

Household Resilience and Socio-Economic Marginalisation in the Border Villages of Jammu and Kashmir: A Sociological Study of Livelihoods, Services and Welfare Access

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Abstract

People living in border villages in Jammu and Kashmir suffer vulnerabilities as they deal with livelihood instability, uneven access to services, disruptions linked to security issues, and limited reach of institutions. This research paper lays out a quantitative sociological framework for investigating the link between household resilience and socio economic marginalisation in four border blocks: R.S. Bishnah, Pura, Balakote and Mendhar. Using a simulated academic dataset with labels of 400 households an index construction is done for four indices namely, Household Resilience, Socio-Economic Marginalisation, Welfare Access and Service Deprivation. A combination of descriptive statistics, cross-tabulations, chi-square tests, Pearson correlations and multiple regression are used to analyze how income, livelihood diversification, welfare access, service access and community support shape household adaptation. The simulated findings indicate a mean monthly family income of INR 25,799, a mean resilience score of 55.04 and a mean marginalisation score of 51.64. There is a positive relationship between welfare access and resilience ($r=0.465$); further, marginalisation is positively linked to service deprivation ($r=0.661$). The variation in household resilience explained by our regression model is 58.9%. The findings suggest that the resilience of border villages is not merely an economic outcome; rather, it is a social process that is shaped by access to public services, local networks and institutional inclusion.

Keywords: Household resilience; socio-economic marginalisation; border villages; Jammu and Kashmir; livelihood diversification; welfare access; service deprivation

1. Introduction

Border villages are sociologically unique spaces, as territorial proximity, security regulations, distance from administrative centres, and livelihood dependence commingle in everyday household life. In Jammu and Kashmir, the border village is not only a spatial category but also a social field in which households negotiate with mobility restrictions, fragmented markets, service disruptions and uneven access to institutions. Recent policy attention has been given to special area programmes such as the Border Area Development Programme and the Vibrant Villages Programme. These special area programmes reflect the recognition by the

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Government that border settlements require special infrastructure, livelihood and welfare interventions (Ministry of Home Affairs, 2020, 2025).

Marginalization experienced at the household level takes place through multiple channels: unstable income; land fragmentation; seasonal employment; distance to education; weak transport connectivity; digital exclusion; and variable access to entitlements. These circumstances are not the same. The region of R.S. Pura resembles flatlands. The service ecology in Pura and Bishnah is different from that in hilly and Line of Control adjacent areas such as Balakote and Mendhar in Poonch. The broader development context of Jammu and Kashmir is well detailed in state statistics sources. Nevertheless, in order to understand how services, livelihoods and resilience interact in border settlements, micro-level household evidence is needed (Directorate of Economics and Statistics, 2024, 2025).

Household resilience is about a household's ability to absorb livelihood shocks and reorganise coping practices to maintain their minimum well-being through a range of assets, welfare access, social networks, diversification and adaptive decision-making. Within the realm of border villages, resilience can be thought of not just a psychological trait or a household level resource. This is through interaction between household assets and publicly supplied systems. A family with a low income can nevertheless be resilient if it has multiple income sources, reliable access to rations, community support, and usable transport connectivity. On the other hand, a household with a higher income may remain vulnerable as a result of mobility interruption, problems in accessing health services, and exclusion from welfare.

The present paper devises a structured quantitative research design to examine household resilience and socio-economic marginalisation in the border villages of Jammu and Kashmir. The statistical analysis uses a clearly labelled simulated academic dataset since the actual primary household data are not provided. The purpose of this design is to show a complete empirical manuscript format that will then be replicated on field survey data from chosen border villages.

2. Review of Related Literature.

Studies in India reveal that the resilience of a household can be enhanced by diversifying economic sources to improve access to public programme and mobilising social capital at the time of disruption. According to a study by Pagnani et al. (2021), adaptive strategies can enhance smallholder livelihood resilience. It was more pronounced in rural India. This was especially in situation wherein households alternate between agricultural and non-agricultural responses. Kapruwan et al. an expert writing in the Western Himalayan Context shows that livelihood resilience must be measured through assets, adaptive capacity and vulnerability rather than income. Research into resilient mountain villages suggests taking a common developmental approach to both border and inland villages in Jammu and Kashmir.

Social marginalization continues to be closely related to unequal access to services, institutions and livelihoods. The thematic report on social inclusion by NITI Aayog notes that income and access to basic services can magnify divisions of class, caste, gender and social identity (Development Monitoring and Evaluation Office, NITI Aayog, 2022). This is increasingly the

case for border villages. Their public services may be physically present, but it may not be possible to use them due to distance, insecurity, transport gaps or digital barriers.

