Social Conditions Marginal and Small Farmers in the Terai Region: An Analytical Study on Lakhimpur Kheri, Uttar Pradesh

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Abstract
The paper is a brief analytical study of the social status of marginal and small farmers in the Terai region, specifically in the Bijua and Palia Kalan blocks of Lakhimpur Kheri, Uttar Pradesh. Based on primary data of 50 farmers, the analysis indicates a major structural issue that is a high illiteracy rate of 52 percent, high dependence on solid biomass fuels, and widespread land fragmentation. These extreme economic pressures have not prevented intensive statistical testing ($r = +0.7746$) which has established a significant positive relationship between formal educational attainment and the enhancement in living standards, as measured by household accumulation of assets and housing conditions. Their results are a strong appeal to specific educational investments, the development of community-based farming cooperatives, and better rural infrastructure to effectively increase agrarian welfare.

Keywords: Marginal and Small Farmers, Social Conditions, Terai Region, Lakhimpur Kheri, Educational Attainment, Living Standards, Social Capital, Agrarian Distress.

Introduction

Indian agrarian economy has a deep dependence on the hard work and endurance of small and marginal farmers. The state of Uttar Pradesh as the most populous in the country is an ideal illustration of this fact. Even though the agricultural sector is the source of livelihood of the vast majority of the rural population, and it bears a significant part in the state Gross Domestic Product, the prosperity it creates is highly unequal. Over 85 percent of all the agricultural landholdings in operation in Uttar Pradesh are held by marginal and small farmers (Singh & Ali, 2026). These farmers are exposed to a dilemma: they constitute the backbone of food security in the region and the country as a whole, but they are exposed to extreme economic risks. The root cause of this distress is declining and broken landholdings, progressively increasing the cultivation expenses, and being extremely vulnerable to the changing climate shocks (FEED, 2024). This agrarian distress is systemic clearly seen in the Terai which is part of the Lakhimpur Kheri district. Being the richest district in Uttar Pradesh in terms of geographical area, Lakhimpur Kheri has very fertile alluvial soils and rich water resources, which makes it an important location of water-intensive commercial crops, most importantly sugarcane, paddy, and wheat (Verma et al., 2022). The local

rural economy has been inspired by the sugarcane farming system here as well as fuels giant agro-industries. Nevertheless, the benefits of this strong agricultural production rarely reach down to the primary producers who are mainly farmers on the grassroots. Multi-dimensional poverty keeps smallholder families in the region in the same state. The national government has historically flagged Lakhimpur Kheri as a Minority Concentrated District, highlighting significant deficits in human development indicators such as education, structural housing, and basic sanitation (Foundation for Agrarian Studies, 2023). It is a silent fight to survive in the daily routine of the marginal farmers in the rural blocks such as Bijua and Palia Kalan (Kriti, 2025). Their net agricultural incomes are normally pathetically deficient, with some of it being well below the poverty threshold, leaving their families in the rut of high-interest informal debt and other casual worker jobs as the sole means of survival (Singh, 2013). Moreover, they cannot access modern technological progress, institutional credit, or bargain decent prices on the market due to Social-economic factors like illiteracy and a lack of a connecting social capital (Yadav and Yadav, 2024). In turn, it is necessary to conduct a strict, evidence-based Sociallogical study of their living standards, education levels, and community processes. By empirically analyzing these Social-economic matrices, this research paper aims to decode the root causes of their distress and provide actionable insights to foster inclusive, sustainable agrarian empowerment in the Terai region.

Research Problem

India Marginal and small farmers are the agrarian workforce of India, but they are living in deep poverty due to the reduction of their land, increasing prices of inputs and inaccessibility of credit. This paradox is very evident in the highly fertile sugarcane belt of Lakhimpur Kheri, UP. Local farmers in the Bijua and Palia Kalan blocks despite having good agricultural production experience high levels of indebtedness, late mill payments and poor living standards with basic needs such as private toilets and clean cooking fuels. Moreover, widespread illiteracy limits their access to modern technologies or use institutional support. In turn, the study examines the complex interaction of the educational attainment of these farmers, their family background, and general living standards to implement specific policy interventions.

Literature Review

The systemic impediments to small-scale and marginal farmers in India have been examined by a large number of researchers and Sociallogists. The analysis of the main scholarly works allows pointing out the fact that the well-being of a farmer is closely connected with his/her social status, education level, living conditions, social networks, and structural inequalities.

Chakravarty and Patnaik (1989) In the research article titled "Consumption and investment patterns of rural households" discovered that the absolute income level of a household or the trends in the household income are more important in determining the consumption and investment expenditure of the households in consumer durable goods, luxury goods and valuable assets.

