



Assessing the Toto Tribe's Livelihood Pattern with Their Determinants in A District of West Bengal, India

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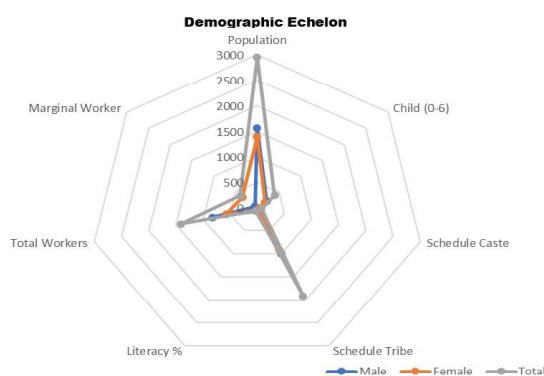
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HIGHLIGHTS

- A unique study on livelihood pattern of Toto tribe, an isolated tribal community almost extinct in India
- Study implies the rubrics of livelihood pattern of Toto tribes in a very systematic social echelon
- The Toto tribes due to their ethnocentric culture and alienation from the mainstream population have thrived and developed their own livelihood sources from the knowledge derived from their rich culture

GRAPHICAL ABSTRACT



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ABSTRACT

Context: The Toto tribes, becoming extinct nearly in the 1950s are an isolated tribal group residing only in a small enclave of Totopara, the foothill of the Sub-Himalayas in the Alipurduar district of West Bengal, India.

Objective: The study aims to explore and analyze the best livelihood option within the Toto community and the influential determinants with tenable strategies for enshrining, promoting and propagating the appropriate livelihood option within the community.

Methods: The study was conducted in the Madarihath-Birpara block of the Alipurduar district of West Bengal. The study was conducted with one dependent variable and thirteen independent variables. The results were obtained after analyzing the data using the statistical tools namely frequency, percentage, mean, standard deviation, coefficient of variation, and correlation coefficient.

Results & discussion: The results indicate that the old aged and illiterate people are involved in different farming activities in their community which helps to sustain their livelihood. It was also observed that innovativeness and attitude towards the adoption of innovation play a pivotal role in sustaining the livelihood of Toto tribes.

Significance: It may be concluded that the tribal people due to their distinct culture and alienation from the mainstream population have thrived and developed their own livelihood sources from the knowledge derived from their rich culture; they not only have used the natural resources but also have been the main guardians of these resources.

India is marked by its rich traditional heritage of Tribes. Since the days of the remote past, the diversified art and cultural forms generated by the tribal and rural people of India have continued to evince their creative magnificence. Apart from their outstanding brilliance from the perspective of aesthetics, the tribal lifestyles have played an instrumental role in reinforcing national integrity, crystallizing social solidarity, fortifying communal harmony, intensifying the value system, and promoting the elements of humanism among the people of the country (Saikia and Chauhan, 2021). Totos were nearly becoming extinct in the 1950s, but recent measures to safeguard their areas from being swamped with outsiders have helped preserve their unique heritage and also helped the population grow. Anthropologists agree that the Toto culture and language are totally unique to the tribe, and are clearly distinguished from the neighboring *Rajbongshis*, *Koch*, *Mech*, or the *Bhutanese Sharchop* tribes. The Totos are considered *Monogoloid* people, with flat noses, small eyes, broad and square cheeks, thick lips, and small eyes and black iris. Toto language belongs to the Tibeto-Burman family of sub-Himalayan groups, as classified by Hodgson and Grierson. The area of the entire Toto country called Totopara is 1,996.96 acres (8.0814 km²). As per the 2011 Census of India, Totopara had a total population of 2,960. There were 1,568 (53%) males and 1,392 (47%) females. In Totopara Male literacy stands at 69.33 per cent while female literacy rate was 45.45 per cent (Table 1). It lies 22 km from Madarihat, the entrance of the famous Jaldapara National Park. There are various ways of acquiring mates viz., (1) marriage by negotiation (*Thulbehoea*), (2) marriage by escape (*Chor-before*), (3) marriage by capture (*Sambehoea*) and (4) love marriage (*Lamalami*). There is no custom of divorce among the Totos. Though they make their main food from *marua* (a kind of millet), the staple food of the Totos now includes rice, *chura* (parched rice), milk, and curd. They also eat meat, generally goat, pork, venison, poultry, and fish of all kinds. Women eat the same food as men and there are no restrictions of any kind on the widows. Totos also drink fermented liquor called *Eu*, made from fermented *marua*, rice powder, and malt, which is served warm in *Poipa* (wooden glasses). *Eu* is drunk on all occasions. Totos live in elevated bamboo huts. These are raised on *machas* (raised platforms) and have straw thatches (Mahapatra, 1992). There is a single log placed to get to the hut, and this log is meant to be drawn up at night (Ramaiah, 1988). They define themselves as Hindus,