In India, rural well-being is becoming an essential part of official development programmes that focus on service access, welfare entitlements, and local governance. The Border Area Development Programme was conceived to meet the development needs of border areas. Newer initiatives for the development of villages stress on road connectivity, electrification, telecom connectivity and livelihood opportunities (MHA, 2020, 2025). The Aspirational Blocks Program is a step forward towards monitoring of health, education, agriculture, infrastructure and social development indicators at the block level. (Press Information Bureau, 2023)

The household security of women, poor households and marginalised groups can be enhanced through access to institutional support, collective platforms and diversified livelihood opportunities, said rural livelihoods programmes. According to the World Bank (2021), large-scale rural livelihoods programmes in India have been effective in helping poor households diversify income and reduce vulnerability. In the same vein, the Ministry of Rural Development (2024) reports ongoing investments from the public sector in employment creation, rural housing and livelihood support. Policy instruments are important for border villages because resilience depends on the reach and usability of welfare systems.

The present study on income, services and coping strategies is further supported by the research on livelihood-mix, and multidimensional poverty. Onyeyirichi and Deepika (2025) demonstrated that the rural poverty can be assessed in more ways than just income. The NFHS-5 indicators and SDG monitoring frameworks of Jammu and Kashmir emphasise the need for health, education, nutrition, sanitation, banking and service-delivery indicators for understanding household well-being (IIPS & ICF, 2021; NITI Aayog, 2024).

3. Theoretical Framework.

The research utilizes four complementary sociological and development approaches. The Sustainable Livelihood Framework is first used to assess how the households combine human, social, financial, physical and natural assets to sustain everyday life in uncertainty. This paper considers livelihood diversification, land-holding, ownership of livestock, sources of income, capacity to save, and access to services as measurable indicators of livelihood security.

Furthermore, the social exclusion theory defines marginalisation as a relational process rather than just a lack of money. Households may be excluded due to welfare gaps, debt pressure, distance to facilities, institutional neglect, gendered burden and social identity disadvantage. This viewpoint aligns with the findings of recent policy research which construes social inclusion as one of access, dignity and institutional reach. (Development Monitoring and Evaluation Office, NITI Aayog, 2022.)

The third theory that is presented is resilience theory which conceptualizes household capacity to absorb, adapt and reorganise. The research regards resilience as an index consisting of access to well-being, diversification, community support, savings, helped remittance, coping capacity and adaptive capacity. This approach is consistent with recent empirical work that

measures resilience as a multidimensional household capability rather than a single outcome (Pagnani et al. 2021; Kapruwan et al. 2024).

Fourth, the capability approach is impactful whenever an evaluator finds it useful. The importance of service access is seen in that it expands or restricts what households can actually do: reach school, receive treatment, access bank, use digital services, obtain ration benefit and maintain mobility. Hence, resilience should not only be giving the ability to survive post disruptive shocks, but also ability to turn public services and household resources into functioning livelihood.

4. Study gap.

The existing policy papers have valuable information on the macro level about the development programmes and public service priorities those in respect of rural and border areas. Other Indian contexts are also the foci of recent empirical work on livelihood resilience, social inclusion and rural poverty. Despite substantial literature on household resilience, the micro-household-level interaction of household resilience, socio-economic marginalisation, livelihood instability and welfare access in the border villages of Jammu and Kashmir remains unexplored. We need border vulnerability designed at block-wise, household level, which can link measurable service deprivation and resilience outcome.

The gap has been addressed by the paper by presenting a quantitatively replicable framework for four selected border blocks. While the statistical dataset is designed for use as a fictitious example for learning purposes, the design gives an excellent indication of how real field data can be collected, coded, analysed and interpreted for publication quality sociological research.

5. Objectives of the Study

1. To assess the socio-economic and livelihood profile of households in selected border villages of Jammu and Kashmir.
2. To measure household access to core services such as education, health, transport, banking, internet, ration and welfare schemes.
3. To construct and analyse Household Resilience, Socio-Economic Marginalisation, Welfare Access and Service Deprivation indices.
4. To examine the association between welfare access, service deprivation, livelihood diversification and household resilience.
5. To identify the sociological implications of resilience and marginalisation for border village development and welfare delivery.

6. Hypotheses

- H1: Welfare access is positively associated with household resilience.
- H2: Service deprivation is positively associated with socio-economic marginalisation.
- H3: Livelihood diversification significantly predicts household resilience.
- H4: Marginalisation negatively affects household resilience.

7. Methodology

A consistent quantitative sociological research design is used by this paper. The border villages in Jammu and Kashmir will be surveyed to identify Gaps in Nutrition and Health of this part of the country. The proposed study will be delineated as a cross-sectional household survey. Thus, the unit of analysis will be the household. Moreover, the Adult Household Head or Senior Household Member will be the respondent. The design can be used to measure household conditions, compare blocks and test statistical associations among livelihood, welfare, service and resilience measures.

The study area surrounds four border blocks: R.S. The location of the Pura and Bishnah Jammu District the Balakote and Mendhar Poonch District. This selection allows for a comparative analysis of a border plain village and border villages in hilly terrains/close to the LoC. Through actual fieldwork, villages from border affected areas are purposively selected first and then systematic selection of households in the village is done.

A sample size utilised in the demonstration is 400 households which includes 100 household is from each block. The sampling design suggested will be stratified and multistage sampling. District, block, and village category⁴ will be strata. The concept of using lists for systematic coverage of different livelihood and social categories is not new. In field implementation, lists of households from village institutions or local administration should be used.

