

A Study of Rural Development in Aligarh District: Current Status, Challenges, and Future Prospects

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Abstract: This study presents a comprehensive empirical analysis of rural development in Aligarh district, Uttar Pradesh, a region where approximately 70% of the population resides in villages and where traditional agrarian livelihoods intersect with the globally renowned lock-making industry. Despite its economic significance, rural Aligarh faces persistent challenges including gender disparities in literacy, fragmented landholdings, infrastructure deficits, and climate-dependent agricultural vulnerability. This research examines the current developmental status through a mixed-methods approach, integrating primary data from 100 respondents across five strategically selected villages (Lodha, Alampur Subakara, Maheshpur ADF, Chherat Sudhal, and Sapera Bhanpur) with secondary data analysis. The study evaluates critical dimensions of rural development including agricultural productivity, educational infrastructure, healthcare accessibility, employment opportunities, and community awareness of government schemes such as the "One District One Product" (ODOP) initiative, dairy cooperative expansion, and emerging rural tourism potential. Quantitative analysis utilizing Microsoft Excel and SPSS was complemented by qualitative thematic examination of field observations and in-depth interviews with marginal farmers, agricultural laborers, and administrative stakeholders. Findings reveal significant gaps in cold storage facilities, credit accessibility, and technical training that impede sustainable growth, while highlighting transformative opportunities presented by rapid urbanization and industrial encroachment. The research identifies localized trends and infrastructure disparities through cross-village comparative analysis, ultimately proposing a strategic framework for transitioning Aligarh from a traditional agrarian economy to a modern, self-reliant rural hub. The study concludes with practical policy recommendations aimed at fostering long-term resilience, inclusive prosperity, and improved implementation of rural development programs in the region.

Keywords: Rural Development, Agricultural Productivity, One District One Product (ODOP), Rural Infrastructure, Gender Literacy Gap, Fragmented Landholdings, Dairy Cooperatives, Rural Tourism, Sustainable Livelihoods, Government Schemes, Agrarian Economy, Inclusive Growth.

1. Introduction

Rural development serves as the cornerstone of regional

stability in Aligarh, a district where approximately 70% of the population resides in villages. Historically renowned for its agricultural productivity and the globally recognized lock-making industry, rural Aligarh represents a unique intersection of agrarian traditions and household-based manufacturing. However, despite its economic significance, the region grapples with systemic imbalances, including a pronounced gender gap in literacy, fragmented landholdings, and heavy reliance on erratic monsoon patterns.

In recent years, Aligarh's rural landscape has undergone significant transformation under the pressures of rapid urbanization and industrial encroachment. While these forces threaten traditional livelihoods, they simultaneously offer new market linkages and economic opportunities. Nevertheless, infrastructure deficits—particularly in cold storage facilities, credit accessibility, and technical training—remain significant barriers to achieving sustainable growth.

This research paper aims to provide a comprehensive analytical overview of the current developmental status of rural Aligarh. It identifies critical bottlenecks hindering progress and evaluates the transformative potential of modern policy interventions. By examining the impact of the "One District One Product" (ODOP) initiative, the expansion of dairy cooperatives, and the emerging sector of rural tourism, this study explores how diversifying the rural economy can foster long-term resilience and inclusive prosperity. Ultimately, this paper outlines a strategic framework for Aligarh's transition from a traditional agrarian economy to a modern, self-reliant rural hub.

2. Data and Methodology

A. Research Design

This study adopts an empirical research design, utilizing both descriptive and analytical methods to evaluate the status of rural development in Aligarh district, Uttar Pradesh. The approach integrates primary and secondary data to examine the intersections between landholding patterns, irrigation access,

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and the efficacy of government schemes.

B. Data Sources

Primary Data: Collected through structured questionnaires, field observations, and in-depth interviews with diverse demographic groups, including marginal farmers, agricultural laborers, and local administrative stakeholders.

C. Sampling and Study Area

The study area encompasses five blocks within Aligarh district. Using stratified random sampling, five villages were selected to ensure broad socio-economic representation:

Sample Size: From each village, 20 respondents aged 18–65 years were interviewed, resulting in a total sample size of 100 participants. This diverse cohort represents varying income levels, landholding sizes, and occupational profiles, ensuring a balanced perspective on rural livelihoods.

Table 1

S.No.	Village Name	Block
1	Lodha	Aligarh Block
2	Alampur Subakara	Aligarh Block
3	Maheshpur ADF	Aligarh Block
4	Chherat Sudhal	Aligarh Block
5	Sapera Bhanpur	Harduaganj Block

3. Data Analysis

The collected data was processed using both qualitative and quantitative techniques:

- *Quantitative Analysis:* Performed using Microsoft Excel and SPSS to generate descriptive statistics, including averages, frequencies, and cross-tabulations.
- *Qualitative Analysis:* Field observations and interview transcripts were thematically analyzed to provide contextual depth and nuanced insights.
- *Comparative Analysis:* A cross-village comparative approach was employed to identify localized trends, infrastructure gaps, and common barriers to development.

