Educational Administration: Theory and Practice
2022, 28(3), 337 - 347
ISSN: 2148-2403
https://kuey.net/

Research Article

Dimension of Development and Social Wellbeing Among The Tribes of Manbazar-II Block in West Bengal, India

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Citation: Dr. Sumanta Kumar Baskey,(2022) Dimension Of Development And Social Wellbeing Among The Tribes Of Manbazar-II Block In West Bengal, India, *Educational Administration: Theory and Practice*, 28*(3)* 337 - 347
Doi: 10.53555/kuey.v28i03.7147

ARTICLE INFO
Received- 05/05/2022
Revised- 08/06/2022
Accepted- 12/07/2022

ABSTRACT

The development level in Manbazar-II block, the study area, remains unsatisfactory compared to the current standards. This assessment is based on an analysis of several variables, including economic status, access to basic needs, health status, and communication infrastructure. A composite index was created using principal component analysis and other statistical methods to evaluate these factors. The findings reveal significant disparities in development levels among the tribal communities in the area. If awareness about basic needs, health, communication, and economic improvement is increased among the tribes, progress in development could be achieved more uniformly.

Keywords: Tribal development, Social wellbeing, Economic status, Common minimum needs, Health, Communication

1.1. Introduction

Most of tribal India resides in forested hills and naturally isolated regions, often referred to by various names that reflect their connection to the land. These names include Vanyajati (castes of the forest), Vanavasi (inhabitants of the forest), Pahari (hill dwellers), Adimjati (original communities or primitive people), Adivasi (first settlers), Janjati (folk people), and Anusuchit Janjati (scheduled tribe). Each term highlights a unique aspect of their identity and way of life.

The study focuses on five tribes: Bhumij, Mahali, Orang, Sabar, and Santhal. The Bhumij tribe, primarily residing in West Bengal, Odisha, and Jharkhand, speak the Mundari language from the Austro-Asiatic family or the predominant local language, such as Bengali. The name Bhumij means "born from the soil," and members of the Bhumij Kols have adopted the surname "Sing." In 2022, the study area recorded approximately 12,582 Bhumij individuals. The Mahali tribe, recognized as a scheduled tribe in West Bengal and Jharkhand, traditionally sustains itself by crafting and selling bamboo articles. A distinctive feature of the Mahali people is the tattooing of their names on their hands. The study area reported about 8,343 Mahali individuals in 2022.

The Sabar people, also known as Shabar and Saora, are one of the scheduled tribes in India, predominantly residing in West Bengal, Jharkhand, and Odisha. Historically, under the British Raj, they were categorized as a 'criminal tribe' under the Criminal Tribes Act of 1871, a label that still brings social stigma and ostracism today. The Sabar tribe, mentioned in the Hindu epic Mahabharata and sometimes referred to as Kariya in certain areas, are traditionally forest dwellers. They are not accustomed to agriculture and depend on the forest for their livelihood. In 2022, approximately 7,163 Sabar individuals were recorded in the Manbazar-II block.

Santals are primarily found in the states of West Bengal, Bihar, Odisha, Jharkhand, and Assam, and they belong to the pre-Aryan period. Known as formidable fighters during British rule in India, they revolted against Lord Cornwallis's permanent settlement in 1855. Notably, in the late 1850s, Santal hero Sidhu mobilized around 10,000 Santals to establish a parallel government against British rule. Earlier, in 1789, Bada Tilka Majhi became the first Santal leader to take up arms against the British.

Santals speak Santhali, part of the Austro-Asiatic language family, and have their own script called 'Olchiki,' developed by Dr. Raghunath Murmu in 1925. Besides Santhali, they also speak Bengali, Oriya, and Hindi. Their livelihood is closely tied to the forests they inhabit, relying on trees and plants for their basic needs.

Additionally, they engage in hunting, fishing, and cultivation. In 2022, about 14,035 Santals were recorded in the study area. The tribal communities live in conditions characterized by poor economic status, inadequate access to basic needs, poor health, and limited communication. This paper focuses on the detailed study of tribal development and the social well-being of these communities.

2. Literature Review

Chandra (1994) studied the relationship between forests and the tribal economy, focusing on rights and concessions, land use, initiatives for economic improvement through forests, and obstacles to economic progress among tribals. Singh (1984) explored various approaches and studies on tribal development in India, including community development programs, economic development, and the advancement of health, hygiene, housing, and social development, particularly in the Bishnupur block of Bihar. Singh (1994) examined the Indian tribal economy in Orissa and Bihar, highlighting aspects such as the primary sector economy, eco-cultivation, central micro systems and tribal micro systems, consumerist tendencies, tribal economic sub-systems, and issues related to land degradation.

