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Infrastructure Development And Quality Of Life In Fringe Areas Of Sanquelim Town In Goa

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Abstract:

Infrastructure plays an important role in economic growth and overall development. Facilities such as roads, electricity, water supply, housing, transport, health centers and communication systems support daily life and economic activities. This paper examines how infrastructure development has influenced the quality of life of people living in surrounding areas. The study is based on the idea that improved infrastructure leads to better access to basic services, increased employment opportunities, higher income levels and improved living conditions. The paper uses secondary data as well as primary data along with researcher's observations related to the study area. The study found that well-planned infrastructure development has contributed positively to the economic growth and enhanced the quality of life in the town and its fringe areas. However, unequal development, poor maintenance and lack of community involvement has been a major constraint to reduced benefits. The new developmental efforts have given rise to visible problems of dust pollution, traffic diversion and chaotic management of traffic. The reliability of the developed infrastructure is also a concern. The paper concludes that sustainable and inclusive infrastructure development is essential for long-term economic growth and improved quality of life. Policymakers should focus on balanced development that meets the needs of local communities and accelerate the overall quality of life.

Keywords: Infrastructure, Economic Growth, Quality of Life, Regional Development, Services.

Introduction:

Fringe area development holds the reflection of balanced regional development for Core-periphery model (Banu, 2013 and Sutar, 2024). Sanquelim Municipal area, located in the Bicholim taluka of North Goa district, has been gradually developing into an important emerging urban center in the region. The town is surrounded by several fringe villages such as Kudne, Naveli, Vridi, Karapur, Parye, Harvale, Surla, and Sarvona. In recent years, improvements in infrastructure such as the construction of markets, bridges, educational institutions and recreational facilities have contributed to improved living conditions for the residents within the town as well as those in nearby villages. By improved connectivity, availability of basic amenities and growing opportunities, Sanquelim continues to attract new settlers and is increasingly recognized as a key growth center in this part of Goa (Census of India, 2011; Government of Goa, 2023).

Aims And Objectives:

The study aims to understand how infrastructure is improving the daily lives of people in fringes of Sanquelim and to see the

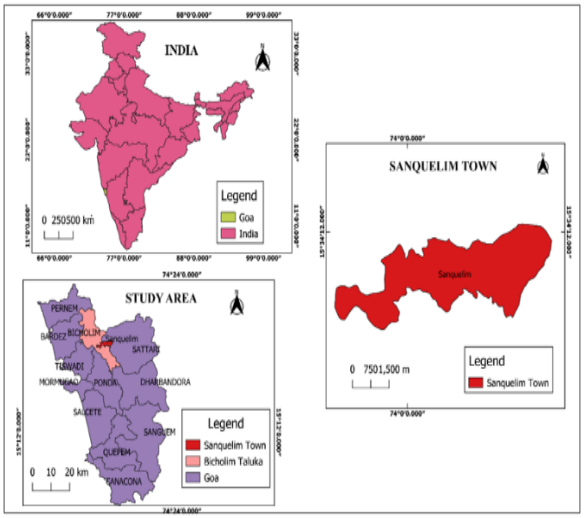
challenges and opportunities that the nearby villages face.

a. To identify the infrastructure and quality of life.
b. Problems faced by the villagers regarding the infrastructure

Study Area: Fringe Areas Of Sanquelim Town In North Goa:

Sanquelim town is located in Bicholim Taluka of the Indian state of Goa. It is located at 15.56° N latitude and 74.01° E longitude and is around 78 meters above sea level.

Fig. 1: Locational aspects of Study Area: Sanquelim in North Goa:



Source: Survey of India Toposheet has been used to Prepare with the help of QGIS software

The town is administered by the Sanquelim Municipal Council (SMC) and has the postal code (PIN) 403505. As per the 2011 Census, Sanquelim had a population of 13,651 people, with a high literacy rate of over 91%. Sanquelim is well-connected with good roads and transport links making it a hub for nearby villages. It also attracts many visitors and migrant population to come and do their work by gainful employment. Thus, the town provides a good study area to assess the quality of life and support services for social growth.

Database And Methodology:

The study is based on primary data collected directly from the field to understand the living conditions of the people residing on the fringe (Adjacent outskirts of Sanquelim). A survey was conducted covering 60 local residents between December 2025 and January 2026, focusing on their daily lives, access to basic facilities and challenges related to rural development. The research work followed a qualitative approach supported by field observations, while simple statistical analysis was used to summarize the responses and identify key patterns. GIS mapping was also used to combine field information with spatial analysis, helping to better represent the study area and strengthen the findings.