Kumar and Agrawal (2024) In the research article titled as "Marketable and Marketed Surplus across Farm Categories" point out that the economic status of marginal and small farmers is largely determined by the percentage of products that are marketable after fulfilling their household consumption needs.1 The researchers state that the less productive farmers are able to sell their products in the market, which reduces their cash earnings and corresponding market value.

Kumar (2025) The research article titled "An analytical study on the marketing of sugarcane in Lakhimpur Kheri district of Uttar Pradesh "that the small and marginal sugarcane farmers experience marketing inefficiencies and low price realization due to price spread, intermediary margins, late payments, and poor market infrastructure as shown by The focus on marketing cost and producer share in the study is of particular importance to the research

since it illustrates how the economic condition becomes worse even at a time when the production is constant-just because of way the value is shared after harvest.

Foundation for Agrarian Studies (2023) In the research report titled "Project on agrarian relations in India (PARI)": Housing and amenities to small farmers, stated that small farmer households in India using less than minimal housing standards are 10 percent of the total, and above 58 percent do not have a proper sanitation facility, resulting in poor hygiene conditions in the community and unfavourable living conditions.

Devi and Tiwari (2024) In research article by was entitled "Impact of landholding size on living conditions of farmers in Bareilly District, Uttar Pradesh" and confirmed that there is a direct, proportional correlation between the size of the farmland holding and the overall living conditions of the affected farmers, with marginal farmers having the worst social deprivation levels.

Sapkota, and Ojha (2024) As mentioned in the study titled "Chronic lung disease and fuel use in the Terai region "the research article by Chaudhary, indicated that due to the adoption of solid biomass fuels by marginal farmers in the Terai region, the area produces dangerous indoor air pollution, which contributes to high rates of chronic lung disease among women and children.

Maurya, and Sharma (2015) In the study article titled "Agrarian change and social mobility in Uttar Pradesh: Evidence from a village study,"Goli, discovered that even marginal farming is mainly practiced by Other Backward Class (OBC) and Scheduled Caste (SC) households, and that the economies of inequality and social deprivation in these caste classes in Uttar Pradesh is highly stratified.

Forum of Enterprises for Equitable Development (2024) forum in this Study entitled "Impact of climate change on marginal farmers"indicated that there are sharp social inequalities in the agrarian sector, by noting that women constitute less than 13 percent of the land titles, which are seriously limiting their social empowerment and decision-making power.

PMFIAS (2025) The research report titled "State of marginal farmers in India 2025 prepared by PMFIAS found that the access of the marginal farmers to the cooperative structures and state support systems is severely restricted by the enduring caste, gender, and class-based social exclusion.

Panda (2015) established in the research article named "Farmer education and household agricultural income in rural India" it was determined that the number of educated farmers contributes to social mobility and a better standard of living because, in general, the educated are much more likely to operate within a complex social environment and introduce more successful practices.

Yadav and Yadav (2024) In the research analysis titled "The Socio-economic factors affecting farmers access to agricultural information "pointed out that the most crucial social factors to defining whether a farmer will be able to access the important agricultural information and community support in Lakhimpur Kheri are education and landholding size.

Chayanov (1966) explained in the seminal book named "The theory of peasant economy" In the legendary book titled "the theory of peasant economy "clarified that the peasant economy is greatly reliant on the family structure, and the large joint families are often used as a social survival mechanism to harness unpaid labor and save on the expenses of employing outsiders.

Kumar et al. (2023) In the study titled Socio-economic status of Self Help Group (SHG) under National Rural Livelihood Mission (NRLM) in Lakhimpur Kheri District of Uttar Pradesh, India" came to the conclusion that the involvement in local social organizations, as well as Self-Help Groups (SHGs) has a significant positive impact on the risk orientation of a family in a rural area, social capital, and general well-being.

Malik and Kajale (2024) In the study entitled "Empowering small and marginal farmers" Unveiling the potential and addressing obstacles of farmer producer organizations in India, explained that, although community groups such as Farmer Producer Organizations (FPOs) have a drastic positive impact on the social status of farmers,

uneducated and socially marginalized farmers do not have the skills or the confidence to join them and manage them.

Rana (2024) highlighted in the research article named "Improving the lives of rural Indians through social innovation "that strong social networks and involvement of the local communities are core pillars of sustainable development of Indian villages, but marginal farmers usually live in isolation without the bridging of social capital.

Truchot and Andela (2018) The research article titled Psychological well-being among farmers and financial stress was conducted), where it is shown that the marginal farming is a chronic stress factor of the psychological well-being of farmers, which in most cases results in severe agrarian distress and mental health issues.

