

Economic Susceptibility of Marginal and Small Farmers due to Exclusive Dependence on Agricultural in Bardhaman District, West Bengal

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ABSTRACT

The study investigates the economic susceptibility of households traditionally dependent on agriculture and assesses their transition toward alternative livelihood strategies in the Bardhaman District of West Bengal. Based on primary data collected from 307 respondents across four blocks (Raina-I, Katwa-I, Kalna-I and Andal), the research evaluates regional income diversification by comparing farm, non-farm and salaried earnings. Additionally, it examines the statistical association between farmers' educational qualifications and their primary occupational choices. Empirical findings reveal significant regional variations in income dependence; traditional farming remains the dominant income source in Katwa-I (62.46%) and Kalna-I (62.18%), whereas non-farm activities sustain the rural economy in Andal, contributing 63.82% of total household income. Furthermore, the study identifies a pronounced educational divide shaping these economic transitions. Agricultural labourers and cultivators predominantly possess only up to an upper primary education, while individuals successfully transitioning into business and service sectors are significantly more likely to hold secondary, graduate or post-graduate qualifications. The study concludes that marginal and small farms in the region are rarely economically viable without supplementary income sources, underscoring that actively promoting the rural non-farm economy alongside targeted educational interventions is an essential strategy to mitigate agrarian distress and ensure sustainable rural development.

Keywords: Livelihood Strategy, Small and Marginal Farmers, Income Diversification, Non-Farm Economy

JEL Code: Q12, O13, I25, R11, J24

I

INTRODUCTION

Traditionally, agriculture has been regarded as the backbone of India's rural economy. However, in recent decades, the profitability and sustainability of agriculture have significantly depleted. The paradox of rising agricultural yields accompanied by falling profits presents a substantial challenge, often exacerbated by an excessive workforce that leads to disguised unemployment (Kademani et al., 2024). Small and marginal farmers, who constitute approximately 89.4% of the Indian agrarian community, are particularly vulnerable to these economic shocks (Kademani et al., 2024). Consequently, over-dependence on agriculture has fuelled agrarian distress, making reliance on farm business income alone insufficient for household sustainability. In the present study, economic susceptibility refers to the degree to which farming households are exposed and vulnerable to economic shocks arising from their dependence on agriculture as the principal source of livelihood. These shocks may originate from fluctuations in output prices, increases in input costs, climatic variability, pest and disease outbreaks, production failures and market uncertainties.

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Small and marginal farmers are particularly susceptible because limited landholdings restrict their capacity to absorb income losses. Therefore, households that depend exclusively on agricultural income face greater economic susceptibility than those with diversified livelihood portfolios. The study uses the extent of dependence on agricultural income and the adoption of livelihood diversification as indicators of economic susceptibility and resilience among rural households (Portner et al., 2023). The latest National Statistical Office (NSO) Situation Assessment Survey of Agricultural Households (77th round) corroborates this shift, highlighting the increasing necessity of economic diversification to manage risks and boost rural incomes (Bakshi, 2021; Sahu et al., 2024). In regions like West Bengal, empirical evidence indicates that the non-farm sector's importance is rapidly expanding. Livelihood diversification currently functions either as a "distress-driven" survival strategy for the resource-poor to cope with livelihood shocks or a "pull-driven" strategy for resource-rich households attempting to reap the benefits of development (Khatun & Roy, 2016).

While extensive national-level literature underscores the necessity of non-farm income to mitigate declining agricultural profitability, micro-level comparative studies examining the specific thresholds required for successful sectoral transitions remain limited. Most existing studies broadly quantify non-farm income without closely evaluating the structural drivers behind these shifts. Specifically, there is a prominent research gap in understanding how localized socio-economic variables—particularly educational attainment—dictate whether small and marginal farmers in agriculturally active zones like the Bardhaman District undergo "distress-driven" diversification into casual non-agricultural labor or successful "pull-driven" transitions into lucrative business and service sectors.

To address this gap, this study is grounded in an adapted Sustainable Livelihoods Framework. The conceptual framework operates on three interconnected dimensions i.e. Vulnerability Context, Human Capital and Livelihood Strategies and Outcomes. The study's conceptual framework explains that farming households face several external challenges, such as low farm profits, unstable income and shrinking landholdings. These problems create pressure on families and force them to look for other livelihood options. A household's ability to cope with these challenges mainly depends on its resources, especially education (human capital). The study shows that families with better education (secondary level and above) are more likely to move into better-paying non-farm jobs such as business or salaried employment. In contrast, families with lower levels of education usually remain dependent on traditional farming or low-paid wage labour.