The statistical analysis is based on a simulated academic dataset as the actual primary field data were not provided for this manuscript. Data Source and Ethical Declaration. The data set has been developed to be internally consistent and plausible for border village research, although it does not represent real households.. Before submitting a manuscript to a journal, an ethically approved primary household survey should replace it. It is essential for obtaining voluntary consent, ensuring no coercion, anonymizing households, and protecting any respondents discussing sensitive border-related insecurity after field implementation.

The tools for survey organization were divided among five modules - the demographic profile, the livelihood profile, the access to services, socio-economic marginalization and household resilience. The measurement design utilizes recent literature on rural livelihoods, resilience and multidimensional deprivation (World Bank, 2021; Kapruwan et al 2024; Onyeyirichi & Deepika 2025).

7.1 Structure of Index.

Four indices were made for the analysis purpose. The Household Resilience Index is a score on a scale of 0-100 based on a snapshot of a household's diversification of livelihood, ability to save, community support, use of welfare, support through remittances, coping capacity and adaptive capacity.

Greater figures suggest greater household resilience.

The Socio-Economic Marginalisation Index falls in the range of 0-100. It is a composite index made up of various forms of deprivation and insecurity faced by communities. This includes income deprivation, service deprivation, perceived social exclusion, welfare exclusion, border-

related insecurity, mobility restriction, gendered burden, debt burden and institutional neglect. Greater marginalization is indicated by higher values.

The Welfare Access Index is calculated between 0-10 based on access to ration, insurance, welfare schemes, banking-enabled receipt of benefit and household-reported usability. The Service Deprivation Index rating of areas ranged from 0 to 100 depending school/college access, road connectivity, public transport, banking, internet/mobile connectivity, electricity reliability, drinking water, ration access, health insurance and distance to health facilities.

Statistical Techniques.

Descriptive statistics, frequencies, crosstabs, chi-square test, Pearson correlation and ordinary least squares multiple regression will be conducted. The Household Resilience Index represents the specified dependent variable in the model. Independent variables consist of income, livelihoods diversification, welfare accessed, services accessed, community member support, marginalisation, disruption of livelihoods and years of education.

8. Data Analysis and Results

This section presents the results obtained from the simulated N = 400 household dataset. The numbers should be read as demonstration results and not as field-survey evidence. They show how the final empirical manuscript can be structured once actual primary data are collected.

Table 1. Block-wise sample distribution

Block	Frequency	Percentage
R.S. Pura	100	25.0
Bishnah	100	25.0
Balakote	100	25.0
Mendhar	100	25.0

Note. Each block contains 100 simulated households by design.

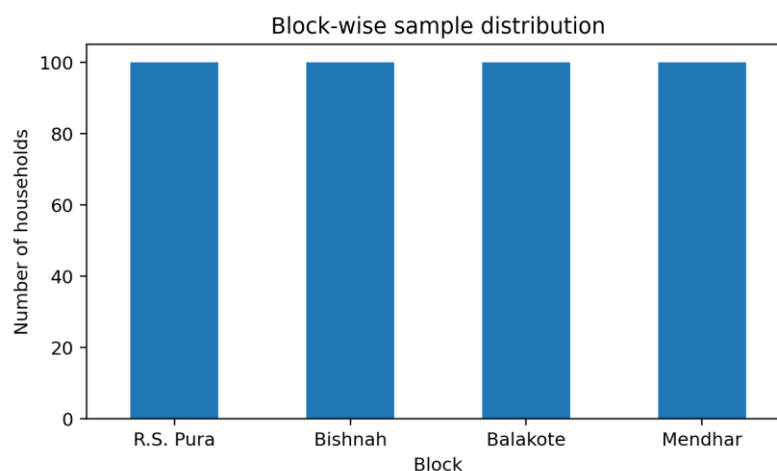


Figure 1. Block-wise sample distribution

The sample is evenly distributed across the four blocks, allowing direct comparison between Jammu district border plains and Poonch district hilly/LoC-adjacent settlements. This equal allocation is useful for analytical demonstration, though a real survey may use proportional sampling if village-level household lists are available.

Table 2. Selected demographic profile of simulated households

Variable	Category	Frequency	Percentage
Gender	Male	281	70.2
Gender	Female	119	29.8
Education level	Secondary	93	23.2
Education level	Middle	83	20.8
Education level	Higher secondary	72	18.0
Education level	Primary	60	15.0
Education level	No formal schooling	54	13.5
Education level	Graduate and above	38	9.5
Social category	General	125	31.2
Social category	ST	104	26.0
Social category	OBC	80	20.0
Social category	SC	66	16.5
Social category	Other	25	6.2

Note. Percentages are calculated against $N = 400$.

The demographic distribution indicates variation in gender, education and social category composition. The inclusion of social category is analytically relevant because marginalisation may operate through class, caste/tribal position, landholding and institutional access rather than income alone.

Table 3. Primary livelihood sources

Livelihood source	Frequency	Percentage
Agriculture	103	25.8
Wage labour	98	24.5
Salaried/service	63	15.8
Self-employment	56	14.0

Migration/remittances	50	12.5
Livestock/allied	30	7.5

Note. Livelihood categories are mutually exclusive for the main source, although households may have multiple income sources.