4. Objectives of the Study

1. To examine the current status of agriculture and rural development in Aligarh district, focusing on productivity, infrastructure, and livelihood support systems.
2. To assess the availability and quality of educational facilities in the villages of Aligarh district.
3. To evaluate the condition of educational infrastructure in rural areas, including school buildings, teaching resources, and access to basic amenities.
4. To analyze the accessibility and effectiveness of healthcare services in the villages of Aligarh district.
5. To explore employment opportunities and community development initiatives that contribute to socio-economic advancement in rural Aligarh.
6. To assess the level of awareness and understanding among rural residents regarding government rural development initiatives and schemes.

7. To evaluate the overall satisfaction of rural populations with the implementation and outcomes of rural development programs in Aligarh district.
8. To draw conclusions and offer practical suggestions and policy recommendations for improving rural development planning and execution in the region.

5. Limitations of the Study

Despite employing a rigorous research methodology, this study acknowledges several limitations that may affect the scope and generalizability of its findings:

1. *Geographic Specificity:* The findings are confined to Aligarh district, based on data collected from only five selected villages. Consequently, the results may not be generalizable to other regions with different socio-economic, cultural, or agro-climatic conditions.
2. *Sample Size Constraints:* The study was limited to 100 responses due to time and resource constraints. This restricted sample size may affect the statistical representativeness and reliability of the data.
3. *Data Reliability Issues:* Some respondents exhibited reluctance to disclose sensitive information, particularly regarding their exact income levels or candid opinions on government schemes. This hesitancy may have compromised the completeness and accuracy of certain data points, potentially introducing response bias.

6. Survey-Based Analysis of Rural Development in Aligarh District

A. Section 1: Agricultural and Rural Development

This section looks at how important agriculture is to rural households in Aligarh. We wanted to find out whether farming is still the main source of income for these families and how easily farmers can get essential resources like seeds, fertilizers, water, and irrigation facilities.

We also looked at how well farmers understand and use government agricultural schemes. Are they actually benefiting from these programs? Do they have access to local agricultural centers or initiatives that teach modern farming techniques? Additionally, we examined what crops are most commonly grown in the district and looked at whether crop insurance and other support systems are available—and if they actually help farmers feel more secure in their work. Overall, our goal was to assess how effective these support systems are and what impact they have on farmers' productivity and livelihoods.

1) Findings and Discussion

Our survey of 100 respondents reveals some interesting patterns about agriculture and government support in Aligarh. To start with, only about 27.5% of families said they primarily depend on farming for their livelihood (Mean = 1.28, SD = 0.45). This suggests that many rural households are moving away from agriculture or diversifying into other income sources.

On a more positive note, 80% of respondents reported that

Table 2
Descriptive statistics of agricultural variables (N = 100)

Variable	N	Mean	Std. Deviation	Variance	Skewness	Kurtosis
Are you or any member of your family primarily dependent on agriculture?	100	1.28	0.45	0.20	1.05	-0.95
Have you or your family previously benefited from any government agricultural scheme?	100	1.80	0.41	0.16	-1.56	0.45
How would you rate the availability of agricultural resources (seeds, fertilizers, water) in your village?	100	2.55	0.50	0.25	-0.21	-2.06
What type of irrigation technique are you currently using on your agricultural land?	100	2.93	0.35	0.12	-4.98	25.61
Is there any agricultural development center available for farmers in your area?	100	2.05	0.78	0.61	-0.09	-1.34
Is there any agricultural development scheme in Aligarh that raises awareness among farmers about modern farming techniques?	100	1.43	0.50	0.25	0.32	-2.00
Are there any agricultural development schemes specifically targeted at farmers in Aligarh?	100	1.85	0.92	0.85	0.31	-1.80
Do farmers in villages receive any government assistance for agricultural development?	100	1.63	0.70	0.50	0.69	-0.67
Is there any kind of crop insurance scheme currently being implemented in villages to support agricultural life?	100	1.88	0.88	0.78	0.25	-1.70
Which crop is cultivated the most in Aligarh district?	100	1.18	0.45	0.20	2.64	6.87
Do you avail the benefits of any government-run agricultural schemes?	100	1.65	0.53	0.28	-0.11	-0.90
Which government-run agricultural schemes do you benefit from?	100	6.30	2.52	6.37	-1.47	0.62

they or their families had benefited from government agricultural schemes at some point (Mean = 1.80, SD = 0.41). This indicates that these programs are reaching people, even if not everyone is taking advantage of them.

