010	2015
1	China	105.87	106.08	106.28
2	United States of America	97.74	97.90	98.28
3	UK and Northern Ireland	95.90	96.58	97.20
4	Germany	95.95	96.07	96.63
5	Japan	95.28	94.97	94.68

Source: <http://knoema.com/atlas/United-Kingdom-of-Great-Britain-and-Northern-Ireland/topics/Demographics/Population/Sex-ratio> as on 25th January 2016

Annexure II.

(Sex ratio of all states/UTs)

Ranking	States	Sex Ratio
1	Kerala	108.4
2	Pondicherry	103.8
3	Tamil Nadu	99.5
4	Andhra Pradesh	99.2
5	Chhattisgarh	99.1
6	Manipur	98.7
7	Meghalaya	98.6
8	Orissa	97.8
9	Mizoram	97.5
10	Himachal Pradesh	97.4
11	Goa	96.8
12	Karnataka	96.8
13	Uttar Pradesh	96.3
14	Tripura	96.1
15	Assam	95.4
16	Jharkhand	94.7
17	West Bengal	94.7
18	Lakshadweep	94.6
	INDIA	94.0
19	Nagaland	93.1
20	Madhya Pradesh	93.0
21	Rajasthan	92.6
22	Maharashtra	92.5
23	Arunachal Pradesh	92.0

24	Gujarat	91.8
25	Bihar	91.6
26	Uttarakhand	90.8
27	Punjab	89.3
28	Sikkim	88.9
29	Jammu & Kashmir	88.3
30	Andaman & Nicobar Islands	87.8
31	Haryana	87.7
32	NCT of Delhi	86.6
33	Chandigarh	81.8
34	Dadra & Nagar Haveli	77.5
35	Daman & Diu	61.8

Source: Statistical Abstract of Mizoram – 2012

Annexure III

(Sex ratio of Mizoram since 1901)

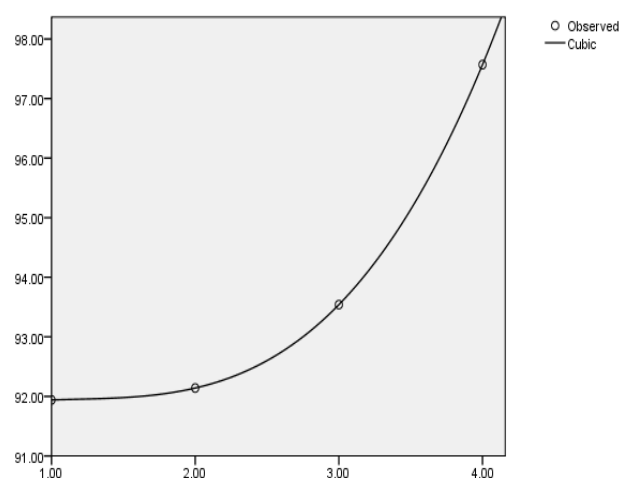
Sl. No	Year	Male	Female	Total	Sex Ratio
1	1901	39,004	43,430	82,434	111.35
2	1911	43,028	48,176	91,204	111.96
3	1921	46,652	51,754	98,406	110.94
4	1931	59,186	65,218	124,404	110.19
5	1941	73,855	78,931	152,786	106.87
6	1951	96,136	100,066	196,202	104.09
7	1961	132,465	133,598	266,063	100.86
8	1971	170,824	161,566	332,390	94.58
9	1981	257,239	236,518	493,757	91.94
10	1991	358,978	330,778	689,756	92.14
11	2001	459,109	429,464	888,573	93.54
12	2011	555,339	541,867	1,097,206	97.57

Source: Statistical Abstract of Mizoram – 2012

Annexure IV

(SPSS output for cubic model)

Coefficients					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig.
X	1.022	.000	.505	.	.
X ²	-.830	.000	-2.082	.	.
X ³	.238	.000	2.574	.	.
(Constant)	91.510	.000		.	.



Source: Generated by SPSS