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Pattern of social change and development among the tribal women in Assam, India

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Abstract

Social change, which is a multidimensional and complex process, occurs in all societies irrespective of their structure, compactness, integrity and stage of development. But for a change to be termed development, it must occur continuously in a desirable dimension and direction. These desired goals are specified by the values and needs of the society concerned. While change results in modification or alteration or replacement of the old by the new ones, development aims to achieve human well-being and enhance the quality of life. Like other societies, the tribal society of Assam, located in India's North East, is also witnessing the spurt of social change and development due to a variety of factors. Having diverse ethnic origins, representing racial stock from Proto-Austroloid to Mongoloid, with a distinctive socio-cultural system, own cultural ethos, an unique way of adaptation to different ecological niches and a distinctive social structure of their own, these tribal groups seem to respond to processes of social change and development quite differently compared to other communities. In this context the role of women is vital as women are an active agent of change. However, the pattern of social change and development is no way uniform throughout the state. It is different among different tribal groups and in varying spatial contexts. Besides, the effects of change also seem to assume different orders and pattern. It is in this backdrop, an attempt is made in this paper to understand the patterns of social change and development among the women of eight major tribal groups (Boro, Mising, Karbi, Rabha, Sonowal Kachari, Tiwa, Dimasa, and Deori) living here. The study is based on both primary and secondary data. While secondary data has been obtained from relevant Census of India publications for the period 1971-2001, necessary primary data have been collected through a field survey in the dominant pockets of eight major tribal groups (2009-2011). Further, to understand the pattern of social change and development among the women of the different tribal groups, quantitative techniques like Social Change Index, Composite Z Score and Principal Component Analysis have been used.

Keywords : Social change, Tribal women, Racial stock.

1. Introduction

With a long history of peopling Assam (Fig. 1) presents a diverse population composition and accommodates 3,308,570 tribal people accounting for 12.41 per cent of the state's total population as per 2001 Census. When the distribution of tribal population is concerned, it is observed that they are mainly concentrated in the hill and foothill regions, peripheral and low-lying areas of the state, and hence the overall distribution becomes quite uneven. Again, of the total tribal population in the state, 82.40 per cent live in the plains and the remaining 17.60 per cent in the hills. Assam is the home of as many as 23 tribal groups. They are Chakma (0.075 per cent), Dimasa (3.35 per cent), Garo (0.64 per cent), Hajong (0.008 per cent), Hmar (0.437 per cent), Lusai (0.09 per cent), Karbi (10.68 per cent), Naga (0.66 per cent), Deori (1.20 per cent), Pawi (0.027 per cent), Hojai (0.008 per cent), Synteng (0.01 per cent), Barman (0.48 per cent), Boro (40.09 per cent), Khasi-Jaintia (0.38 per cent), Kuki (0.85 per cent), Lakher (0.00033 per cent), Man (0.022 per cent), Sonowal-Kachari (7.01 per

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cent), Tiwa (5.02 per cent), Mising (17.80 per cent), Mech (0.27 per cent) and Rabha (8.14 per cent). Of these tribal groups eight groups have more than 1 per cent of population each, out of the total tribal population of Assam. They are Boro (40.09 per cent), Mising (17.80 per cent), Karbi (10.68 per cent), Rabha (8.14 per cent), Sonowal-Kachari (7.01 per cent), Tiwa (5.02 per cent), Dimasa (3.35 per cent) and Deori (1.20 per cent). These eight groups have been considered in the present study. These tribal groups together accounts for 93.29 per cent of the total tribal population in the state. It may be mentioned here that except the Karbis of Karbi Anglong and Dimasas of N. C. Hills, the rest are plain tribes occupying distinct areas of the state.

The tribal communities of the state maintain a classic example of 'unity in diversity' for the entire country. Unfortunately, in the recent times there has been a noticeable loosening of the bonds of fraternity resulting in the creation of smaller ethnic groups. Societies are also changing rapidly in recent years, and with social changes the degree and intensity of aspiration are also changing.

A scrutiny of the available studies on the pattern of social change clearly reveals that change is a vast, complicated and multifaceted process involved with innumerable causes and bearing consequences thereof. It is needless to say that social change occurs in all societies irrespective of their structure, compactness, integrity and stage of development, etc. But for a change to be termed development, it must occur continuously in a desirable and desired direction (Jena and Mahapatra, 2002). These desired goals are specified by the values and needs of the society concerned. And hence, development in comparison to change is more value loaded and ethical. While change results in modification or alteration or replacement of the old by new ones, development aims to achieve human well being and enhance the quality of life. It may be mentioned here that like other societies, the tribal society of Assam is also witnessing the spurt of social change and development due to a variety of factors. In this context the role of women is vital as women are an active agent of change. In addition, with the increasing tempo of development in the sphere of education and economic scenario the dimension and spirit of acculturation have been gaining, thereby boosting the entire process of social change and development among the tribal women. However, the pattern of social change is in no way uniform throughout the state. It is different among different tribal groups and also in spatial context. Besides, the effects of change also seem to assume different orders and patterns. It is in this backdrop, the present paper is designed to understand the general picture of socio-economic change and development among women of different tribal groups in the state.