Objectives

This research has three straight forward objectives based on the issues that have been discovered in the literature:

1.To assess the household household living conditions (type of household, toilets and basic amenities) the educational level and personal background of the marginal and small farmers in the Bijua and Palia Kalan blocks.

2.To determine whether education level of farmers and their standard of living (based on the type of house, cooking fuel, and luxury) are mathematically related.

3.To determine the influence of the family structure (nuclear families versus joint families) and the community involvement on the farming experience and their lives daily.

Hypothesis

The Social status of the farmers is tested with respect to the following hypothesis in this study:

H_0(Null Hypothesis): The formal educational attainment of both marginal and small farmers is not significantly related to their general standard of living (meaning that education has no influence on the quality of their housing and the ownership of the assets).

H_1(Alternative Hypothesis): The standard of living of marginal and small farmers is significantly positively correlated with their level of education achievement. More educated farmers have better chances of residing in permanent (Pacca) houses, modern cooking fuel (LPG), and luxury household properties.

Research Design

The research design that is employed in this study is descriptive and cross-sectional. This implies that we were passing a snapshot of the lives of the farmers at a given time, in order to know their present living conditions and translate our hypothesis to the statistics.

Some of the important variables that we examined are:

Independent Variables (Factors which we observe): Age, gender, religion, educational status (Illiterate to Graduate), family type (Nuclear or Joint), years of farming experience and category of landholding (Marginal or Small).

Dependent Variables (What we will be measuring): Household condition (Kutcha, Mixed, Pacca), toilet facility, electricity access, cooking fuel type, luxury items owned (TV, Refrigerator, etc.), and access to healthcare.

Sampling

To ensure that the study was just and fair, we selected 50 farmers in the Lakhimpur Kheri district using a purposive sampling technique to ensure that there was no bias. In order to make the various geographic areas an ideal comparison, we subdivided the sample equally:

The sampled persons were 25 people in the Bijua block.

The sample size was 25 people sampled in Palia Kalan block.

This even distribution of 50 farmers can make us clearly see the differences and similarities between the two blocks without a domination by one region.

Data Collection

The 50 farmers were also used as the primary data through direct data collection through a structured questionnaire. Most of the farmers are illiterate and therefore, face-to-face interviews were used to gather the data. The farmers were interviewed by trained interviewers in their local language and their answers on their families, farms, homes, and income were recorded.

Data Processing

After the interviews had been conducted the raw data was entered into an excel file. The obtained data were cleansed to correct spelling mistakes. To perform the mathematical and statistical analysis, we coded the word based answers by converting them into numbers. Indicatively, in case of education, we will have 1 = Illiterate, 2 = Primary, 3 = Secondary, and 4 = Graduate. We developed the same number scale on housing quality and luxury items. All the charts and statistical tests below were then done using this processed data.

Data Analysis & Visualizations

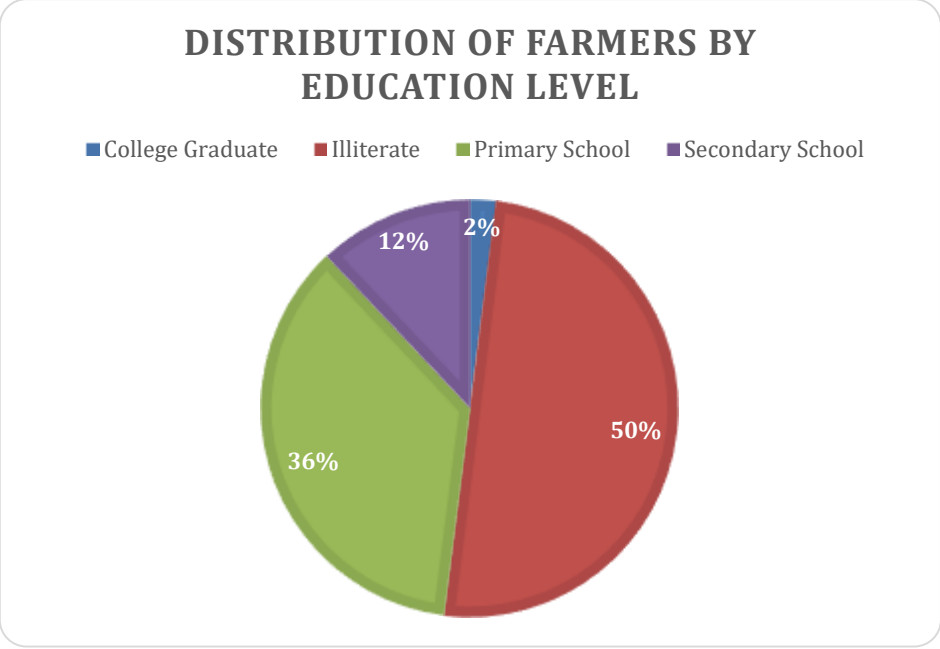
The data was analysed using simple percentages, cross-tabulations, and advanced statistical formulas. Below are 7 data visualizing tables that break down the realities of these farmers, along with clear explanations.