When we asked about access to basic agricultural resources like seeds, fertilizers, and water, the response was lukewarm (Mean = 2.55). Farmers seem to be getting by, but there is definitely room for improvement in terms of infrastructure and supply.

The data on irrigation techniques tells an interesting story. The average score was 2.93, but the distribution is heavily skewed (Skewness = -4.98) with very high kurtosis (25.61). What this means in practical terms is that while a small group of farmers has adopted modern irrigation methods, the vast majority are still using traditional approaches. There is a clear divide here between those who have moved forward and those who haven't.

We also found that very few respondents were aware of agricultural development centers in their area (Mean = 2.05) or programs that teach modern farming techniques (Mean = 1.43). This points to a significant gap in outreach and extension services. Awareness of targeted schemes for Aligarh farmers (Mean = 1.85) and crop insurance options (Mean = 1.88) was somewhat better but still moderate at best. Clearly, more needs to be done to get the word out about these initiatives.

Interestingly, there was strong agreement about which crop is most commonly cultivated in the district (Mean = 1.18), with high skewness and kurtosis values indicating a clear consensus among respondents.

When asked whether they use government-run agricultural schemes, most respondents answered positively (Mean = 1.65). However, the question about which specific schemes they use produced the highest mean score (6.30) with considerable variation. This suggests that while some farmers are tapping into multiple programs, others are not benefiting at all, leading to an uneven distribution of support.

To sum up, government agricultural initiatives are present in Aligarh, but their impact is patchy. While a good number of farmers have benefited from some form of support, many others remain unaware of or unable to access these resources. There is

a pressing need for better outreach, improved infrastructure, and more equitable distribution of agricultural assistance. Without these improvements, the goal of sustainable rural development in Aligarh will remain elusive for many farming families.

B. Section 2: Educational Facilities in the Villages of Aligarh District

In this section, we take a closer look at the state of education in rural Aligarh. Our main goal was to understand whether the education being provided actually meets the real needs of students. We looked at what schools are available—both government and private—and checked whether basic facilities like clean drinking water, science labs, playgrounds, and support for children with disabilities are in place. These things matter enormously for creating an environment where children can actually learn and thrive.

We also wanted to see how well Anganwadi centers and mid-day meal programs are working. These initiatives play a vital role in early childhood development and keeping kids in school, so we tried to find out whether they are really reaching the children who need them and making a positive difference.

Another important focus was understanding the barriers that prevent children from getting a good education. We looked at issues like how accessible schools are, whether resources are available, and whether students get to participate in skill development or awareness programs. We also checked school attendance rates and whether the facilities and support provided are adequate for all children in the community.

Ultimately, we wanted to hear directly from villagers about their experiences with education—the good and the bad—so we could identify where the system is working well and where it needs more support.

1) Findings and Discussion

Our survey paints a mixed picture of education in rural Aligarh. On the bright side, most respondents confirmed that educational institutions exist in their villages (Mean = 1.08), and government schools are widely available (Mean = 1.10). Anganwadi centers and mid-day meal programs are also nearly universal (both with a mean of 1.08), which shows that basic

Table 3
Educational facilities and services in rural Aligarh (N = 100)

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Is there any educational institute in your village?	100	1.00	2.00	1.08	0.27
Are there any significant problems regarding children's education in your village?	100	1.00	3.00	2.10	0.50
Is there any government school in your village?	100	1.00	3.00	1.10	0.38
Is there any private school in your village?	100	1.00	2.00	1.25	0.44
Is there any Anganwadi center available in the village?	100	1.00	2.00	1.08	0.27
Is there a Computer or Science laboratory in the government school of the village?	100	1.00	2.00	1.95	0.22
Is there any educational scheme being availed in the government schools of the village?	100	1.00	2.00	1.43	0.50
Is mid-day meal facility available to students?	100	1.00	2.00	1.08	0.27
Is there a lack of any basic facilities in the village?	100	1.00	2.00	1.43	0.50
Is there an experience of a community library in any school in the village?	100	1.00	2.00	1.88	0.33
Is any educational campaign being implemented in the village schools?	100	1.00	3.00	2.10	0.87
Are disability-friendly facilities available for students in the village schools?	100	1.00	3.00	1.88	0.61
Are sports facilities available in the village schools?	100	1.00	3.00	1.90	0.81
Do all the children in the village study in the village school?	100	1.00	3.00	2.05	0.50
Are there any skill development programs conducted in the village schools?	100	1.00	3.00	2.15	0.80
Is clean drinking water available in the village school?	100	1.00	3.00	1.25	0.63

government initiatives are reaching these communities.

