



Investigating the Impact of Socio-Economic Factors on Poverty Reduction in Rural Areas of Kunduz Province, Afghanistan

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Abstract: Rural poverty is a complex and multifaceted problem that many developing countries face. This type of poverty is not only related to a lack of access to financial resources and insufficient income, but also depends on various economic and social factors. Identifying these factors and understanding their impact on the living conditions of rural inhabitants is crucial for designing effective programs and policies to alleviate poverty. In this context, this study aimed to identify and analyze the socio-economic factors affecting rural poverty reduction in Kunduz province. The statistical population of this research included all rural households in Kunduz Province. The primary data collection tool was a questionnaire, which, after assessing its validity and reliability, was distributed to 383 participants based on Cochran's formula and collected through a multi-stage sampling method. For data analysis, in addition to descriptive statistics, the coefficient of variation and multiple linear regression were used. The results indicated that among the economic factors influencing rural poverty reduction, the most significant consensus was related to variables such as investment in rural service jobs, the development of livestock farming in villages (raising economically viable animals), and the development of fish and poultry farms. Meanwhile, the establishment of local cooperatives in villages, access to public services for rural families, and education aimed at increasing the productivity of agricultural and non-agricultural products were recognized as some of the most important social factors affecting the reduction of rural poverty in Kunduz Province. Overall, the economic and social factors affecting the reduction of rural poverty explained approximately 55% of the total variance.

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INTRODUCTION

Despite considerable advancements in today's society, poverty remains an issue that is not easily resolved, and this phenomenon continues to persist, threatening the world, particularly rural populations (Alemu & Singh, 2021; Eze et al., 2019; Barati et al., 2022; Sohag, Mahmud,

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Alam & Samargandi, 2015). When poverty exists in a community, its residents face a crisis of economic problems and disorder (Trani et al., 2016). Consequently, valuable and fruitful activities do not thrive, and the lack of means for a decent life, along with food shortages, severely afflicts people, leading to widespread hunger. Serious concerns regarding poverty and ways to reduce it have recently resulted in the production of a vast body of theoretical and empirical literature (Jula & Beriso, 2023; Hallegatte et al., 2020; Mhlanga, 2021; Bruijn & Antonides, 2022; Qamruzzaman, Karim & Kor, 2023; ESCAP, 2007; Asogwa, Umeh & Okwoche, 2012; Zafar et al., 2021; Cui et al., 2023). Each of the studies aims to describe and explain the characteristics, patterns, influencing factors, and local, regional, and global policies related to the problem of poverty. Although significant efforts have been made in recent years to operationalize the concept of poverty, most studies have considered inadequate income as an indicator of poverty (Bossert et al., 2013). However, Chambers (2007) argued that poverty is not solely a result of economic deprivation but is also a consequence of social phenomena. Rural poverty is one of the major challenges faced by developing communities (Kalinowski & Rosa, 2021). This type of poverty, which refers to the lack of resources and facilities in rural areas, can stem from various factors, including insufficient infrastructure, limited access to education and healthcare, and economic instability (Prince et al., 2023).