2. Objectives

The main objectives of the study are :

a) to find out the level of social change and socio-economic development among tribal women as reflected through different demographic and socio-economic attributes in varied spatial contexts in Assam; and

b) to explore the dynamics of social change and development as reflected in the nature and extent of change among the women of different tribal groups.

3. Database and Methodology

The study is based on both primary and secondary data. The secondary data have been collected from the Census of India publications for the period 1971-2001, various official reports, records, documents and publications. Data for understanding the average condition of demographic, social and economic characteristics have been collected from district census hand-books. Further, in order to have detailed information on various aspects relating to demographic, economic, socio-cultural characteristics and cultural preservation and social change among tribal women household survey has been conducted with the help of a well-designed questionnaire, in the selected sample villages in the state with a view to understand the location

specific patterns and processes. Three villages – one each in the core, periphery and transition - in the most dominant areas inhabited by the eight major tribes have been selected for primary survey (Fig. 2). In each village thus selected a minimum of 20 per cent of households has been considered for survey through stratified random sampling method during 2009-2011. Further, to understand the pattern of social change and development among the women of the different tribal groups, quantitative techniques like Social Change Index, Composite Z Score and Principal Component Analysis have been used. Further more, cartographic representation of the tabulated data is made to give a clear exposition of the results.

4. Level of social change

Broadly speaking, the level of social-change is a complex, dynamic and multi-dimensional concept. It is generally viewed in relative context. Combining the individual values of change meaningfully towards getting the overall dimension of change is really a difficult task. This is more so due to considerably a large number of indicators involving contrasting nature of data and units of measurement.

Among the different measures of determining change index, although the range equalization method1 developed by UNDP for determination of Human Development Index is found to be highly useful both for socio-economic change and development (CSD, 2006), the meaningful consideration of minimum and maximum values for some attributes is quite difficult, if not impossible. As a solution to this problem a simple but meaningful change index is designed in the present context. Accordingly, the change index value for an attribute is obtained by simply dividing the value for current year by base year. The overall change index2 is, however, given by summation of the change index value for all the attributes (Kar and Sharma, 1997). In the case of negative indicator/attribute, i.e., fertility rate, child-woman ratio, gender differential in literacy, etc, the change index is derived by dividing the attribute value for base year by current year. In any case, higher the value of change index, higher will be the degree of overall socio-economic change.

The level of socio-economic change has been found out for the period 1971-1991 among different tribal groups based on a very few attributes like female literacy rate (X1), gender differential in literacy (X2), rural-urban differential in literacy (X3), sex ratio (X4) and proportion of urban tribal women (X5). But, the attributes considered to find out the variation in socio-economic change for the period 1991-2001 include proportion of population in the age group 0-6 (X1), sex ratio (X2), economic dependency ratio (X3), female literacy (X4), gender differential in literacy (X5), urban-rural differential in female literacy (X6), female work participation (X7), gender differential in work participation (X8), proportion of female non-agricultural work participation (X9) and proportion of urban women (X10) among the major tribal groups in Assam. On the other hand, for the purpose of finding out spatial variation in the level of socio-economic change among them during 1991-2001 eleven indicators like proportion of population in the age group 0-6 (X1), average household size (X2), sex ratio (X3), female literacy rate (X4), gender differential in literacy (X5), urban-rural differential in female literacy (X6), proportion of urban women (X7), female work participation (X8), gender differential in work participation (X9) and proportion of female non-agricultural work participation (X10) have been considered at district level.

5. Spatial disparity in the level of socio-economic change

The degree of socio-economic change during 1991-2001 among the tribal women in the state varies spatially depending on a host of interrelated factors including the prevailing level of socio-economic development among the tribal women, infrastructural development and socio-cultural

practices. Among the districts in the state, the values of composite change index show that the degree of socio-economic change is highest in Golaghat (16.63), followed by Bongaigaon (16.35) and lowest in Goalpara and Nagaon (11.27), followed by Nalbari (11.99) as against the state average of 13.23 (Fig. 3). Among other districts, Cachar, Kokrajhar, Dhemaji and Jorhat witness somewhat high degree of socio-economic change among the tribal women, while Tinsukia, N. C. Hills, Morigaon, Hailakandi, Dhubri, Kamrup, Darrang and Dibrugarh witness considerably low degree of change.

6. Inter-tribal disparity in the level of socio-economic change

So far the degree of socio-economic change among the tribal women in Assam during 1971-1991 based on a few indicators is considered, it is found that the degree of change varies quite significantly from one tribal group to another. It is noted that the change has been strikingly high among the Tiwas (26.59), followed by the Karbis (23.15) and lowest among the Boros (9.08), followed by the Sonowal-Kacharis (9.80) as against the state average for all tribal groups (10.46) (Table 1).

Table-1 : Level of Socio-Economic Change among the Tribal Women (Inter-Tribal Variation) in Assam, 1971-1991 and 1991-2001.