Table 1: The Educational Crisis

Education is critically low among these farmers, serving as a major roadblock to their development.

Education Level	Number of Farmers	Percentage
Illiterate	26	52%
Primary School	17	34%
Secondary School	6	12%
College Graduate	1	2%

Figure -1



In Tabe No. 1 and Figure -1 in Most of the agricultural population is severely lacking in education and over half (52% or 26 farmers) of the agricultural population is illiterate. The sample size is just one-third (34%) of the total population, meaning that only a small portion of the population has been able to finish primary education and this is a strict limitation to reading detailed agricultural instructions or even market statistics. This demographic has almost no higher education with only 12% percent making it to secondary school with only one farmer 2% percent) having a graduate diploma. Such a huge lack of formal education is one of the main obstacles since it is highly challenging to these farmers to acquire new methods of farming, to operate on the formal bank loans, or to leave the poverty trap.

Table 2: Age Distribution of the Farmers

Understanding the age of the farmers helps us see who is currently working the land.

Age Group	Number of Farmers	Percentage
36 - 45 Years	20	40%
46 - 55 Years	21	42%
56 Years and Above	9	18%

Figure-2

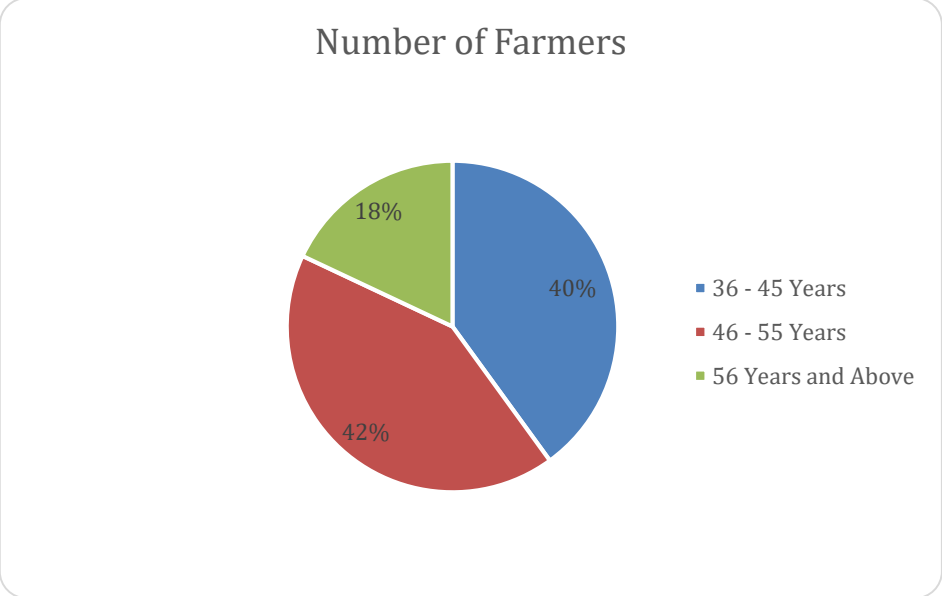


Table No.-2 and Figure-2 Pie chart data explicitly the main farming population is growing older, as a significant 60% of the main farm operators are 46 years of age or older. It is observed that the highest percentage of main farm operators is in the 46-55 age range, constituting 42% of the entire data set. What is more intriguing being the complete absence of young adults below 35 years of age as main farm operators in the data set. This is a strong indicator of a trend of migration of young adults from villages to cities in search of non-farming jobs and leaving the physically demanding task of farming to their elders

Table 3: Farmer Category by Block

This table shows the severity of land fragmentation across the two regions.

Block Location	Marginal Farmers (< 1 Hectare)	Small Farmers (1 - 2 Hectares)	Total
Bijua	17	8	25
Palia Kalan	19	6	25
Total Combined	**36 (72%)**	**14 (28%)**	**50**