The Imperial Gazetteer of India (1911) defines a tribe as a group of families with a common name, dialect, and territory, typically not endogamous, though they may have been originally. According to the Indian Constitution, tribes recognized under Article 342 are designated as Scheduled Tribes. Mishra (2007) noted that many socio-economic initiatives to uplift tribals were introduced during British rule, but these did not achieve the expected outcomes. Ramotra (2008) emphasized that development from a geographical perspective involves new spatial relationships within scheduled tribe communities and between them and their environment, transforming their economic and social structures.

Traditionally, "development" referred to a national economy's ability to generate and sustain annual GNP growth, as Todaro (1985) explained. Despite achieving growth targets in the 1950s and 1960s, many Third World countries, including India, saw little improvement in living standards. Seers (1969) redefined economic development in the 1970s to include eliminating poverty, inequality, unemployment, disease, and illiteracy. Todaro (1985) later described development as a multi-dimensional process involving significant changes in social structures, attitudes, institutions, economic growth, inequality reduction, and poverty eradication, ultimately aiming for a better quality of life.

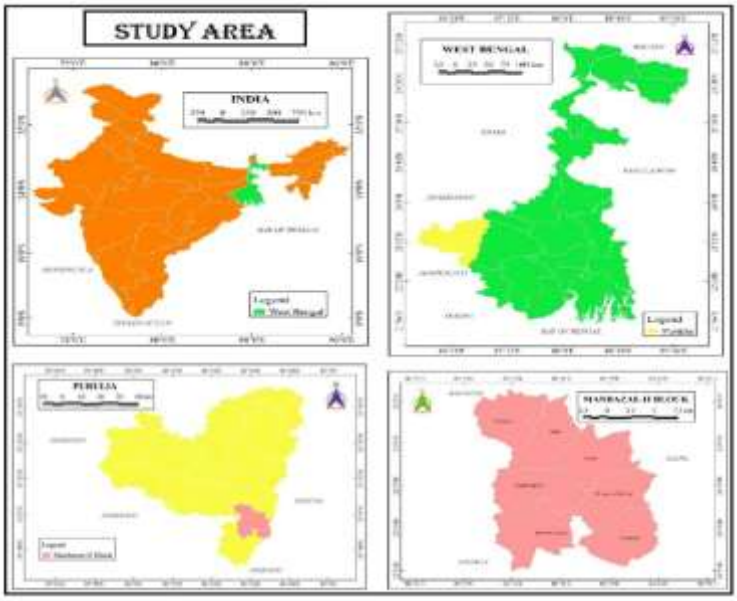
Sharma (1984) discussed the importance of tribal participation in industrial and mineral development, stressing the need for dynamic involvement to strengthen their socio-economic base. Sharma and Prasad (1982) reviewed tribal development planning, critiquing British policies and post-independence strategies for their shortcomings. Narayan et al. (1983) highlighted that tribal development strategies often overlook social structure stagnation. Singh (1993) observed that development efforts among tribals have not significantly improved their material conditions, often neglecting local resources and tribal needs. Haimendorf (1984) noted the Government of India's commitment to modernization and industrialization for improving living standards. Singh (1988) argued that a lack of idea exchange hindered technological and socio-economic progress in tribal development.

Das et al. (2015) studied unmet contraceptive needs among tribal women in Purulia district, West Bengal, focusing on prevalence, causes, and socio-demographic factors. Patra et al. (2021) conducted a comparative study on tribal education development in India, particularly in Purulia district, examining educational backwardness and policy recommendations. Pal et al. (2015) analyzed the socio-economic status of selected tribes in West Bengal. Nagda (2004) reported extremely low literacy rates among Rajasthan tribals, affecting their health, a positive relationship also noted by Joung et al. (1995).

Roy and Jana (2015) examined workforce distribution and occupational specialization in Purulia district. Satpati and Sharma (2021) investigated livelihood options and security among tribals in West Bengal's southwestern plateau and highland region. Ghosh et al. (2015) conducted a spatial analysis of healthcare facilities in Purulia district. Mandal and Haldar (2018) explored the influence of forest density on indigenous population concentration in Purulia. Sarkar et al. (2011) created a natural resource inventory for Manbazar block, focusing on sustainable agricultural development. Baskey and Jana (2022) studied tribal livelihood development in Manbazar-II Block, Purulia District, West Bengal.