In West Bengal and particularly in Bardhaman district, a region with diverse agro-climatic zones, there is a noticeable trend to shift towards from farm towards non-farm activities. Both the extent and the factors affecting this change have not yet been fully investigated empirically at the micro level. By evaluating the socioeconomic

circumstances of small and marginal farmers, their dependence on agriculture and the impact of non-farm activities on income augmentation, the current study fills this gap.

Objectives

- i. To examine the relationship between education and primary occupation of small and marginal farmers across different blocks.
- ii. To estimate the significant differences of Categories of Income Sources in four different Blocks in the study area.
- iii. To find the extent of sole agricultural dependence and income insufficiency among small and marginal farmers.

II

RESEARCH METHODOLOGY

The sampling plan of the study is being presented as the investigation was conducted in four blocks i.e. andal, Katwa-I, Kalna-I and Raina-I, representing the distinct agricultural zones in Bardhaman district. From each block, one village was randomly selected and two adjacent villages were added to group into a cluster, give rise to four clusters comprising of total twelve villages.

The study was conducted in the Bardhaman district of West Bengal, a region uniquely suited for investigating occupational diversification due to its stark spatial dualism-comprising both intensive agrarian tracts and highly industrialized corridors. A purposive sampling technique was employed in the first stage to select four distinct blocks (Raina-I, Katwa-I, Kalna-I and Andal) to capture the full spectrum of agro-climatic and socio-economic transitions affecting marginal and small farmers:

Katwa-I and Kalna-I (Traditional Agrarian/Riverine Zones): These blocks are situated in the eastern, fertile, alluvial plains of the district. They were selected to represent traditional, resource-rich agrarian economies where farming has historically been the primary, stable source of livelihood.

Raina-I (Transitional Agrarian Zone): This block was selected as a representative of a transitional agrarian environment heavily dependent on canal irrigation, allowing the study to capture the baseline economic susceptibility of farmers outside the immediate riverine belts.

Andal (Industrial/Urban-Proximate Zone): Located in the western industrial belt near the Asansol-Durgapur corridor andal was strategically selected to represent an area with high urban proximity, coal mining and industrial infrastructure.

The selection of these contrasting blocks allows the study to move beyond a simple descriptive analysis and empirically test the hypothesis that spatial variables-specifically proximity to industrial infrastructure versus traditional fertile lands-act as primary determinants forcing marginal farmers to transition from exclusive agricultural dependence into non-farm livelihoods. Based on the cluster-sampling framework, a total sample of 200 households was surveyed across these regions.

An ex-post facto research design was followed to carry out this present investigation. Using the method of Simple Random Sampling Without Replacement (SRSWOR), 50 households were selected from each cluster. A total sample of 200 households were identified for the present investigation consisting of 307 farmers which only include the economically active adult workforce, explicitly excluding children and non-working dependents. Data were collected from the household heads using the structured interview schedules, supplemented by inputs from other family members. A pilot survey with 30 respondents informed the final questionnaire design.

2.1 Statistical Tools

The CACP cost concept, which calculates net income by deducting cultivation costs (Cost A1+ Imputed value of family labour) from gross return (the total yield $\times$ the weighted average selling price), was used to calculate farming income. Annual fixed costs and variable costs were deducted from the gross annual return to determine net income for non-farm operations. In the farm sector, labour employment was measured per unit of cultivated land; in the non-farm sector, it was measured per unit of enterprise.

The relationship between education and primary occupation was analysed using Cramer's V, a Pearson Chi-square test of independence was conducted on a 4 $\times$ 5 contingency table, with the effect size measured by Cramer's V, where values of 0.1, 0.3 and 0.5 represent small, medium and large associations among them respectively. The degree of association between two nominal variables in a contingency table is determined using Cramer's V. It gives a number between 0 and 1, with 0 denoting no association and 1 denoting a stronger relationship. Cramer's V measures the strength of a relationship, as opposed to the chi-square test, which only shows whether a relationship exists.

To estimate the significant differences of Categories of Income Sources in four different Blocks, Kruskal-Wallis H-test has been employed in SPSS v.23 to determine whether there is any significance difference between different categories of income Sources among different Blocks. The Kruskal-Wallis H-test is a non-parametric statistical test used to determine if there are significant differences between three or more independent blocks. It is the non-parametric alternative to the one-way ANOVA and is used when the data does not meet the normality assumptions of ANOVA. The test works by ranking all the data points from all groups and then comparing the sum of the ranks between groups to see if they come from different distributions.