Tribal Groups	Change Index Value*		Change Index Value**
	1971-1991	1991-2001	(1991-2001)
1. Boro	9.08	9.14	14.35
2. Mising	16.33	6.37	14.12
3. Karbi	23.15	5.60	13.35
4. Rabha	19.13	5.19	12.47
5. Sonowal-Kachari	9.80	5.83	12.98
6. Tiwa	26.59	5.12	11.57
7. Dimasa	19.13	5.71	12.19
8. Deori	16.88	5.61	13.39
All Scheduled Tribes	**10.46**	**5.81**	**13.07**

*Based on five demographic and socio-economic variables.

**Based on ten demographic and socio-economic variables.

Source : Census of India, 1971, Assam, Part 2-A, General Population Tables and Part 2-C (i), Social and Cultural Tables; Census of India 1991, Series 4, Assam, Part 2-B, Primary Census Abstract; Census of India, 2001, Series 19, Assam, Tables A5-A9, Primary Census Abstract.

It is worth mentioning that the degree of socio-economic change has been somewhat high among the tribal groups having considerably low level of socio-economic development. It means that the tribal groups like the Sonowal-Kachari, Deori, Boro and Mising which had considerably better socio-economic condition witnessed somewhat slow pace of socio-economic change during 1971-1991. But during 1991-2001 the pace of socio-economic change based on the same attributes has witnessed a different picture. It may be mentioned in this context that unlike in the period 1971-1991, the degree of socio-economic change is found to be the highest among the Boros (9.14) and the lowest among the Tiwas (5.12) during 1991-2001 (Table 1). It means that the Boros who have earned considerable autonomy in political and socio-economic matters in recent time as a result of the formation of BTC are seen to undergo socio-economic change for their all round development.

The current picture of the degree of socio-economic change among the tribal women during 1991-2001 can be obtained from as many as ten attributes. It is worth mentioning in this respect that the inter-tribal variation in the pace of change has not been so significant. In fact, the change index value varies from 11.57 (Tiwa) to 14.35 (Boro) as against the state average of 13.07 (Table 1). It means the Boros along with other tribal groups like Misings, Deoris and Karbis have witnessed considerably high degree of socio-economic change in the recent time.

7. Level of socio-economic development among tribal women

The level of socio-economic development which is mainly based on the combined performance of a number of related individual attributes provides an overall picture of socio-economic status of population in an area or population group. Like degree of socio-economic change, level of socio-economic development is also a multi-dimensional concept which is viewed in relative context. It involves cumulative result of the standardized values for each selected indicator using some meaningful quantitative measure.

For the purpose of assessing the spatial variation in the level of socio-economic development among the tribal women in the state, eleven attributes have been considered at district level for 2001. These include proportion of population in the age group 0-6 (X1), average household size (X2), sex ratio (X3), female literacy rate (X4), urban-rural differential in female literacy (X5), gender differential in literacy (X6), proportion of female literates with educational level HSLC and above (X7), female work participation (X8), gender differential in work participation (X9), proportion of female non-agricultural workers (X10) and proportion of urban women (X11). Of these attributes, proportion of population in the age group 0-6, average household size, urban-rural differential in female literacy, gender differential in literacy, and gender differential in work participation, are negative attributes. On the other hand, altogether seventeen attributes have been considered for determination of inter-tribal variation in level of socio-economic development in the state. These include proportion of population in the age group 0-6 (X1), average household size (X2), sex ratio (X3), general marital fertility rate (X4), percentage of birth with 5th and above children to total birth (X5), annual growth rate of population (X6), age dependency ratio (X7), female literacy (X8), age-specific literacy for age group (10-19) (X9), urban-rural differential in female literacy (X10), proportion of female literates with educational level HSLC and above (X11), gender differential in literacy (X12), female work participation (X13), gender differential in work participation (X14), proportion of female non-agricultural workers (X15), economic dependency ratio (X16) and proportion of urban women (X17). Among these, proportion of population in the age group 0-6, average household size, general marital fertility rate, proportion of 5th child birth to total birth, annual growth rate of population, age dependency ratio, urban-rural differential in female literacy, gender differential in literacy, gender differential in work participation, and economic dependency ratio are the negative attributes of socio-economic development.

So far the determination of the level of socio-economic development is concerned, in the present study composite scores of socio-economic development have been computed by Z-Score method as done by Kumar (1993) and Kar (1996), and Principal Component Analysis (PCA) as done by Smith (1973), Nuna (1990), Kumar (1997) and Kar (2002) in their works. It needs to be mentioned here that the composite Z-Score3 gives equal weightage to each indicator. But the Principal Component Analysis (PCA) Composite Score4 involves differential weightage to the indicators called factor loadings. In the case of computation of composite Z-score involving different parameters, the signs of the scores of all the negative parameters, as already indicated, have been reversed in order to make all these parameters compatible with positive ones. On the

other hand, composite scores of socio-economic development of tribal women at district level and tribal group level have been found out by applying PCA. The analysis, for the purpose has been carried out in the computer using a software Statistical Package for Social Sciences (SPSS) for a data matrix of 11variables × 23 districts (spatial variation) and 17 variables × 8 tribal groups (inter-tribal variation).