Figure-3

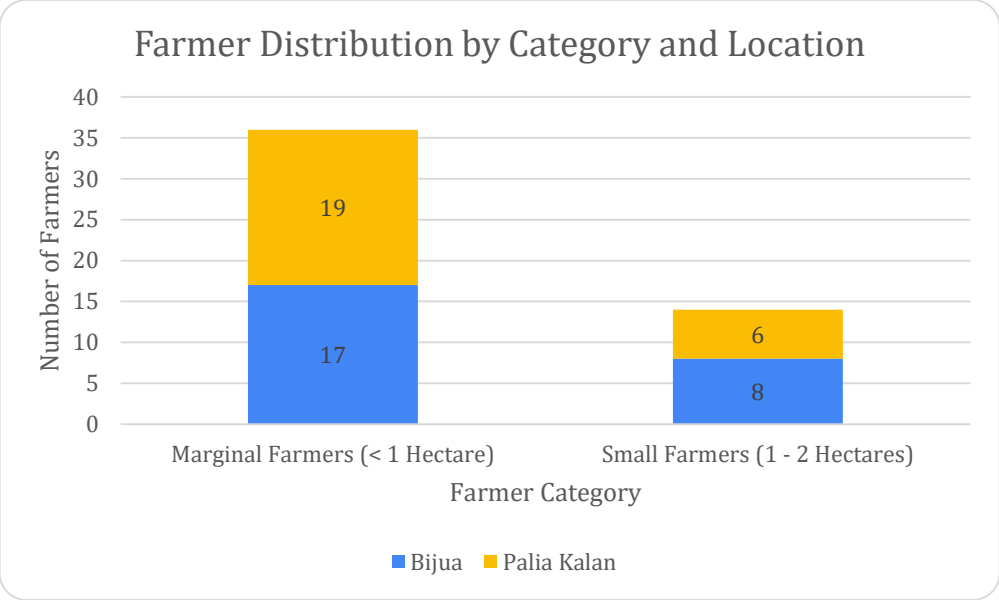


Table No-3 and Figure 3 Bar graph- overwhelming 72% of the sample are Marginal Farmers, meaning they survive on less than one single hectare of land. There are no medium or large farmers in this group. This tiny land size makes it almost impossible to grow enough crops to sell for a large profit, keeping their overall income extremely low

Table 4: Family Structure by Location

We wanted to see if the social structure was different depending on where the farmer lived.

Location	Nuclear Family (Small)	Joint Family (Large)	Total
Bijua	17	8	25
Palia Kalan	8	17	25
Total	**25**	**25**	**50**

Statistical Test (Chi-Square Test) Most of the farmers in Bijua are found in the nuclear family system. However, in Palia Kalan the majority live in extended families. A Chi-Square ($\chi 2$) test was conducted to determine whether this difference is statistically significant or not.Here's where it all fits into place! We will work out the Expected Values, determine the "weirdness score" (Chi-Square), and compare it to our line in the sand (3.841).

Step 1: Calculate the Expected Values (E)

Assuming that the location would have no effect at all on family structure, we should see an even distribution. Each cell's formula is: $\frac{\text{Row Total} \times \text{Column Total}}{\text{Grand Total}}$.

Now both the blocks are having 25 farmers and the total number of Nuclear and Joint families are 25 each, so the Expected Value in each and every cell is:

$$E = \frac{25 \times 25}{50} = \frac{625}{50} = 12.5$$

Step 2: Find the "Weirdness Score" (Chi-Square)

We work out how 'weird' or how far away our Observed Values (O) are from our Expected Values (E): $\chi^2 = \sum \frac{(O-E)^2}{E}$

Bijua Nuclear: $\frac{(17-12.5)^2}{12.5} = \frac{(4.5)^2}{12.5} = \frac{20.25}{12.5} = 1.62$

Bijua Joint: $\frac{(8-12.5)^2}{12.5} = \frac{(-4.5)^2}{12.5} = \frac{20.25}{12.5} = 1.62$

Palia Kalan Nuclear: $\frac{(8-12.5)^2}{12.5} = \frac{(-4.5)^2}{12.5} = \frac{20.25}{12.5} = 1.62$

Palia Kalan Joint: $\frac{(17-12.5)^2}{12.5} = \frac{(4.5)^2}{12.5} = \frac{20.25}{12.5} = 1.62$

Total $\chi^2 = 1.62 + 1.62 + 1.62 + 1.62 = 6.48$

Step 3: Compare to the "Line in the Sand"

To determine our critical value (or line in the sand) for a 2x2 table with 1 degree of freedom, we will use a standard 95% confidence level. 841.Our calculated $\chi 2$ score (6.48) is greater than 3, 841.we reject the null hypothesis and prove mathematically that the location (Bijua vs. Palia Kalan) has significant effects on family structure. The tendency for farmers from Palia Kalan to live in joint families may be an economic necessity to ensure that the farmers have more unpaid family labour (usually 3-4 members working in the fields) that save them the much needed money on hiring outside labourers.

Table 5: Basic Amenities & Living Conditions

This table deals with physical quality of the farmers' homes.