However, when we dig deeper, the gaps become apparent. Only 25% of respondents said there are private schools in their areas (Mean = 1.25), meaning most families have limited choice in where to send their children. More concerning is the near-total absence of modern educational infrastructure. Computer and science laboratories are extremely rare (Mean = 1.95), which puts rural students at a significant disadvantage when it comes to learning practical skills for today's world.

Community libraries, disability-friendly facilities, and sports infrastructure are also hard to come by, with means of 1.88, 1.88, and 1.90 respectively. This suggests that schools are doing the bare minimum but are not equipped to provide a well-rounded, inclusive education.

We also found widespread concern about problems in children's education (Mean = 2.10). Skill development programs are notably lacking (Mean = 2.15), and educational campaigns are not being implemented effectively (Mean = 2.10). While some government schemes are technically being used (Mean = 1.43), their actual impact seems limited.

Basic amenities are another weak spot. Clean drinking water in schools is not guaranteed (Mean = 1.25), which is unacceptable for institutions responsible for children's wellbeing. It is also telling that not all village children attend the local school (Mean = 2.05). This suggests that some families are actively seeking better opportunities elsewhere, likely because they do not trust the quality of education available in their own villages. The reported lack of basic facilities (Mean = 1.43) only reinforces this trend.

Overall, our findings suggest that while the skeleton of an educational system exists in rural Aligarh, it is not functioning as it should. Schools are there, but they lack the resources, infrastructure, and programs needed to deliver quality education. Basic needs like clean water are not always met, and opportunities for skill development or inclusive learning are rare.

If these communities are going to see real improvement in educational outcomes, they need more than just buildings and teachers. They need investment in modern facilities, targeted programs that address real gaps, and a genuine commitment to making education work for every child—not just those who can afford to look elsewhere.

C. Section 3: Educational Infrastructure in the Villages of Aligarh District

This section takes a closer look at the actual state of educational infrastructure in rural Aligarh. We wanted to understand not just whether schools exist, but whether they are truly accessible and functional for all children. We examined the condition of both government and private schools, paying special attention to basic amenities like clean drinking water, usable classrooms, playgrounds, and science laboratories.

A key concern for us was whether schools are genuinely accessible to everyone, including children with disabilities. We also looked at how well supplementary services like Anganwadi centers and mid-day meals are supporting children's education. Beyond that, we tried to identify specific pain points—things like overcrowded classrooms, teacher shortages, and resource gaps—that are holding the system back. Our hope is that these insights will point toward concrete opportunities for improvement.

1) Findings and Discussion

Based on what we heard from 100 respondents, the story of education in rural Aligarh is one of contrasts. On one hand, the basics are largely in place. Most villages have some kind of educational institution (Mean = 1.08), government schools are common (Mean = 1.10), and Anganwadi centers are widely available (Mean = 1.08). The extremely high positive skewness (3.35 to 4.11) and kurtosis values (9.74 to 17.57) tell us that these facilities are nearly universal—almost everyone has access to them.

The mid-day meal program is also running successfully across the board (Mean = 1.08), which is genuinely good news for child nutrition and school attendance.

But here is where the picture gets more complicated. Private schools are rare (Mean = 1.25), and advanced learning tools like computer and science labs are practically non-existent (Mean = 1.95). The strongly negative skewness (-4.29) for laboratories indicates that virtually no one has access to these facilities. This is a serious gap that puts rural students at a massive disadvantage in an increasingly digital world.

Despite having schools, significant educational problems persist (Mean = 2.10). Basic amenities are still lacking—clean drinking water is not guaranteed (Mean = 1.25), and the positive

Table 4
Educational infrastructure in rural Aligarh (N = 100)

Variable	N	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
Is there any educational institute in your village?	100	1.00	2.00	1.08	0.27	3.35	9.74
Are there any significant problems regarding children's education?	100	1.00	3.00	2.10	0.50	0.24	1.19
Is there any government school in your village?	100	1.00	3.00	1.10	0.38	4.11	17.57
Is there any private school in your village?	100	1.00	2.00	1.25	0.44	1.20	-0.59
Is there any Anganwadi center available?	100	1.00	2.00	1.08	0.27	3.35	9.74
Is there a Computer or Science laboratory?	100	1.00	2.00	1.95	0.22	-4.29	17.29
Is any educational scheme being availed?	100	1.00	2.00	1.43	0.50	0.32	-2.00
Is mid-day meal facility available?	100	1.00	2.00	1.08	0.27	3.35	9.74
Is there a lack of basic facilities?	100	1.00	2.00	1.43	0.50	0.32	-2.00
Is there a community library?	100	1.00	2.00	1.88	0.33	-2.36	3.74
Are educational campaigns being implemented?	100	1.00	3.00	2.10	0.87	-0.20	-1.68
Are disability-friendly facilities available?	100	1.00	3.00	1.88	0.61	0.06	-0.19
Are sports facilities available?	100	1.00	3.00	1.90	0.81	0.19	-1.44
Do all children study in the village school?	100	1.00	3.00	2.05	0.50	0.11	1.28
Are skill development programs conducted?	100	1.00	3.00	2.15	0.80	-0.28	-1.38
Is clean drinking water available?	100	1.00	3.00	1.25	0.63	2.34	4.00