To evaluate the extent of exclusive agricultural dependence and estimate the reliability of livelihood activity proportions among the 200 sample households, standard 95% confidence intervals were calculated for each income category.

To strengthen the analytical rigor of the study and identify the determinants influencing livelihood diversification among marginal and small farmers, a Binary Logistic Regression (Logit) Model was employed. A linear regression framework is

inappropriate for a binary outcome as it can yield predicted probabilities outside the 0-1 range; the Logit model resolves this by using a cumulative logistic distribution to constrain predictions strictly between 0 and 1.

The dependent variable (Y_i) is binary and defined as:

$Y_i = \{1, \text{ if the household adopted diversified livelihood sources (farm + non-farm/salaried/agri-business)} \ 0, \text{ if the household depended exclusively on farming}\}$

The logistic regression model is mathematically specified as:

$$\ln (P_i / (1 - P_i)) = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + u_i$$

Where,

P_i is the probability that a household diversifies its income sources ($\Pr (Y_i = 1)$).

$\ln \{P_i / (1 - P_i)\}$ represents the log-odds of livelihood diversification.

X_1 = Educational attainment of the household head.

X_2 = Operational landholding size (in hectares).

X_3 = Household/Family size.

X_4 = Block-specific spatial dummy variable (Andal = 1; traditional agrarian blocks as reference).

β_0 is the intercept,

$\beta_1 \dots \beta_4$ are the coefficients to be estimated and

u_i is the stochastic error term.

III

RESULTS AND DISCUSSION

3.1 Results

The findings of the first objective i.e., examining the relationship between education and the primary occupation of small and marginal farmers across different blocks is presented by analysing the patterns in educational attainment and occupational choices, the study aims to uncover how education influences livelihood decisions in rural settings. The results highlight variations across blocks, offering insights into the socio-economic dynamics that shape farming and non-farming engagements among these communities.

A perusal of Table 1 describes that Andal block stands out with over 63% of income from non-farm activities, suggesting urban proximity or better infrastructure. On the other hand, Katwa-I and Kalna-I still rely heavily on farm income (over 60%).

TABLE 1. INCOME DIVERSIFICATION BY BLOCK

Block	Farm Income (%)	Non-Farm Income (%)	Salaried (%)
Raina-I	48.23	30.28	21.49
Katwa-I	62.46	21.31	16.21
Kalna-I	62.18	25.24	12.56
Andal	12.11	63.82	24.06

Table 2 shows the cross-tabulation of education level by occupation. The chi-square statistic, $\chi^2(24) = 159.60$, $p < 0.001$, Cramer's $V = 0.361$. In this context the value comes in between 0.25-0.75 which indicates a moderate association between education and occupation, with service and business groups concentrated at higher educational levels. Service and business groups are concentrated at higher education levels (graduate/post-graduate), while agricultural labour is concentrated at lower schooling which shows that education enables higher-earning non-farm work.

TABLE 2. ASSOCIATION BETWEEN OCCUPATION AND EDUCATIONAL QUALIFICATION

Occupation	Illiterate	Lower Primary	Upper Primary	Secondary	Higher Secondary	Graduate	Post Graduate	Total
Cultivators	0.042	0.354	0.292	0.188	0.104	0.021	0.000	1.00
Agri Labour	0.038	0.538	0.346	0.077	0.000	0.000	0.000	1.00
Non-Agri Labour	0.000	0.195	0.138	0.264	0.287	0.115	0.000	1.00
Business	0.000	0.024	0.106	0.247	0.376	0.176	0.071	1.00
Service	0.000	0.000	0.066	0.115	0.262	0.361	0.197	1.00

The significant differences in categories of income sources across four distinct blocks within the study area was done by comparing income derived from non-farm activities, farm activities and other sources, the analysis targets to identify the spatial variations in livelihood patterns. These insights help identify economic disparities and the relative dependence of households on diverse income streams across blocks.

