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RESEARCH ARTICLE
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Comparative study of Household Expenditure Patterns among the Cycle Rickshaw Pullers of Agartala Municipal Corporation

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ABSTRACT

The present study examines the household expenditure pattern of cycle rickshaw pullers with special reference to inter-community variation in expenditure behaviour. The study is based on primary data collected from 370 cycle rickshaw pullers through a field survey. Descriptive statistical techniques such as averages and percentages have been used to analyse the structure of household expenditure, while One-way Analysis of Variance (ANOVA) has been employed to examine the statistical significance of expenditure variation across social groups. The findings reveal that household expenditure is largely concentrated on essential consumption needs, with food grains accounting for the highest share of total monthly expenditure, followed by children's education. Expenditure on drink and smoking exceeds spending on health, entertainment, and rickshaw maintenance, reflecting the economic vulnerability and consumption priorities of the households. Community-wise analysis indicates moderate variation in expenditure patterns among different social groups. However, ANOVA results show that differences across most expenditure categories are statistically insignificant, except for housing expenditure, which exhibits significant inter-community variation. The study highlights the subsistence-oriented economic condition of cycle rickshaw pullers and the limited scope for welfare-oriented household expenditure.

Keywords: *ANOVA, community variation, Cycle rickshaw pullers, household expenditure, urban informal sector*

1.Introduction

Household expenditure constitutes an important aspect of socio-economic studies, as it directly reflects the social and economic conditions of a population. Various academic disciplines, including Economics, Commerce, Sociology, and Geography, undertake such studies to understand socio-economic dynamics at both micro and macro levels. The pattern of household expenditure is widely used as an indicator of standard of living and overall welfare of households (Deaton & Muellbauer, 1980; Sen, 1999). In general, expenditure behaviour reflects income levels and consumption priorities, where a higher share of spending on non-essential or luxury goods is often associated with relatively better socio-economic conditions, while lower levels of discretionary expenditure generally indicate economic constraint (Todaro & Smith, 2015).

In developing countries such as India, socio-economic structures are marked by deep-rooted inequalities shaped by caste, religion, region, and occupational categories. These structural inequalities are strongly reflected in disparities in income, consumption, savings, and overall living standards across different sections of the population (Desai & Dubey, 2011; Office of the Registrar General & Census Commissioner, India, 2011). Large-scale national surveys such as the National Sample Survey Office (National Sample Survey Office, 2014) and Periodic Labour Force Survey (Ministry of Statistics and Programme Implementation, 2023) further highlight persistent inequalities in consumption expenditure and labour conditions, particularly among informal sector workers. Such disparities significantly affect household welfare and their capacity for socio-economic mobility.

The present study focuses on one such marginalised occupational group, namely cycle rickshaw pullers working in Agartala, who are generally situated within the lower socio-economic strata of urban informal labour. The study seeks to examine their expenditure patterns and consumption behaviour to understand their economic condition and standard of living. Furthermore, the cycle rickshaw pullers belong to diverse social categories, including Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and General categories, allowing intra-occupational comparison of socio-economic differences.

2. Literature Review

Household expenditure and consumption behaviour have been widely studied within economics as key indicators of welfare and inequality. Engel's Law remains a foundational principle in consumption theory, suggesting that the proportion of income spent on food declines as income increases, making expenditure patterns a reliable measure of welfare (Engel, 1857). Later empirical work further established consumption expenditure as a more stable welfare indicator than income in developing economies with large informal sectors (Deaton, 1997). Research on informal labour markets highlights structural vulnerability, irregular earnings, and absence of social protection as defining features of informal employment (Harris & Todaro, 1970; Chen, 2012). In the Indian context, informal employment dominates urban labour markets, with a significant proportion of workers engaged in low-paid, insecure occupations (International Labour Organization, 2018; National Commission for Enterprises in the Unorganised Sector, 2007).