8. Spatial disparity in the level of socio-economic development among the tribal women

As elsewhere in India, the level of socio-economic development among the tribal women in Assam varies spatially depending on historical factors, infrastructural base and prevailing socio-cultural practice in its different parts. The values of the composite Z-score as calculated at district level show that the level of socio-economic development of tribal women is highest in Dibrugarh district, followed by Cachar and Kamrup, while the lowest in Karimganj, followed by Hailakandi (Fig. 4). Within each district again, there would be significant disparities in socio-economic development depending on locational influence including urbanization, industrialization and dominant tribal group occupying the area.

9. Inter-tribal disparity in the level of socio-economic development of women

Depending on historical background, locational advantages and disadvantages, the degree of tribal and non-tribal interaction, and infrastructural base, the level of socio-economic development of women among major tribal groups in Assam presents a highly varied picture. The values of the composite Z-scores of altogether seventeen attributes clearly show that the level of development is the highest among the Sonowal-Kachari women, followed by the Deoris, and the lowest among the Karbis, followed by the Misings (Table 2 and Fig. 5). Among the other four tribal groups, the position is slightly better among the Rabha women as compared to the Boro, Tiwa and Dimasa women.

Table - 2 : Various Dimensions of Women's Development Among Different Tribal Groups in Assam, 2001

Tribal Groups	Composite Z-Scores of Women's Development			
	Demographic	Social	Economic	Overall
1. Boro	2.35	- 1.59	- 1.37	- 0.61
2. Mising	- 7.18	- 3.88	1.48	- 9.58
3. Karbi	- 8.30	- 5.18	0.30	- 13.18
4. Rabha	2.75	0.64	- 2.79	0.60
5. Sonowal-Kachari	9.18	8.29	0.69	18.16
6. Tiwa	1.18	- 0.59	- 2.90	- 2.31
7. Dimasa	- 5.04	- 2.98	0.21	- 7.81
8. Deori	4.00	5.30	4.39	13.69

Source : Calculated on the basis of data from Census of India, 2001.

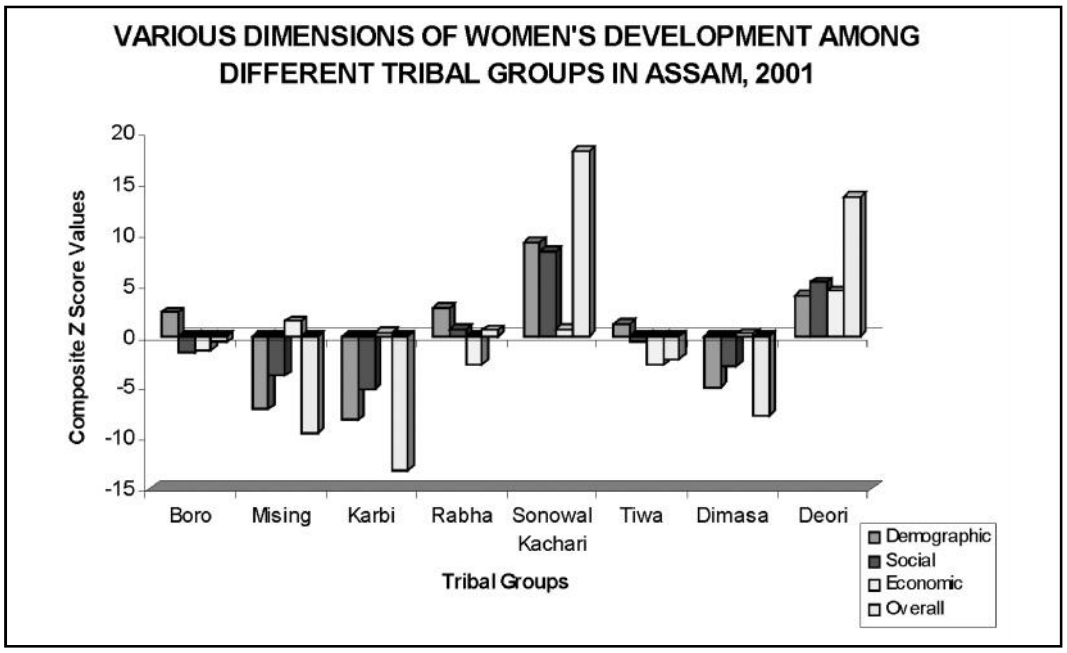

Fig. 5

So far PCA is concerned, 17 × 17 inter-variable correlation matrix reveals that the female literacy rate has a significant negative relationship with general marital fertility, proportion of fifth and above child birth, age dependency ratio, and proportion of population in age group 0-6. Similarly, female educational attainment of HSLC and above witnesses a significant positive relationship with female work participation, and a significant negative relationship with economic dependency ratio and general marital fertility rate. Besides, female work participation rate presents a significant negative relationship with economic dependency ratio and gender differential in work participation. However, female work participation unexpectedly influences the proportion of non-agricultural female workers negatively. It is thus clear that while female literacy contributes towards improvement of demographic character of tribal women, the educational attainment mainly enhances their economic condition in the state.