but the Totos have two main gods whom they worship: *Ishpa* - He is supposed to live in the Bhutan hills, and causes sickness when displeased. He is offered animals. *Eu* and *Cheima* - She is supposed to keep the village and its people safe from troubles and sicknesses. She is also offered rice, fowl. The Totos have no priests and offer their worship and sacrifices on their own. *Ishpa* is worshipped in the open outside the house and *Cheima* is inside the house (Islam and Samsuddoha, 2017). Of late, there are a few Christian converts among the tribe, largely attributed to Christian missionary works. Totos cultivate land (Mancha Srihari, 2012). The Totos are not active farmers and hence they do not cultivate a particular crop to a great extent. Every home has a kitchen garden surrounded by bamboo fences; in these gardens, they grow vegetables, potatoes, and bananas, among others (Chauhan, *et.al*, 2022), which is some shorts of self-reliant in year-round vegetable production system for food and nutritional security (Noopur *et al.*, 2021). Sometimes they trade with traders from the outside world. Some Totos raise cows and pigs as an occupation (Shah, 2003), which need to understand the typology of farming system (Walia *et al.*, 2022). At different stages of history, the Totos tribes have been moving away from a subsistent economy to a market economy (Danda, 1991). Further, the transformations of the village from community ownership of land to individual land holding and from isolated tribal to multi-ethnic habitat have also taken place in the recent past (Mondol, *et.al*, 2009), Chauhan *et al.*, 2022). Sometimes they trade with traders from the outside world (De, 2012). Some Totos raise cows and pigs as an occupation. Keeping this in view the objectives of the study are to explore and analyze the status of Totos; to trace out the micro as well as macro socio-cultural and socio-economic determinants which are influencing the livelihood options; to examine the role of government schemes and programs, institutions in livelihood promotion of Totos; and to suggest tenable strategies for enshrining, promoting and propagating the appropriate livelihood option within the community (Prashanthi and Reddy, 2022).

METHODOLOGY

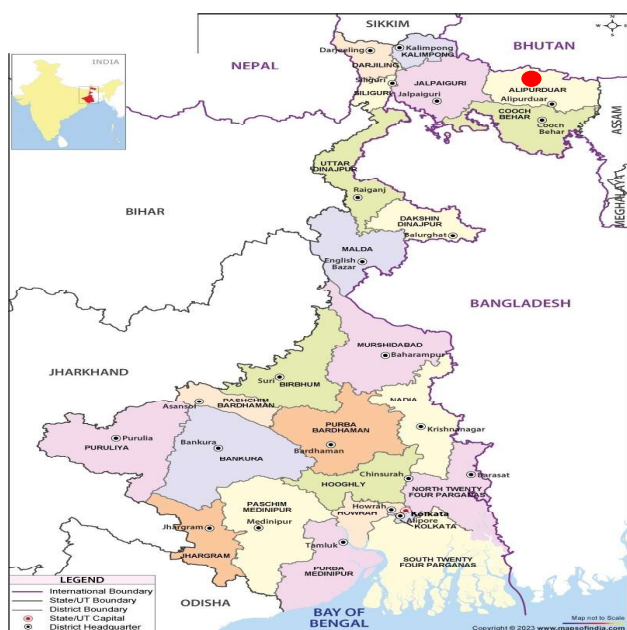
The study was conducted in the Totopara-Bollalguri GP of the Madarihat-Birpara block of Alipurduar district (latitude 26.489°N and longitude 89.527°E) in West Bengal. The demographic features of Toto tribes in Totopara of the Madarihar-Birpara block of West Bengal is placed in Table-1 for better understanding of the research locale. The area had been selected for