Previous studies have shown that various factors influence the reduction of rural poverty. For instance, Sunde (2024), in a study titled *The socio-economic impact of poverty in Namibia: the case study of three informal settlements in Windhoek*, found that severe deprivation resulting from inadequate sanitation, limited healthcare, and inadequate education were identified as factors of poverty in the study area. Pezeshk, Ismail, and Mohammad (2019) conducted a study titled "Investigating Rural Poverty Indices and Their Influencing Factors in Iran," concluding that inflation rate, unemployment rate, fertility, household size, temporal trends, and rural population have a positive effect on poverty, while economic growth, the agricultural producer price index, net capital stock in agriculture, and agricultural value added negatively affect poverty and are recognized as influencing factors. Imay et al. (2015) found that access to non-agricultural employment in rural areas led to a decrease in vulnerability and poverty in both Vietnam and India. Millor and Malik (2016) reported that the employment growth rate in Sindh and Punjab provinces of Pakistan rose from 2.2% to 5.3% between 2010 and 2012; however, this increase in employment was unable to curb the rise in poverty. Najafi and Shushtarian (2007) conducted a study aimed at identifying the determinants of poverty in Iran. They concluded that illiteracy, low education levels, household size, and dependency ratio are among the most significant poverty determinants. They suggested developing formal education and implementing population control policies to help households escape poverty. The results of Asogwa et al. (2012) indicated that farmers' access to technology information and collective agricultural institutions is crucial in reducing poverty among farmers in the urban outskirts of Nigeria, as it creates opportunities for information sharing. Additionally, improving educational opportunities for farmers has been linked to increasing peasant income and enhancing their living conditions, making it one of the most important factors in reducing poverty.

Studies on poverty have also been conducted in Afghanistan. However, none of the previous research has addressed the identification of economic and social factors affecting the reduction of rural poverty from the perspective of rural residents. For instance, the World Bank and the Ministry of Economy of Afghanistan (2016) found in their assessment of poverty in the country that the poverty rate increased from 36 percent in 2012 to 40 percent in 2014. They stated that half of the poor population is underage and mostly lives in rural areas. Trani et al. (2016) showed that nearly all adults in Afghanistan suffer from deprivation in at least one dimension, and those living in rural areas are more exposed to poverty. Shaiq et al (2022), in a study titled "Dimensions of Poverty in Kunduz Province," concluded that the MPI index in rural and urban areas of this province was 0.483 and 0.445, respectively, and found that the intensity of rural poverty is greater than that of urban poverty.

Afghanistan has been unable to achieve sustainable rural development due to various factors, and its villages face different economic, social, infrastructural, and structural challenges (Shaiq et al., 2021). The country has benefited from international aid for many years (Asadi et al., 2024), but it suffers from poverty more than ever before (Floreani, López & Rama, 2021; Shaiq et al., 2022). Most rural households' income sources in the study area depend on agriculture and livestock. The rise in unemployment and the deepening of poverty in this province indicate that without proper planning and reliance solely on the agricultural sector, development expansion and spread in the rural areas of this province are unlikely. Studies show that more than 60 percent of residents' income in Kunduz province comes from agricultural and livestock resources. In rural areas, over 85 percent of people are directly or indirectly involved in agriculture and sustain their livelihoods through it, while this figure is around 20 percent in urban areas.

Although this province has good potential opportunities, unfortunately, trade and industry have not experienced significant growth, and most of its population lives below the poverty line, with a poverty rate of 66.4 percent and unemployment at 32.8 percent in 1398 (Provincial Profile of Kunduz, 1398). Since rising poverty is a fundamental problem in Afghanistan and the region studied, paying attention to this issue and considering specific mechanisms is essential. Understanding the factors influencing poverty reduction is a key requirement for successfully designing and implementing policies and strategies to reduce poverty across all communities, especially in the studied region. Moreover, implementing poverty reduction policies without clearly defining their scope and dimensions will not produce significant success. Therefore, a lack of accurate understanding of poverty and its dimensions, along with insufficient focus on its influential factors in various programs, leads to ineffective policymaking, waste of scarce economic resources, unproductive efforts, prolonged poverty, and hindered sustainable development. Consequently, a clear understanding of the economic and social factors affecting poverty reduction can serve as a valuable guide for developing poverty alleviation programs and optimizing national resource use. Since no research has yet been conducted to identify the economic and social factors impacting rural poverty reduction in the studied region, this research is particularly

important. In other words, by identifying these factors, this study can enrich the country's theoretical literature on the subject, provide mechanisms for addressing the issue, and assist policymakers in selecting effective strategies for future poverty reduction. Therefore, this study aims to answer the following questions:

1. What are the most important socio-economic factors affecting rural poverty reduction?
2. Do socio-economic factors play a significant role in reducing rural poverty?