In the next step the principal components whose eigen values are more than one have been extracted including the factor loadings for all the variables applying unrotated regression method (Table 3). It is found that altogether the first three principal components explain 91.59 per cent of the total variation in the parameters of demographic and socio-economic development of tribal women. However, for present analysis, the components I and II which explain 50.07 per cent and 27.79 per cent respectively have only been considered here. Accordingly, the composite scores for eight major tribal groups have been found out for understanding the prevailing inter-tribal variation in demographic and socio-economic development of women in the state.

10. First principal component

This component which is centred around general marital fertility rate in association with proportion of fifth child birth, age dependency ratio and proportion of children in the age group 0-6 has a negative relationship with socio-economic development of tribal women. It is observed that prevalence of high general marital fertility rate and high proportion of fifth child birth with consequent high proportion of children in the age group 0-6, population growth rate and

Table - 3 : Unrotated Factor Matrix for the variables selected (For Major Tribal Groups)

Variables*	Factor Loadings for Different Components		
	Comp 1	Comp 2	Comp 3
Population in the age group 0-6 (X1)	0.903	- 0.225	0.0077
Average Household size (X2)	0.561	- 0.403	- 0.694
Sex Ratio (X3)	- 0.651	- 0.006	- 0.606
General Marital Fertility Rate (X4)	0.959	0.160	0.128
Percentage of birth with 5th & above Children to Total birth in the year (X5)	0.965	- 0.013	0.103
Annual Growth Rate of Population (%) (X6)	0.682	0.210	0.476
Dependency Ratio (%) (X7)	0.972	- 0.146	- 0.008
Female Literacy Rate (X8)	- 0.927	- 0.254	0.235
Age-Specific Female Literacy Rate in Age 10-19 (X9)	- 0.943	- 0.185	0.205
Urban-Rural Differential in Female Literacy (X10)	0.817	- 0.263	0.258
Proportion Female Literates with Education HSLC and above (X11)	- 0.548	- 0.761	0.267
Gender Differential in Literacy (X12)	0.888	- 0.028	- 0.375
Female Work Participation (X13)	- 0.088	- 0.987	0.007
Gender Differential in Work Participation (X14)	- 0.264	0.935	- 0.183
Percentage of Female Non-Agricultural Workers (X15)	- 0.299	0.887	0.004
Economic Dependency Ratio among women (X16)	0.097	0.994	- 0.004
Percentage of Urban Women (X17)	0.125	0.233	0.895
Eigen Value	8.512	4.725	2.332
Percentage of Variance	50.073	27.793	13.700
Cumulative Percentage of Variance	50.073	77.866	91.586

Source : Worked out in Computer using SPSS on the basis of data from Census of India, 2001.

age dependency ratio has been explained by expected negative influence of female literacy rate and female educational attainment, and positive influence of gender and urban-rural differential in literacy. It means, the general marital fertility rate and other associated demographic attributes having largely influenced by female literacy and educational attainment which form the fertility and educational dimension of demographic and social development of women. Hence, this component may be called as the index of socio-demographic development of tribal women. As this component shows a negative relationship with socio-demographic development level, the higher the scores of the component, lower is the level of development and vice-versa.

The composite scores of the first component show that among the eight major tribal groups in Assam Sonowal-Kachari women occupy the highest position and the Karbi women the lowest position. Among the other groups, the Deoris, Rabhas, and Boros occupy considerably better position as compared to the Tiwas, Dimasas and Misings (Table 4 and Fig. 6). Such a disparity in respect of women's socio-demographic development among the different tribal groups is largely associated with historical legacy, prevailing socio-cultural practices, degree of interaction with other population groups and the overall process of development.

Table - 4 : PCA Composite Scores of Tribal Women's Development among different Tribal Groups in Assam, 2001.

Tribal Groups	Composite Scores of PCA	
	Component 1	Component 2
1. Boro	– 0.221	0.573
2. Mising	1.069	– 1.482
3. Karbi	1.338	0.198
4. Rabha	– 0.425	0.970
5. Sonowal-Kachari	– 1.641	0.012
6. Tiwa	– 0.071	0.382
7. Dimasa	0.731	0.926
8. Deori	– 0.778	– 1.579

Source : Worked out in Computer using SPSS on the basis of data from Census of India, 2001

11. Second principal component

This component is mainly centred around some contrasting economic variables like female non-agricultural work participation, economic dependency ratio and gender differential in work participation with somewhat complex association with some other variables including female educational attainment and female work participation (Table 4). It is found that rise in female non-agricultural work participation combined with rise in gender differential in work participation is associated with decline in female work participation and female educational attainment. It means that female educational attainment and female literacy do not have much contribution towards increase of non-agricultural work participation among all the tribal groups in the state. Moreover, female work participation is found to be negatively associated with female non-agricultural work participation. It may be mentioned here that this component is not explaining the demographic character at all. Hence, this component may thus be termed as the index of economic development of tribal women.