Table 1. Demographic features of Toto tribes in Totopara of the Madarihar-Birpara block of West Bengal

| Particulars | Total | Male | Female |
|---------------------|-------|-------|--------|
| Total No. of houses | 624 | - | - |
| Population | 2960 | 1568 | 1392 |
| Child (0-6) | 400 | 218 | 182 |
| Schedule Caste | 75 | 41 | 34 |
| Schedule Tribe | 1,904 | 999 | 905 |
| Literacy (%) | 58 | 69.33 | 45.45 |
| Total Workers | 1401 | 828 | 573 |
| Main Worker | 1010 | --- | --- |
| Marginal Worker | 391 | 51 | 340 |

the study with the purposes (a) there is ample scope for collecting relevant data for the present study, (b) acquaintance with the local people as well as the local language, (c) the concerned area was easily accessible to the researcher in terms of place of residence, (d) the area was very easily accessible to the researcher in terms of transportation and (e) the closure familiarities of the student researcher with the area, people, officials and local dialects. Purposive as well as simple random sampling techniques were adopted for the study. For the selection of state, district, block, and gram panchayat purposive sampling technique was adopted and in case of selection of villages and respondents simple random sampling technique was taken up. Altogether 70 numbers of respondents have been selected for this study. After reviewing various literature related to the field of study a list of variables was prepared (Paul, 1997).

One dependent variable livelihood pattern of the



Study area map

tribal farmers and the thirteen numbers of independent variables are age, education, family size, family education status, primary occupation, size of holding, material possession, house type, social participation, cosmopolitanism, mass-media exposure, innovativeness and attitude towards adoption of innovation was taken up in the present study. In measuring the livelihood pattern ten statements were arranged as per their increasing order of importance (Bailey, 1994). The results were obtained after analyzing the data using statistical tools namely frequency, percentage, mean, standard deviation, coefficient of variation, and correlation of coefficient.

RESULTS

A profile for cross-sectional information of the study is depicted as the socio-economic profile of the respondents. The socio-economic profile of the respondents was obtained with the help of the Socio-Economic Status Scale (Rural) developed by (Pareek and Trivedi, 1964). Socio-economic status refers to the position of an individual with reference to various indicators of social and economic conditions in a rural area. The Socioeconomic status scale has five items. The socioeconomic status of respondents was calculated by

Table 2. General distribution of independent variables in terms of frequency and per centage for all the respondents (N=70)

| Category | No. | % |
|---------------------|-----|-------|
| <i>Age</i> | | |
| Young (18-30) | 1 | 1.43 |
| Middle age (31-50) | 25 | 35.71 |
| Old age (above 50) | 44 | 62.86 |
| <i>Caste</i> | | |
| Scheduled Tribe | 70 | 100 |
| <i>Education</i> | | |
| Illiterate | 39 | 55.71 |
| Read Only | 0 | 0 |
| Read & write | 18 | 25.71 |
| Primary | 7 | 10 |
| Secondary | 2 | 2.86 |
| Higher secondary | 3 | 4.29 |
| Graduate & above | 0 | 0 |
| <i>Family size</i> | | |
| Up to 5 members | 45 | 64.29 |
| Above 5 members | 25 | 35.71 |
| <i>Land holding</i> | | |
| No land | 0 | 0 |
| Less than 2 bigha | 9 | 12.86 |
| 2 to 5 bigha | 35 | 50 |
| 5 to 10 bigha | 26 | 37.14 |

adding the scores assigned to each category of each of them. It is found from Table 2 that the majority of the respondents are old age (above 50 yrs); they all belong to Schedule caste; the majority are illiterate; 45 per cent of the family having up to five members and 50 per cent of the villagers have two to five bighas of land (Goswami and Biswas, 2021).

