

A Study on Satisfaction Level of Local Residents towards Road Connectivity in Palghar District

Sharad Vasant Rane¹, Dr. Bhuvanesh H. Bari²

¹Research Scholar, St. G. G. College of Arts & Commerce, Vasai, District Palghar, Maharashtra

²Research Guide, St. G. G. College of Arts & Commerce, Vasai, District Palghar, Maharashtra

Abstract: Road connectivity is an important factor for the socio-economic development of rural and semi-urban areas, as it directly influences access to healthcare, education, government services, markets, employment, and daily mobility. The study focuses on understanding the perception and satisfaction level of local residents regarding road connectivity to hospitals, schools/colleges, and government offices. Palghar District has a large rural and tribal population, where road infrastructure plays a significant role in improving accessibility and quality of life. Therefore, the study attempts to examine whether existing road connectivity is satisfactory from the viewpoint of local residents.

The study is based on primary data collected from 130 local people through a structured questionnaire. The data was analysed using percentage analysis, mean score, One-Sample t-test, and Friedman test. The One-Sample t-test results indicate that there is a significant level of satisfaction among local residents regarding road connectivity to hospitals, schools/colleges, and government offices. The mean score analysis shows that satisfaction is highest for hospital connectivity, followed by school/college connectivity and government office connectivity. However, the Friedman test shows that there is no significant difference among the internal satisfaction factors. The study concludes that road connectivity in Palghar District is generally satisfactory, but improvement is still required in ambulance access, student transportation facilities, road maintenance, and convenient access to government services.

Keywords: Road Connectivity, Resident Satisfaction, Palghar District, Rural Infrastructure, Public Service Accessibility

I.INTRODUCTION

Road connectivity is one of the most important components of infrastructure development because it directly affects the daily life of people. Good roads

help local residents to travel easily from one place to another and improve access to essential services such as hospitals, schools, colleges, government offices, markets, banks, and workplaces. In rural and semi-urban areas, road connectivity becomes more important because people often depend on nearby towns and service centres for education, healthcare, employment, and administrative work. Therefore, the quality and availability of roads play a major role in improving the overall standard of living of local people.

Palghar District is one of the important districts of Maharashtra, having rural, tribal, coastal, and semi-urban areas. Many villages in the district are dependent on road networks for their connection with taluka places, markets, hospitals, schools, colleges, and government offices. In such areas, road connectivity is not only a transport facility but also a basic requirement for social and economic development. If roads are in good condition, people can reach essential services on time; however, poor road conditions, lack of transport facilities, potholes, narrow roads, and seasonal difficulties during monsoon may create problems for local residents.

Connectivity to hospitals is an important aspect of road infrastructure because timely medical access can save lives. In rural areas, delays in reaching hospitals or primary health centres may affect emergency treatment, ambulance services, maternal healthcare, and regular medical check-ups. Good road connectivity helps patients, elderly people, pregnant women, and emergency vehicles to reach healthcare centres quickly and safely. Therefore, satisfaction with hospital connectivity is an important indicator of the usefulness of road infrastructure in Palghar District.

Similarly, road connectivity to schools and colleges is essential for educational development. Students require safe, regular, and convenient transport facilities to attend schools and colleges. Poor roads, long travel time, lack of public transport, and unsafe routes may affect student attendance, punctuality, and continuation of education, especially in rural and tribal areas. Good roads encourage students to pursue higher education by reducing travel difficulties and improving access to educational institutions. Hence, the satisfaction of local residents regarding school and college connectivity is an important area of study.

Road connectivity to government offices is also necessary because people frequently visit administrative centres for certificates, schemes, welfare benefits, land records, banking-related documentation, and other public services. If roads are well connected to government offices, local residents can save time, reduce travel costs, and access government services more efficiently. On the other hand, poor connectivity may delay access to schemes and create inconvenience for people living in remote villages. Thus, road connectivity plays an important role in strengthening public service delivery.