Within urban transport and informal mobility systems, cycle rickshaw pullers represent a particularly vulnerable occupational group. Studies on urban informal transport labour in Indian cities such as Delhi and Kolkata show that rickshaw pullers face long working hours, low daily earnings, high physical vulnerability, and dependence on informal credit networks for survival (Bhattacharya & Mitra, 2013; Roy, 2009; Rajé & Tiwari, 2009). These studies also highlight that rickshaw workers allocate a major proportion of income to basic consumption needs, leaving little scope for savings or investment, reinforcing long-term economic insecurity. Caste-based disparities further intensify socio-economic inequality in India. Desai and Dubey (2011), using National Sample Survey data, demonstrate persistent gaps in consumption, income, and asset ownership between Scheduled Castes, Scheduled Tribes, and other social groups, reflecting structural inequality embedded in Indian society.

However, despite extensive literature on informal labour and urban poverty, micro-level empirical studies on expenditure behaviour of cycle rickshaw pullers in smaller urban centres remain limited. Moreover, caste-wise comparative analysis within this occupational group, particularly in cities such as Agartala, is still largely underexplored, justifying the present study.

3. Objectives of the Study

The objectives of the present study are as following:

1. To examine the household expenditure patterns among cycle rickshaw pullers of the Agartala Municipal Corporation.

2. To analyse the distribution of household expenditure across different heads, such as food, housing, health, education, transport, and miscellaneous items.

3. To compare the expenditure patterns of cycle rickshaw pullers belonging to different social groups.

4. To assess the standard of living of cycle rickshaw pullers based on their expenditure and consumption patterns.

4. Methodology

4.1 Research Design

The present study is based on a descriptive and comparative research design. The household expenditure patterns of cycle rickshaw pullers are analysed across different socio-economic and caste groups

4.2 Study Area

The study has been conducted in Agartala Municipal Corporation Area. It is the capital city of Tripura, India. Agartala is the capital as well as the biggest urban centre of Tripura. It houses all the important educational, medical, commercial and administrative institutions of the state. Therefore, it attracts a wide range of people from all over the state for various purposes. The city represents an important urban centre where a significant number of workers are engaged in informal sector occupations, including cycle rickshaw pulling.

4.3 Universe of the Study

The universe of the study consists of all cycle rickshaw pullers operating within the municipal limits of Agartala. According to official records of the Agartala Municipal Corporation, there were 9,939 cycle rickshaw pullers in the year 2020.

4.4 Sample Size and Sampling Technique

The sample size was determined using a 99 percent confidence level with a 5 percent margin of error, resulting in a total sample of 370 cycle rickshaw pullers. A random sampling technique was employed, and respondents were selected from among willing cycle rickshaw pullers to ensure fair representation across different social groups, including Scheduled Castes (SC), Scheduled Tribes (ST), Other Backward Classes (OBC), and General categories.

4.5 Period of Field Survey

The field survey for the present study was conducted over a period from February 2021 to June 2022.

4.6 Sources of Data

The study is based on both primary and secondary sources of data. Primary data were collected directly from the field through a structured interview schedule administered to cycle rickshaw pullers during the survey period. Secondary data were obtained primarily from the office of the Agartala Municipal Corporation and its official website for information regarding the number and distribution of cycle rickshaw pullers. In addition, relevant information was gathered from books, academic journals, government reports, census publications, and other published sources.

4.7 Tools and Techniques of Data Collection

Primary data were collected through a structured interview schedule designed to obtain information relating to household expenditure patterns among cycle rickshaw pullers. Data were collected on expenditure across different categories such as food grains, children's education, drinking and smoking, housing, electricity, health, entertainment, and rickshaw maintenance, along with socio-economic and social category-related information of the respondents.

4.8 Tools of Analysis

The collected data were analysed using descriptive and inferential statistical techniques. Descriptive tools such as averages, percentages, ranking methods, and comparative tables were employed to examine household expenditure patterns across different expenditure categories and social groups. Furthermore, One-way Analysis of Variance (ANOVA) was employed to examine whether statistically significant differences existed in household expenditure patterns among different social categories of cycle rickshaw pullers. The analysis was conducted across expenditure categories including food grains, children's education, drink and smoking, electricity, health, entertainment, rickshaw maintenance, and housing. Statistical significance was assessed at the 5 per cent level.