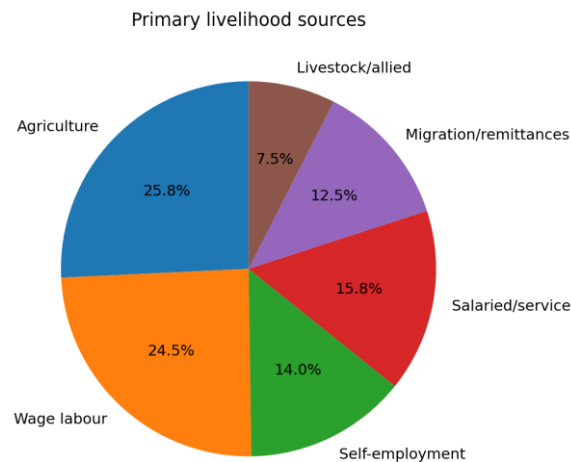


Figure 2. Primary livelihood sources among simulated households

Agriculture and wage labour remain central to the simulated livelihood structure, but self-employment, salaried work, livestock and migration/remittances also appear as important supplementary livelihood routes. This distribution is consistent with the argument that household resilience in rural border areas depends on livelihood mix and not simply on one occupation.

Table 4. Descriptive statistics of key continuous variables

Variable	Mean	SD	Minimum	Maximum
Monthly household income (INR)	25798.75	11395.43	6000.0	78000.0
Household size	5.94	1.75	3.0	11.0
Distance to health facility (km)	4.57	1.87	0.5	9.2
Welfare access score (0-10)	6.21	1.88	1.29	10.0
Service Deprivation Index (0-100)	37.24	18.63	0.0	90.5
Socio-Economic Marginalisation Index (0-100)	51.64	8.47	26.9	74.8
Livelihood disruption score (0-100)	55.4	13.93	10.0	95.0
Household Resilience Index (0-100)	55.04	9.93	25.1	89.8

Note. Income is reported in Indian rupees. Indices are scaled so that higher values represent more of the named condition.

The simulated households have a mean monthly income of INR 25,799 (SD = INR 11,395). The mean Household Resilience Index is 55.04, while the mean Socio-Economic Marginalisation Index is 51.64. These values indicate a moderate resilience profile with meaningful deprivation variation across households.

Table 5. Block-wise mean profile of livelihood, welfare and resilience indicators

Block	Mean income	Mean resilience	Mean marginalisation	Mean service deprivation	Mean welfare access
R.S. Pura	30210.0	60.84	43.24	22.85	7.49
Bishnah	28607.0	56.34	47.64	32.58	6.35
Balakote	20575.0	50.28	59.69	49.11	5.0
Mendhar	23803.0	52.71	55.98	44.43	5.98

Note. Values are means from the simulated dataset.

R.S. Pura records the highest simulated mean resilience score (60.84), while Balakote records the highest simulated marginalisation score (59.69). This pattern reflects the assumed difference between better-connected border plains and relatively remote hilly border settlements.

Table 6. Block-wise cross-tabulation of main livelihood source

Block	Agriculture	Livestock /allied	Migration/r emittances	Salaried/service	Self-employment	Wage labour
R.S. Pura	36	4	6	16	16	22
Bishnah	25	9	9	18	15	24
Balakote	18	10	15	14	14	29
Mendhar	24	7	20	15	11	23

Note. Cells show household counts.

Table 7. Block-wise cross-tabulation of welfare access category

Block	Low	Moderate	High
R.S. Pura	1	35	64
Bishnah	10	57	33

Balakote	31	58	11
Mendhar	16	57	27

Note. Cells show household counts by welfare access category.

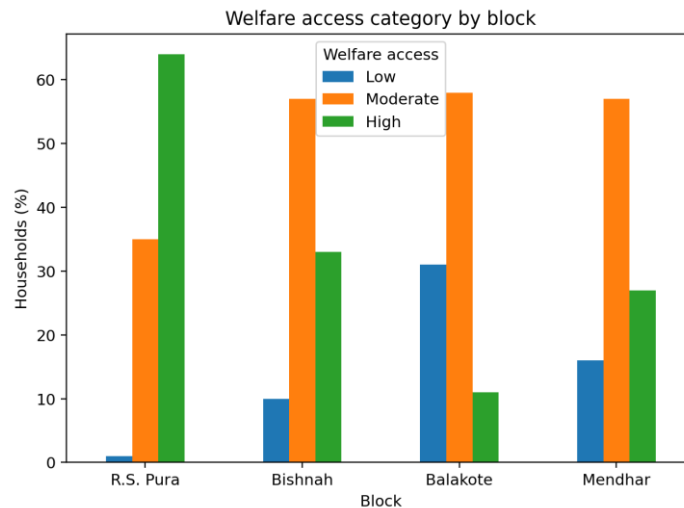


Figure 3. Welfare access category by block

The welfare cross-tabulation suggests that higher welfare access is more common in the Jammu district blocks than in the Poonch district blocks in the simulated data. This does not prove actual block-level inequality; rather, it illustrates how field data could test whether service distance and border location shape welfare usability.