skewness (2.34) suggests that while some schools have managed this, many others have not. Community libraries are uncommon (Mean = 1.88), and skill development programs are notably absent (Mean = 2.15). These are not luxuries; they are essential components of quality education that prepares children for the future.

Some government schemes are technically being used (Mean = 1.43), but the distribution is uneven. The moderate skewness and negative kurtosis indicate that access is inconsistent—some villages are benefiting, others are being left out. Educational awareness campaigns (Mean = 2.10) and disability-friendly facilities (Mean = 1.88) are also not widely available, which raises serious concerns about inclusivity.

Perhaps most telling is the finding that not all village children attend the local school (Mean = 2.05). This suggests that parents who can afford it are actively seeking better options elsewhere, likely because they do not trust the quality of education available locally. Sports and extracurricular activities are also poorly supported (Mean = 1.90), meaning children are missing out on holistic development opportunities.

To sum it up, rural Aligarh has the skeleton of an educational system—schools exist, basic programs are running, and most children have somewhere to go. But the bones are weak. Quality is inconsistent, modern infrastructure is missing, and inclusivity is patchy at best.

If we want to see real change, we need more than just buildings and teachers. We need targeted investment in laboratories, libraries, and clean water. We need skill development programs that actually reach rural children. We need disability-friendly facilities and genuine awareness campaigns. And we need to convince families that their local school is worth staying for—not leaving.

The data makes it clear: infrastructure alone is not enough. Without quality, inclusivity, and relevance, education in rural Aligarh will continue to fall short of what its children deserve.

D. Section 4: Health Care Facilities in Aligarh District Villages

In this section, we focus on something fundamental: the health and well-being of rural residents, and whether they can actually access basic health services when they need them. We wanted to find out if there are enough doctors, health centers,

and hospitals in these villages. Are children getting vaccinated on time? Are pregnant women receiving the care and support they need?

We also looked at government health programs operating in the villages—things like health check-up camps and awareness campaigns. More importantly, we asked whether people actually find these services useful and whether they are really using them.

But health care does not exist in a vacuum. So we also examined the basic amenities that shape daily life: clean drinking water, reliable electricity, good roads, and public transportation. These are often overlooked, but they have a huge impact on people's quality of life, their ability to move around, and ultimately their health.

Our main goal was to hear directly from villagers about their real experiences—the problems they face, what works, and what does not. By understanding both the strengths and weaknesses of the current system, we hope to identify what needs fixing to protect and improve the health of rural Aligarh's residents.

1) Findings and Discussion

Based on what we learned from 100 respondents, the state of health care and basic infrastructure in rural Aligarh is a mixed bag. There are some foundations in place, but serious gaps remain when it comes to quality, access, and consistency.

Let us start with the positives. Vaccination facilities for children are widely available (Mean = 1.08), and the extremely high skewness (4.98) and kurtosis (25.61) values tell us this is nearly universal. Maternity and child health services are also broadly accessible (Mean = 1.08), with similarly high skewness (3.35) and kurtosis (9.74). This is genuinely good news—these essential services are reaching most villages.

However, the picture changes when we look at broader health infrastructure. Few respondents reported having good doctors and health centers nearby (Mean = 1.20), and health-related issues remain common in villages (Mean = 1.98). This suggests that while specific maternal and child health programs are working, general health care access is still a problem.

