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Socio-economic Patterns of Agricultural Households in Mizoram

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Abstract:
Background: *Mizoram is a region where the majority of the working population is engaged in agriculture. However, the agriculture and allied sectors' contribution to the state's Gross State Value Added (GSVA) remains relatively low at 23.71% for 2021-22 (Economic Survey of Mizoram, 2024-25). Thus, it is essential to understand the socio-economic profiles of agricultural households. This paper aims to shed light on various factors, including household income, landholdings, land ownership, asset ownership, bank deposit accounts, and alternative sources of income.*
Materials and Methods: *The study examines the socio-economic conditions of these households by employing statistical tools such as percentages, means, medians, modes, and chi-square tests, and graphical representations such as graphs and pie charts to produce informative results. It also proposes measures to support and uplift farming households in Mizoram.*
Results: *Results indicate that approximately 80% of agricultural households are headed by males, with the average age of the household head being 56.86 years. A significant number of respondents hold educational qualifications below matriculation, with a statistically significant relationship observed between gender and educational attainment. Most household heads are classified as small and marginal farmers. Notably, nearly all respondents have a savings deposit account, and over 90% own the land they cultivate. Households possess a variety of assets, including additional land, housing, vehicles, jewellery, and agricultural machinery. However, income derived from crop and livestock farming is relatively low, prompting households to seek alternative income sources.*
Conclusion: *These findings highlight the considerable socio-economic challenges faced by agricultural households, underscoring the need for initiatives aimed at raising awareness of available schemes and credit options, as well as the development of policies that create markets for agricultural products.*
Keywords: *Socio-economic, agricultural households, chi-square test, assets, sources of income.*

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I. Introduction

Agriculture plays an important role in the Indian economy, as it is the leading sector that generates the most employment. As it also provides an indispensable resource to the population, the government has taken several measures over the years to improve the welfare, interests, and security of the farmers (Malsawmdawngi & Singh, 2025). Some of the measures that were taken up by the government include the Green Revolution (1960s), the National Agriculture Policy (2000), etc. as well as the initiatives taken by developing several schemes for the upliftment of farmers such as Pradhan Mantri Kisan Samman Nidhi (PM-KISAN), Pradhan Mantri Fasal Bima Yojana (PMFBY), Modified Interest Subvention Scheme (MISS), Agriculture Infrastructure Fund (AIF), Rashtriya Krishi Vikas Yojana, National Food Security Mission (NFSM), etc. (Ministry of Agriculture & Farmers Welfare, 2024).

Mizoram is a region where the majority of the working population is engaged in agriculture. However, the agriculture and allied sector's contribution to the state's Gross State Value Added (GSVA) remains relatively low at 23.71% for the year 2021-22 as reported in the Economic Survey of Mizoram, 2024-25. According to the 2011 population census, agricultural workers (main and marginal) comprise 54.6% of the population in India. In Mizoram, approximately 55.76% of the total working population are agricultural workers, of whom 44% are female, and 56% are male (Office of the Registrar General & Census Commissioner, India, 2011).Thus, it is essential to understand the socio-economic profiles of agricultural households. Understanding their challenges, livelihoods, and contributions can provide valuable insights into the region's economic dynamics and the lives of its people.

II. Objectives of the study

This research aims to highlight the demographic and socio-economic factors of the agricultural households in Mizoram, including income levels, landholding sizes, land ownership, asset possession, bank deposit accounts, and alternative sources of income.

III. Research Methodology

Both primary and secondary data are used for the study. The primary data was collected through questionnaires developed by the researcher via field research and interaction with farmer households, as well as by consulting relevant existing studies in the field. The secondary data was gathered from research journals, magazines, books, newspapers, websites, published and unpublished theses and dissertations, and reports from various agencies such as NABARD, the National Sample Survey, the Agriculture Department, the Directorate of Economics and Statistics, and the Ministry of Agriculture and Farmers Welfare.

The study was conducted in Four Districts of Mizoram, namely Mamit, Aizawl, Champhai, and Lunglei. Farmer households of each operational holding in these Districts will be considered as the population of the study. According to the Agricultural Census 2015-16, there are 89,573 individual operational holdings in Mizoram.

The four districts with the most landholdings, namely Mamit, Aizawl, Champhai, and Lunglei, have been selected for the study. According to the Krejcie and Morgan table, the minimum sample size at a 95% level of confidence is 381. The study is conducted with a sample size of 410 to ensure higher accuracy of population representation and to minimise possible errors in questionnaire responses. The selection of sample households is done through multistage sampling. Stratified sampling is employed for distribution of farmer households in each district into sub-strata based on landholding size, to collect a representative sample. Samples are collected from each District proportionately as given in the table.