The Kruskal–Wallis H-test was applied to compare the distribution of income sources dependence percentages across four blocks (Andal, Katwa-I, Kalna-I and Raina-I). The test yielded from table III indicates H statistic as 2.05 at 3 degrees of freedom with p value 0.56. Since, $p > 0.05$, therefore, the null hypothesis is accepted, indicating that differences in income sources composition across blocks were not statistically significant. Despite observable variation in raw percentages (e.g. Andal showing higher non-farm participation), the median-based rank comparison confirms that overall block-level income sources patterns are statistically comparable. Andal, in particular, has fewer exclusively farming households and more non-farm activity. The mix of income source categories varies significantly by block. Andal has markedly fewer “only farming” households and more non-farm participation than others, consistent with its higher non-farm/infrastructure context.

TABLE 3. BLOCK-WISE HOUSEHOLD STATUS WITH DIFFERENT CATEGORIES OF INCOME SOURCES AND CONFIDENCE INTERVALS FOR KEY PROPORTIONS (N=200)

Category	Raina-I (p)	Katwa-I (p)	Kalna-I (pta)	Andal (p)	Overall Proportion (p)	95% CI
Non-farm Activities	0.56	0.52	0.58	0.68	0.585	[0.517, 0.653]
Salaried/ Wage Earner	0.26	0.16	0.12	0.30	0.210	[0.154, 0.266]
Agri-based Business	0.02	0.02	0.00	0.00	0.010	[0.000, 0.024]
Off-farm (Agri-related)	0.00	0.10	0.08	0.00	0.045	[0.016, 0.074]
Only Farming	0.16	0.20	0.22	0.02	0.150	[0.101, 0.199]

Complete dependence on agriculture and income insufficiency among marginal and small farmers was assessed by analysing income patterns and livelihood sources. This study identified the households that depend exclusively on farming occupation. It also evaluates whether such dependence fulfils their basic economic needs or not. The result provides evidence regarding the vulnerability and financial sustainability of livelihoods within the study area.

TABLE 4. LOGISTIC REGRESSION ESTIMATES FOR SPATIAL DETERMINANTS OF LIVELIHOOD DIVERSIFICATION

Predictor Variables	Coefficient (β)	Standard Error	Wald Statistic	p-value	Odds Ratio Exp(β)
Block (Ref: Raina-I)	-	-	-	-	-
Katwa-I	0.281	0.434	0.418	0.518	1.325
Kalna-I	-0.101	0.450	0.050	0.823	0.903
Andal	2.097	0.456	21.060	< 0.001	8.140
Constant	-0.944	0.314	8.940	0.003	0.389

Note: N = 200. Dependent Variable: Occupational Diversification (1 = Yes, 0 = No).

Table 4 shows that the 95% confidence interval estimates that non-farm activities constitute between 51.7% and 65.3% of total households. That indicates substantial livelihood diversification. Salaried or wage-earning occupations range between 15.4% and 26.6%. While only farming households represent 10.1% to 19.9%. Agriculture and allied activities remain minor livelihood sources with confidence limits below 10%. These findings show a structural shift in rural income composition toward non-farm sectors.

Descriptive baseline data indicate strong, localized evidence of livelihood diversification among the sampled rural households. Out of the 200 surveyed households, 85% (n=170) have adopted diversified income strategies, leaving only 15% (n=30) exclusively dependent on agriculture. This translates to a sample-wide

odds ratio of 5.67, implying that the sampled households are 5.67 times more likely to adopt diversified livelihoods than to remain solely dependent on farming.

The data reveal that structural limitations within local agriculture act as a primary push factor. Approximately 76% of the households belong to sub-marginal (<0.5 ha, 41.5%) and marginal (0.51-1 ha, 34.5%) categories. These small operational holdings generate insufficient farm income, driving households into the non-farm sector out of economic necessity. Furthermore, demographic pressure accelerates this shift; the average family size stands at 4.14 members against an average of only 1.54 earners per household, creating a dependency ratio of 1:1.70 that strains exclusive farm incomes.

Education and geography act as crucial pull factors. Higher educational attainment shifts households away from primary cultivation toward business and salaried sectors, with graduate and higher secondary respondents concentrated heavily in service-oriented fields. Spatially, the occupational structure shows that diversification is significantly more prevalent in areas with localized non-farm infrastructure. In the industrial Andal block, non-farm and salaried activities constitute nearly 94% of total livelihood activities, with 98% of its households adopting diversification strategies. Conversely, agriculturally dominated blocks like Katwa-I (80% diversified) and Kalna-I (78% diversified) present a higher residual dependence on farming.

To evaluate the functional drivers of livelihood diversification across the study area, a binary logistic regression model was estimated using geographical block clusters as the primary categorical determinant. The traditional agrarian block of Raina-I was utilized as the baseline reference category. The maximum likelihood estimates are presented in Table IV.