RESEARCH METHOD

Study Area

Kunduz Province, located in northeastern Afghanistan, is bordered to the north by the Amu River (300 kilometers from Tajikistan), to the south by Baghlan Province, to the east by Takhar Province, and to the west by Samangan and Balkh Provinces. This creates a northeastern zone among the Baghlan, Takhar, and Badakhshan provinces. About 80% of the population is engaged in agriculture and livestock farming. In terms of climate, this province is somewhat humid and semi-arid; however, it has recently faced drought phenomena (Shaiq, Aiuby & Hayat, 2024). Approximately 75% of the agricultural land in Kunduz Province is flat, and the soil is fertile. The economic infrastructure of this province is based on agriculture and animal husbandry (Provincial Profile of Kunduz, 2019).



Fig.1. Study area location (Kunduz Province – Afghanistan)

Sampling Method

This research is a survey study based on primary data. The statistical population of the study comprises all heads of households residing in rural areas of Kunduz Province. To determine the sample size, the Cochran formula was used, which estimated the sample size to be 383

people. The sampling method in this study was multi-stage. In the first stage, four districts were selected from among its administrative units using cluster sampling. Then, four villages were randomly selected from each of the selected areas. Finally, the heads of households in the selected villages were studied as sample units.

Data Collection

The data required for the study were collected by visiting the selected villages in person and completing the questionnaire by the heads of households. In other words, information was collected in the field using a questionnaire.

The primary data collection tool in this study was a researcher-made questionnaire. To develop it, face-to-face interviews were initially conducted with several individuals from the statistical population to identify various dimensions of the topic. Based on the findings of previous research, theoretical foundations, and relevant literature, an initial version of the questionnaire was created. This version was then revised and finalized following review and evaluation by faculty members from the Department of Agricultural Business Management at Balkh University and the Department of Agricultural Economics and Extension at Baghlan University. The final questionnaire consisted of 33 closed-ended items. To measure the variables, nominal and ordinal scales, including a ten-point Likert scale, were used, considering the nature of the data.

Data Analysis

After data collection, the information was coded and entered into SPSS version 26 software. For data analysis, descriptive statistics including frequency, percentage, mean, standard deviation, and coefficient of variation were first used to describe the characteristics of the sample and research variables. Then, multiple linear regression was used to examine the relationships between variables and determine the effect of independent variables on the dependent variable.

Reliability And Validity of The Instrument

The content validity method was used to examine the validity of the research instrument. For this purpose, the initial questionnaire was provided to some experts and faculty members of the Department of Agricultural Business Management of Balkh University and the Department of Agricultural Economics and Extension of Baghlan University. After receiving suggestions and making necessary amendments, the final version was prepared. Cronbach's alpha coefficient was used to measure the reliability of the questionnaire. The Cronbach's alpha value was 0.703, which indicated acceptable reliability of the measurement tool and appropriate internal consistency of the questionnaire items.

FINDINGS AND DISCUSSION

The research findings indicated that approximately 73% of the respondents were married. About 11% of them were illiterate. Meanwhile, out of the total respondents, 129 individuals had literacy skills sufficient for reading and writing (Table 1).

Table 1. Educational status of the sample community under study

Scale	Frequency	Percent
Illiterate	42	10.9
As far as reading and writing	128	33.6
High School Graduate	143	37.2
Bachelor	68	17.7
Master	2	0.5
Total	383	100.0

Source: Research findings, 2023

First question research: *What are the most important economic and social factors affecting rural poverty reduction?*