Primary Data: The primary data has been collected through personal interviews with 60 local households living in the fringe of SMC. Personal interaction of the researchers helped to get clear idea about the life, challenges and changing living conditions of the people. It allowed respondents to express their views making the data accurate and reliable. This ensured in giving better insights of ground-level realities that are not captured through the secondary data.

Reviews Of Related Literature:

The paper titled “Urban Change in Goa, India” by Vaz et al. (2017) was reviewed to understand patterns of urban growth and environmental impact in Goa. The study analyses urban expansion using remote sensing and landscape metrics, with a focus on coastal sustainability. The findings reveal rapid urban growth around historic centres and tourism zones, along with uncontrolled sprawl into rural and coastal areas. This pattern of development poses risks to natural landscapes and cultural heritage. Although the study provides valuable spatial data

for planners, it does not assess how urban growth affects residents' daily lives or quality of life. Smaller towns such as Sanquelim and issues related to access to basic services remain underexplored, indicating a gap in people-centred urban research.

The paper "Goa 2100: The Transition to a Sustainable RUrban Design" by Revi et al. (2006) focuses on long-term planning strategies for Panjim to ensure sustainable development and quality of life. Using scenario planning and systems thinking, the study introduces a "RUrban" model that integrates rural and urban systems through improved infrastructure and ecological planning. The outcomes include strategies for managing water, transport, land use, and governance while reducing environmental impact. However, the study lacks current quality-of-life data and does not address inland towns such as Sanquelim. Despite these limitations, the paper offers an important framework for sustainable regional planning in Goa.

The paper titled "Outcomes from Building Transparency in Governance in a Smart City Project in India: A Case Study of Panaji, Goa" by Goel and Thomas (2021) examines the role of transparency and governance in implementing Smart City projects. Using a case study approach and secondary data sources, the study finds that transparent digital practices and strong leadership improved coordination, project delivery, and public trust. Citizens felt more confident due to access to information and clear decision-making processes. However, the study does not measure how this governance practices translated into improvements in residents' quality of life, and smaller towns were not included in the analysis.

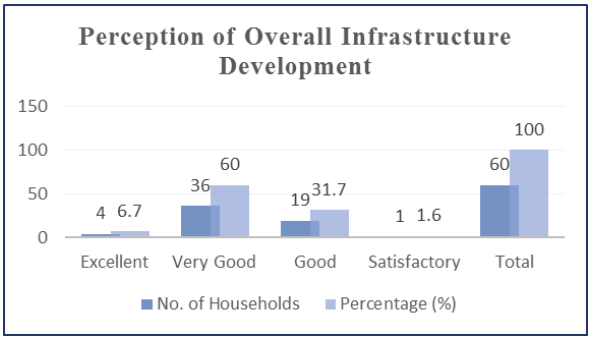
The paper "Transportation and Quality of Life: A Case Study of Copenhagen" by Hybel and Mulalić (2022) investigates the relationship between transportation systems and residents' quality of life. Using quality-of-life surveys and transport data, the study shows that better accessibility, reduced congestion, and people-oriented transport systems significantly enhance life satisfaction. The research highlights the importance of walking, cycling, and efficient public transport. However, the findings are based on a European city and may not be directly applicable to small towns in India. The study also does not include other basic services such as health or water supply.

The paper titled "Infrastructure and Quality of Life in Latin American Cities" by Jaitman (2015) explores how urban infrastructure influences residents' well-being. By comparing multiple cities using infrastructure and quality-of-life indicators, the study finds that access to transport, water, sanitation, and public spaces strongly improves daily living conditions. The research also emphasizes the need for equitable access to infrastructure. While peri-urban and informal areas are not included, the study clearly establishes infrastructure as a critical factor in improving urban quality of life. The study focuses on the current academic year 2025-26 all the analysis, observations and evaluations are done in this period of time.

Results And Discussion:

The infrastructure development in Sanquelim and its fringe areas has been perceived positively by the people living there (Fig. 2). A majority of respondents (60%) rated it as Very Good, while 31.7% rated it as Good. Hence, recent infrastructure related to roads, electricity, water supply, education and transport have significantly improved the living environment.