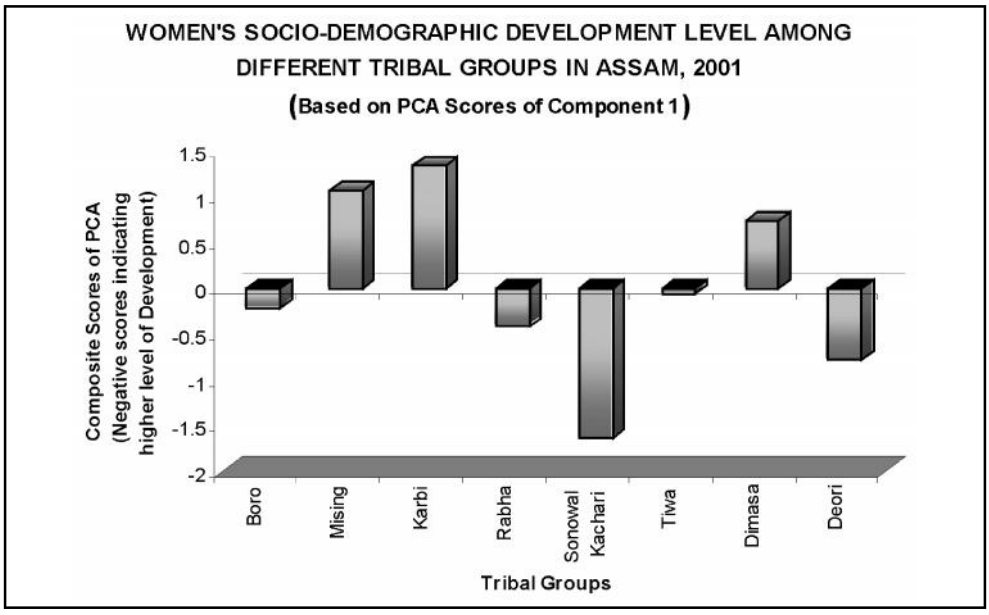

Fig. 6

Unlike the first principal component, the composite scores of this component reveal that among all the major tribal groups in Assam, the Rabha women occupy the highest position in economic development and the Deori women the lowest. Among the other tribal groups, the Dimasas and the Boros witness a considerably better position; the Tiwas, Karbis and Sonowal-Kacharis a medium position; and the Misings a discouraging position (Table 4 and Fig. 7). It means the level of economic development which largely depends on resource availability and locational advantages is not necessarily positively associated with socio-demographic dimensions of development. Hence, the tribal groups, like the Sonowal-Kachari and Deori witnessing considerably encouraging socio-demographic position among women have not shown equally high level of economic development. But the real advancement rests on their balanced development in all the sectors. This is found to be missing among the tribal women of Assam.

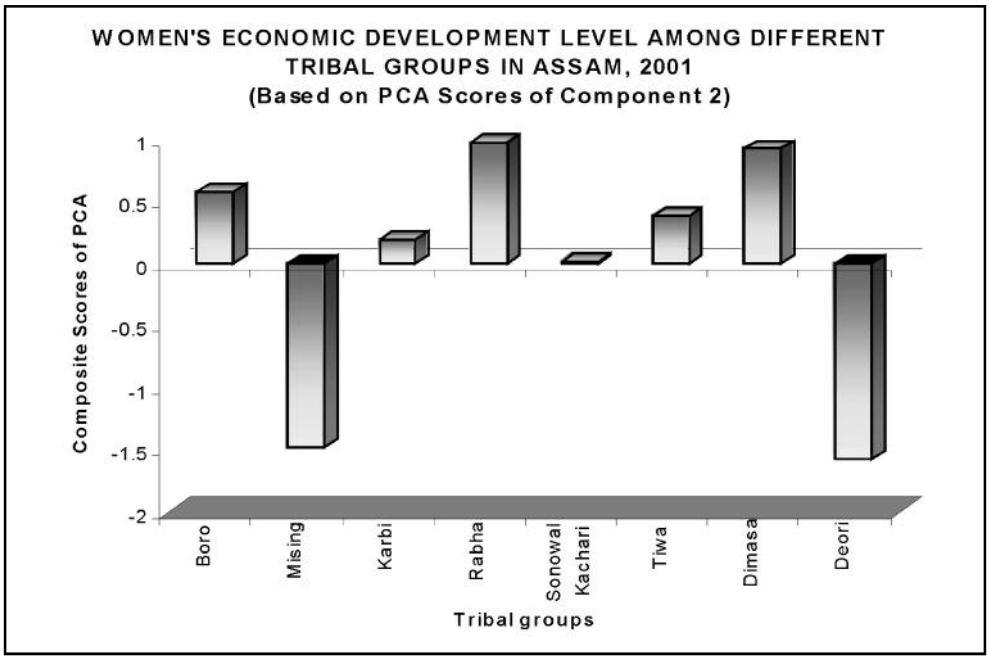

Fig. 7

The above analysis of the levels of socio-economic development of women based on quite a large number of demographic, social and economic attributes presents a highly varied and complex pattern among different tribal groups in the state. In fact, in view of the highly varied contributions of different attributes, the values of composite scores so calculated do not give a clear picture of socio-economic development level among the tribal women in the state. In consideration of such inherent limitations of multi-variate analysis, women's development level is calculated merely based on composite Z-scores of three attributes, viz. sex ratio, female literacy and proportion of female non-agricultural workers among the eight different tribal groups in the state for 1991 and 2001 (Table 5). Accordingly, the Sonowal-Kacharis occupy the highest position and the Misings occupy the lowest position. Among the other tribal groups, the position of women is slightly better among the Boros and Rabhas; average among the Deoris, Tiwas and Dimasas; and discouraging among the Karbis both in 1991 and 2001.