Preventive and educational services are particularly weak. Health education programs are inconsistently available (Mean = 1.43), and health camps or check-up programs are not regularly held (Mean = 1.38). These gaps matter because early

Table 5
Health care facilities and basic amenities in rural Aligarh (N = 100)

Variable	N	Min	Max	Mean	Std. Dev	Skewness	Kurtosis
Are there good doctors and health centers in the village?	100	1.00	3.00	1.20	0.46	2.33	5.14
Is there any health-related issue in the village?	100	1.00	3.00	1.98	0.58	-0.00	0.25
Is there a vaccination facility for children?	100	1.00	3.00	1.08	0.35	4.98	25.61
Is there any scheme for pregnant women?	100	1.00	3.00	1.18	0.55	3.03	7.84
Is any kind of health education provided?	100	1.00	3.00	1.43	0.71	1.40	0.53
Are there health camps and check-up programs?	100	1.00	3.00	1.38	0.74	1.65	1.03
Is there a government hospital available?	100	1.00	2.00	1.33	0.47	0.78	-1.47
Is free treatment available at government hospitals?	100	1.00	2.00	1.33	0.47	0.78	-1.47
Are cleanliness campaigns being run?	100	1.00	2.00	1.23	0.42	1.37	-0.14
Is there any health scheme in the village?	100	1.00	2.00	1.43	0.50	0.32	-2.00
Is maternity and child health service available?	100	1.00	2.00	1.08	0.27	3.35	9.74
Are health-related awareness campaigns running?	100	1.00	2.00	1.40	0.50	0.42	-1.92
Do you avail the health services available?	100	1.00	2.00	1.30	0.46	0.91	-1.24
Is fresh drinking water available?	100	1.00	2.00	1.05	0.22	4.29	17.29
Does your village have proper facilities?	100	1.00	2.00	1.30	0.46	0.91	-1.24
How would you assess the quality of health services?	100	1.00	3.00	2.18	0.55	0.10	0.16
Is there adequate electricity supply?	100	1.00	2.00	1.25	0.44	1.20	-0.59
How many hours is electricity available?	100	1.00	4.00	2.13	0.91	0.81	0.16
How will you evaluate the roads?	100	1.00	4.00	2.58	0.71	-0.05	-0.10
Is there proper public transportation?	100	1.00	2.00	1.33	0.47	0.78	-1.47

detection and health awareness can prevent bigger problems down the line.

Government hospitals and free treatment facilities are technically available (both Mean = 1.33), but the distribution is uneven. The skewed distribution indicates that while some villages benefit, others are left out. Health schemes and awareness campaigns are reported (Mean = 1.43 and 1.40), but their impact varies from village to village. On a brighter note, cleanliness campaigns for health are relatively common (Mean = 1.23), showing that some communities are actively engaged in public health efforts.

When it comes to basic amenities, the results are similarly uneven. Access to fresh drinking water is excellent (Mean = 1.05), with extremely high skewness (4.29) indicating near-universal availability. However, electricity supply is less reliable. While most villages have electricity (Mean = 1.25), the number of hours it is actually available varies considerably (Mean = 2.13). This inconsistency affects daily life and can impact health services that depend on power.

Road quality is a significant concern (Mean = 2.58), suggesting that poor infrastructure makes it harder for people to reach health facilities. Public transportation remains limited (Mean = 1.33), which compounds the access problem—especially for those who cannot afford private transport.

Perhaps most telling is how people rate the overall quality of health services (Mean = 2.18). This lukewarm rating suggests dissatisfaction. Services may exist, but they are not meeting people's expectations or needs effectively.

To wrap up, rural Aligarh has managed to put some essential health services in place—vaccinations and maternal care are reaching most communities, and clean water is widely available. But the system is patchy. Good doctors and health centers are scarce. Preventive services like health education and check-up camps are inconsistent. Basic infrastructure like roads and electricity is unreliable, making it harder for people to access care even when it is technically available.

The gap between having services and having *quality* services is real and significant. If we want sustainable rural development, we need to invest not just in building clinics, but

in staffing them with qualified professionals, running regular health education programs, and fixing the roads, power supply, and transport links that make health care accessible. Without these improvements, the health and well-being of rural residents will continue to suffer despite the presence of some well-intentioned programs.

E. Section 5: Employment and Community Advancement in Aligarh Villages

In this section, we look at how people in rural Aligarh make a living—especially those who cannot rely entirely on farming. We wanted to find out whether there are other ways to earn money within the village, and whether people have actually benefited from government employment schemes or skill development programs designed to improve their lives.

We also explored the sense of community in these villages. Are there self-help groups or small community projects that bring people together and drive collective progress? How connected do people feel to their neighbors, and how actively are they involved in initiatives that make the village a better place to live?

Our hope was to capture real stories of effort, resilience, and hope—stories that reveal what is working well and where more support is needed. By understanding these dynamics, we aim to identify both the strengths of the current system and the gaps that must be addressed to improve quality of life and economic security for rural residents.

1) Findings and Discussion

This part of our survey looks at whether rural Aligarh offers real alternatives to farming and how active communities are in driving their own development. The picture that emerges is one of limited diversification and uneven participation in government and grassroots initiatives.