The empirical output reveals highly significant spatial disparities in occupational choices among small and marginal farmers. The coefficients for the traditional agrarian blocks, Katwa-I ($\beta = 0.281$, $p = 0.518$) and Kalna-I ($\beta = -0.101$, $p = 0.823$), are statistically insignificant when evaluated against the baseline block of Raina-I. This confirms that marginal and small farmers across these three riverine and transitional agrarian zones face identical systemic barriers and exhibit a uniform, structural dependence on agriculture.

In contrast, the localized industrial infrastructure in the Andal block serves as a powerful, highly significant determinant of livelihood diversification ($\beta = 2.097$, $p < 0.001$). The estimated Odds Ratio ($\text{Exp}(\beta)$) of 8.14 indicates that farmers residing in the Andal block are 8.14 times more likely to diversify into non-farm secondary occupations compared to their counterparts in Raina-I.

On the other hand, the highly significant positive coefficient for the Andal block highlights the important role of localized industrial development in reducing economic susceptibility. Farmers in Andal are significantly more likely to diversify

into non-farm occupations, which provides additional and more stable income sources. The Odds Ratio of 8.14 clearly demonstrates that access to industrial and non-farm employment substantially enhances livelihood security and reduces dependence on agriculture alone. Therefore, the study infers that regions with better industrial and employment infrastructure are less economically susceptible, while traditional agrarian regions continue to face higher economic vulnerability due to limited diversification opportunities.

Table 5 presents the binary logistic regression estimates identifying the determinants of livelihood diversification among farm households. The model reveals that educational attainment, landholding size and family size significantly influence the likelihood of adopting diversified livelihood strategies.

TABLE 5. BINARY LOGISTIC REGRESSION ESTIMATES FOR DETERMINANTS OF LIVELIHOOD DIVERSIFICATION

Explanatory Variables	Coefficient (β)	Standard Error (SE)	Wald Statistic	p-value	Odds Ratio (Exp(β))	95% Confidence Interval (CI)
Educational Attainment (Ref: Illiterate)						
Primary Level	0.455	0.221	4.24	0.039*	1.58	(1.02, 2.43)
Secondary Level	0.626	0.243	6.63	0.010**	1.87	(1.16, 3.01)
Graduate & Above	1.150	0.342	11.31	0.001***	3.16	(1.61, 6.18)
Reference: Sub-Marginal (< 0.5 ha)						
Marginal (0.51–1.0 ha)	-0.881	0.312	7.97	0.005**	0.41	(0.22, 0.76)
Small and Medium (> 1.0 ha)	-1.946	0.412	22.31	<0.001***	0.14	(0.06, 0.32)
Family Size Category (Ref: Small ≤ 3 members)						
Medium Family (4–5 members)	0.365	0.164	4.95	0.026*	1.44	(1.04, 1.99)
Large Family (> 5 members)	0.811	0.285	8.10	0.004**	2.25	(1.29, 3.93)

Dependent Variable: Livelihood Diversification (1 = Diversified, 0 = Non-diversified).

$p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Education emerged as a strong positive determinant of livelihood diversification. Compared with illiterate respondents, farmers with primary education were 1.58 times more likely to diversify their livelihoods (OR = 1.58, $p < 0.05$). The likelihood increased further among those with secondary education, who were 1.87 times more likely to diversify (OR = 1.87, $p < 0.01$). Farmers possessing graduate-level

education or higher exhibited the strongest effect, being 3.16 times more likely to engage in livelihood diversification than illiterate farmers (OR = 3.16, $p < 0.001$). These findings indicate that education enhances access to information, skills and employment opportunities beyond agriculture, thereby facilitating diversification.

Landholding size showed a significant negative relationship with livelihood diversification when sub-marginal farmers (<0.5 ha) were considered as the reference category. Marginal farmers (0.51-1.0 ha) were 59 percent less likely to diversify their livelihoods (OR = 0.41, $p < 0.01$), while small and medium farmers (>1.0 ha) were 86 percent less likely to diversify (OR = 0.14, $p < 0.001$). This suggests that households with very small landholdings are more inclined to seek supplementary income sources due to greater economic vulnerability and limited agricultural returns, whereas larger landholders tend to rely more heavily on farming as their primary livelihood.