3. Materials and Methods

3.1.Study Area



Manbazar-II Block, the study area depicted in Figure 1, is located in the Purulia District of West Bengal, India, situated in the eastern plateau region of the country. The block extends from 22°50'00"N to 23°3'10"N latitude and 86°30'55"E to 86°42'55"E longitude. Known for its tropical location, extreme climate, and undulating topography, this region is an extension of the Chhotanagpur plateau. It is home to several tribal communities, including the Bhumij, Mahali, Sabar, and Santal, who maintain a rich heritage of ethnic culture and practices. The temperature in Manbazar-II Block can soar up to 45°C during the intense summer months and drop to as low as 7°C in winter. The area receives an average annual rainfall of 1300 mm. Due to the challenging climate and terrain, the tribal residents of the rural villages rely heavily on field and fores

3.2. Objectives of the Study

The primary objectives of the study are:

- To evaluate the current status of tribal development.
- To assess the social well-being of the tribal communities.

3.3 Database and methodology

The research methods utilized in this study include literature review, data collection from both primary and secondary sources, and statistical analysis. Secondary data were sourced from various publications and websites, including:

(i) District Statistical Handbook, Purulia: 2009 (ii) West Bengal Primary Education Programme Authority (http://www.opepa.in) (iii) West Bengal Government Portal (http://www.westbengal.gov.in) (iv) Department of School & Mass Education (http://www.westbengal.gov.in/schooleducation) (v) ST & SC Development, Minorities & Backward Classes Welfare Department (http://www.stscwestbengal.gov.in) (vi) Census of India: 2011 (http://censusindia.gov.in/) (vii) Wikipedia (http://en.wikipedia.org/wiki/Purulia_district) (viii) Official website of Manbazar-II block (http://manbazer.nic.in/tribe.htm) (ix) West Bengal Tribal Empowerment & Livelihood Programme (http://www.otelp.org/) (x) District Rural Development Authority (DRDA), Purulia.

Data analysis was performed using statistical methods such as principal component analysis, along with UNDP developmental indices, including the Human Development Index, Gender-related Development Index, Physical Quality of Life Index, and Quality of Life Index.

4. Result and Discussion

4.1 Status of tribal development

The level of tribal development has been analyzed by assessing various factors including economic development, the availability of basic needs, health status, and communication infrastructure.

4.1.1 Level of economic development

To measure the level of economic development, the following parameters were selected: per capita GDP (PCGDP), per capita consumption (PCCSUMP), percentage above the poverty line (APL), employment rate (EMPLOYMENT), and percentage of households with no assets (NO ASSETS).

The economic status of any region can be gauged through these indicators. Among the tribes in the study area, the Per capita GDP for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 887.62, 822.49, 812.73, 754.24, and 845.84 respectively. This indicates that the Bhumij tribe has the highest GDP among the tribes. The Per capita consumption for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 89.13, 82.71, 79.55, 75.22, and 86.19 respectively, with the Santal tribe showing the highest per capita consumption. The percentage of households above the poverty line (APL) for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 6.70%, 5.42%, 4.13%, 4.56%, and 6.15% respectively. Here, the Bhumij tribe has the highest percentage of households above the poverty line.

The employment rate for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 6.76%, 5.27%, 3.45%, 4.04%, and 6.08% respectively, with the Bhumij tribe having the highest employment rate. Lastly, the percentage of households with no assets for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 62.62%, 69.95%, 66.35%, 72.63%, and 69.30% respectively. The Bhumij tribe has the lowest percentage of households with no assets among the tribes (Table 1).

Table no.1: Economic Status

Tribes	PCGDP	PCCSUMP	APL	EMPLOYMENT	NO ASSEST
Bhumij	887.62	89.13	6.70	6.76	62.62
Mahali	822.49	82.71	5.42	5.27	69.95
Orang	812.73	79.55	4.13	3.45	66.35
Sabar	754.24	75.22	4.56	4.04	72.63
Santal	845.84	86.19	6.15	6.08	69.30
Source: Primary survey and data computed by authors, 2022					

4.1.2 Common minimum needs

The parameters used to assess common minimum needs include literacy rate (LRR), percentage of households with safe drinking water (PHSDR), percentage of households with electricity (PHEC), percentage of households with pucca houses (PHELPH), and percentage of households with bank accounts (PHBA).

These indicators help simplify the understanding of households meeting common minimum needs. Among the tribes in the study area, the literacy rates for Bhumij, Mahali, Orang, Sabar, and Santal are 40.98%, 38.88%, 38.40%, 34.51%, and 40.92%, respectively, with the Bhumij tribe having the highest literacy rate. The percentage of households with safe drinking water facilities for Bhumij, Mahali, Orang, Sabar, and Santal is 15.43%, 13.37%, 7.36%, 11.93%, and 14.08%, respectively. The Bhumij tribe has the highest percentage of households with safe drinking water.