II. REVIEW OF LITERATURE

1. Asher and Novosad (2020), in the research paper titled “Rural Roads and Local Economic Development,” examined the impact of India’s rural road construction programme on local economic development. The study found that rural road connectivity improves mobility, labour movement, and access to markets, although its impact on income and assets may not always be immediate. The conclusion of the study is that road connectivity plays an important role in changing the occupational and economic pattern of rural households. For the present study on Palghar District, this review is useful because residents’ satisfaction with road connectivity can be linked with their access to employment, markets, education, healthcare, and overall development.
2. Aggarwal (2018), in the research paper titled “Do Rural Roads Create Pathways out of Poverty? Evidence from India,” studied whether rural roads help reduce poverty by improving economic

opportunities in villages. The findings showed that better rural roads improve access to markets, non-farm employment, and public services. The conclusion of the study is that road infrastructure acts as a pathway for rural development, especially when it connects isolated villages with nearby towns and service centres. This is highly relevant to Palghar District, where several tribal and rural areas depend on roads for daily travel, livelihood, education, and healthcare access.

3. Adukia, Asher and Novosad (2020), in the research paper titled “Educational Investment Responses to Economic Opportunity: Evidence from Indian Road Construction,” analysed how road construction affects educational decisions in rural India. The study observed that improved roads increase access to schools and create better economic opportunities, which influence household decisions regarding children’s education. The conclusion is that road connectivity is not only an infrastructure issue but also an educational development factor. For Palghar District, this review supports the idea that satisfaction with road connectivity may be higher where residents experience easier travel to schools, colleges, and educational institutions.
4. Bell and van Dillen (2012), in the research paper titled “How Does India’s Rural Roads Program Affect the Grassroots? Findings from a Survey in Orissa,” studied the effects of all-weather roads on households in rural areas. The study found that rural roads improved access to goods, education, health services, and local markets. The conclusion of the study is that road connectivity has direct grassroots-level benefits and improves the everyday living conditions of rural residents. This literature is relevant to Palghar District because residents’ satisfaction depends not only on the presence of roads but also on road quality, all-weather usability, and access to essential services.
5. Bell (2012), in the research paper titled “The Benefits of India’s Rural Roads Program in the Spheres of Goods, Education and Health: Joint Estimation and Decomposition,” examined the benefits of rural road development in relation to markets, education, and healthcare. The study concluded that rural roads improve the movement of goods and provide better access to schools and health facilities. This literature is important for the

Palghar study because local residents' satisfaction can be measured through their perception of road usefulness for daily needs such as hospital visits, school travel, agricultural transport, and access to government offices.

6. Banerjee and Sachdeva (2015), in the research paper titled "Pathways to Preventive Health: Evidence from India's Rural Road Program," focused on the relationship between road connectivity and preventive healthcare access. The study found that improved rural roads increase awareness, availability, and use of healthcare services. The conclusion is that road infrastructure indirectly contributes to better health outcomes by reducing physical barriers to medical services. This is useful for the Palghar District study because residents in remote villages may judge road connectivity based on how easily they can reach hospitals, primary health centres, ambulances, and emergency medical facilities.
7. Chakrabarti (2025), in the research paper titled "Rural Roads and Economic Development: Insights from India," studied the economic impact of PMGSY road connectivity during the first decade of implementation. The study highlighted that all-weather roads are important for rural settlements that were previously unconnected. The conclusion of the study is that rural roads are critical for improving socio-economic development, especially in areas facing infrastructure deficits. This review is relevant to Palghar District because the district has many rural and tribal settlements where residents' satisfaction depends on road availability, safety, maintenance, and connectivity with nearby urban centres.
8. Jain and Biswas (2021), in the research paper titled "The Road to Safety: Examining the Nexus between Road Infrastructure and Crime in Rural India," examined the relationship between road infrastructure and social safety in rural India. The study found that road infrastructure can improve employment, public bus services, street lighting, and living standards, which may reduce crime and insecurity. The conclusion is that roads contribute not only to economic development but also to social security and quality of life. For Palghar District, this review is useful because residents' satisfaction with road connectivity may also

depend on safety, transport availability, lighting, and ease of movement during evening or emergency situations.