Table 1: District-level distribution of the respondents

District	Population	No. of Respondents	Percentage
Aizawl	15,804	112	27.30
Champhai	11,547	80	19.50
Lunglei	15,827	118	28.80
Mamit	14,231	100	24.40
Total	**57,409**	**410**	**100**

Source: Primary source

From each district, three (3) RD Blocks are selected based on higher population size as given by the Mizoram Population Census 2011. The two most inhabited villages are chosen from each RD block. Therefore, the research comprises 24 villages (Three RD Blocks x two villages x four districts) and 10 towns/villages within the district capitals. The list of operational landholders according to the Agriculture Census 2015-16 was collected from the Directorate of Economics & Statistics. The samples in each village/town are then selected randomly, which was generated using an MS Excel sheet.

Data was analysed using relevant descriptive statistical tools such as percentage, ratio, mean, median, mode, range and graphical presentation. In addition, the chi-square test is used wherever applicable.

IV. Findings and Discussions

The Demographic and socio-economic factors are taken from the respondents, where factors such as gender, educational qualifications, age, occupation, and possession of bank accounts are taken from the head of the agricultural households, and other factors such as size of landholdings, asset ownership, income from farming, and other sources of income are taken to represent the households.

1. Gender and Educational Qualification of the family head:

The gender of the household head plays an important role in the family's decision-making in finance and other matters. According to the Agriculture Census 2015-16, female operational holders in India consist of 13.96%, and their participation was the highest in the marginal category. Ramkumar et. al. (2024) specify the contribution of women in agriculture to be very significant yet labour-intensive and underpaid, and therefore, they face barriers such aslack of land ownership, lack of credit access, and recognition. Chebet (2023) also highlights the involvement of women in cooperatives and agribusiness as an important factor for improving productivity and thus suggests the enhancement of women's access to training, credit, and leadership goals.

According to the Population Census 2011, more than 60% of the heads of households have an educational qualification below Secondary (Matriculation), i.e. till primary or middle.Table 2 shows the number and percentage of the respondent households in terms of gender and educational qualification of the head of the family.

Table 2: Gender and Educational Qualification of the family head

	No. of respondents	**Percentage (%)**
Gender:		
Male	335	81.71
Female	75	18.29
Total	**410**	**100**
Educational Qualification:		
Below HSLC	216	52.68
HSLC	60	14.64
HSSLC	70	17.07
Graduate & Above	64	15.61
Total	**410**	**100**

Source: Primary source

In the present study, as shown in Table 2, the gender distribution of the respondents, where 81.7% of the households have a male as the family head and 18.3% consist of females.

The 2011 Population Census reveals a significant statistic: 17.6% of households in Mizoram are led by women. This notable figure reflects the increasing presence of female heads of households in the region. This observation aligns with the findings of Lalbiakzuali (2020), which underscores the reality that women's contributions to agriculture in Mizoram are predominantly informal and often go unpaid, highlighting the critical yet underappreciated role they play in sustaining agricultural practices and food security in their communities.

The findings show that 52.68% of farmer respondents have an educational qualification below HSLC (High School Leaving Certificate). The data complements the Census 2011, which states that the majority of the heads of the respondents have an educational qualification below HSLC, i.e. below secondary/matriculation. The data complements the Census 2011, which states that the majority of the heads of the respondents have an educational qualification below HSLC, i.e. below secondary/matriculation.

To inculcate deeper meaning into the data, the association between gender and educational qualification is tested using the chi-square test.

Table 3: Gender Distribution of Educational Qualifications (Chi-square test)

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	25.021[a]	3	.000
Likelihood Ratio	26.681	3	.000
Linear-by-Linear Association	17.534	1	.000
Cramer's V	0.247		.000
0 cells have expected count less than 5.			

Source: Compiled from primary sources

Chi-square test as per Table 3showed the association between gender and educational qualification to be statistically significant at $p<0.01$, with males having higher educational qualifications than females. This matches what other studies have found. Premachandran (2025) explains that girls in rural areas often face challenges like early marriage, safety issues, and poor school access, which limit their education. A report by Voluntary Action Network India (2024) also shows that many states still have significant gaps between boys' and girls' education. Kushwaha and Siddique (2025) found that fewer girls reach higher education levels, especially in rural areas. These studies help explain why the data show fewer females with graduate-level education.

2. Age of the family head

Vanlalmuana (2021) describes that age is an important variable to understand the demographicprofile of the sample respondents, as it influences decision-making and productive capacity.Descriptive statistics of the age of the family head are given in the table.

