Study on the impact of Pradhan Mantri Gram Sadak Yojana on the socio-economic status of the rural people under Wozhuro Rural Development Block, Wokha District, Nagaland

ABSTRACT

The study was conducted under the wozhuro R.D block and a total of 100 respondents were selected randomly from three villages. An interview schedule was developed for data collection, while frequency, percentage, and correlation analysis were the statistical tools used for the present study. The study on socio-economic and personal characteristics of the respondent showed that the majority of the respondent was under the age group of 31-50 years, the male population formed a larger part of the respondents while a majority of them have attained a primary level of education, majority of them were married; the majority of the respondent belonged to large size family, while the majority of them had small land holding size and the majority of the respondent had an annual income of (Rs. 41,000-60,000). It was found out from the study that the majority of the respondents were employed in the 33 days and below category and the majority of the respondent generate their income through agriculture and livestock. The findings showed that there was a great impact on both farm and non-farm sectors. The dependent variable income generation was found to have a positive and significant relationship with the independent variable family size and land holding. Also, farm benefits were found to have a positive and significant relation with land holding and annual income and non-farm benefits with annual income. The study showcased a good coverage of the program in the study area, having a major impact on all aspects of the socio-economic development of the rural people. Thus, the implementation of PMGSY was found to be encouraging and satisfactory.

Keywords: All-weather roads, PMGSY, roads, rural connectivity, socio-economic impact.

Comment [A1]: Please revise the abstract. It should be composed of a sentence for the introduction, another sentence for the general objective, the next 2 sentences could be for the materials and methods, next, a sentence for each objective. Minimum of 200 and maximum of 250 words could be a good abstract. Then sometimes, researchers include a sentence for general recommendation, but better if not.

INTRODUCTION

Rural connectivity through all-weather roads plays a significant role in uplifting the socio-economic conditions of rural areas. It promotes access to various economic and social developments, which include education and health care services, and also access to modern

agricultural farm inputs and machinery thereby leading to agricultural development and income-generating opportunities for rural farmers. India has more than 6 lakh villages of various sizes and populations, inhabited by almost 80 percent of its population but lack of well-knit road connectivity has deprived the rural areas of basic enmities like education, medical health care facilities, banking, employment, and access to modern agricultural facilities, thereby leaving a large section of the country's rural population below the poverty line and depriving them of mainstream economic and social development. This has resulted in large-scale migration of the rural population to towns and cities in search of better livelihood opportunities. To prevent this situation, the government of India has embarked on several rural development and poverty alleviation programs in the rural areas of the country. On the 15th of August 2000, the Prime Minister announced a centrally sponsored scheme called the Pradhan Mantri Gram Sadak Yojana as a fully funded centrally sponsored scheme to provide all-weather road connectivity in rural areas of the country, on the recommendations of National Rural Roads Development Committee. The scheme was launched on 25th December 2000 and has been formulated as an anti-poverty program, focusing on providing connectivity to unconnected rural habitations to enable access to economic and other essential services. Impact means an influence, effect, or force exerted by a new idea concept, technology, or ideology on something. Roads can play a very important role in alleviating poverty through increased agricultural production and income-generating opportunities. Roads enable farmers to access modern farming inputs and facilitate the timely marketing of their farm produce. Rural road connectivity leads to an easier access to health care and educational facilities and opens avenue for various non-farm employment opportunities for rural people.

Comment [A2]: The introduction needs to be revised. It should consist of latest citations that support your research problem. There is no visibility of objectives and rationale of the study.

LITERATURE REVIEW

Shah and Azam (1991) conducted a study on the effects of road construction on employment in Sargodha, Pakistan and the results indicated a positive relationship between road construction and employment generation, particularly in the non-farm sector. Nimbalkar (1993) found that the majority (47%) of rural youth have a low social economic status while 41.22 percent had medium socio-economic status only, and 11 percent of the youth had high socio-economic status. Barwell (1996) stated that rural connectivity is the only means for a country’s rural people to achieve all-round development which includes better education, access to medical and banking facilities, better transportation, and working facilities. Pant (2000) mentioned that the country has still to overcome the problems of poverty. Today, an