Table - 5 : Women's Development Among Different Tribal Groups in Assam, 1991 and 2001

Tribal Groups	Composite Z-Score*		Composite Z-Score** (2001)
	1991	2001	
1. Boro	1.17	1.73	1.46
2. Mising	-3.39	-3.35	-2.76
3. Karbi	-3.08	-2.47	-3.66
4. Rabha	1.06	1.61	0.61
5. Sonowal-Kachari	3.94	2.64	3.83
6. Tiwa	0.94	0.62	0.005
7. Dimasa	-0.55	-0.06	-2.00
8. Deori	-0.09	0.76	2.52

* Based on Sex Ratio, Female Literacy and Proportion of Female Non-Agricultural Workers.

** Based on Sex Ratio, Female Literacy, Proportion of Female Non-Agricultural Workers and Proportion of Female Literates with Educational Level HSLC and above.

Source : Calculated on the basis of data from Census of India, 1991 and 2001

12. Inter tribal disparity in living condition associated with socio-economic well-being of women

Besides the level of socio-economic development of women, as discussed above, the living condition which is associated with socio-economic well-being of women witness a significant inter-tribal variation in Assam.

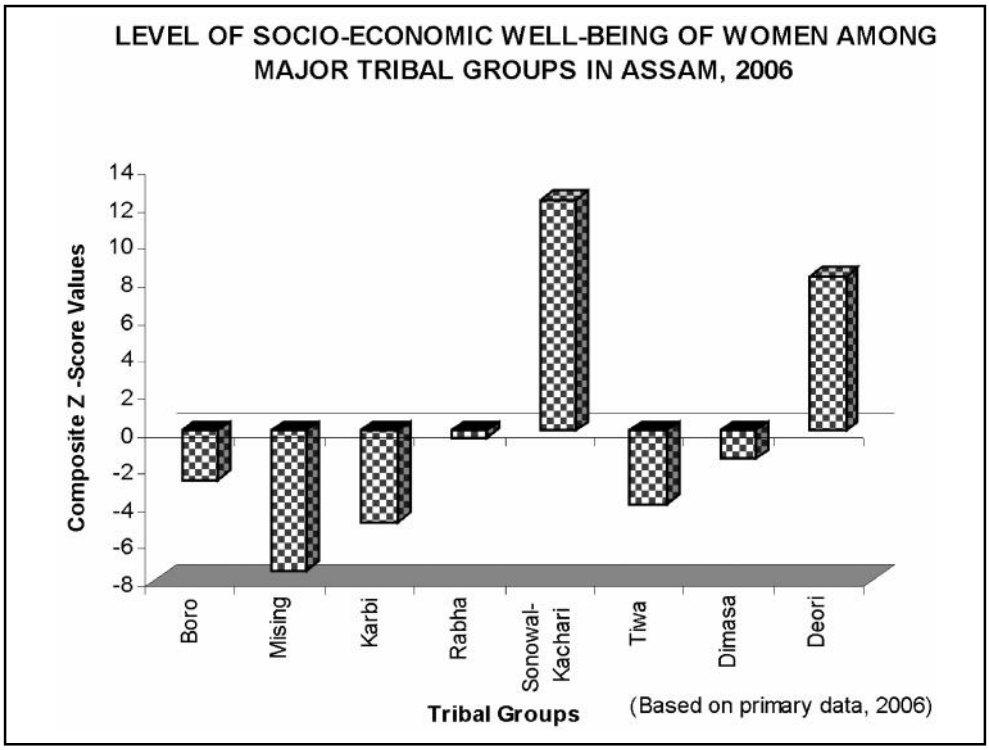

Fig. 8

The values of composite Z-scores based on the parameters like proportion of expenditure in education and dress, proportion of households with modern gadgets, proportion of large sized house, proportion of pucca houses, proportion of nuclear family, proportion of house with tube-well, proportion of house with LPG, and proportion of house with sanitary latrine reveal that the Sonowal-Kacharis occupy the highest position (12.30) and the Misings the lowest position (-7.45) in the living condition among all the tribal groups. Among the other tribal groups, Deoris occupy a high position; the Rabhas, Dimasas and the Boros a medium position; and the Tiwas and Karbis a low position in this respect (Fig. 8).