As stated in the research methodology section, the coefficient of variation (Pélabon, 2020) was used to prioritize the economic factors affecting rural poverty reduction. In other words, it is one of the important statistical methods used to identify the most important variables, and this method has been used in various studies (Shaiq et al., 2021; Talebpour et al., 2022; Shaiq, Hashemi & Hashemi, 2024; Varmazyari et al., 2024; Shaiq et al., 2026). According to Table (2), the highest consensus was on variables such as investment in rural service businesses, development of livestock farming in villages (raising economically viable animals), development of fish and poultry farms, the establishment of small production factories in rural areas, creation of small home-based and local businesses, and serious government attention along with appropriate policies for rural development and budget allocation in this area. Conversely, the lowest consensus was attributed to factors such as education on cultivating high-income and high-value crops, expansion of weekly local markets in villages, market regulation and the law of supply and demand, and the establishment of packaging and processing factories for agricultural products (Table 2).

Table 2. Prioritization of Economic Factors Affecting the Reduction of Rural Poverty in Kunduz Province

Economic Factors	Mean	Std. Deviation	CV
Investment in rural service businesses	3.96	1.112	0.281
Development of livestock farming in villages (economically viable animal husbandry)	3.67	1.049	0.286
Development of fish and poultry farms	3.39	1.003	0.296
Establishment of small production factories in rural areas	3.65	1.119	0.307
Creation of small home-based and local businesses	3.29	1.015	0.309
Serious attention from the government and the adoption of appropriate policies regarding rural development and budget allocation in this area	3.48	1.101	0.316

Providing small loans to rural residents and monitoring their use	3.3796	1.07215	0.317
Insuring agricultural products of rural farmers	3.81	1.215	0.319
Acquiring skills for diversification and non-agricultural production (such as carpet weaving, sewing, carpentry, and blacksmithing) among rural residents	3.75	1.195	0.319
Developing agriculture, particularly fruit orchards	3.67	1.225	0.334
Developing and expanding rural tourism areas	3.49	1.183	0.339
Promoting handicrafts, such as carpet weaving	3.68	1.262	0.343
Expanding weekly local markets in villages	3.30	1.141	0.346
Establishing packaging and processing factories for agricultural products	3.32	1.155	0.348
Regulating the market and the law of supply and demand	3.63	1.280	0.352
Training in the cultivation of high-income and foreign exchange-generating crops	3.05	1.274	0.418

Source: Research findings, 2023

According to Table (3), the variables of establishing local cooperatives in villages, access of rural families to public services such as clinics, education aimed at increasing productivity in agricultural and non-agricultural outputs, and the development of transportation and communication facilities were identified as the most significant social factors influencing rural poverty reduction in Kunduz Province. The least consensus was found regarding the variables related to rural residents' access to support services, the development of technical and skill-based infrastructure in villages, and the management of natural resources (water and land).

Table 3. *Prioritization of Social Factors Affecting the Reduction of Rural Poverty in Kunduz Province*

Social Factors	Mean	Std. Deviation	CV
Establishment of Local Cooperatives in Villages	3.66	0.946	0.259
Access for rural families to public services such as clinics	3.97	1.059	0.267
Training in increasing the productivity of agricultural and non-agricultural products	3.54	0.993	0.281
Development of transportation and communication facilities	3.45	0.982	0.284
Creation of physical infrastructure (roads, water, electricity, etc.) in villages	3.69	1.069	0.290
Prevention of seasonal migration by creating industrial employment in rural areas	3.67	1.073	0.293
Health and well-being of family members	3.88	1.155	0.298
Utilization of specialists in matters related to rural development and agricultural promotion	3.61	1.076	0.298
Improvement of the quality and quantity of communication routes	3.57	1.124	0.315
Support from authorities for entrepreneurs and owners of new businesses	3.75	1.186	0.316
Increased participation and cooperation of rural residents and farmers in product sales	3.38	1.094	0.324
Development of educational infrastructure in villages	3.55	1.151	0.324
Management of natural resources (water and land)	3.43	1.129	0.329
Development of technical and vocational infrastructure in villages	3.34	1.163	0.349

Source: Research findings, 2023

Second research question: Do economic and social factors play a significant role in reducing rural poverty?