estimated 350 million out of one billion people fall below the poverty line. More than 60 percent of the population are still depending on agriculture for livelihood and employment. NRDA (2004) found that with the construction of *PMGSY* roads, there has been an improvement in the accessibility to education facilities which has resulted in increased school enrolment and school attendance in all the States. PEO (2005) study concluded that PMGSY has succeeded in providing connectivity to some of the most deserving habitations. PMGSY roads provide connectivity to important places such as schools/colleges, market centers, block offices, etc. It has improved the accessibility of beneficiary villagers and resulted in higher income in the form of a better price for agricultural produce, new employment avenues, etc. Nair and Ashutosh (2006) assessed the impact of *rural roads* in terms of increased income in the farm sector of the benefited area and results indicated that the rural road benefited the farm sector in terms of reduction of transport costs, reduction of spoilage of produce, price gains from timely marketing, and income gain from a shift in cropping pattern. Althaf (2010) found in his study that the PMGSY roads connected the habitations with district headquarters, block headquarters, the main banks, nearest hospitals, markets for household assets, markets for provisions, fertilizers and pesticides shops, veterinary hospital and bus stop with all-weather roads. A study conducted by Jain (2014) revealed that the construction of PMGSY roads has led to many employment opportunities and active involvement of housewives in small-scale industries like pickle making etc., which has significantly contributed to a decreased rate of poverty. Keeping this in view, a study was conducted to find out the impact of Pradhan Mantri Gram Sadak Yojana on the socio-economic status of the rural people under the wozhuro rural development block under Wokha District, Nagaland.

RESEARCH METHODOLOGY

The study was conducted in the Wokha district of Nagaland which is located at a distance of 80 km from the state capital Kohima. Out of the seven rural development blocks in the Wokha district, wozhuro rural development block was purposively selected for the study. A total of three villages i.e., Shaki, Phiro, and Sankiton were selected keeping in view the objectives selected for the study and out of which a total of 100 respondents were randomly selected and each village was represented by 20-30 respondents respectively. Primary data were collected with the help of a structured interview schedule which was pre-tested on a small non-sample population before final data collection. Secondary data were collected from

literature such as text, journals, abstracts, census books, etc. Frequency and percentage were used to analyze the data and correlation analysis was carried out using microsoft excel.

Comment [A3]: Lack of sequence exists among different segments of Methodology section. It should start from population then sample, sampling procedure, research instrument, research design, data collection strategies, data analysis tools etc.

3. FINDINGS AND DISCUSSIONS

3.1 Socio-economic variables of the respondents

3.1.1 Age

Table 1. Distribution of the respondents based on their age.

Sl. No.	Category	Frequency	Percentage
1.	Up to 30 years	40	40%
2.	31-50 years	48	48%
3.	51 and above	12	12%
	Total	100	

The respondents were divided into three categories based on age. The majority i.e., 48 percent of the respondents were found to be within the age group of (31-50) years, followed by 40 percent (up to 30 years) and 12 percent (51 and above) category. It can be referred from the findings on the age that persons with physical vigor and accountability towards the family form the largest age group category. Manual work was mostly done by persons belonging to 30-50 years categories because of their physical and mental ability.

3.1.2 Gender

Table 2. Distribution of the respondents based on sex.

Sl. No.	Category	Frequency	Percentage
1.	Male	77	77%
2.	Female	23	33%
3.	Total	100	

Table 2 shows that the male population formed a larger part of the selected respondents, comprising 77 percent to 23 percent of the women population. The larger number of male respondents may be due to the fact that they were more exposed to different activities, including attending training programs, seminars, campaigns, etc. which made them more interactive in acquiring reliable information regarding the concerned subject. The women

folks, on the other hand, were more engaged in household activities which deprived them of many extra-curricular activities.

3.1.3 Education

Table 3. Distribution of the respondents based on their education.

Sl. No.	Levels of Education	Frequency	Percentage
1.	Illiterate	40	40%
2.	Primary level	49	49%
3.	Secondary	7	7%
4.	Secondary and above	4	4%
	Total	100	

Table 3 revealed that the maximum number of the respondents have attained a primary level of education (49%) followed by illiterate (40%), secondary level (7%), and secondary and above level (4%). Respondents with primary level formed the largest category. The findings on education showed that the literacy rate of the respondent was not satisfactory as the majority of them were illiterate and a majority had attended only the primary level of education. This justified their confinement with employment/occupation within the villages on one hand and poor socio-economic status to avail better education on the other hand.