Table 4: Age of the family head of the agricultural households

Test Statistics	Sampled households
Mean	56.86
Median	56
Mode	55
Std. Deviation	11.33
Minimum	33
Maximum	98

Source: Primary source

The data in Table 4show that the mean age of the head of the sampled agricultural households is 56.86 years. There is no official data on the average age of the head of farm households in Mizoram; however, the 2011 Population Census and NSSO Survey 77th round (2021) data suggest that the age of the majority of the heads of family in Mizoram ranges between 40 and 59 years.

4. Occupation of the family head and Size of landholdings

While this study primarily focuses on agricultural households, it is important to note that farming may not necessarily serve as the principal occupation of the family head. In many cases, the professional pursuits of the household leaders can significantly influence the family's decision-making process. This dynamic suggests that various occupations beyond agriculture may play a crucial role in shaping the priorities and choices of these families, thereby impacting their overall livelihood and community engagement.

The Agriculture Census 2015-16 have classified the size of operational landholdings into marginal, small, semi-medium, medium and large landholdings. This is incorporated to classify size classes in the present study. The distribution of household heads' occupations and the size of landholdings is shown in Table 5.

Table 5: Occupation and Size of Landholdings

	No. of respondents	Percentage (%)
Occupation of the family head		
Farmer	243	59.3
Government employee	82	20
Private employee	18	4.4
Professional	46	11.2
Business owner	21	5.1
Total	**410**	**100**
Size of Landholding (in ha)		
Marginal (Less than 1 ha)	178	43.41
Small (1-2 ha)	91	22.2
Marginal & Small combined	**269**	**65.61**
Semi-medium (2-4 ha)	97	23.66
Medium & Large (4 ha & above)	44	10.73
Total	**410**	**100**

Source: Primary source

According to the NSSO Survey 77th round (2021), most family heads of agricultural households in India are self-employed in farming. Similar findings are also found in Mizoram, as supported by the findings

that 59.3% of the agricultural household heads are farmers. However, many rural households in Mizoram are shifting towards other non-agricultural work, and employment in agriculture is declining, as mentioned by Chanu, Singh, & Sharma in 2023&Lalengzama in 2019.

The data presented in Table 5 clearly indicates that a substantial segment of the surveyed households, amounting to 20% of the heads of families, are employed in government positions. This statistic highlights the role of public sector employment in the economic structure of the community represented by the respondents.
Table 5indicates that more than 60% of the respondents are marginal and small farmers, with the majority falling into this category. According to the Agriculture Census 2015-16, the average size of landholdings is 1.25 ha, which is higher than the National average of around 1.08 ha. The official document of 2015-16 shows that 68.8% of the agricultural holdings are small and marginal holdings. This proves that the data in the present study gives an accurate representation of the Mizoram State. Lalzuitluangi (2020), in her studies among agriprenuers of the Sericulture cluster inSaitual district of Mizoram, had also found that 70 per cent of them are small and marginal farmers holding less than 2acres. In India, 68.5% and 17.6% of the landholdings belong to the marginal and small category according to the Agriculture Census 2015-16. According to the NSSO Survey 77th round (2021), in India in 2019, 70.4% are marginal farmers who own less than 1 hectare of land.

Table 6: Gender-wise Distribution of the size of landholdings (Chi-square test)

	Value	**df**	**Asymp. Sig. (2-sided)**
Pearson Chi-Square	12.888[a]	3	.005
Likelihood Ratio	14.947	3	.002
Linear-by-Linear Association	10.224	1	.001
Cramer's V	0.177		.005
0 cells have expected count less than 5.			

Source: Compiled from primary sources

From Table 6, the chi-square test revealed a statistically significant relationship between gender and landholding size at $p < 0.01$; however, the strength of the association is weak, as the value of Cramer's V is 0.177. According to data from the Agriculture Census 2015-16 and the NSSO Survey 77th round (2021), female-headed households consistently have smaller average landholdings compared to their male counterparts, with over 75% of these holdings being less than 1 hectare. A 2023 study conducted by Singh et al. further highlighted that women's land ownership is not only quantitatively lower but also qualitatively inferior, as they frequently lack formal titles, access to irrigation, and decision-making authority.

6. Possession of Bank Deposit Account,Ownership of the Land, and Other Assets Owned by the Households

Possession of a bank account is the basic means of financial inclusion, and it creates a platform for households in savings and investment; therefore, it is significant to know the bank holdings of the family head. Land ownership plays a vital role in providing secure income for the farmers; it also reduces investment variability as farmers can invest securely in farm assets, as mentioned by Akber et. al. (2024). Subramanian& Kumar (2024) also mention that having ownership of land gives farmers the capacity to take credit from institutional sources. Table 7 shows the distribution of the respondents towards possession of bank deposit accounts, ownership of land, and other assets.