Households with electricity are as follows: Bhumij, Mahali, Orang, Sabar, and Santal have 0.20%, 0.20%, 0.60%, 0.20%, and 0.20%, respectively, with the Orang tribe having the highest percentage of households with electricity. The percentage of households with pucca houses for Bhumij, Mahali, Orang, Sabar, and Santal is 0.34%, 0.14%, 0.12%, 0.70%, and 0.23%, respectively, with the Sabar tribe having the highest percentage of pucca houses. Finally, the percentage of households with bank accounts for Bhumij, Mahali, Orang, Sabar, and Santal is 76.74%, 70.86%, 72.93%, 71.45%, and 74.62%, respectively, with the Bhumij tribe having the highest percentage of households with bank accounts (Table 2).

Table 2: Common Minimum Needs.

Tribes	LRR	PHSDR	PHEC	PHLPH	PHBA
Bhumij	40.98	15.43	0.2	0.34	76.74
Mahali	38.88	13.37	0.2	0.14	70.86
Orang	38.40	7.36	0.6	0.12	72.93
Sabar	34.51	11.93	0.2	0.70	71.45
Santal	40.92	14.08	0.2	0.23	74.62
Source: Primary survey and data computed by authors, 2022					

4.1.3 Health status

Health status among the tribes can be assessed through various parameters, including life expectancy, infant mortality rate, neo-natal mortality rate, percentage of people not morbid, maternal mortality rate, and period of prevalence.

In the study area, the life expectancy of the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 56, 49, 50, 46, and 51 years, respectively. The Bhumij tribe has the highest life expectancy.

The infant mortality rate (IMR) for these tribes is 3.47, 3.27, 2.06, 3.09, and 2.68, respectively. The Bhumij tribe has the highest IMR. The neo-natal mortality rate (NNMR) for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 0.63, 0.56, 0.64, 0.64, and 0.55, respectively, with the Orang and Sabar tribes having the highest NNMR. The percentage of people not morbid (PNMORBI) is 86.54%, 87.19%, 83.57%, 83.52%, and 83.52%,

respectively, for the Bhumij, Mahali, Orang, Sabar, and Santal tribes, with the Mahali tribe having the highest percentage of people not morbid.
The maternal mortality rate (MMR) for the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 1.02, 1.15, 1.13, 1.72, and 1.23, respectively, with the Sabar tribe having the highest MMR.
The period of prevalence (POPREV) for these tribes is 1.52, 1.88, 1.77, 1.80, and 1.30, respectively, with the Sabar tribe having the highest period of prevalence (Table 3).

Table 3: Health and Health-Related Services

Tribes	EXP	IMR	NNMR	PNMORBI	MMR	POPREV
Bhumij	56	3.47	0.63	86.54	1.02	1.52
Mahali	46	3.27	0.56	87.19	1.15	1.88
Orang	50	2.06	0.64	83.71	1.13	1.77
Sabar	46	3.09	0.64	83.57	1.72	1.80
Santal	51	2.68	0.55	83.52	1.23	1.30
Source: Primary survey and data computed by authors, 2022						

4.1.4 Communication

Access to communication among the tribal communities is assessed through various indicators: the percentage of households with mobile phones, the percentage of people watching TV news at least once a week, the percentage of ever-married women watching TV news at least once a week, the percentage of people reading newspapers at least once a week, the percentage of ever-married women reading newspapers at least once a week, and the percentage of people who have heard the radio.
In the study area, the percentage of households with mobile phones among the Bhumij, Mahali, Orang, Sabar, and Santal tribes is 54.20%, 52.23%, 51.43%, 52.08%, and 53.28% respectively, with the Bhumij tribe having the highest percentage. The percentage of people watching TV news at least once a week is 29.40% for the Bhumij, 25.46% for the Mahali, 22.35% for the Orang, 19.36% for the Sabar, and 26.40% for the Santal tribes, with the Bhumij tribe having the highest percentage. Among ever-married women, the percentage watching TV news at least once a week is 11.36% for the Bhumij, 10.13% for the Mahali, 9.47% for the Orang, 8.32% for the Sabar, and 10.74% for the Santal tribes, with the Bhumij tribe again having the highest percentage.
The percentage of people reading newspapers at least once a week is 12.41% for the Bhumij, 11.41% for the Mahali, 11.52% for the Orang, 10.11% for the Sabar, and 12.71% for the Santal tribes, with the Santal tribe having the highest percentage. Among ever-married women, the percentage reading newspapers at least once a week is 5.41% for the Bhumij, 3.27% for the Mahali, 3.75% for the Orang, 2.48% for the Sabar, and 5.27% for the Santal tribes, with the Bhumij tribe having the highest percentage. The percentage of people who have heard the radio is 24.28% for the Bhumij, 22.74% for the Mahali, 18.69% for the Orang, 20.09% for the Sabar, and 24.40% for the Santal tribes, with the Santal tribe having the highest percentage (Table 4).