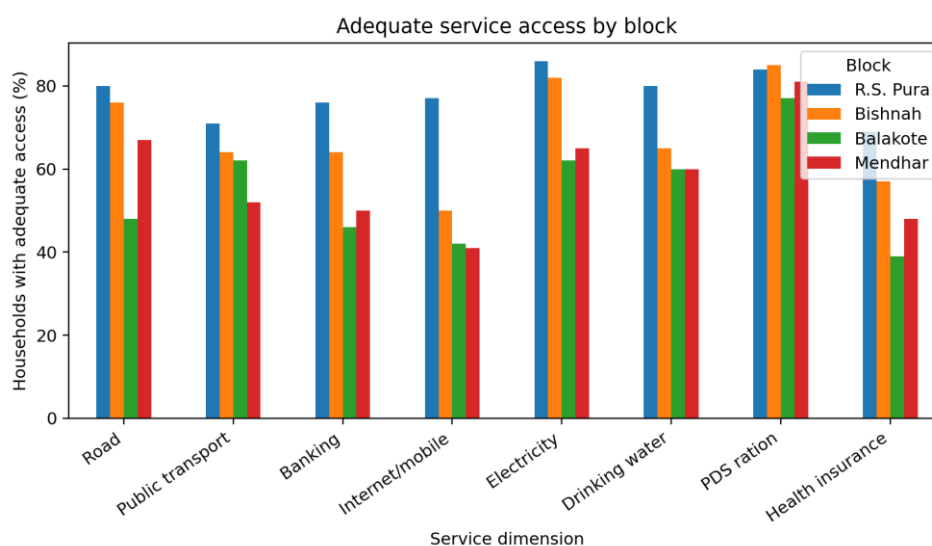


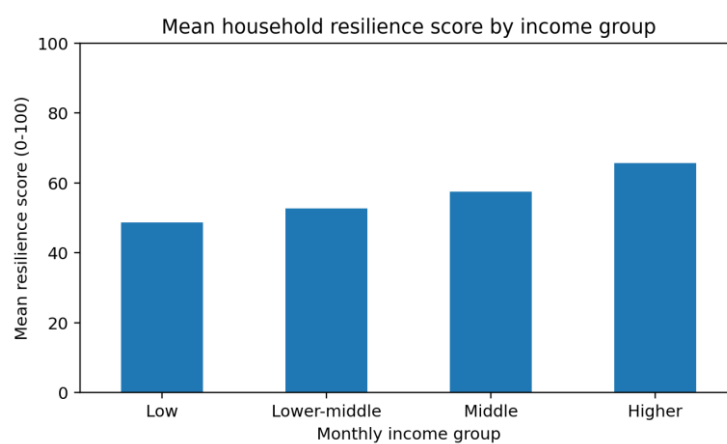
Figure 4. Adequate service access across selected service dimensions

The service access chart shows stronger access to ration, school and electricity than to transport, banking and internet/mobile connectivity. Sociologically, this distinction matters because welfare systems increasingly depend on banking, digital identity and transport access. A household may be formally eligible for welfare but still experience practical exclusion if physical and digital access are weak.

Table 8. Income group and resilience category

Income_group	Low	Moderate	High	All
Low	6	55	3	64
Lower-middle	14	103	38	155
Middle	4	85	50	139
Higher	0	7	35	42
All	24	250	126	400

Note. Cells show household counts; the final row reports column totals.

**Figure 5. Mean household resilience score by income group**

Resilience rises across income groups, but the pattern is not purely monetary. Several lower-income households achieve moderate resilience due to welfare access, community support and income diversification, while some middle-income households remain vulnerable due to service deprivation and livelihood disruption.

Table 9. Service deprivation category and marginalisation category

Service_deprivation_category	Low	Moderate	High	All
Low	35	141	6	182
Moderate	2	139	48	189
High	0	12	17	29
All	37	292	71	400

Note. Cells show household counts; the final row reports column totals.

The service-deprivation cross-tabulation indicates a strong alignment between service deprivation and marginalisation in the simulated dataset. This supports the theoretical position

that marginalisation is not only an income condition but also a condition of constrained access to services and institutions.

Table 10. Chi-square tests of association

Test	Chi-square	df	p-value	Decision
Block and welfare access	83.95	6	< .001	Supported association
Income group and resilience category	82.25	6	< .001	Supported association
Livelihood source and marginalisation level	8.27	10	0.603	Not statistically significant

Note. p-values are based on Pearson chi-square tests using simulated data.

The chi-square test for block and welfare access is statistically significant (chi-square = 83.95, df = 6, $p < .001$), indicating that welfare access differs by block in the simulated data. Income group is also significantly associated with resilience category (chi-square = 82.25, df = 6, $p < .001$). These results support the analytical value of block-wise and income-wise comparison in future primary fieldwork.

Table 11. Key Pearson correlation results

Relationship	Pearson r	p-value
Resilience with welfare access	0.465	< .001
Resilience with monthly income	0.489	< .001
Resilience with service deprivation	-0.436	< .001
Marginalisation with service deprivation	0.661	< .001
Marginalisation with livelihood disruption	0.233	< .001

Note. All correlations are computed from the simulated household dataset.