3.1.4 Marital status

Table 4. Distribution of the respondents based on marital status.

Sl. No.	Category	Frequency	Percentage
1.	Unmarried	23	23%
2.	Married	77	77%
	Total	100	

As evident from table 4 majority (77%) of the respondents belonged to the married category while 23% percent belonged to the unmarried category. It was observed that the majority of the respondents were married. This explains the reason for seeking employment, most probably to provide sustenance for their respective families.

3.1.5 Family size

Table 5. Distribution of the respondents based on their family size.

Sl. No.	Category	Frequency	Percentage
1.	Small (up to 5 member)	44	44%
2.	Large (more than 5)	56	56%
	Total	100	

To determine the size of the family, the total number of persons in each family was recorded, and depending on the number of persons in the family they were categorized into two categories namely small size and large size. Table 5 revealed that the majority (56%) of the respondents were from a large size family and the small size family being the least with 44 percent.

3.1.6 Land holding

Table 6. Distribution of the respondents based on land holding size.

Sl. No.	Size of land holding	Frequency	Percentage
1.	Landless	9	9%
2.	Marginal (1-2.5 acres)	34	34%
3.	Small (2.5-5 acres)	41	41%
4.	Medium (5-7.5 acres)	16	16%
	Total	100	

The total land holding under agriculture was obtained during the data collection from the respondents and categorized into landless, marginal, small, and medium. Table 6 revealed that the majority (41 %) of the respondents belonged to the small farmer's category, whereas (34 %) of the respondents fell under marginal farmers followed by medium farmers (16%) and landless (9%). It was found that the land holding patterns of the respondents were mostly ancestral for both agricultural and non-agricultural land.

3.1.7 Annual income

Table 7. Distribution of the respondents based on their total annual income.

Sl. No.	Category	Frequency	Percentage
1.	Below 20,000	10	10%
2.	21,000-40,000	13	13%
3.	41,000-60,000	40	40%
4.	61,000 and above	37	37%
	Total	100	

It was observed from table 7 that the majority i.e., 45 percent of the respondents had an annual income in the (21,000-40,000) category, followed by 30 percent in the (below 20,000) category, 15 percent in the (41,000-60,000) category, and 10 percent in (61,000 and above) category respectively. Those respondents receiving high annual income were farmers who were engaged in different agricultural activities and enterprises compared to the other categories who were least or not engaged.

3.2. Impact of PMGSY on the socio-economic status of the rural people in the study area:

3.2.1 Employment generation

Table 8. Distribution of the respondents based on employment generation.

Sl. No.	Category	Frequency	Percentage
1.	33 days and below	65	65%
2.	34-66 days	25	25%
3.	67 days and above	10	10%
	Total	100	

Table 8 shows the number of working days generated under PMGSY as hired labor during road construction. It was observed that the majority (65%) of the respondent received employment days under (33 days and below) category followed by (25%) in (34-66 days) category and (10%) in (66 days and above) days and below category. Under the PMGSY scheme, there is no fixed no. of working as in other employment-generating programs like MGNREGA, etc., however, this table revealed that the majority of the respondent was employed for 33 days and below employment days, and the respondent's expressed

satisfaction with the daily wage that was provided to them under the scheme. Shah and Azam (1991) indicated a positive relationship between road construction and employment generation.

3.2.2 Income generation

Table 9. Distribution of the respondents based on income generation.

Sl. No.	Particulars	Frequency	Percentage
1.	Agriculture	21	21%
2.	Livestock	11	11%
3.	Business	9	9%
4.	Others	8	8%
5.	Agriculture & livestock	24	24%
6.	Livestock & business	12	12%
7.	Business & others	5	5%
8.	Agriculture & others	6	6%
9.	All of them	4	4%
	Total	100	

Table 9 shows that the majority (24%) of the respondents are dependent on agriculture & livestock followed by (21%) solely in agriculture and (11%) in livestock, (9%) in business, and (8%) in other categories. (12%) of the respondent generate their income through livestock and business, (6%) through agriculture and others, and (5%) through the business and others category. It was observed that the majority of the respondents were engaged in an agricultural occupation, where agricultural products such as rice, mustard, potato, and orange were the major crops cultivated in all the villages whereas livestock included poultry, piggery, etc. income from business and others include running grocery shops and pan shops, log business, fish business, handicrafts, weaving, etc. PEO (2005) in a study concluded that PMGSY roads have improved the accessibility of beneficiary villages and resulted in higher income in the form of a better price for agricultural produce, new employment avenues, etc.