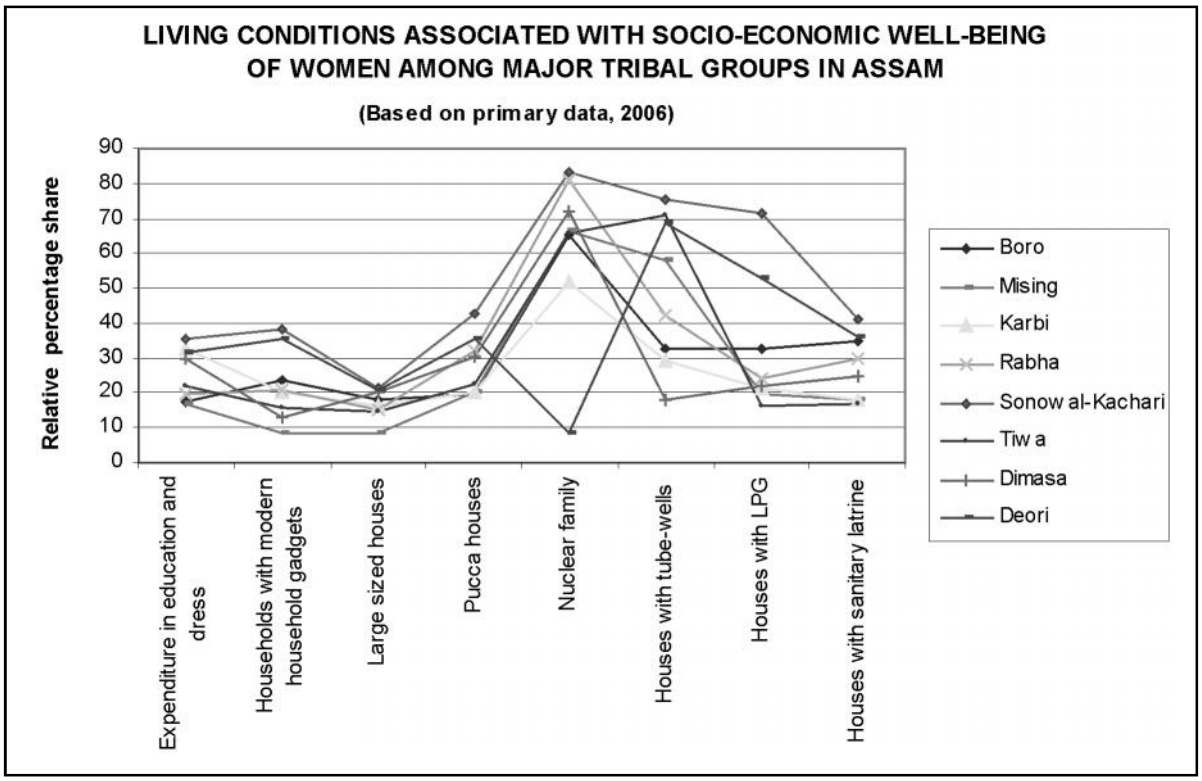

Fig. 9

It is worth mentioning that depending on historical background and socio-cultural practices, as expected the picture of living condition among the tribal groups is almost similar with the level of socio-economic development among them (Fig. 9). Hence, improvement in the socio-economic development among the tribal women has contributed to the betterment of their living condition.

13. Conclusion

At the end, it can be stated that the degree of social-change and socio-economic development among the tribal women of Assam varies spatially depending on historical factors, infrastructural base, and prevailing socio-cultural practice in its different parts. From the above analysis it is found that the level of development is highest among the Sonowal Kachari women followed by the Deoris, and the lowest among the Karbis, followed by the Misings. Moreover, the changes observed in the tribal societies of the state indicate that the society is in a mid way between tradition and modernity. While tradition prevails in many respects, modernity is fast penetrating into the life of the people.

Notes

1. Composite Index (Range Equalisation Method)

   Cj = Weighted average of $\sum \frac{(X_{ij} - X_{ij}\,\min)}{(X_{ij}\,\max - X_{ij}\,\min)}$

   Where,

   X_{ij}max and X_{ij}min are the maximum and minimum values for i^{th} indicator in the It j^{th} spatial unit respectively, and X_{ij} is the value for i^{th} indicator in the j^{th} spatial unit.

   Council for Social Development (CSD) (2006) : *India : Social Development Report,* Oxford University Press, New Delhi, pp. 216-224.

2. Social Change Index

   $$CIj = \sum_{i=0}^{n} \frac{X_{ij}(t_2)}{X_{ij}(t_1)}$$

   Where,

   $Xij(t_i)$ and $Xij(t_2)$ are the values of the i^{th} attribute for j^{th} area for the base year (t_i) and final year (t_2) respectively.

   Kar, B. K. and Sharma, H. N. (1997) : "Socio-Economic Transformation in the Tribal Society of Assam", *North Eastern Geographer,* Vol. 28 (1&2), pp. 32-41.

3. Composite Z-Score

   $$Zj = \sum_{i=0}^{n} \frac{X_{ij} - \overline{X_i}}{\sigma_i}$$

   Where,

   X_{ij} is the value of the i^{th} attribute for j^{th} area and σ_i respectively are the mean and standard deviation of the i^{th} attribute for all areas.

4. PCA Composite Score may be computed in the following manner,

   $$F_{jk} = \sum_{i=1}^{m} l_{ik} Z_{ij}$$

   where,

   F_{jk} = Factor Scores for spatial unit j on factor k,
   i = One of the m original Variables,
   l_{ik} = Factor Loading 'k' on variables I, and
   Z_{ij} = Original observations in standard form for variable i and spatial unit j.

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