9. Singh (2017), in the research paper titled "Impact of Development of Rural Road Infrastructure in India," discussed the importance of rural road infrastructure for social and economic progress. The study emphasized that rural roads improve connectivity between villages, markets, schools, hospitals, and administrative centres. The conclusion is that rural roads are a basic requirement for inclusive rural development. This literature is relevant to the Palghar District study because satisfaction among local residents can be strongly influenced by road durability, maintenance, pothole-free travel, public transport access, and connectivity during monsoon seasons.
10. Deshpande and Bhole (2023), in the research paper titled "Study of Rural Development through Infrastructure Development and the Initiatives by the Government of India," examined the role of infrastructure in rural development. The study stated that infrastructure development, including roads, is essential for improving rural livelihoods, service access, and economic participation. The conclusion is that rural development cannot be achieved without strong physical infrastructure. This review supports the Palghar District study because road connectivity is one of the key indicators through which local residents evaluate development, government performance, and quality of life in rural areas

III. RESEARCH GAP

The reviewed literature shows that road connectivity has a strong role in rural development by improving access to markets, education, healthcare, employment, transport services, and overall quality of life. However, most of the earlier studies have focused on the broader economic, social, educational, and health impacts of rural road development at the national or state level, especially under rural road programmes such as PMGSY. Very limited research is available on the satisfaction level of local residents regarding road connectivity in Palghar District, particularly from the viewpoint of people living in tribal, rural, and semi-urban areas. Existing studies also give less attention to local issues such as road maintenance, potholes, road

conditions during monsoon, availability of public transport, connectivity to hospitals, schools, markets, government offices, and daily travel difficulties. Therefore, there is a need to conduct a district-specific study in Palghar to understand how local residents perceive the quality, usefulness, accessibility, and satisfaction level of road connectivity in their area.

IV.RESEARCH METHODOLOGY

The study is based on a descriptive and analytical research design to examine the satisfaction level of local residents regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District. Primary data was collected from 130 local people through a structured questionnaire covering demographic factors and satisfaction-related

statements on road connectivity. The respondents included people from different gender, age, educational, and occupational backgrounds, which helped in obtaining a balanced view of local perceptions. The collected data was coded and analysed using statistical tools such as percentage analysis, mean score, One-Sample t-test, and Friedman test. The One-Sample t-test was used to examine whether the satisfaction level of residents was statistically significant, while the Friedman test was applied to compare and rank different satisfaction factors related to hospital, school/college, and government office connectivity. The study therefore provides a systematic understanding of residents' satisfaction and identifies areas where road connectivity needs further improvement in Palghar District.

V.DATA ANALYSIS

The following table indicates the demographic factor of the study:

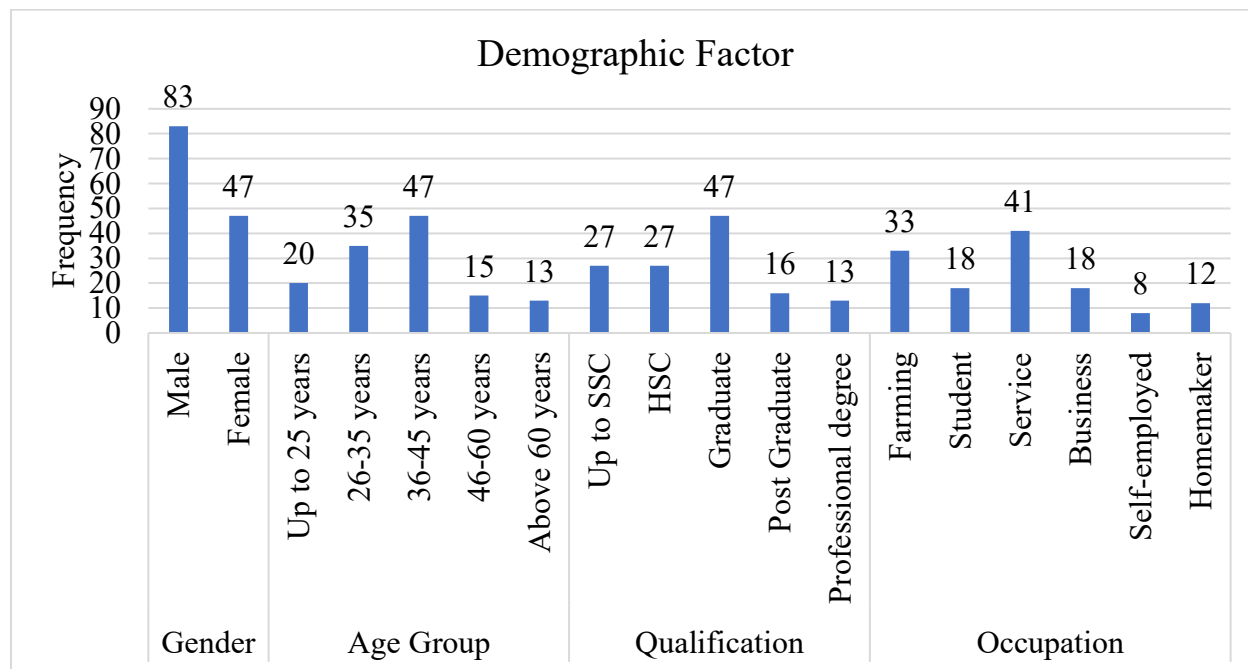
Sr.no	Demographic Factor	Category	Frequency	Percent
1	Gender	Male	83	63.8
		Female	47	36.2
2	Age Group	Up to 25 years	20	15.4
		26-35 years	35	26.9
		36-45 years	47	36.2
		46-60 years	15	11.5
		Above 60 years	13	10.0
3	Qualification	Up to SSC	27	20.8
		HSC	27	20.8
		Graduate	47	36.2
		Post Graduate	16	12.3
		Professional degree	13	10.0
4	Occupation	Farming	33	25.4
		Student	18	13.8
		Service	41	31.5
		Business	18	13.8
		Self-employed	8	6.2
		Homemaker	12	9.2

The demographic profile of the respondents shows that out of 130 local residents, the majority were male respondents (83), while 47 were female respondents. In terms of age group, the highest number of respondents belonged to the 36–45 years category

(47), followed by 26–35 years (35), indicating that most respondents were from the active working-age group. Regarding educational qualification, the majority were graduates (47), followed by respondents educated up to SSC and HSC level, with 27

respondents each, showing a moderately educated respondent group. In terms of occupation, the highest number of respondents were from the service sector (41), followed by farming (33), while students and business respondents were 18 each. Overall, the

sample represents a mixed profile of residents from different gender, age, education, and occupational backgrounds, making the responses useful for understanding satisfaction regarding road connectivity in Palghar District.



Objective-1: To examine the satisfaction of local people regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

Alternate Hypothesis H₁₁: There is a satisfaction of local people regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

Null Hypothesis H₀₁: There is no satisfaction of local people regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

To test the above null hypothesis, One Sample T-test is applied and results are as follows:

One-Sample Test				
	Test Value = 60			
	t	df	P-value	Mean Difference
Satisfaction of Hospital Connectivity	9.339	129	.000	11.569
Satisfaction of School/College Connectivity	7.579	129	.000	8.092
Satisfaction of Government Offices Connectivity	3.620	129	.000	3.877

Interpretation: The above results indicate that calculated p-value is 0.000. It is less than 0.05. Therefore One Sample T-test is rejected. Hence Null hypothesis is rejected and Alternate hypothesis is accepted.