4.9 Variables Used in the Study

The major variables considered in the study include social category (SC, ST, OBC, and General) and expenditure categories such as food grains, children's education, drink and smoking, housing, electricity, health, entertainment, and rickshaw maintenance.

5. Results and Discussion

5.1 Overall household expenditure pattern among cycle rickshaw pullers

The expenditure pattern among cycle rickshaw pullers indicates that household spending is predominantly concentrated on essential and routine consumption requirements. Food grains constitute the largest component of household spending, with an average monthly expenditure of Rs 5,321.22 per household (table.1). The substantial allocation towards food suggests that a major proportion of household resources is devoted to meeting subsistence requirements, reflecting the consumption priorities of economically constrained households. The predominance of food expenditure further indicates that a considerable share of household income is absorbed by immediate consumption needs, thereby limiting the scope for expenditure on broader developmental and welfare-related activities.

Children's education emerges as the second-largest expenditure category, with an average monthly expenditure of Rs 1,217.49, indicating that households continue to allocate a meaningful proportion of their limited resources towards educational requirements despite restricted earning opportunities (table.1). This pattern may reflect the importance attached to educational investment and its perceived role in improving future livelihood opportunities.

A notable pattern is also evident from the table.1 in relation to expenditure on drink and smoking. Expenditure on drink and smoking (Rs 509.78) exceeds allocations towards health (Rs 386.03), entertainment (Rs 351.08), and rickshaw maintenance (Rs 318.78), suggesting that a comparatively larger proportion of household resources is directed towards consumption-related activities rather than welfare and occupational requirements. Such expenditure may potentially reduce the availability of resources for productive and welfare-enhancing purposes.

Electricity expenditure records an average monthly value of Rs 421.34, reflecting spending on basic utility requirements, while expenditure on health occupies a comparatively smaller share of household spending. Lower allocations towards entertainment, rickshaw maintenance, and housing expenditure (Rs 250.54) suggest limited spending capacity beyond essential needs. Overall, the expenditure structure demonstrates that the household economy of cycle rickshaw pullers is primarily characterised by an emphasis on immediate consumption and subsistence requirements, whereas expenditure associated with long-term welfare enhancement remains comparatively limited.

5.1.1 Percentage Share and Ranking of Household Expenditure

Table.1 Percentage Share and Ranking of Cycle rickshaw Pullers' Household Expenditure

Expenditure Head	Average monthly expenditure in rupees	Percentage share (%)	Rank
Food grains	5321.22	60.63	I
Children's education	1217.49	13.87	II
Drink/Smoking	509.78	5.81	III
Electric bill	421.34	4.80	IV
Health	386.03	4.40	V
Entertainment	351.08	4.00	VI
Rickshaw maintenance	318.78	3.63	VII
House	250.54	2.85	VIII

Source: Calculated by the author based on field survey data, collected from February 2021 to June 2022.

The percentage distribution of household expenditure further substantiates the predominance of subsistence-oriented spending behaviour among cycle rickshaw pullers. Food grains account for the largest share of total household expenditure (60.63 percent), followed by children's education (13.87 percent). In contrast, comparatively smaller proportions are allocated towards housing, occupational maintenance, and recreational activities. The ranking pattern therefore indicates that household expenditure is largely directed towards immediate survival needs, while comparatively limited resources remain available for broader welfare and quality-of-life improvements.

5.2 Community-wise Comparative Analysis of Household Expenditure

Table.2 Cycle Rickshaw Pullers' Community-wise Comparative Analysis of Household Average Expenditure (in Rupees)

Community	SC	OBC	ST	General
Food grains	5,189.59	5,108.00	5,108.57	6,210.17
Children's education	1,137.69	1,338.00	1,121.43	1,310.17
Drink/ Smoking	485.50	506.00	656.43	481.36
House	231.36	137.00	547.62	286.44
Rickshaw maintenance	184.02	401.00	478.57	451.69
Entertainment	345.41	347.54	382.12	351.19
Health	410.83	362.50	313.10	406.78
Electric bill	435.50	421.67	303.10	464.41

Source: Calculated by the author based on field survey data, collected from February 2021 to June 2022.