Table 7: Possession of Bank Deposit Account, Ownership of the Land, and Other Assets Owned by the Households

	No. of Respondents	**Percentage**
Possession of a bank deposit account		
Yes	396	96.59
No	14	3.41
Total	**410**	**100**
Ownership of the land occupied by the respondents		
Yes	385	93.9

No	25	6.1
Total	**410**	**100**
Other assets owned by the households		
Other Land	173	42.2
Residential House	374	91.22
Vehicle	343	83.66
Jewellery	113	27.56
Agricultural machinery	119	29.02
Total	**410**	**100**

Source: Primary source

Among the respondents of the present study, 96.59% have a savings deposit account, as given in Table 7. According to the NSSO Survey 77th Round (2021), the percentage of households having a savings bank account is 88.1% in India. According to the Economic Survey of Mizoram 2024-25 and the Mizoram Time Series Statistical Database, the estimated percentage of households having a savings bank account is 91.2%. This also shows that Mizoram's statistics are above the national average.

According to the Agriculture Census 2015-16, the percentage of wholly owned and operated landholdings in Mizoram is 94.5%. In the present study, the ownership of land among the respondents is 93.9%, as shown in Table 7.

Table 7 also shows that 42.2% of the respondents own other land or lands. 91.22% of the respondents own houses, which aligns with the NSSO Survey 77th round (2021) findings that 95% of the agricultural households own residential houses. Vehicle has become an important necessity in Mizoram, and as of August 2025, there are more than 3 lakh registered vehicles with the state government, according to the Transport Department, Government of Mizoram, 2025. Given the socio-economic context and infrastructural accessibility, the observed vehicle ownership rate of 83.66% among respondents is consistent with expectations.

Table 7 also shows the low ownership of jewellery as an asset at 27.56%, and this can be explained by the significantly lower ownership of the asset in the North-Eastern region of India, as per the NSSO Survey 77th round (2021). The findings also show that only a small portion of the respondents, i.e. 29.02% own agricultural machinery. According to the Mizoram Agriculture Department (n.d.), ownership of agricultural machinery such as power tillers, tractors, irrigation pumps, sprayers, etc., is very low, and the ownership is skewed towards medium and large farmers, even with the availability of government schemes such as RKVY and SMAF. This remains the same with the nation, and the mechanisation is high among the states of Punjab, Haryana, and Maharashtra.

9. Income from Farming

Income is the most significant means to measure the economic outcome of agriculture. The NABARD website report on "Farm Size and Productivity-Empowering Marginal Farmers for Cultivating Prosperity" in 2025 suggests a threshold farm size of 1.65 hectares for notable income improvement through cultivation, as larger farm size is associated with higher income. The average annual income from crop farming and livestock farming is collected separately for the study as given in Table 8.

Table 8: Average annual income from crop and livestock farming

Income from crop farming	No. of Respondents	Percentage
Below Rs. 30,000	197	48.05
Rs. 30,000 - Rs. 50,000	60	14.63
Rs. 50,000 - Rs. 1,00,000	68	16.59
Rs.1,00,000 - Rs.1,50,000	37	9.02
Rs.1,50,000 - Rs. 2,00,000	15	3.66
Rs. 2,00,000 - Rs. 2,50,000	15	3.66
Above Rs. 2,50,000	18	4.39
Total	**410**	**100**

Income from livestock farming	No. of Respondents	Percentage
Below Rs. 30,000	253	61.71
Rs. 30,000 - Rs. 50,000	59	14.39
Rs. 50,000 - Rs. 1,00,000	45	10.98
Rs.1,00,000 - Rs.1,50,000	36	8.78
Rs.1,50,000 - Rs. 2,00,000	6	1.46
Rs. 2,00,000 - Rs. 2,50,000	10	2.44
Above Rs. 2,50,000	1	0.24
Total	**410**	**100**

Source: Primary source

The average annual income from crop farming and its relationship with the size of landholdings, as per the study, is given in Table 9.

Table 9: Average annual income from crop farming and relationship with the size of landholdings (Chi-square test)

	Value	df	Asymp. Sig. (2-sided)
Likelihood Ratio	309.715	18	0.000
Linear-by-Linear Association	207.365	1	0.000
Cramer's V	0.532		0.000
10 cells (35.7%) have expected count less than 5. The minimum expected count is 1.61.			