It is revealed from Table 2 that the majority of the respondents belong to old age (62.86%), while 35.71 per cent were middle-aged and the remaining were young in terms of age which was obtained during the course of my investigation.

Table 2 indicates that all the respondents belong to the scheduled caste. Table 2 reveals that 55.71 per cent of the respondents are illiterate. 25.71 per cent of the respondents can read and write, 10 per cent of the respondents are primarily educated, 10 per cent of the respondents has education up to primary level, 2.86 per cent of the respondents has the education up to secondary level, 10 per cent respondents has received higher secondary education. It is clear from Table 2 that 64.29 per cent of the respondents belongs to a small family (up to 5 members) and the remaining 35.71 per cent of them belongs to a large family (above 5 members). It is found from Table 2 that all the respondents have their own land for their agricultural practices i.e. 100 per cent were landowners. Among them, 12.86 per cent hold less than 2 bigha of land followed by 50 per cent of them holding 2 to 5 bigha of land, and the rest 37.14 per cent hold 5 to 10 bigha of land, which indicates that all the Toto families are actively engaged for sustaining their livelihood on agriculture and allied areas (Jairath, 1991).

It is evident from Table 3 that the distribution of

respondents is on the basis of their respective socio-economic and additional attributes. The variable, age is distributed in young (18-30), middle (31-50), and old age (above 50) with a mean, standard deviation value, and coefficient of variation of 53.06 and 9.55, and 17.99 respectively. Education is distributed in illiterate (0), read-only (1), read and write (2), primary (3), secondary (4), Higher Secondary (5), graduate & above (6) with a mean, standard deviation value and coefficient of variation of 1.14, 1.47 and 128.15 respectively (Pandey, 1999).

Family size, the third independent variable is distributed into two parameters i.e., up to 5 members (1) and above 5 members (2) with a mean, standard deviation, and coefficient of variation of 1.34, 0.48, and 35.33 respectively. Family education status is an independent variable that is calculated as the total educational score/family size. The total educational scores categorized under education were illiterate, can read only, can read and write middle to high school, and college graduate/postgraduate with corresponding scores of 0 to 6, with a mean, standard deviation, and coefficient of variation of 3.41, 1.11 and 32.41 respectively.

Primary Occupation is the next independent variable which is distributed as agriculture (4), business (3), service (2), and others (1) having a mean value of 5.54 a standard deviation is 1.26 and a coefficient of variation for the distribution of the variable occupation is 22.72. Total land holding is the next independent variable which is distributed as no land, less than 2 bighas of land, 2 to 5 bighas of land, and 5 to 10 bighas of land with a mean, standard deviation value, and coefficient of variation are 5.75, 1.93 and 33.50 respectively.

Material possession is the next independent variable

Table 3. Descriptive statistics of independent variables with respect to range mean, standard deviation value and co-efficient of variation

| Variables | Max | Min | Range | Mean | SD | CV (%) |
|---|------|------|-----------|-------|------|--------|
| Age | 69 | 37 | 27 – 67 | 53.06 | 9.55 | 17.99 |
| Education | 6 | 0 | 0 – 6 | 1.14 | 1.47 | 128.15 |
| Family Size | 2 | 1 | 1 – 2 | 1.34 | 0.48 | 35.33 |
| Family Education Status | 4.99 | 1.42 | 1.42-4.99 | 3.41 | 1.11 | 32.41 |
| Primary Occupation | 6 | 1 | 1 – 6 | 5.54 | 1.26 | 22.72 |
| Land Holdings | 10 | 2 | 2 – 10 | 5.75 | 1.93 | 33.50 |
| Material Possession | 7 | 1 | 1 – 7 | 5.29 | 2.23 | 42.22 |
| House Type | 4 | 1 | 1 – 4 | 1.80 | 0.75 | 41.91 |
| Cosmopolitaness | 3 | 0 | 0 – 3 | 1.38 | 0.48 | 35.19 |
| Social Participation | 6 | 0 | 0 – 6 | 7.70 | 1.72 | 22.37 |
| Mass Media exposure | 3 | 0 | 0 – 3 | 11.88 | 2.15 | 18.15 |
| Innovativeness | 3 | 1 | 1 – 3 | 4.62 | 1.09 | 23.60 |
| Attitude towards adoption of innovation | 5 | 1 | 1 – 5 | 30.88 | 3.68 | 11.91 |