3.2.3 Farm Benefits: Agriculture and Livestock

Table 10. Distribution of the respondents based on farm benefits.

Sl. No.	Particulars	Frequency	Percentage
1.	Reduction in spoilage of produce	65	65%
2.	Improvement in marketing of produce	72	72%
3.	Shift in cropping pattern	56	56%
4.	Increase in animal & poultry production	37	37%
5.	Improved meat quality and sale of meat products	37	37%
6.	Good quality farm manure	58	58%
7.	More access of forage crops	36	36%

Table 10 shows that 65 percent of the respondent benefited through a reduction in spoilage of produce, 72 percent through an improvement in marketing of produce, 56 percent shift in cropping pattern, 37 percent from an increase in animal & poultry production, 37 percent in improved meat quality and sale of meat products, 60 percent benefited through good quality farm manure and 58 percent had more access of forage crops. Thus, there was a positive impact on the agriculture and livestock sector. Nair and Ashutosh (2006) in a study indicated that the rural road benefited the farm sector in terms of reduction of transport costs, reduction of spoilage of produce, price gains from timely marketing, and income gain from a shift in cropping pattern.

3.2.4 Non-farm Benefits

a) Health

Table 11. Distribution of the respondents based on health.

Sl. No.	Particulars	Frequency	Percentage
1.	Easy access to maximum medical facilities	65	65%
2.	Access to emergency medical care (emergency doctors/ ambulance etc)	79	79%
3.	Improved medical care for the old and the disabled	43	43%

Table 11 revealed that 65 percent of the respondent had easy access to maximum medical facilities, 79 percent had access to emergency medical care (emergency doctors/ ambulance, etc), and 43 percent felt that there was improved medical care for the old and the disabled.

The results thus showed that there has been a great impact on the health facilities where the rural people had easy access to maximum medical facilities and infrastructure. Shah and Abbasi (1992) examined that access to relevant facilities and centers through connectivity results in improved health facilities.

b) Education

Table 12. Distribution of the respondents based on education.

Sl. No.	Particulars	Frequency	Percentage
1.	Easy accessibility to various schools & institutions (transport)	78	78%
2.	Shift from Govt. to private schools/colleges	58	58%
3.	Outdoor exposure like field trip, study tour etc.	12	12%
4.	Additional private tuitions	16	16%
5.	Any children studying outside the State	3	3%

Table 12 showed that 78 percent of the respondent had easy accessibility to various schools & institutions (transport), 58 percent could manage to shift their children from Govt. to private schools/colleges, 12 percent could afford outdoor exposure like a field trip, study tour, etc., while 16 percent of the respondent could effort additional private tuitions and 3 percent of the respondent could send their children outside the state for higher studies. NRDA (2004) found that with the construction of PMGSY roads, there has been an improvement in the accessibility to education facilities.

c) Community Welfare

Table 13. Distribution of the respondents based on community welfare.

Sl. No.	Particulars	Frequency	Percentage
1.	Transportation and marketing facilities improved	76	76%
2.	Better road coverage creates/opened employment chances through projects from other agencies other than PMGSY	38	38%
3.	Any new projects being implemented recently from State departments	100	100%

4.	Frequent trainings been conducted in the village by various State Departments/organizations etc.	68	68%

Table 13 showed that 76 percent of the respondent felt that transportation and marketing facilities were improved, 38 percent of the respondent felt that better road coverage creates/opened employment chances through projects from other agencies other than PMGSY, 100 percent recorded that some new projects were being implemented recently from State departments and 68 percent recorded that there were frequent training been conducted in the village by various State Departments/organizations, etc. In a similar finding, NRDA (2004) observed that the construction of the PMGSY road has led to an increase in the frequency of visits by government officials.

d) Others

Table 14. Distribution of the respondents based on others.