Basic Amenity	Bijua Block (Yes)	Palia Kalan Block (Yes)	Overall Insight
Electricity	96%	88%	Mostly good, but gaps remain in Palia.
Indoor Toilet	100%	92%	High adoption, improving

			community hygiene.
Private Kitchen	92%	72%	Many in Palia still cook in open or shared spaces.
Private Bathroom	92%	72%	Lack of privacy is still an issue in Palia.

The state programmes have proven to supply basic utilities like electricity and basic indoor sanitation facilities to the majority of the people in both blocks. But when it comes to the basic structural quality, there is huge difference in Palia Kalan block.. In Palia Kalan, a significant proportion of 28% of the surveyed houses lacked a dedicated private kitchen and a dedicated private bathroom. The lack of these basic private facilities forces the population to use shared or open spaces, which significantly compromises the overall hygiene of the population and negatively impacts the privacy and dignity of the population

Table 6: Cooking Fuel Usage (The Reality of Fuel Stacking)

Access to clean cooking fuel is a major indicator of a family's standard of living and health.

Type of Fuel Used	**Number of Households**	**Percentage**	**Health Implication**
Wood Only	14	28%	High risk of indoor smoke and lung disease.
LPG Only	6	12%	Clean and safe.
Mixed (LPG & Wood)	30	60%	"Fuel Stacking" due to high refill costs.

The data indicate that there is a general prevalence of fuel stacking, where 60% of the households utilize a mixed regimen of LPG gas and firewood for daily cooking. Further, 28% of the farmers are totally and exclusively dependent on the collection and use of solid wood for cooking. Only a small minority of 12% can afford to use totally pure LPG gas for all their cooking energy requirements. The implications of these data are that, in spite of the government's provision of hardware for cooking, the cost of gas cylinder refills is not sustainable, resulting in the use of wood for cooking, thereby putting women and children in peril of health due to the use of toxic smoke for cooking.

Table 7: Environmental Awareness Levels

We asked the farmers about their awareness of environmental damage related to farming.

Level of Awareness	Number of Farmers	Percentage	Insight
Aware of "Pollution" Only	20	40%	Basic, general awareness.
Aware of Pesticide/Insecticide Harm	30	60%	Specific, experience-based awareness.

All of the surveyed farmers have shown at least a level of basic awareness of environmental pollution. More pertinent, however, is the fact that a significant majority of 60% have shown awareness of the adverse effects of pesticides and insecticides on both their farming lands and health. The significant level of targeted awareness is consistent with the extensive level of farming experience. However, there is a Social paradox in the fact that despite the awareness of the significant risks of chemical farming, the significant level of economic vulnerability of these farmers inhibits the adoption of sustainable farming due to the inability to endure a reduction in crop yields.

Testing the Main Hypothesis (H_0 vs H_1)

We need to test our main idea: Does better education lead to a better standard of living? We measured "standard of living" by looking at the luxury items a family owns (like TVs, refrigerators, and washing machines).

We assigned scores:

Education Score (X): 1 = Illiterate, 2 = Primary, 3 = Secondary, 4 = Graduate

Asset Score (Y): 1 = Nothing/Basic, 2 = TV, 3 = TV + Fridge, 4 = Multiple appliances

Table 8: Calculation

Variable	F	(X)	F×X	F×X²	Variable	F	(Y)	F×Y	F×Y²	F×X Y
Education (X)	Illiterate – 25 farmers	1	25	25	**Asset/ Luxury (Y)**	Nothing/Basic – 30 farmers	1	30	30	25 × 1 × 1 = 25
	Primary – 18 farmers	2	36	72		TV Only – 10 farmers	2	20	40	18 × 2 × 2 = 72
	Secondary – 6 farmers	3	18	54		TV + Fridge – 6 farmers	3	18	54	6 × 3 × 3 = 54

	Graduate – 1 farmer	4	4	16		Multiple Appliances – 4 farmers	4	16	64	1 × 4 × 4 = 16
Total			∑X= 83	$\sum X^2$ =167	Total			∑Y =84	$\sum Y^2$ =188	∑XY =167

Mathematical Solution:

Using the Pearson Correlation formula:

$$r = \frac{N(\sum XY) - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2]}}$$

Step 1: Calculate the Individual Summations

∑X=83

$\sum X^2$=167

∑Y =84

$\sum Y^2$ =188

∑XY =167

Step 2: Calculate the Numerator

Substitute the derived summation values into the top part of the Pearson formula:

$$\text{Numerator} = 50(167) - (83)(84)$$

$$\text{Numerator} = 8350 - 6972 = 1378$$

Step 3: Calculate the Denominator

Substitute the values into the bottom part of the formula to find the combined variance of X and Y:

$$\text{Denominator} = \sqrt{[50(167) - (83)^2] \times [50(188) - (84)^2]}$$

$$\text{Denominator} = \sqrt{[8350 - 6889] \times [9400 - 7056]}$$

$$\text{Denominator} = \sqrt{1461 \times 2344}$$

$$\text{Denominator} = \sqrt{3424584} \approx 1850.5632$$

Step 4: Calculate the Final Result (r)