In the following analysis, the impact of all economic and social variables influencing rural poverty reduction was examined using a multiple regression test, with rural poverty reduction as the dependent variable. Regression analysis allows prediction of changes in the dependent variable through independent variables and enables determination of each independent variable's contribution to explaining the dependent variable (Ziglari, 2024). All variables used were included in the regression equation. The results indicate that the regression equation was significant at the 0.000 level. In other words, a linear relationship between the study's dependent variable and the two independent variables (economic and social factors affecting rural poverty reduction) was found to be significant at the one percent level. The results of this test demonstrate that both economic and social factors had a significant contribution to reducing rural poverty in the studied area.

Table 4. Regression analysis of rural poverty reduction

Factors	B	Beta	T	Sig.	VIF
(Constant)	6.655		8.119	0.000	
Economics factor	0.132	0.343	4.782	0.000	4.395

Source: Research findings, 2023

On the other hand, as shown in Table 4, the VIF (Variance Inflation Factor) values for these variables are also less than 10. Therefore, there is no multicollinearity, and it can be stated that the standardized coefficients of each independent variable in the regression model reflect their actual roles. According to Table 5, the value of the Durbin-Watson test falls within the range of 1.5 to 2.5, which assures that there is no autocorrelation among the variables.

Table 5. Summary of regression analysis test for dependent variable (rural poverty reduction)

Durbin-Watson	Std. Error of the Estimate	Adjusted R-Square	R Square	R
1.626	2.90304	0.559	0.562	.750 ^a

Source: Research findings, 2023

Table 5 shows that the independent variables were able to explain approximately 56% ($R^2 = 0.559$) of the variations in the dependent variable "rural poverty reduction".

Description of The Main Findings

Results showed that about 11 percent of respondents were illiterate and 129 people had only basic reading and writing skills. The results also showed that from the perspective of household heads, the most important economic factors affecting rural poverty reduction include investment in rural service jobs, development of livestock and agriculture, expansion of fish and poultry farms, and establishment of small manufacturing factories in rural areas. Among these factors, the creation of service job opportunities and the development of production activities related to agriculture and livestock were the most important in reducing

rural poverty. In addition to economic factors, the findings showed that social factors also play an important role in reducing poverty. The establishment of local cooperatives, access of rural households to public services, and provision of training related to increasing the productivity of agricultural and non-agricultural activities were among the most important social factors identified in this study.

The low literacy level among some heads of rural households can limit their ability to access economic information, manage financial resources, and develop income-generating activities. Therefore, educational and extension programs commensurate with the literacy level of villagers can provide the basis for improving their knowledge, skills, and motivation to participate more in economic activities. The importance of investing in rural service jobs can be interpreted from the perspective that the rural economy does not rely solely on agricultural production. Rather, the development of service and non-agricultural activities can diversify household income sources and reduce their vulnerability to production and market fluctuations. Creating a suitable environment for investment, developing infrastructure, accessing financial resources, and supporting rural entrepreneurship are essential factors for the dynamism of the rural economy.

Also, respondents' emphasis on the development of livestock farming indicates the important place of this activity in the economy of rural households in Afghanistan. In addition to providing food, livestock farming is an important source of income, employment, and economic security for rural families. However, effective utilization of the potential of this sector requires access to veterinary services, technical training, appropriate inputs, and sales markets. The development of fish and poultry farming can also be interpreted as a strategy for diversifying the rural economy. These activities, with less land requirements than some agricultural activities, provide a good opportunity to create employment and increase the income of rural households. Also, the establishment of local cooperatives can play an important role in poverty reduction by increasing bargaining power, facilitating access to resources, and strengthening social cooperation.