Table 4: Communication

Tribes	PHONE	TV1	TV2	NEWS PAPER1	NEWS PAPER2	RADIO
Bhumij	54.20	29.40	11.36	12.41	5.41	24.28
Mahali	52.23	25.46	10.13	11.41	3.27	22.74
Orang	51.43	22.35	9.47	11.52	3.75	18.69
Sabar	52.08	19.36	8.32	10.11	2.48	20.09
Santal	53.28	26.40	10.74	12.71	5.27	24.40
Source: Primary survey and data computed by authors, 2022						

5. Overall Level of tribal development

To determine the overall level of tribal development in the study area (Table 9), principal component analysis (PCA) has been utilized. This method considers the mean values of selected components such as economic development, availability of basic needs, health status, and quality of communication.

5.1 Overall economic development

In the economic status analysis (Table 9), the mean values for the tribal data are as follows: Per Capita GDP (PCGDP) is 827.57, Per Capita Consumption (PCCSUMP) is 83.14, percentage of Above Poverty Line (APL) is 5.57, Employment Rate (EMPLOYMENT) is 5.71, and percentage of households with No Assets (NO ASSEST) is 68.57. These factors account for approximately 56.276% of the variation in the data. Among these, the percentage of households with no assets (NO ASSEST) has the highest loading (0.903) in the first principal component index (PCI), followed by Per Capita GDP (PCGDP), Per Capita Consumption (PCCSUMP), percentage of households Above Poverty Line (APL), and Employment Rate (EMPLOYMENT) (Table 5).

Table no. 5. PCI analysis of economic development

Economic Development		
Variable	PRIN1	PRIN2

PCGDP	0.882	-0.357
PCCSUMP	0.839	-0.452
APL	0.690	0.670
EMPL	0.205	0.948
NO ASSEST	0.903	0.042
Variation Explained	56.276%	89.893%

The primary issues in the study area are limited assets, extremely low productivity, and persistent engagement in low-paid jobs. Despite the figures for GDP and employment rate, the fundamental problems remain. This indicates that the tribal population is trapped in a cycle of poverty, hunger, and economic disparity. The majority of the common people in this hilly region are deprived of life's opportunities and continue to live in misery. The tribal people primarily fall into categories such as landless labourers, small and marginal farmers, and fishermen.

5.2 Overall development of common minimum needs

In assessing common minimum needs, the tribal mean values are as follows: Literacy Rate (LRR) is 36.14, Percentage of Households with Safe Drinking Water (PHSDR) is 13.71, Percentage of Households with Electricity (PHEC) is 61.00, Percentage of Households with Pacca Houses (PHLPH) is 14.43, and Percentage of Households with Bank Accounts (PHBA) is 73.29 (Table no. 9).

Table no. 9. Overall level of tribal development

Economic Status		Common Minimum Needs		Health and Health Related Services		Communication	
Components	Mean	Components	Mean	Components	Mean	Components	Mean
PCGDP	827.57	LRR	36.14	EXP	53.43	PHONE	53.00
PCCSUMP	83.14	PHSDR	13.71	IMR	3.29	TV1	25.43
APL	5.57	PHEC	61.00	NNMR	0.71	TV2	10.29
EMPLOYMENT	5.71	PHLPH	14.43	PNMORBI	85.29	NEWS PAPER1	11.57
NO ASSEST	68.57	PHBA	73.29	MMR	1.43	NEWS PAPER2	4.00
				POPREV	1.57	RADIO	22.71
Source: Primary survey and data computed by authors, 2022							

The first principal component (PRIN1) accounts for 52.063% of the data's variation. Among the variables, the percentage of households with bank accounts (PHBA) has the highest loading (0.790) on PRIN1, followed by literacy rate, percentage of households living in pacca houses, percentage of households with safe drinking water, and percentage of households with electricity. The lowest weights are assigned to the percentage of households with safe drinking water, percentage of households living in pacca houses, and enrolment ratio. This suggests that basic needs and economic development are crucial for a healthy enrolment ratio. The high drop-out rates are attributed to insufficient economic development, indicating that improvements in minimum needs are essential for increasing enrolment (Table no. 6).

Table no. 6. PCI analysis of common minimum needs

Common Minimum Needs		
Variable	PRIN1	PRIN2
LRR	0.767	-0.564
PHSDR	0.574	0.795
PHEC	-0.770	0.622
PHLPH	0.685	0.644
PHBA	0.790	0.017
Variation Explained	52.063%	87.115%

5.3 Overall development of health

In evaluating health status, the tribal mean values are as follows: Life Expectancy at Birth (EXP) is 53.43, Infant Mortality Rate (IMR) is 3.29, Neo-natal Mortality Rate (NNMR) is 0.71, Percentage of People Not Morbid (PNMORBI) is 85.29, Maternal Mortality Rate (MMR) is 1.43, and Period of Prevalence (POPREV) is 1.57 (Table no. 9).