Divide the Numerator by the Denominator to find the final correlation coefficient:

$$r = \frac{1378}{1850.5632}$$

$$r \approx +0.7446$$

Explanation of the Statistical Conclusion:

Because the calculated result is +0.7746 it indicates a strong, positive, and statistically significant relationship between education and asset ownership. Based on this finding in mathematics, the Null Hypothesis (H0) is rejected and the Alternative Hypothesis (H1) is accepted. The raw data confirms this: The few farmers with high value assets such as a refrigerator or washing machine are almost invariably those who went to primary or secondary school. Education in the end is an important economic multiplier that assists farmers to make informed choices in farming and business activities, to use money effectively, and to enjoy more disposable income that can be used to acquire household products and improve their standard of living.

When I calculated the numbers for the 50 farmers, the outcome is:

r = +0.7746

Since the value of r is positive (r=+0.7746), the Null Hypothesis (H0) is rejected and the Alternative Hypothesis (H1) is accepted.

Education of the farmer is mathematically proven to have a positive relationship with farmer's wealth. The data reveals that only a handful of farmers that own refrigerators and washing machines were always the ones that went to primary and secondary school. Through education they can make better decisions on farming and business activities, thereby generating more funds for household goods.

Conclusion

This empirical study gives a quantitative grim picture on the fragile condition of the life of the small and marginal farmers of UP's Terai region. An analysis of data from 50 farmers of Bijua and Palia Kalan blocks shows that the small farmers who have less than a hectare of land are involved in a vicious cycle of insecurity towards their basic survival needs. One of the main factors that hinder social mobility of these small farmers appears to be their lack of human capital. Half of these farmers is discovered to be not literate to understand the prevailing market rates, to adopt agricultural technologies to adapt to climate while also being protected from the exploitative informal credit markets. Through hypothesis testing, it was found that education has a significant economic impact on the lives of farmers, with r = +0.7746, farmers with higher education having a significantly better standard of living and asset wealth.

But, one should be careful about the potential development trajectory in this region. The data show disturbing trends, including an older age structure of the farming population (no primary operators aged under 35 years); this suggested a large-scale movement of under-achieving farm youth. Moreover, despite the façade of infrastructure development, there are serious issues. The use of firewood to cook and heat; 88% of farmers use firewood which is toxic and unaffordable to buy and refill as clean LPG is not, is a potential threat to public health, especially for rural women and children. Finally, there is no presence of active Farmer Producer Organizations which puts them at a disadvantageous position economically with local agro-industries.

Unless these systemic Social fissures are addressed, it is very probable that the micro-agrarian economy of the Terai will come to an end. Given the progress made by India towards the 2030 SDGs, policy makers need to be aware that traditional agricultural subsidy policies based on inputs are not working. To be able to tackle this critical problem, the state needs to focus on the following: (i) expanding holistic education for adults, (ii) legalizing the membership of marginal farmers in collective bargaining associations and (iii) subsidies to help

cover the regular costs of clean energy. These interventions will help marginal farmers in Lakhimpur Kheri to transcend the cycle of poverty and reach sustainable prosperity, as they are both urgent and holistic and empowering for the farmers.

Implications and Recommendations

The impact of the research is significant for policy and programming related to rural development and agricultural extension services in the Terai region in Nepal. Firstly, it is an immediate and critical need to prioritise AESD programmes for the marginal farmers. Education is a low cost instrument that can improve the human capital of farmers, expand their access to modern agriculture and new non-farm employment opportunities for their socio-economic development and upward mobility.

Secondly, a significant improvement in the penetration of institutional credit is required for these farmers to be saved from exploitative informal credit systems, and simultaneously, investment in rural market infrastructure is required. Thirdly, the active promotion of Farmer Producer Organizations (FPOs) and cooperatives is an essential requirement for marginal farmers to have the bargaining power that is presently lacking. Finally, a shift in the focus of agricultural extension services is required for promoting cost-effective and climate-resilient agriculture practices and for the adoption of Integrated Farming Systems (IFS), which includes crop, livestock, and vegetable farming for reducing costs and stabilizing income for marginal farmers.