The findings of this study on the importance of investing in rural economic activities are consistent with the results of studies by Alam (2017), Maulu et al. (2021), and Eskwa et al. (2012). These studies have also shown that developing productive activities, creating job opportunities, and supporting rural economic sectors play an important role in improving household livelihoods and reducing poverty. The present results are also consistent with the findings of Endris and Kassegn (2022), who emphasized the role of investment in rural service jobs as an effective factor in reducing poverty. Lack of sufficient investment in rural areas can reduce economic opportunities, increase unemployment, and perpetuate poverty. The findings related to the importance of local cooperatives and public services are also consistent with the results of the study by Nguyen (2019). These studies have shown that social institutions such as cooperatives can provide the basis for poverty reduction and improving social welfare by strengthening collective participation, access to resources, and providing support services.

Based on the findings of this study, it can be said that several economic and social factors play a role in reducing rural poverty in Kunduz province. In response to the question about economic factors affecting poverty reduction, the results showed that the development of rural service jobs, strengthening livestock and agriculture, developing fish and poultry farming, and establishing small rural industries are among the most important economic factors. In response to the question about social factors, the findings showed that establishing local cooperatives, improving access to public services, and providing productivity-enhancing training are key social factors in reducing rural poverty.

Despite providing valuable findings, this study has some limitations. First, the research data were collected based on the perspectives and perceptions of household heads; therefore, some responses may have been influenced by respondents' personal perceptions. Second, the present study was conducted in rural areas of Kunduz province, and generalizing its results to other regions of Afghanistan should be done with caution. Also, time constraints and access to some rural areas may have affected the scope of data collection. For future research, it is suggested that similar studies be conducted in other provinces of Afghanistan to examine regional differences in factors affecting rural poverty reduction. Also, researching the role of access to financial credit, new agricultural technologies, sales markets, and rural youth in economic activities can provide new areas for future research.

CONCLUSION

The results of this study showed that poverty reduction in rural areas of Kunduz province is influenced by a set of economic and social factors, and achieving this goal requires a comprehensive and multidimensional approach. The findings indicate that the development of economic activities, especially investment in rural service jobs, strengthening the agricultural and livestock sectors, expanding fish and poultry farming, and establishing small industries, are among the most important solutions to improve the situation of rural households. This shows that diversifying economic activities can reduce households' dependence on a single source of income and increase their ability to cope with economic fluctuations and natural hazards. On the other hand, the study's results showed that social factors also play a significant role in poverty reduction. Establishing and strengthening local cooperatives, improving access to public services, and providing practical training to enhance the productivity of economic activities are among the factors that can lay the groundwork for empowering rural households. These findings indicate that economic development cannot lead to sustainable poverty reduction without strengthening human and social capital. The low literacy level of some of the heads of households in the study also highlights the need for greater investment in education, skills training, and extension programs, because improving knowledge and skills increases villagers' ability to take advantage of economic opportunities and better manage resources. The results of this study are consistent with previous studies and show that developing productive activities, creating job opportunities, supporting local investments, and strengthening participatory institutions are among the most important

strategies for reducing rural poverty in developing countries. This indicates that, to achieve sustainable development, economic policies must be implemented simultaneously with social and educational programs to have a greater impact on improving the well-being of rural households.

Author contribution

Conceptualization, Muhammad Asef Shaiq; methodology, Muhammad Asef Shaiq; software Muhammad Asef Shaiq; validation, Abdul Samie Maulavizada; formal analysis, Muhammad Asef Shaiq; investigation, Abdul Samie Maulavizada; resources, Muhammad Asef Shaiq; data curation, Muhammad Asef Shaiq; writing—original draft preparation, Muhammad Asef Shaiq; writing—review and editing, Abdul Samie Maulavizada; visualization, Abdul Samie Maulavizada; supervision, Abdul Samie Maulavizada; project administration, Muhammad Asef Shaiq; All authors have read and agreed to the published version of the manuscript.

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Conflict of Interest Statement

The authors report there are no competing interests to declare.

Data Availability Statement

Primary data will be made available upon official request from the first author.

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