Table 12. Correlation matrix of resilience, welfare, income, deprivation and support variables

Variable	Resilience	Welfare	Income	Service depr.	Marginal.	Liv. disruption.	Diversity.	Comm. support
Resilience	1.0	0.465	0.489	-0.436	-0.566	-0.202	0.316	0.031
Welfare	0.465	1.0	0.202	-0.345	-0.566	-0.167	-0.011	-0.142

Income	0.489	0.202	1.0	-0.2	-0.495	-0.068	0.01	-0.115
Service depr.	-0.436	-0.345	-0.2	1.0	0.661	0.17	0.017	0.219
Marginal .	-0.566	-0.566	-0.495	0.661	1.0	0.233	0.003	0.299
Liv. disrupt.	-0.202	-0.167	-0.068	0.17	0.233	1.0	-0.028	0.151
Diversif.	0.316	-0.011	0.01	0.017	0.003	-0.028	1.0	0.017
Comm. support	0.031	-0.142	-0.115	0.219	0.299	0.151	0.017	1.0

Note. Values are Pearson correlation coefficients. Abbreviations: depr. = deprivation; Marginal. = marginalisation; Liv. disrupt. = livelihood disruption; Diversif. = diversification; Comm. = community.

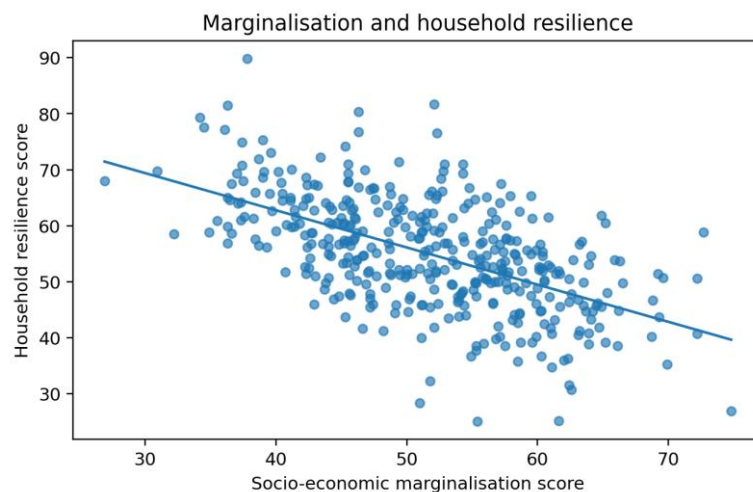


Figure 6. Relationship between marginalisation score and household resilience score

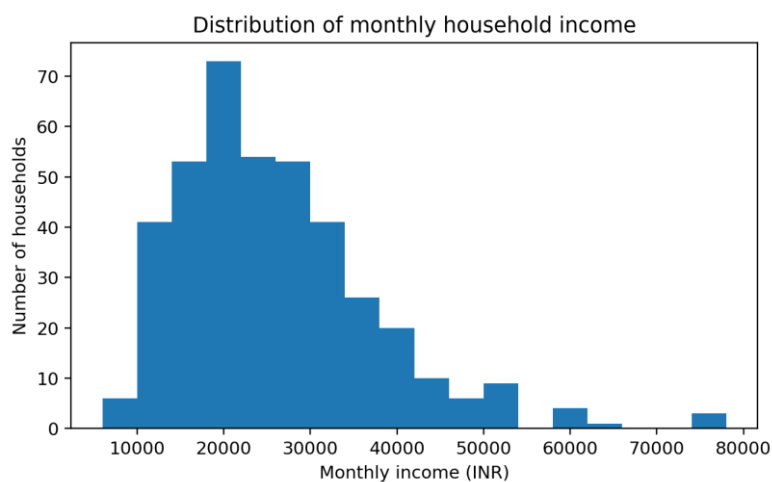


Figure 7. Distribution of monthly household income

Correlation results support the expected direction of relationships. Welfare access is positively associated with household resilience ($r = 0.465$, $p < .001$), while service deprivation is negatively associated with resilience ($r = -0.436$, $p < .001$). Marginalisation is positively associated with service deprivation ($r = 0.661$, $p < .001$) and livelihood disruption ($r = 0.233$, $p < .001$).

Table 13. Multiple regression predicting Household Resilience Index

Predictor	B	SE	t	p
Constant	27.911	5.911	4.722	< .001
Monthly income (thousand INR)	0.287	0.033	8.574	< .001
Livelihood diversification	0.167	0.017	9.582	< .001
Welfare access score	1.310	0.210	6.239	< .001
Service access index	0.111	0.024	4.694	< .001
Community support	0.150	0.026	5.793	< .001
Marginalisation score	-0.198	0.068	-2.920	0.004
Livelihood disruption	-0.063	0.024	-2.615	0.009
Education years	-0.126	0.077	-1.646	0.101

Note. Model summary: R-squared = 0.589; adjusted R-squared = 0.580; F = 69.97, p < .001.