The first principal component (PRIN1) accounts for 63.012% of the variation in the data. The variable with the highest loading on PRIN1 is the percentage of the population not morbid, while the variable with the lowest loading is the neo-natal mortality rate. This indicates that the overall health status, as represented by the

principal component analysis, reflects significant variations in the health indicators, with low health status being particularly evident in the low loading of neo-natal mortality rate (Table no. 7).

Table no. 7. PCI analysis of health status

Health		
Variables	PRIN1	PRIN2
EXP	0.749	0.192
IMR	0.448	0.432
NNMR	0.018	-0.021
PNMORBI	0.784	0.544
MMR	-0.702	0.682
POPREV	-0.335	0.852
Variation Explained	63.012%	81.512%

5.4 Overall development of communication

In the assessment of communication status, the tribal mean values are as follows: Percentage of people with mobile phones (PHONE) is 53.00, percentage of people who watch TV news at least once a week (TV1) is 25.43, percentage of ever-married women who watch TV news at least once a week (TV2) is 10.29, percentage of people who read newspapers at least once a week (NEWS PAPER1) is 11.57, percentage of ever-married women who read newspapers at least once a week (NEWS PAPER2) is 4.00, and percentage of people who listen to the radio (RADIO) is 22.71 (Table no. 9).

The first principal component (PRIN1) accounts for 55.319% of the variation in the data. The variable with the highest loading on PRIN1 is the percentage of people who usually watch TV news at least once a week (TV1), indicating its significant role in communication development. Conversely, the variable with the lowest loading is the percentage of ever-married women who usually read newspapers at least once a week (NEWS PAPER2), highlighting a lower level of female engagement with print media (Table no. 8).

Table no. 8. PCI analysis of communication

Communication		
Variable	PRIN1	PRIN2
PHONE	0.849	-0.206
TV1	0.972	-0.012
TV2	-0.104	0.909
NEWS PAPER1	0.958	0.188
NEWS PAPER2	0.010	-0.634
RADIO	0.850	0.127
Variation Explained	55.319%	77.359%

6. Social wellbeing

The social wellbeing of tribal is assessed through various indices, including the Human Development Index, Gender-Related Development Index, Physical Quality of Life Index, and Quality of Life Index.

6.1 Human development index (HDI)

According to the United Nations Development Programme (UNDP, http://hdr.undp.org/en/content/human-development-index-hdi), the Human Development Index (HDI) is calculated using three dimensions: health, knowledge, and standard of living, with four indicators: life expectancy at birth, mean years of schooling, expected years of schooling, and per capita income (Table no. 10). The formula for HDI is as follows:

HDI= $\sqrt{}$ LEI. EI. II

In the study area, the HDI values for different tribes are:

- **Bhumij Tribe**: Life Expectancy Index (LEI) = 0.56, Education Index (EI) = 0.65, Income Index (II) = 0.39, resulting in an HDI of 0.37.
- **Mahali Tribe**: LEI = 0.49, EI = 0.61, II = 0.34, with an HDI of 0.32.
- **Orang Tribe**: LEI = 0.50, EI = 0.53, II = 0.25, giving an HDI of 0.26.
- **Sabar Tribe**: LEI = 0.46, EI = 0.49, II = 0.36, resulting in an HDI of 0.20.
- **Santal Tribe**: LEI = 0.51, EI = 0.64, II = 0.36, with an HDI of 0.34.

These findings indicate that while the overall human development index among the tribes is relatively low, there is variation between tribes. The Bhumij tribe has the highest HDI, followed by the Santal tribe, Mahali tribe, Orang tribe, and Sabar tribe, respectively.

Table no. 10: Human Development Index (HDI)

Tribes	LEI	EI	II	HDI

Bhumij	0.56	0.65	0.39	0.37
Mahali	0.49	0.61	0.34	0.32
Orang	0.50	0.53	0.25	0.26
Sabar	0.46	0.49	0.18	0.20
Santal	0.51	0.64	0.36	0.34
Source: Primary survey and data computed by authors, 2022				

6.2 Gender related development index

The United Nations Development Programme (UNDP) Human Development Report emphasizes the dimensions of gender inequality in development. This is assessed through the Gender Development Index (GDI), which measures gender disparities in life expectancy, education, and income. The formula for calculating the GDI is:

Gender related development index (GDI) = √ GPLEI. GPEI. GPII

where:

- **GPLEI** = Gender gap in Life Expectancy Index
- **GPEI** = Gender gap in Education Index
- **GPII** = Gender gap in Income Index

In the study area, the gender gap values and the resulting GDI for each tribe are as follows:

- **Bhumij Tribe**: Gender gap in life expectancy index = 0.04, education index = 0.06, income index = 0.12, yielding a GDI of 0.020.
- **Mahali Tribe**: Gender gap in life expectancy index = 0.06, education index = 0.03, income index = 0.05, resulting in a GDI of 0.010.
- **Orang Tribe**: Gender gap in life expectancy index = 0.05, education index = 0.03, income index = 0.26, with a GDI of 0.020.
- **Sabar Tribe**: Gender gap in life expectancy index = 0.03, education index = 0.04, income index = 0.10, leading to a GDI of 0.010.
- **Santal Tribe**: Gender gap in life expectancy index = 0.06, education index = 0.04, income index = 0.15, resulting in a GDI of 0.020.