Let us start with employment. Non-agricultural job opportunities are scarce (Mean = 1.43, SD = 0.64). The distribution is heavily skewed (1.87) with high kurtosis (5.22), which tells us that most people see very few options beyond farming. A small minority may have found something else, but for the vast majority, agriculture remains the only game in

Table 6
Employment and community development in rural Aligarh (N = 100)

Variable	N	Min	Max	Mean	Std. Dev	Variance	Skewness	Kurtosis
Are there employment opportunities other than agriculture?	100	1.00	4.00	1.43	0.64	0.40	1.87	5.22
Have you benefited from government employment or skill programs?	100	1.00	4.00	1.83	0.55	0.30	0.88	5.47
Are there community development initiatives or self-help groups?	100	1.00	2.00	1.45	0.50	0.25	0.21	-2.06
Have you participated in community development activities?	100	1.00	2.00	1.75	0.44	0.19	-1.20	-0.59

town.

Government programs have not made much of a dent either. While slightly more people report benefiting from employment or skill development schemes (Mean = 1.83, SD = 0.55), the positive skewness (0.88) and high kurtosis (5.47) reveal a familiar pattern: a few individuals have gained something, but most have not. These programs are either not reaching enough people or not delivering meaningful outcomes for those they do reach.

Community-level initiatives paint a somewhat different picture. Self-help groups and development projects do exist to some extent (Mean = 1.45), with a fairly balanced distribution (Skewness = 0.21). However, the negative kurtosis (-2.06) indicates a flat distribution—meaning some villages have these structures in place while others do not. Participation in community activities is relatively more common (Mean = 1.75), and the negative skewness (-1.20) suggests that more people are getting involved than not. But the low kurtosis (-0.59) tells us this participation is not evenly spread; some communities are active, others are not.

To sum it up, rural Aligarh is struggling to move beyond agriculture. Non-farm employment is limited, government schemes are not reaching most people, and while community initiatives exist, they are patchy and inconsistent.

What this tells us is that rural development here needs more than good intentions. It needs better execution of skill programs that actually train people for available jobs. It needs stronger employment linkages that connect villagers to markets and opportunities outside farming. And it needs genuine grassroots engagement that empowers communities to drive their own progress.

Without these changes, too many rural residents will remain stuck in precarious agricultural livelihoods, unable to build the security and resilience they need to thrive.

F. Section 6: Knowledge of Rural Development Initiatives

In this section, we wanted to understand how much villagers actually know about the rural development programs meant to improve their lives. We were not testing their expertise or judging their intelligence. Rather, we tried to find out how well information about these schemes has traveled from government offices to the people they are supposed to help.

Do villagers in Aligarh district know these programs exist? Can they name specific schemes? More importantly, do they feel informed and included, or do they feel left out of the loop?

By listening to their responses, we hoped to understand the real connection between government policies and village life.

Are these initiatives actually reaching people and making a tangible difference? Or are they just paperwork and posters, invisible to the very people they claim to serve?

1) Findings and Discussion

Our findings reveal a troubling gap between government intentions and grassroots reality. Awareness of rural development schemes among Aligarh's villagers is limited—though not completely absent.

The mean score of 1.83 (on what appears to be a 1-2 scale, where 1 likely means "Yes" and 2 means "No") suggests that most respondents are unfamiliar with the various initiatives available to them. The standard deviation of 0.38 and small variance of 0.15 indicate that this lack of awareness is fairly consistent across the board. Simply put, most people we spoke to did not know about these programs.

The distribution tells an even clearer story. The strong negative skewness (-1.78) and leptokurtic pattern (Kurtosis = 1.22) show that responses cluster heavily toward "No." While a handful of individuals may have some awareness, the vast majority do not. The data leaves little room for optimism about current outreach efforts.

This matters. If people do not know a program exists, they cannot apply for it. They cannot demand accountability. They cannot plan their futures around promised support. The schemes may look good on paper, but on the ground, they are practically invisible.

To put it bluntly, the communication strategy for rural development in Aligarh is broken. Government programs are not reaching the people they are designed to help, not because the programs are useless, but because nobody knows about them.

This awareness gap is not just an administrative failure—it is a missed opportunity to transform lives. Villagers are missing out on support that could improve their livelihoods, infrastructure, and access to public services. Meanwhile, government resources are being spent on initiatives that fail to find their audience.

Fixing this requires more than putting up a few banners. It means strengthening local governance bodies to actively spread information. It means running genuine awareness campaigns that speak to people in their own language and context. It means partnering with grassroots organizations that already have trust and reach in these communities.

Without these steps, rural development will remain a top-down exercise in futility—well-meaning policies that never touch the ground where they are needed most.