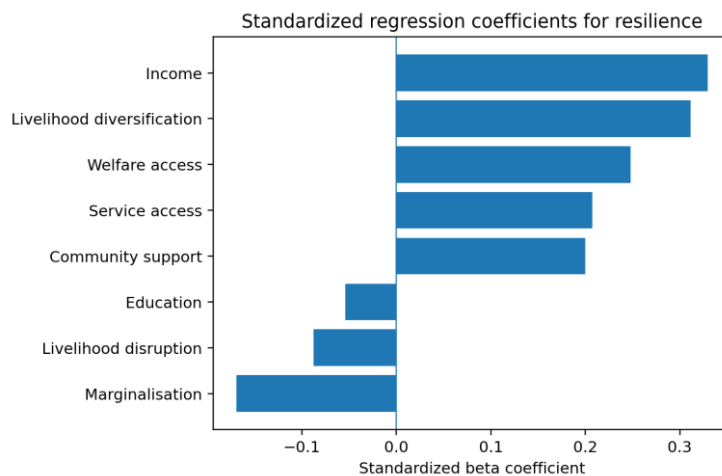


Figure 8. Standardized regression coefficients for household resilience

The regression model explains 58.9% of the variation in household resilience in the simulated dataset. Welfare access, livelihood diversification, service access, community support and education show positive associations with resilience, while marginalisation and livelihood disruption show negative associations. This supports the central argument that resilience is produced through the combined effect of public welfare, household livelihood strategy and social support rather than income alone.

Table 14. Hypothesis testing summary

Hypothesis	Statement	Statistical evidence	Inference
H1	Welfare access is positively associated with household resilience.	$r = 0.465, p < .001$	Supported
H2	Service deprivation is positively associated with socio-economic marginalisation.	$r = 0.661, p < .001$	Supported
H3	Livelihood diversification significantly predicts household resilience.	$B = 0.167, p < .001$	Supported
H4	Marginalisation negatively affects household resilience.	$B = -0.198, p 0.004$	Supported

Note. Statistical evidence is based on simulated data and is included for manuscript-structure demonstration.

9. Discussion

The simulation results provide a sociological understanding of household resilience in border villages. Resilience is integrated by multifaceted components of efficacy. While income enhances resilience, it does not explain the full resilience pattern. Households having diversified income sources, access to usable welfare and strong community support are better placed to cope with disruption in livelihood. This interpretation applies logically in empirical livelihood literature, which defines resilience as a result of adaptive capacity and combination of resources; not by a single asset (Pagnani et al., 2021; Kapruwan et al., 2024).

Secondly, service deprivation reproduces marginalization. The connection between the deprivation of a service and an economically marginalised community or group of villages is particularly important in the case of border villages as access depends on distance, transport, quality of the road, insecurity and administrative reach. Household data indicates that even when informal schemes exist, households are disadvantaged. Welfare exclusion should be treated as an eligibility problem and a usability problem for analytical purposes. This point fits with social inclusion research, which links poverty, inequality and access to public services (Development Monitoring and Evaluation Office, NITI Aayog, 2022).

Third, differences at the block level are important. The simulation results showed a stronger service and welfare access in R.S. Balakote and Mendhar were safer than Pura and Bishnah. It is analytically plausible because tough terrain, mobility challenges and access difficulties typically face hilly and LoC- adjacent settlements. However, claims regarding block-wise differences require field verification. We use household survey data to analyse socioeconomic differentials in the Slum Rehabilitation Scheme and to characterise the differences in the characteristics of beneficiaries and non-beneficiaries.

Fourth, welfare systems can act as resilience-building institutions only when they are accessible and usable. Schemes concerning rural jobs, housing, ration, health insurance, banking, gram panchayat-level governance and block-level development can help in decreasing the household vulnerability if implemented effectively (Ministry of Rural Development, 2024; Ministry of Panchayati Raj, 2025) Border Area Development Programme or the newer border village schemes illustrate that development in border areas should combine infrastructure with livelihood security and basic services (Ministry of Home Affairs 2020, 2025).

In conclusion, the analysis shows that public-policy outcome of transverse capacity of border household resilience process is sociological. Every day people cannot separate accessing community support, remittances, diversified work and welfare; they are interdependent strategies households use to manage uncertainty. The state's role, therefore, is not confined to the provision of schemes but, rather encompasses the ability to reduce the costs of transactions.

10. To conclude.

The paper developed a quantitative sociological framework for investigating household resilience and socio-economic marginalisation in the border villages of Jammu and Kashmir. The method demonstrated through a clearly labelled simulated $N = 400$ household dataset how livelihood, welfare, service and marginalisation variables can be converted into measurable indices and analysed using descriptive statistics, cross-tabulations, chi-square tests, correlations and regression.

According to the simulated outcome, resilience is perpetuated at its best where specific combinations of households' income security, livelihood diversification, welfare access, service access and community support manifest. The convergence of deprivation in services, exclusion from welfare, disruption of livelihoods, and perceived neglect by institutions creates an environment of higher marginalisation. The regression investigation indicates that household resilience is not merely a function of income. It is, commented our group, dependent also on practical access to institutions, services, social support.