These figures indicate that gender disparities in life expectancy, education, and income exist among the tribes in the study area (Table no. 11).

Table no.11: Gender Related development Index

Tribe	MLEI	FLEI	GPLEI	MEI	FEI	GPEI	MII	FII	GPII	GDI
Bhumij	0.54	0.49	0.04	0.69	0.61	0.06	0.22	0.17	0.12	0.020
Mahali	0.54	0.47	0.06	0.63	0.59	0.03	0.18	0.16	0.05	0.010
Orang	0.53	0.47	0.05	0.55	0.51	0.03	0.16	0.09	0.26	0.020
Sabar	0.49	0.46	0.03	0.51	0.47	0.04	0.10	0.08	0.10	0.010
Santal	0.54	0.48	0.06	0.67	0.61	0.04	0.21	0.15	0.15	0.020
Source: Primary survey and data computed by authors, 2022										

6.3 Physical quality of life index

The Physical Quality of Life Index (PQLI), as outlined by the United Nations Development Programme (UNDP), is based on three indicators: the infant mortality index, life expectancy index, and literacy index. The formula for calculating the Physical Quality of Life Index is:

$$PQLI = \left[\frac{IMI + LEI + LI}{3}\right]$$

where:

- **IMI** = Infant Mortality Index
- **LEI** = Life Expectancy Index
- **LI** = Literacy Index

To evaluate the physical quality of life among the tribes, the PQLI has been calculated as follows:

- **Bhumij Tribe**: Infant Mortality Index = 0.01, Life Expectancy Index = 0.56, Literacy Index = 0.38, resulting in a Physical Quality Index of 0.32.

- **Mahali Tribe**: Infant Mortality Index = 0.02, Life Expectancy Index = 0.49, Literacy Index = 0.34, giving a Physical Quality Index of 0.28.
- **Orang Tribe**: Infant Mortality Index = 0.03, Life Expectancy Index = 0.50, Literacy Index = 0.37, leading to a Physical Quality Index of 0.30.
- **Sabar Tribe**: Infant Mortality Index = 0.05, Life Expectancy Index = 0.46, Literacy Index = 0.33, resulting in a Physical Quality Index of 0.26.
- **Santal Tribe**: Infant Mortality Index = 0.01, Life Expectancy Index = 0.51, Literacy Index = 0.39, giving a Physical Quality Index of 0.30 (Table no. 12).

Table no.12: Physical Quality of Life Index

Tribe	IMI	LEI	LI	PQLI
Bhumij	0.01	0.56	0.38	0.32
Mahali	0.02	0.49	0.34	0.28
Orang	0.03	0.50	0.37	0.30
Sabar	0.05	0.46	0.33	0.26
Santal	0.01	0.51	0.39	0.30
Source: Primary survey and data computed by authors, 2022				

6.4 Quality of life

Developed by the United Nations Development Programme (UNDP) as part of the Human Development Report, the Quality of Life Index assesses various dimensions such as household conditions, education, health, and economy. The index is calculated using several indicators from these individual dimensions.
The formula for the Quality of Life Index is:

$$QLI = \left[\frac{Sum\ of\ index\ value\ of\ all\ indicators}{Number\ of\ indicators}\right]$$

To evaluate the quality of life among different tribes, the index was computed using relevant indicators. The Quality of Life Index values for the tribes are as follows:

- **Bhumij Tribe**: 0.31
- **Mahali Tribe**: 0.30
- **Orang Tribe**: 0.25
- **Sabar Tribe**: 0.17
- **Santal Tribe**: 0.30

Among these, the Bhumij tribe demonstrates the highest quality of life, while the Sabar tribe shows the lowest quality of life compared to the others (Table no. 13).