5.2.1 Food expenditure

Expenditure on food grains exhibits discernible variation across the social categories under study. Households belonging to the General category record the highest average monthly expenditure on food grains (Rs 6,210.17), whereas SC (Rs 5,189.59), OBC (Rs 5,108.00), and ST (Rs 5,108.57) households demonstrate comparatively similar expenditure levels (table.2). The relatively higher expenditure observed among General category households suggests a greater allocation of household resources towards food consumption in comparison with other communities. In contrast, the marginal differences among SC, OBC, and ST households indicate a relatively uniform pattern of expenditure on food items. These variations in expenditure levels may reflect differences in household consumption patterns, economic capacity, and resource allocation priorities among the different social categories. Overall, the findings indicate that expenditure on food grains constitutes a major component of household spending across all communities, underscoring the centrality of basic consumption needs within the household economy of cycle rickshaw pullers.

5.2.2 Education Expenditure

The community-wise pattern of expenditure on children's education exhibits moderate variation across different social categories. OBC households record the highest average monthly expenditure on children's education (Rs 1,338.00), closely followed by General households (Rs 1,310.17), whereas comparatively lower expenditure levels are observed among SC (Rs 1,137.69) and ST (Rs 1,121.43) households (table.2). The comparatively higher allocation towards educational expenditure among OBC and General households indicates a relatively greater proportion of household resources being directed towards educational needs. In contrast, the lower expenditure levels among SC and ST households may suggest comparatively constrained spending capacity with respect to educational requirements. Although, variations are evident across social categories, the overall expenditure pattern indicates that households across all communities allocate a notable share of their resources towards education, highlighting the significance of educational expenditure within household consumption priorities.

5.2.3 Consumption behavior and lifestyle expenditure

Consumption-related expenditure on drink and smoking displays marked differences among the communities under study. Among the communities under study, ST households recorded the highest average monthly expenditure on drinking and smoking (Rs 656.43), exceeding the corresponding expenditure levels observed among OBC (Rs 506.00), SC (Rs 485.50), and General (Rs 481.36) households (table.2). The comparatively higher allocation towards this expenditure category among ST households indicates a relatively greater proportion of household resources being directed towards personal consumption related activities. In contrast, the expenditure levels among SC, OBC, and General households remain comparatively similar, suggesting a relatively consistent pattern of allocation within these communities. Given the limited income generating capacity associated with cycle rickshaw pulling, a comparatively larger allocation towards drink and smoking expenditure may potentially reduce the proportion of household resources available for essential and welfare-oriented expenditure categories. The observed variation highlights differences in expenditure priorities and consumption patterns among the social categories under study. The relatively higher expenditure observed among ST households may indicate a comparatively greater tendency towards expenditure on drink and smoking-related activities than that observed among other social groups.

5.2.4 Maintenance and housing expenditure

The distribution of expenditure on housing and rickshaw maintenance reveals noticeable differences across the social categories under study. Expenditure on housing is highest among ST households (Rs 547.62), followed by General (Rs 286.44), SC (Rs 231.36), and OBC (Rs 137.00) households (table.2). A comparable pattern is evident in the case of rickshaw maintenance expenditure, where ST households record the highest average monthly expenditure (Rs 478.57), followed by General (Rs 451.69) and OBC (Rs 401.00) households, while SC households exhibit the lowest expenditure level (Rs 184.02).The comparatively higher expenditure on housing among ST and General households may be associated with the greater prevalence of rented accommodation among respondents belonging to these communities, particularly for occupational purposes. Since many cycle rickshaw pullers reside near their places of work to facilitate daily commuting and employment related activities, expenditure on rent forms an important component of household expenditure. The elevated housing expenditure recorded among these communities therefore appears to be influenced by occupational mobility and residential arrangements rather than by improved housing conditions or higher living standards.