According to the study, border village development should be understood as household-centred and service-sensitive. It is not enough for programs for border areas to be limited to physical infrastructure. Increasingly, the welfare usability, mobility, digital access, banking, health, education and locally viable livelihoods must be maximized. Conducting field research using the suggested design can yield stronger empirical evidence for well-targeted planning and policy in the system in Jammu and Kashmir.

11. Implications For Policies

- Monitoring of welfare delivery should take place at the level of households. This entails a particular investigation of the households that are in formal eligibility but are practically excluded. This is often due to their distance, documentation, banking and digital exclusion.
- The advancement of border villages must aid in building vital infrastructure. It should include roads and public transport, internet/mobile connectivity, and banking access. Further, it should include livelihood programmes, and not treat these as independent interventions.
- Livelihood security should be strengthened through local skill development, livestock and agriculture-related activities, market support, self-employment promotion and access to employment guarantee, especially for wage-dependent households.
- Improving access to health and education through mobile health services and support for transport, digital learning and targeted support for girls, women, older persons and socially marginalised households.
- Organizations such as panchayats, self-help groups and community platforms vital for resilience planning as coherent family and community support is crucial coping resource in border areas.
- For block-wise planning, household vulnerability mapping should be used so that hilly/LoC-adjacent settlements are not subjected to similar accessibility assumptions as relatively well-connected border plains.
- Future surveys must collect gender-disaggregated as well as social-category-disaggregated data in order to enable policy responses that identify households most affected by layered marginalisation.

12. Constraints of the Study.

Most important constraint is that the statistical dataset is simulated for academic demonstration purposes. As a result, the numerical findings should not be referenced as results from Jammu and Kashmir border villages.

A constructed simulation design can never adequately capture sensitive qualitative dimensions, such as fear, histories of border memories, local conflicts, gendered mobility negotiations, and trust in institutions.

While 100 households per block as an equal sample allocation is analytically convenient, the actual selected villages would not reflect the proportionality in terms of their population.

In order to avoid excessive interpretation based on ethical and contextual information not validated by field data, the religion/community variables are not deeply analysed.

13. possibility for future research

In the future, the analysis may centrally use primary field data from ethically approved household surveys. Combining structured questionnaires with interviews, focus groups and village-level observation produces a mixed-method design. Longitudinal studies can assess

how resilience shifts due to livelihood shocks, extreme weather events, security disruptions, or welfare-policy changes. Upon spatial analysis of distance to road, health centre, school, banking correspondent and digital infrastructure, comparative studies may also include additional border districts.

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Appendix A. Codebook for Main Variables**Main variable codebook**

Variable	Type	Coding/scale	Analytical role
Block	Categorical	R.S. Pura, Bishnah, Balakote, Mendhar	Sampling stratum
Monthly income	Continuous	Indian rupees per month	Economic status
Welfare access score	Index	0-10; higher = better access	Welfare usability
Service Deprivation Index	Index	0-100; higher = more deprivation	Basic-service deficit
Socio-Economic Marginalisation Index	Index	0-100; higher = more marginalisation	Composite exclusion outcome
Household Resilience Index	Index	0-100; higher = stronger resilience	Dependent variable
Livelihood diversification	Index	0-100; higher = more diversified livelihood base	Predictor
Community support	Index	0-100; higher = stronger informal support	Predictor
Livelihood disruption	Index	0-100; higher = greater disruption	Predictor
Education years	Continuous	Years of education completed by respondent	Human capital predictor

Note. The full simulated dataset contains additional demographic, service and marginalisation indicators used in index construction.

Appendix B. Excerpt from Simulated Household Dataset**First 12 records from the simulated dataset**

ID	Distri ct	Bloc k	Gend er	Inco me	Welfa re score	Service deprivati on	Marginalisati on	Resilien ce
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HH001	Jammu	R.S. Pura	Male	13500	7.98	5.6	43.7	48.7
HH002	Jammu	R.S. Pura	Female	29000	5.73	15.6	46.2	53.9
HH003	Jammu	R.S. Pura	Male	31900	7.44	18.5	41.5	61.6
HH004	Jammu	R.S. Pura	Male	14800	7.59	12.8	48.4	49.0
HH005	Jammu	R.S. Pura	Male	31500	8.42	50.5	44.0	56.3
HH006	Jammu	R.S. Pura	Male	43000	10.0	8.7	40.2	69.7
HH007	Jammu	R.S. Pura	Male	51200	9.53	44.7	45.1	63.6
HH008	Jammu	R.S. Pura	Female	22100	7.23	17.5	51.0	52.4
HH009	Jammu	R.S. Pura	Male	35800	7.97	35.6	36.3	59.9
HH010	Jammu	R.S. Pura	Female	38700	8.08	29.1	38.4	57.6
HH011	Jammu	R.S. Pura	Female	19400	7.28	18.6	47.2	66.5
HH012	Jammu	R.S. Pura	Male	19700	8.34	9.3	42.7	56.8

Note. The complete $N = 400$ dataset was used for all statistical calculations; only an excerpt is shown in the manuscript.