Sl. No.	Particulars	After PMGSY	
		Frequency	Percentage
1.	Television	10	10%
2.	Radio	8	8%
3.	Telecommunication (Mobile/landline/internet)	22	22%
4.	Access to other new technological innovations. Example-solar lamps, rice mill, water pump etc	36	36%
5.	No. of business establishments (any) being set up	7	7%

Table 14 revealed that there was a positive impact on the standards of living of the people after implementation of the program as they could afford some of the new technologies like telecommunication etc., and built up new business establishments, to name a few. A similar finding by Althaf (2010) found that farmers and shopkeepers have increased economic activity after road construction; there was an introduction of new shops in the villages.

3.2.5 Social participation

Table 15. Distribution of the respondents based on social participation

Sl. No.	Particulars	Frequency	Percentage
1.	Contact with VDB/ Village council	75	75%

2.	Contact with Govt. Officials (Agriculture/Veterinary/Others)	76	76%
3.	Contact with Bank officials (NABARD/SBI/RRB/Others)	38	38%
4.	Contact with NGOs	33	33%
5.	Member of any organization	29	29%
6.	Any other	8	8%

Table 15 explains the distribution of the respondents based on their social participation. Here by social participation, the researcher means the extent to which an individual participates in a broad range of social roles and relationships. It was observed that the respondents were socially active and had contact with the village council, and govt. officials, banks, and various NGOs. In a similar finding, Althaf (2010) found in his study that PMGSY roads connected the habitations with district headquarters, block headquarters, the main banks, nearest hospitals, markets for household assets, markets for provisions, and bus stop with all-weather roads.

3.4 Correlation between independent variables with dependent variables:

Table 16. Correlation between independent variables with income generation:

Sl. No	Variables	Correlation coefficient 'r'
1.	Age	0.02
2.	Gender	-0.05
3.	Education	-0.06
4.	Marital status	0.12
5.	Family size	0.20**
6.	Land holding	0.27**
7.	Annual income	-0.10

****=Significant @ 1%α**

Table 16 shows that the variables family size and land holding had a positive and significant relationship with income generation.

Table 17. Correlation between independent variables with farm benefits and non-farm benefits:

Sl. No.	Variables	Correlation coefficient 'r'		
		Farm benefits	Non-farm benefits	
			Health	Education
1.	Age	0.04	0.12	0.03
2.	Gender	0.08	-0.07	0.03
3.	Education	-0.02	0.18	0.13
4.	Marital status	0.06	0.07	0.00
5.	Family size	0.14	0.06	-0.02
6.	Land holding	0.39**	-0.03	0.12
7.	Annual income	0.66**	0.44**	0.70**

**=Significant @ 1%α

Table 17 shows that land holding and annual income had positive and significant relationship with farm benefits, while there was a positive and significant relationship between annual income and non-farm benefits.

Comment [A4]: The numerical data were presented already in the table. There's no need to write it in sentence form. This is the reason why I am asking for another column of verbal interpretation in tables. After doing so, the researchers should focus on analyzing and interpreting the results, but not through simply rewriting the numerical data. Please focus on interpreting the results why and how do you think it happened and resulted to that. Please include the data that will prove if the variables under study are effective or not.

CONCLUSION

The development of rural roads brings multiple socio-economic benefits to the rural areas which form a strong base of the national economy and it is a powerful instrument for the socio-economic transformation of the villages. The benefits include increased employment opportunities, increased agricultural productivity, saving in the cost of transportation, improved health care and educational facilities, and change in livelihood status. Rural roads provide basic inputs for the all-round socio-economic development of rural areas. The provision and construction of roads and road links bring multiple socio-economic benefits to rural areas and result in forming a strong backbone for the agro-based economy. The study found that the scheme had an impact on raising the standard of living of rural people. There has been a positive impact on employment generation, increase in annual income, farm sector such as agricultural, livestock, and marketing as well as the non-farm sector viz., health, education, community welfare, household assets, etc. Here, the researcher concludes that since rural connectivity under PMGSY had a positive impact on the socio-economic status of the rural people under the wozhuro rural development block covering three villages, more emphasis should be given on the proper implementation of the scheme as rural connectivity is essential for the overall development of the rural areas as there is a close link between rural

connectivity and socio-economic aspects, such as economic growth, employment, education, and health care.

Comment [A5]: Please be specific and concise... Take your results in account while recommending future course of actions. The recommendations are always results-based so indicate your results first and then recommend/suggest some viable measures.

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