which is distributed as a cycle (1), radio (2), T.V. (3), improved agricultural Implements (4), motorbike (5), color television (6), computer (7), car (8) with a mean standard deviation value and coefficient of variation of 5.29, 2.23 and 42.44 respectively. House type is distributed as kaccha (1), mixed (2), pucca (3), and mansion (4) with the corresponding mean, standard deviation value, and coefficient of variation are 1.80, 0.75, and 41.91 respectively. Social participation is the next independent variable that is distributed with a mean and standard deviation values is 7.70 and 1.72. The coefficient

Table 4. Co-efficient of correlation (r): Livelihood in Agriculture and allied sectors (Y1) vs 13 independent variables

| Variables | r-value |
|---|---------|
| Age | -.155 |
| Education | .139 |
| Family Size | .013 |
| Family Education Status | .282* |
| Primary occupation | .454** |
| Land Holding | .999** |
| Material Possession | .529** |
| House type | -.010 |
| Social participation | -.079 |
| Cosmopoliteness | .164 |
| Mass media exposure | -.200 |
| Innovativeness | -.417** |
| Attitude towards adoption of innovation | .479** |

**denotes 1% significance level;

*denotes 5% significance level

Table 5. Coefficient of correlation between livelihood from activities other than Agriculture and allied sector vs 13 independent variables

| Variables | r-value |
|---|---------|
| Age | -.124 |
| Education | .287* |
| Family Size | .367* |
| Family Education Status | .289* |
| Primary occupation | .036 |
| Land Holding | .067 |
| Material Possession | .044 |
| House type | -.129 |
| Social participation | -.181 |
| Cosmopoliteness | .032 |
| Mass media exposure | -.031 |
| Innovativeness | -.327** |
| Attitude towards adoption of innovation | -.010 |

**denotes 1% significance level;

*denotes 5% significance level.

of variation for the distribution of the variable social participation is 22.37. Mass media exposure is the next independent variable with a mean standard deviation and coefficient of variation of 11.88, 2.15, and 18.15 respectively. Another independent variable, innovativeness is distributed with a mean and standard deviation is 4.62 and 1.09. The coefficient of variation for the distribution of the variable innovativeness is 23.60. Attitude towards the adoption of innovation is distributed with a mean and standard deviation is 30.88 and 3.68 respectively.

The coefficient of variation for the distribution of the variable attitude towards the adoption of innovation is 11.91. Table 4 shows that Family Education Status, Primary Occupation, Land Holding, Material Possession, and Attitude towards the Adoption of Innovation are positively and significantly correlated whereas, Innovativeness is negatively and significantly correlated with livelihood in Agriculture and allied areas (Chatterjee, 2004).

Table 5 depicts that education, family size, and family education status are positively and significantly correlated whereas, innovativeness is negatively correlated but both are significantly related to the dependent variable livelihood from other than agriculture and allied sector.

DISCUSSION

The outcome of the research reveals that family education status is positively related with the livelihood pattern of the tribal farmers which means more the education status of the family members more they know about the farming system approach i.e., field crop growing, animal husbandry, apiculture, horticulture, and the interdependence of these subsystems, which ultimately leads to the sustainable livelihood (Jayraj, 1993). Also, Primary occupation agriculture is positively correlated with livelihood pattern of the tribal farmers which reveals that if the primary occupation of the tribal people is agriculture the number of the tribal families would be doing agricultural activities to sustain their livelihood (Khan and Chauhan, 2005). The land holding status of these tribal people is found more diverse the agriculture activities and more the dependence on income, food, feed, and fodder i.e., livelihood on the holding (Lepcha *et.al*, 2018).