Source: Compiled from primary sources

Table 9indicates that 48.05% of respondents earn less than Rs. 30,000 from crop farming. The NSSO Survey 77th round (2021) reported that in India, agricultural households earn Rs. 45,576 per household per year, and in Mizoram, Rs. 35,496 per household per year, from crop farming. This complements the findings of the present study, given in Table8, which shows that the majority of the households earn less than Rs. 50,000 from crop cultivation in a year.

The association between the size of landholdings and income from crop farming is tested, and since 10 cells have an expected count of less than 5, the assumption of the chi-square test is not met. So, we shift to the Likelihood ratio, which gives the value of 309.715 at p-value < 0.01. Therefore, there is a significant association between the size of landholdings and income from crop farming and the strength of the association, according to Cramer's V, is 0.532, which is moderate. The average annual income from livestock farming and its relationship with the size of landholdings are given in Table 10.

Table 10: Average annual income from livestock farming and relationship with the size of landholdings (Chi-square test)

	Value	df	Asymp. Sig. (2-sided)
Likelihood Ratio	190.985	18	0.000
Linear-by-LinearAssociation	128.191	1	0.000
Cramer's V	0.43		0.000
14 cells (50.0%) have expected count less than 5. The minimum expected count is .11.			

Source: Compiled from primary sources

Table 10 shows that a larger number of respondents (61.71%) are concentrated below Rs. 30,000, and 14.39% earn between Rs. 30,000 and Rs. 50,000. The NSSO Survey, 77th round (2021), also reported that the annual income per household in India is Rs. 18,984, and in Mizoram, it is Rs. 16,368, respectively.

The association between the size of landholdings and income from livestock farmingis tested, and since 14 cells have an expected count of less than 5, the assumption of the chi-square test is not met. So, we shift to the Likelihood ratio, which gives the value of 190.985 at p-value < 0.01. Therefore, there is a significant association between the size of landholdings and income from livestock farming and the strength of the association, according to Cramer's V, is 0.430, which is moderate. A study in Meghalaya by Seal et. al. (2025) had also found a significant association between landholding size and household monthly income using chi-square analysis, supporting income disparities by land size. Similarly, Rai et. al. (2023)also reported a highly significant association between farmers' annual income and farm size categories, indicating that income varies significantly with the size of landholding.

10. **Households having any other source of income**

Income from agriculture alone may not be sufficient for the living of the farmer households, and their needs may also depend largely on the size of the family. Sen & Doran (2024) found that alternative sources of income play an important role for the farm households as it helps in reducing poverty risk and stabilising livelihoods.

Table 11: Households having any other source of income

	No. of respondents	**Percentage (%)**
Households having any other source of income		
Yes	359	87.56
No	51	12.44
Total	**410**	**100**
Other Sources of Income		
Rent	114	27.8
Monthly Salary	244	59.51
Business	202	49.27
Investments	56	13.66

Source: Primary source

From the survey conducted for the study, 87.56% of the total agricultural households have at least one source of income, as shown in Table 11. This may be due to the inadequacy of farm income for the households, as mentioned by Ellis in 2000, who specifies that non-farm income is crucial for rural resilience. However, 12.44% of the respondents solely rely on farming.

As shown in Table 11, the majority (59.51%) of the respondents rely on a monthly salary. Similar trends are found in other Indian states that show a shift towards formal employment, as found by Lanjouq & Murgai (2009). Business income of 49.27% is also consistent with Bhalla (2005), who found a rise in informal entrepreneurship. However, income from investments remains low at 13.66%, which reflects the limited financial inclusion as discussed by Demirguc-Kunt et al. (2018). Rental income is linked to property ownership, however, the finding that only 27.8% of the respondents have a rental income suggests that it is unevenly distributed in the studied areas. Zeeshan et. al. (2021) mentioned the significant contribution of non-farm enterprises that complement agricultural production in rural India. It has also been mentioned in the research works of Ranganathan et. al. (2016) and Kapoor et. al. (2021) that there is a rise in the diversification of non-farm income sources.

V. Conclusion

The findings of this paper illuminate the substantial socio-economic challenges that agricultural households encounter, highlighting the urgent need for targeted initiatives aimed at increasing awareness of existing schemes and credit options. Credit alone will not improve the income of farmers if they keep relying on the traditional techniques of farming; therefore, awareness on technological upgradation needs to be given to improve the economic well-being of the agricultural households. Technological demonstrations and tailored training programs should be organised frequently. Furthermore, the findingsemphasise the importance of developing comprehensive policies that foster robust markets for agricultural products, ensuring that farmers can access fair opportunities to sell their goods and thrive in an increasingly competitive environment.

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