Similarly, expenditure on rickshaw maintenance constitutes an important occupational expense because the rickshaw itself functions as the primary income-generating asset for respondents. The comparatively higher maintenance expenditure among ST and General households may indicate a greater allocation of resources towards sustaining occupational activities, whereas the lower expenditure observed among SC households could suggest relatively limited spending capacity for repair and maintenance purposes. Taken together, the expenditure pattern highlights the manner in which occupational requirements and residential arrangements shape household spending behaviour across different social categories.

5.2.5 Health and electricity expenditure

Expenditure on health and electricity demonstrates notable differences across the social categories under study. General households record the highest average monthly expenditure on electricity (Rs 464.41), followed by SC (Rs 435.50) and OBC (Rs 421.67) households, whereas ST households register the lowest expenditure level (Rs 303.10). A similar pattern is evident in the case of health-related expenditure (table.2), where comparatively higher expenditure is observed among SC (Rs 410.83) and General (Rs 406.78) households, while ST households again record the lowest average monthly expenditure (Rs 313.10).

The comparatively lower expenditure on electricity among ST households may reflect a relatively limited level of household utility consumption and may further suggest reduced access to, or utilisation of, electricity-dependent household items and domestic amenities in comparison with other communities. Likewise, the lower allocation towards health expenditure may indicate constrained financial capacity for medical and healthcare-related spending. Under conditions of limited household resources, expenditure priorities are often concentrated on immediate subsistence requirements, potentially reducing the ability of households to allocate sufficient resources towards healthcare needs. The expenditure pattern suggests that differences across communities are not merely indicative of variations in consumption behaviour but may also reflect broader disparities in living conditions and household resource allocation strategies among cycle rickshaw pullers.

5.3 Statistical Analysis of Community-wise Expenditure Variation (Anova)

Table.3 One way ANOVA results of Household Expenditure among Cycle Rickshaw Pullers

Expenditure head	F-value	p-value	Significance
Food grains	0.704	0.550	Not significant
Children's education	0.493	0.687	Not significant
Drink/ Smoking	0.952	0.415	Not significant
House	3.458	0.017	Significant
Rickshaw maintenance	1.142	0.332	Not significant
Entertainment	0.096	0.962	Not significant
Health	0.254	0.858	Not significant
Electric bill	1.469	0.223	Not significant

Source: Calculated by the author based on field survey data, collected from February 2021 to June 2022.

Interpretation

To examine whether variations in household expenditure across social categories are statistically significant, a One-way Analysis of Variance (ANOVA) [$F(3, 366)$] was performed. The results indicate that differences in expenditure across most categories are not statistically significant at the 5 per cent level (table.3). Expenditure on food grains, children's education, drink and smoking, electricity, health, entertainment, and rickshaw maintenance does not show significant variation across the social groups considered in the study.

In contrast, housing expenditure exhibits statistically significant variation (table.3) among the communities ($F = 3.458$, $p = 0.017$). This finding is consistent with the observed expenditure pattern, where ST and General households recorded relatively higher housing expenditure compared to other social groups. This variation may be influenced by differences in residential arrangements, including reliance on rented accommodation and occupational mobility among certain groups. The results suggest that household expenditure behaviour among cycle rickshaw pullers is broadly comparable across communities, with housing being the only expenditure component showing statistically significant inter-community variation.

6. Major Findings

(i) The expenditure structure of cycle rickshaw pullers demonstrates a strong concentration of household resources towards essential consumption requirements, reflecting the predominance of subsistence-oriented spending behaviour among the households under study.

(ii) Food grains constitute the largest component of household expenditure, accounting for 60.63 per cent of total average household expenditure, with an average monthly spending of Rs 5,321.22. This highlights the substantial proportion of household income devoted to basic subsistence needs.

(iii) Children's education emerges as the second-largest expenditure category (13.87 per cent; Rs 1,217.49), revealing that households allocate a notable share of their limited resources towards educational needs despite prevailing economic constraints.

(iv) Expenditure on drink and smoking (Rs 509.78) exceeds expenditure on health, entertainment, and rickshaw maintenance, indicating that a comparatively larger share of household resources is directed towards non-essential personal consumption than welfare-oriented expenditure.

(v) Community-wise analysis reveals variation in expenditure patterns across social categories. General households record the highest expenditure on food grains, whereas OBC households demonstrate comparatively higher expenditure on children's education.