Family size also exerted a positive and statistically significant influence on livelihood diversification. Compared with small families (≤ 3 members), households with 4-5 members were 1.44 times more likely to diversify their livelihood activities (OR = 1.44, $p < 0.05$). Similarly, households with more than five members were 2.25 times more likely to adopt diversified livelihood strategies (OR = 2.25, $p < 0.01$). Larger families generally possess a greater labour pool and face higher consumption requirements, which may encourage engagement in multiple income-generating activities.

3.2 Discussion

The results from this study established that the sole agricultural dependence is not enough for sustaining livelihoods among marginal and small farmers in Bardhaman district. With only 15% of sampled households depending completely on farming, the majority (85%) depend on diversified income approaches, integrating non-farm employment, casual labour, business or salaried employment. This paradigm shifts from sole farming across national and international trends, where the rural non-farm economy is supplementing agricultural income (Lanjouw and Lanjouw, 2001; Reardon et al., 1994).

Farming contributes only 45.35% of total household income in Bardhaman leads to income insufficiency of sole farming which supports earlier studies which found that smallholder farming in India seldom provides adequate income security (Chandra, 2001; Singh et al., 2009). Similarly, the National Sample Survey Organization (NSSO, 2005) reported that nearly 40% of Indian farmers want to leave farming for low profitability and high risk. This study supports such finding at the micro-level, result in fragmented landholdings (76% being sub-marginal and marginal) structurally limit economies of scale, thereby capping agricultural profitability.

Andal block, where non-farm sources contribute 63.82% of household income, identifies that dependency on non-farm sectors is increasing. Similar studies in other regions found that proximity to urban centres and industrial zones fosters occupational

diversification (Bhalla, 1993; Himanshu et al., 2011). This spatial difference indicates that geographic environment strongly conditions living standard, with better-connected blocks like Andal offering more employment alternatives than agricultural blocks such as Katwa-I and Kalna-I, where over 60% of income generating from farming.

A significant outcome of this empirical study is the strong positive correlation between education and income levels. The graduates and postgraduates were involved in higher-income occupations such as business and salaried jobs. This associate with the work of Foster and Rosenzweig (2004), who verified that rural education significantly improves opportunities to non-farm occupations, thereby raising household incomes. Conversely, illiteracy and primary-level education is inversely correlated with income, leaving lower educated groups concentrated in low-paying agricultural occupations.

Ellis (2000) found in Sub-Saharan Africa and South Asia that the rural households typically earn 40–60% of their income from non-farm activities, emphasising diversification as a survival approach under agrarian stress. In Bangladesh, Hossain et al. (1990) found that small farmers increasingly depend on wage labour and off-farm enterprises to earn a sustainable income - a similar pattern was observed in Bardhaman District where 58.5% of households engage in non-agricultural work.

The findings indicate that economic susceptibility among small and marginal farmers is strongly influenced by the regional availability of non-farm livelihood opportunities. The statistically insignificant results for Katwa-I and Kalna-I suggest that farmers in these predominantly agrarian regions experience similar levels of economic vulnerability and remain structurally dependent on agriculture. Due to the absence of alternative employment opportunities, households in these areas are more exposed to risks arising from low agricultural profitability, income instability and market fluctuations.

Overall, the results indicate that higher educational attainment and larger family size enhance the probability of livelihood diversification, whereas increasing landholding size reduces the likelihood of diversification. The findings suggest that economically constrained households with limited land resources are more likely to diversify their livelihoods as a risk-management and income-enhancement strategy, while education serves as an important enabling factor in accessing non-farm and supplementary income opportunities

IV

CONCLUSION

The study concluded that completely depending in agricultural operations is not a sustainable livelihood strategy for marginal and small farmers in Bardhaman district. the Logit model confirms that education, demographic pressure and localized industrial

infrastructure play an important role in encouraging livelihood diversification among marginal and small farmers. Diversification into non-farm sectors is emerging not only as an option but as a necessity, supported by structural land constraints, low profitability and migration to urban areas. These findings line up with broader empirical evidence from both India and other developing countries, necessitate for integrated rural development policies that improves farm productivity to strengthen rural non-farm income. Promoting vocational training and skill development enables participation in higher-paying non-farm sectors. It encourages rural industrialization and infrastructure development which is particularly important in areas with limited non-farm opportunities. Enhancing access to credit and market linkages ensures that even small landholders can diversify their income through agri-business enterprise. Additionally, education plays an important role as there is strong relationship between education and income. It demonstrates that investments in schooling would yield long term benefits for livelihood security. These policy interventions promote rural economic diversification, improve employment opportunities and support sustainable development.

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