Table 7
Awareness of rural development schemes in Aligarh district (N = 100)

Variable	N	Range	Min	Max	Mean	Std. Error	Std. Dev	Variance	Skewness	Kurtosis
Are you familiar with various rural development schemes or programs?	100	1.00	1.00	2.00	1.83	0.06	0.38	0.15	-1.78	1.22

Table 8
Satisfaction with rural development in aligarh district (N = 100)

Variable	N	Range	Min	Max	Mean	Std. Error	Std. Dev	Variance	Skewness	Kurtosis
On a scale of 1 to 5, how satisfied are you with overall rural development? (1 = very dissatisfied, 5 = very satisfied)	100	4.00	1.00	5.00	3.18	0.16	1.03	1.07	0.07	-0.81

G. Section 7: Satisfaction with Rural Development in Aligarh District

In this final section, we simply asked villagers how they feel. Using a straightforward 1 to 5 scale, we invited them to reflect on their personal satisfaction with rural development in their district—based not on what they have heard or seen in reports, but on their own daily experiences.

We were not trying to judge anyone's answer or compare villages. We wanted to understand the emotional reality of people's lives. Are they feeling hopeful about the future, or disappointed by unfulfilled promises? Do they believe development is actually touching their lives, or do they still feel left out of the process?

This section goes beyond numbers. It tries to capture the real sentiment of the community—the human side of development that statistics alone cannot reveal.

1) Findings and Discussion

So how do villagers really feel? The answer is complicated.

The average satisfaction score sits at 3.18 out of 5—a lukewarm "somewhat satisfied." This tells us that development efforts have not been a total failure, but they have not been a resounding success either. People see some progress, but they are not celebrating.

The standard deviation of 1.03 and variance of 1.07 reveal a wide spread of opinions. Some villagers are genuinely pleased with what they have seen. Others remain frustrated. This variation likely reflects real differences in experience—some villages have benefited more than others, and some needs have been addressed better than others.

The near-zero skewness (0.07) suggests a fairly balanced distribution of views. There is no heavy tilt toward either extreme satisfaction or deep dissatisfaction. However, the negative kurtosis (-0.81) indicates a flatter distribution with responses spread across the scale rather than clustering in the middle. In plain terms, people are all over the map in how they feel. There is no clear consensus—just a scattered mix of hope, resignation, and everything in between.

What this means is that while extreme dissatisfaction is relatively rare, genuine enthusiasm is also hard to find. Most people occupy the middle ground: not angry enough to complain loudly, but not happy enough to sing praises either.

Rural development in Aligarh has made some headway, but it has not won people's hearts. The moderate satisfaction scores tell a story of unfulfilled potential. Government schemes exist, infrastructure projects have been launched, and services are technically available—but something is missing. The connection between policy and people's lives remains weak.

Significant gaps persist across agriculture, education, healthcare, employment, and basic infrastructure. Too many villagers still lack access to essential resources. Too many still feel that development is happening somewhere else, not in their

village. The infrastructure that does exist—schools, health centers, roads—often falls short of what people actually need.

For real change, Aligarh needs development that is targeted, inclusive, and genuinely reaches the most remote corners. It needs to close the gap between what looks good on paper and what feels good in daily life.

7. Suggestions for Improvement

Based on what we learned, here are some practical steps that could make a real difference:

1. *Ramp Up Awareness Campaigns:* Many people do not even know what help is available. Information needs to reach every household, not just the well-connected few.
2. *Invest in Rural Education:* Better school buildings, more teaching materials, and proper training for teachers would go a long way toward improving learning outcomes.
3. *Expand Healthcare Reach:* More health centers, more doctors, and reliable vaccination programs are urgently needed in underserved areas.
4. *Create Real Employment Opportunities:* Skill development programs should connect to actual jobs, and local industries need support to grow and hire.
5. *Fix Basic Infrastructure:* Roads, clean water, electricity, and sanitation are foundational. Without them, everything else struggles.

8. Policy Recommendations

For policymakers looking to make rural development actually work, we offer these recommendations:

1. *Strengthen Implementation and Monitoring:* Rural schemes need teeth. Ensure they are not just launched but effectively implemented, tracked, and adjusted based on ground realities.
2. *Support Agricultural Diversification:* Help farmers move beyond mono-cropping through schemes that encourage alternative crops and livelihoods, reducing vulnerability to weather and market shocks.
3. *Build Public-Private Partnerships:* Engage private companies to invest in rural infrastructure and education. Government alone cannot do it all.
4. *Establish Regular Monitoring Systems:* Create feedback loops that assess progress continuously and allow for quick course corrections when schemes are not delivering.
5. *Put Communities in the Driver's Seat:* Empower local people to participate in planning and implementation. Solutions designed with communities, rather than imposed on them, stand a better chance of success.

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