Table no.13: Quality of life index of tribal

Sl no.	Indicator		Tribe									
			Bhumij		Mahali		Orang		Sabar		Santal	
			No. of household	Index score	No. of household	Index score	No. of household	Index score	No. of household	Index score	No. of household	Index score
1	A. Livelihood amenities	Household having safe drinking water	304	0.15	158	0.13	4	0.07	3	0.003	372	0.14
2		Household having drainage facility	61	0.03	27	0.02	3	0.05	0	0	66	0.02
3		Household having toilet	185	0.09	89	0.07	3	0.05	0	0	200	0.07
4		Household having bathroom	100	0.05	37	0.03	2	0.03	0	0	91	0.03
5		Household having separate kitchen	299	0.15	143	0.12	3	0.05	2	0.002	367	0.14
6		Household having electricity	408	0.20	249	0.20	11	0.19	214	0.22	452	0.17
7		People of do not sleep on floor	58	0.03	21	0.02	2	0.03	0	0	48	0.02
A. Quality of life			**0.10**		**0.08**		**0.07**		**0.03**		**0.08**	

1	B. Education	Children go to school daily	2843	0.70	1892	0.77	98	0.69	987	0.51	3721	0.69
2		Children want to take higher education	2637	0.65	1734	0.71	79	0.56	549	0.28	3581	0.67
3		Children get guide from father	861	0.21	473	0.19	27	0.19	132	0.07	1796	0.34
4		Children get guide from mother	955	0.23	516	0.21	31	0.22	128	0.07	1896	0.36
B. Quality of life			**0.45**		**0.47**		**0.41**		**0.23**		**0.51**	
1	C. Health	Household do not take traditional medicine	1643	0.81	648	0.53	23	0.41	458	0.47	1974	0.74
2		Husband takes care during his wife's pregnancy	575	0.28	382	0.27	15	0.12	117	0.09	627	0.27
3		Children get vaccine in proper time	3561	0.88	1652	0.68	94	0.67	1321	0.68	4116	0.77
4		People do not take alcohol	1540	0.39	1715	0.65	87	0.35	276	0.11	1675	0.38
5		People do not take tobacco	961	0.23	1185	0.45	55	0.22	459	0.18	1123	0.26
C. Quality of life			**0.52**		**0.52**		**0.35**		**0.31**		**0.48**	
1	D. Economy	Number of APL family	204	0.10	58	0.05	0	0	0	0	172	0.06
2		Household having bank account	404	0.20	258	0.21	14	0.25	23	0.02	472	0.18
3		Household having Mediclaim	172	0.08	43	0.03	4	0.07	2	0.002	159	0.06
4		Household having Govt, or private employee	169	0.08	38	0.03	2	0.03	0	0	147	0.05
5		Household do not have child labour	869	0.43	432	0.35	27	0.48	498	0.51	967	0.36
D. Quality of life			**0.18**		**0.13**		**0.16**		**0.11**		**0.14**	
Quality of life index			**0.31**		**0.30**		**0.25**		**0.17**		**0.30**	

Source: Primary survey and data computed by authors, 2022

Thus, the social well-being of the Bhumij tribe is superior to that of the other tribes. Following the Bhumij tribe, the Santal tribe exhibits the second-best social well-being, while the Mahali and Orang tribes rank third and fourth, respectively. The Sabar tribe, on the other hand, demonstrates the lowest level of social well-being among the tribes.

7. Conclusion

Considering the above analysis, it is evident that the living conditions among the tribes are varied and not uniform. The economic status across the tribes reflects a generally poor condition, characterized by limited assets, low productivity, and widespread reliance on low-paid jobs. This economic disparity underlines the persistent issues of poverty, hunger, and economic imbalance faced by the tribal communities. The literacy rates among the tribes are also concerning. This lack of educational attainment is largely due to insufficient awareness and socio-economic challenges, including poor family backgrounds. Consequently, very few individuals from these tribes are pursuing higher education, which further hampers their overall development and opportunities for upward mobility.

In terms of communication, the situation is equally unsatisfactory. Access to and use of various communication channels, such as mobile phones, television, newspapers, and radio, is limited. This lack of effective communication infrastructure contributes to the tribes' limited access to information and hinders their ability to engage with broader societal developments. Health status presents another critical issue. The tribes experience low life expectancy and high mortality rates, which are indicative of inadequate healthcare services and poor living conditions. These health challenges are compounded by insufficient access to basic health facilities and services, which further deteriorates their quality of life.

Social well-being varies significantly among the tribes. The Bhumij tribe stands out with the highest level of social well-being compared to others. They have relatively better living conditions, health status, and access to basic services. Following the Bhumij tribe, the Santal tribe ranks second in terms of social well-being. The Mahali tribe is next, showing moderate levels of social well-being, while the Orang tribe follows closely behind. The Sabar tribe, however, exhibits the lowest level of social well-being, reflecting the most challenging conditions among the tribes.

In summary, the disparities in economic conditions, educational attainment, communication access, health status, and social well-being highlight the need for targeted interventions and support to improve the overall quality of life for these tribal communities.

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