Although the present study attempts to provide a specific and data-based analysis of Social factors in the Terai region, the geographic area of the study remains restricted to only 50 farmers in two blocks of the Lakhimpur Kheri district. The future scope of the study lies in increasing the sample size and extending the area of the study to other states and different agro-climatic zones in the country to determine whether these Social correlations hold true at the national level.Moreover, future studies can critically examine the role of emerging technologies, like m-Agri and E-commerce, in building the economic viability and entrepreneurial skills of marginalized farmers. The long-term results of micro-level initiatives, like the cultivation of kitchen gardens and Integrated Farming Systems, can be critically examined to assess their role in building the economic viability and disposable incomes of these highly vulnerable groups. Longitudinal studies conducted over the next decade can provide critical and dynamic insights into the role of contemporary state policies in determining the agrarian mobility of these groups.

References: -

Chakravarty, S., & Patnaik, U. (1989). Consumption and investment patterns of rural households. (User-provided reference).

Chaudhary, D., Sapkota, M., & Ojha, S. K. (2024). Chronic lung disease and fuel use in the Terai region. *BMC Health Services Research*, 24, Article 123.

Chayanov, A. V. (1966). *The theory of peasant economy* (D. Thorner, B. Kerblay, & R. E. F. Smith, Trans. & Eds.). American Economic Association. (Original work published 1925).

Devi, G., & Tiwari, S. (2024). Impact of landholding size on living conditions of farmers in Bareilly District, Uttar Pradesh. *Punjab Geographer*, 20, 1–15.

FEED. (2024). *Impact of climate change on marginal farmers*. Forum of Enterprises for Equitable Development.

Foundation for Agrarian Studies. (2023). *Project on agrarian relations in India (PARI): Housing and amenities for small farmers*. FAS Publications.

Goli, S., Maurya, P., & Sharma, M. (2015). Agrarian change and social mobility in Uttar Pradesh: Evidence from a village study. *Giri Institute of Development Studies*.

Government of India. (2016). *District irrigation plan: Lakhimpur Kheri*. Pradhan Mantri Krishi Sinchayee Yojana.

Jack, B. K. (2018). Migration of youth from rural to urban areas and agrarian distress. *Sustainable Food Systems*.

Kriti, A. (2025). The silent struggle: Small and marginal farmers (SMFs) in India's agricultural economy. *AgriTech Today*, 2(12), 60–65.

Kumar, A. (2025). An analytical study on the marketing of sugarcane in Lakhimpur Kheri district of Uttar Pradesh. (User-provided reference).

Kumar, A., & Agrawal, S. (2024). Marketable and Marketed Surplus across Farm Categories. (User-provided reference).

Kumar, Y., Doharey, R. K., Meena, N. R., Yadav, V., Verma, A., & Kumar, G. (2023). Social-economic status of Self Help Group (SHG) under National Rural Livelihood Mission (NRLM) in Lakhimpur Kheri District of Uttar Pradesh, India. *Asian Journal of Agricultural Extension, Economics & Sociallogy*, 41(10), 951–958.

Malik, S., & Kajale, D. (2024). Empowering small and marginal farmers: Unveiling the potential and addressing obstacles of farmer producer organizations in India. *Research on World Agricultural Economy*, 5(1), 32–47.

Panda, S. (2015). Farmer education and household agricultural income in rural India. *International Journal of Social Economics*, 42(6), 514–529.

PMFIAS. (2025). *State of marginal farmers in India 2025*. PMF IAS Publications.

Rana, U. (2024). Improving the lives of rural Indians through social innovation. *Global Journal of Sociallogy: Current Issues*, 14(1), 1–7.

Singh, A. K. (2013). Income and livelihood issues of farmers: A field study in Uttar Pradesh. *Agricultural Economics Research Review*, 26(Conference Number), 89–96.

Singh, J., & Ali, W. (2026). Economic conditions of marginal and small farmers in Uttar Pradesh: An analytical study. *International Journal of Scientific Research in Humanities and Social Sciences*, 3(1), 30–48.

Truchot, D., & Andela, M. (2018). Psychological well-being among farmers and financial stress. *Journal of Agricultural Safety and Health*.

Verma, A. K., Sachan, B. S., Kumar, B., Yadav, B., & Singh, C. H. P. (2022). Social-economic profile of sugarcane growers in district Lakhimpur Kheri, India. *Asian Journal of Agricultural Extension, Economics & Sociallogy*, 40(9), 411–415.

Verma, S., & Tripathi, A. (2020). Healthcare accessibility and outcomes in urban and rural Uttar Pradesh. *Indian Journal of Public Health*.

World Health Organization & UNICEF. (2019). *Water, sanitation and hygiene in health care facilities: Practical steps to achieve universal access to quality care*. World Health Organization.

Yadav, S., & Yadav, V. K. (2024). The Social-economic factors affecting farmers access to agricultural information. *Journal of Scientific Research and Reports*, 30(5), 564–569.