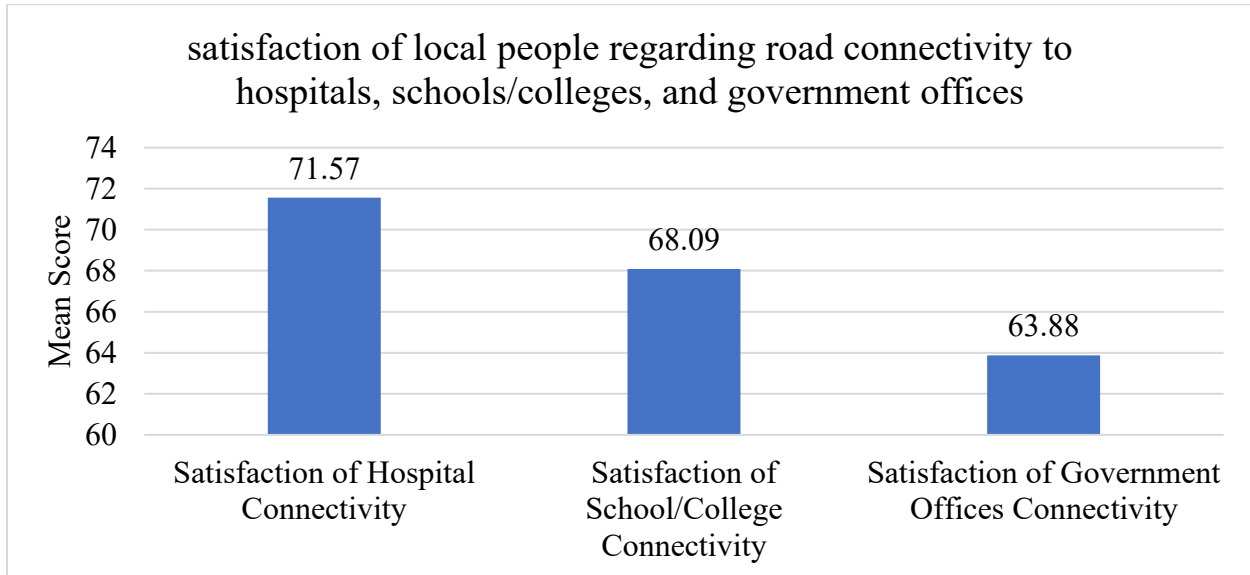
Conclusion: There is a satisfaction of local people regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

Findings: To understand the findings, mean scores are obtained and presented as follows:

One-Sample Statistics				
	N	Mean	Std. Deviation	Std. Error Mean
Satisfaction of Hospital Connectivity	130	71.57	14.125	1.239
Satisfaction of School/College Connectivity	130	68.09	12.174	1.068
Satisfaction of Government Offices Connectivity	130	63.88	12.209	1.071

The mean score analysis shows that local residents of Palghar District are most satisfied with hospital connectivity, with the highest mean score of 71.57, indicating that roads connecting hospitals and healthcare centres are perceived to be comparatively better and more useful. The mean score for school/college connectivity is 68.09, which shows a fairly good level of satisfaction, suggesting that educational institutions are reasonably accessible through existing road networks. However, government

offices connectivity has the lowest mean score of 63.88, indicating comparatively lower satisfaction among residents in reaching administrative and government service centres. Overall, the results show that satisfaction is positive for all three types of connectivity, but hospital connectivity is rated highest, followed by school/college connectivity, while government office connectivity needs more improvement.



Objective-2: To compare the satisfaction of local people among road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

Null Hypothesis H₀₂: There is no significant difference in the factors of satisfaction among local people regarding road connectivity to hospitals,

schools/colleges, and government offices in Palghar District.

Alternate Hypothesis H₁₂: There is a significant difference in the factors of satisfaction among local people regarding road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

To test the above null hypothesis, Friedman Test is applied and results are as follows:

Test Statistics ^a			
	Satisfaction of Hospital Connectivity	Satisfaction of School/College Connectivity	Satisfaction of Government Offices Connectivity
N	130	130	130
Chi-Square	.305	3.742	.740
df	4	4	4
P-value	.989	.442	.946
a. Friedman Test			

Interpretation: The above results indicate that calculated p-value are 0.989, 0.442 and 0.946. It is more than 0.05. Therefore Friedman test is accepted. Hence Null hypothesis is accepted and Alternate hypothesis is rejected.

Conclusion: There is no significant difference in the factors of satisfaction among local people regarding

road connectivity to hospitals, schools/colleges, and government offices in Palghar District.