Improved agricultural implements, information sources like T.V., Radio more the scientific cultivation of cropping and more the production and the dependence of tribal families on agriculture as their livelihood source. This is the reason why material possession is positively and significantly related to the livelihood of agriculture

and allied fields. Mostly the tribal farmers' degree of innovativeness is less because they mostly follow the age-old proven wisdom in farming of their ancestors and due to the low exposure with the mainstream population, they are very skeptical of the innovations. This is the reason why innovativeness is negatively significant with the dependent variable. However, due to the government initiatives being taken both at the center and state level, their attitude is changing towards the adoption of new innovations. This is why the adoption of new innovations is positively and significantly correlated with the dependent variable. Education improves the decisiveness of the people about the diverse sources through which they can support their livelihood. Education not only improves the knowledge about different activities but also information as well as skills which are necessary for different technical as well as nontechnical activities. This is the reason why more education diverse the livelihood options for the tribal people in this research study.

Also if the family members are also educated the decision part becomes easy because a family gets different views and experiences from the family members to take on different activities like business, government jobs, etc. to have a sustainable and diverse livelihood. Family size is also an important variable because more the size of family members more the manpower supports not only agricultural activities for livelihood but also activities other than agriculture, also the risk is minimized if there is any failure in the agriculture sector due to natural hazards, as livelihood from other sources can sustain the families (Sikligar, 1993).

Innovativeness means taking more risks but as tribal people have diversity in the livelihood sources, they do not want to take ideas with risk factors this is the reason why innovativeness is negatively but significantly related to the livelihood from sources other than agriculture. 'Sustainable livelihood' is usually understood in material terms – in terms of access to and sustainable management of livelihood resources. However, in a broad sense, sustainable livelihood – particularly in the context of tribal people – is perhaps more appropriately seen in terms of enhancement of capabilities. Ensuring a subsistence income is not sufficient for this purpose. Rather, sustainability is a function of access to institutions and institutional resources in general and to social and economic services in particular.

The study revealed several types of livelihood patterns viz. crop-based, wage-based, forest-based, horticulture-based, migration-based, service business,

and animal husbandry-based prevailing in the area (Islam 2018). The studies have brought out the importance of the farm sector in terms of the percentage of households engaged in the cultivation of different crops (Rizvi, 1993). It was also observed from the resource base of the tribal households that they were not financially and physically sound and did not have adequate facilities for meeting several basic requirements for a reasonable standard of living (Thangjam, *et.al*, 2020).

CONCLUSION

In social sciences, the concept of livelihood extends to include social and cultural means, i.e. the command an individual, family, or other social groups have over an income and or bundles of resources that can be used or exchanged to satisfy its needs. This may involve information, cultural knowledge, social networks, and legal rights as well as tools, land, and other physical resources. The present study has highlighted that family education status; primary occupation, land holdings, material possession, innovativeness, and attitude towards the adoption of innovation have a relationship with the livelihood of these tribal people. The success of dynamic tribal development depends on factors like improved literacy rate, sustainable socio-economic status, women's empowerment, better health care, and other human resources. Therefore, it is desirable to extend basic amenities, empowering women, enhancing their employment opportunities, and providing transport and communication facilities to tribal households. For a sustainable livelihood pattern, a strong resource base is a pre-requisite and the study revealed that many of the resource bases of the tribal households are becoming unproductive and inaccessible (Chanu *et.al*, 2020). An integrated approach is required to bring back the forest resources to more productive phases.

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Appendix: The supplementary data, table, graph in jpeg format for online visibility to the readers are submitted as an appendix.

Author's contribution: The authors conceptualized, operationalized, collected and analyzed, and interpreted

the data, participated in contributing to the text and the content of the manuscript, including revisions and edits. All authors approve the content of the manuscript and agree to be held accountable for the work.

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