(vi) ST households exhibit the highest expenditure on drinking and smoking, along with comparatively higher expenditure on housing and rickshaw maintenance, reflecting differences in expenditure priorities and resource allocation patterns among the social groups.

(vii) The comparatively higher housing expenditure among ST and General households appears to be linked with the prevalence of rented accommodation and occupationally influenced residential arrangements rather than improved housing conditions.

(viii) Lower expenditure on health and electricity among ST households may reflect comparatively limited access to electricity-dependent household amenities and restricted financial capacity for healthcare-related expenditure.

(ix) Results of the One-way Analysis of Variance (ANOVA) reveal that differences in expenditure across most expenditure categories are statistically insignificant at the 5 per cent significance level.

(x) Housing expenditure is the only category exhibiting statistically significant variation among social groups ($F = 3.458$, $p = 0.017$), suggesting that residential arrangements and occupational circumstances have a comparatively greater influence on housing expenditure patterns.

7. Conclusion

The present study examined the household expenditure patterns of cycle rickshaw pullers across different social communities with the objective of understanding whether significant variations exist in their spending behaviour. The analysis indicates that expenditure is largely concentrated on basic necessities such as food grains, housing, and rickshaw maintenance, reflecting the subsistence-level economic condition of the respondents. The one-way ANOVA results reveal that inter-community differences in expenditure across major heads are statistically insignificant, suggesting a broadly uniform economic constraint irrespective of social category. Minor variations observed in specific heads do not alter the overall pattern of expenditure distribution. The findings highlight that the livelihood structure of cycle rickshaw pullers is primarily shaped by low and unstable income rather than community affiliation. This underscores the need for policy attention towards income security, access to welfare schemes, and targeted livelihood support for informal urban workers.

References

Bhattacharya, P., & Mitra, S. (2013). Urban informal transport and livelihood vulnerability: Evidence from Indian cities. Journal of Transport Geography, 30, 102-110.

Chen, M. A. (2012). The informal economy: Definitions, theories and policies. Women in Informal Employment: Globalizing and Organizing (WIEGO).

Deaton, A. (1997). The analysis of household surveys: A microeconometric approach to development policy. Johns Hopkins University Press.

Deaton, A., & Muellbauer, J. (1980). Economics and consumer behavior. Cambridge University Press.

Desai, S., & Dubey, A. (2011). Caste in 21st century India: Competing narratives. Economic and Political Weekly, 46(11), 40-49.

Engel, E. (1857). Die Productions- und Consumtionsverhältnisse des Königreichs Sachsen [The production and consumption conditions of the Kingdom of Saxony]. Zeitschrift des Statistischen Bureaus des Königlich Sächsischen Ministeriums des Innern, 8 (9), 1-54.

Harris, J. R., & Todaro, M. P. (1970). Migration, unemployment and development: A two-sector analysis. American Economic Review, 60(1), 126-142.

International Labour Organization. (2018). Women and men in the informal economy: A statistical picture (3rd ed.). ILO.

Ministry of Statistics and Programme Implementation. (2023). Periodic Labour Force Survey (PLFS), annual report. Government of India.

National Commission for Enterprises in the Unorganised Sector. (2007). Report on conditions of work and promotion of livelihoods in the unorganised sector. Government of India.

National Sample Survey Office. (2014). Household consumer expenditure in India: NSS 68th round (2011-12). Ministry of Statistics and Programme Implementation, Government of India.

Office of the Registrar General & Census Commissioner, India. (2011). Primary census abstract. Government of India. https://censusindia.gov.in

Rajé, F., & Tiwari, G. (2009). Transport and social exclusion in India: A case study of Delhi rickshaw workers. Transport Reviews, 29(3), 297–315.

Roy, A. (2009). Civic governmentality and urban informal transport workers in Kolkata. International Development Planning Review, 31(1), 43-62.

Sen, A. (1999). Development as freedom. Oxford University Press.

Todaro, M. P., & Smith, S. C. (2015). Economic development (12th ed.). Pearson.