Findings: To understand the findings, mean ranks are obtained and presented as follows:

Ranks					
Hospital Connectivity	Mean Rank	School/College Connectivity	Mean Rank	Government Offices Connectivity	Mean Rank
11.1 Roads provide quick and easy access to nearby hospitals.	2.99	12.1 Students can travel safely to schools and colleges.	3.03	13.1 Roads provide easy access to government offices.	3.02
11.2 Emergency vehicles (ambulance) can reach the village easily.	2.95	12.2 Roads do not affect regular attendance of students.	3.14	13.2 Travel to government offices is convenient and time-saving.	2.96
11.3 Road conditions do not delay medical treatment.	3.00	12.3 Transportation facilities for students are easily available.	2.83	13.3 Road connectivity helps in accessing public services efficiently.	2.94
11.4 Travel to hospitals is convenient due to good connectivity.	3.04	12.4 Travel time to educational institutions is reasonable.	2.96	13.4 Roads are well connected to administrative centers.	3.01
11.5 Improved roads have enhanced healthcare access in the area.	3.02	12.5 Good roads encourage students to pursue higher education.	3.04	13.5 Good roads reduce delays in accessing government schemes/services.	3.07

Hospital Connectivity: The mean rank analysis for hospital connectivity shows that the highest satisfaction is observed for the statement “Travel to hospitals is convenient due to good connectivity” with a mean rank of 3.04, indicating that local residents are comparatively more satisfied with the convenience of travelling to hospitals. This is followed by “Improved roads have enhanced healthcare access in the area” with a mean rank of 3.02 and “Road conditions do not delay medical treatment” with a mean rank of 3.00, showing that residents feel road improvement has supported healthcare access and reduced delays in medical treatment. The statement “Roads provide quick and easy access to nearby hospitals” has a mean rank of 2.99, reflecting moderate satisfaction. The lowest mean rank is for “Emergency vehicles can reach the village easily” with 2.95, suggesting that ambulance accessibility still needs improvement in some areas. Overall, hospital connectivity shows a good level of satisfaction, especially in terms of travel convenience and healthcare access.

School/College Connectivity: The mean rank analysis for school/college connectivity indicates that the highest satisfaction is found for the statement “Roads do not affect regular attendance of students” with a mean rank of 3.14, showing that residents strongly feel road connectivity supports regular student attendance. This is followed by “Good roads encourage students to pursue higher education” with a mean rank of 3.04 and “Students can travel safely to schools and colleges” with a mean rank of 3.03, indicating positive satisfaction regarding educational access and student safety. The statement “Travel time to educational institutions is reasonable” has a mean rank of 2.96, showing moderate satisfaction. However, “Transportation facilities for students are easily available” has the lowest mean rank of 2.83, suggesting that although road connectivity is useful, availability of student transport facilities still requires improvement. Overall, satisfaction is higher in terms of attendance and educational encouragement, but transport availability remains a concern.

Government Offices Connectivity: The mean rank analysis for government offices connectivity shows that the highest satisfaction is observed for the statement “Good roads reduce delays in accessing government schemes/services” with a mean rank of 3.07, indicating that residents feel improved roads help them reach government services more easily and reduce delays. This is followed by “Roads provide easy access to government offices” with a mean rank of 3.02 and “Roads are well connected to administrative centers” with a mean rank of 3.01, showing positive satisfaction regarding access to administrative locations. The statement “Travel to government offices is convenient and time-saving” has a mean rank of 2.96, while “Road connectivity helps in accessing public services efficiently” has the lowest mean rank of 2.94. This suggests that residents are generally satisfied with government office connectivity, but there is still scope to improve travel convenience and efficiency in accessing public services.

VI.CONCLUSION

The analysis concludes that local residents of Palghar District show a satisfactory level of perception regarding road connectivity to hospitals, schools/colleges, and government offices. The One-Sample t-test results indicate that satisfaction is significantly higher than the test value, showing that residents are generally satisfied with the existing road connectivity, especially for hospital access, followed by school/college connectivity and government office connectivity. However, the Friedman test results show that there is no significant difference among the internal satisfaction factors, which means that residents have almost similar opinions regarding different aspects of connectivity within each category. Overall, road connectivity in Palghar District is contributing positively to access to healthcare, education, and government services, but improvements are still required in areas such as ambulance access, student transportation facilities, and convenient access to public services.

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