Fig. 2: Perception of Fringe Area Population about Infrastructure Development in and around Sanquelim Municipal Council (SMC), 2025:



Source: Compiled by the Authors using Field Data, 2025-26.

Employment Generation Due to Infrastructure:

The infrastructure development has contributed significantly to perceived employment generation in the region (Fig. 3). Nearly 68.4% of respondents reported moderate to high employment generation highlighting infrastructure development as a strong driver of local economic growth and livelihood opportunities in fringe areas of Sanquelim (SMC).

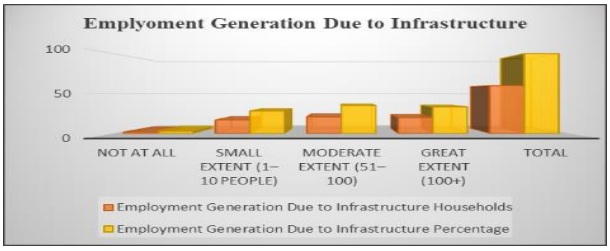


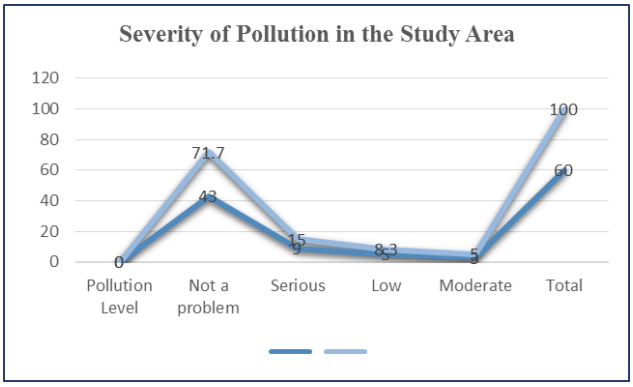
Fig. 3: Perception of Employment Generation in Fringe Area of SMC due to Infrastructure, 2025:

Source: Compiled by the Authors using Field Data, 2025-26.

Severity of Pollution in the Study Area:

Although infrastructure development has improved the quality of life, environmental concerns were also evident (Fig. 4). While 71.7% of households reported pollution as not a problem in their area but about 28.3% acknowledged varying levels of pollution. This reflects emerging environmental stress such as dust, noise, and traffic congestion associated with rapid development in fringe areas.

Fig. 4: Perception of Pollution Severity in Fringe Area of SMC due to Infrastructure 2025:

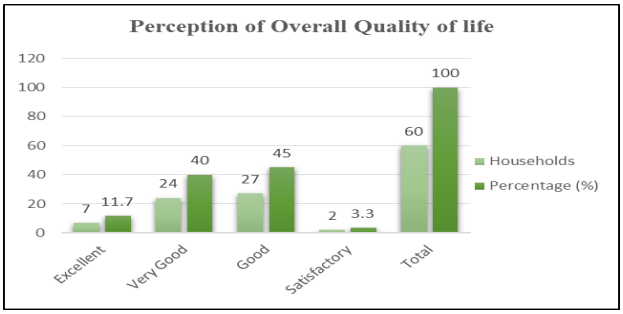


Source: Compiled by the Authors using Field Data, 2025-26.

Perception of Overall Quality of Life:

The majority of respondents perceived their quality of life as Good (45%) or Very Good (40%) (Fig. 5). This indicates that improved infrastructure, accessibility to services and employment opportunities have positively influenced the daily living conditions of people in the surrounding villages of Sanquelim.

Fig. 5: Perception of Overall Quality of Life in Fringe Area of SMC due to Infrastructure 2025

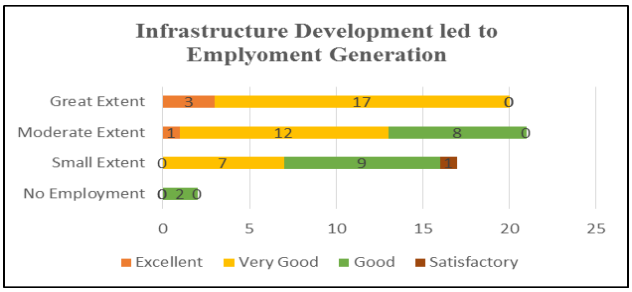


Source: Compiled by the Authors using Field Data, 2025-26.

Infrastructure Development leads to Employment Generation;

The cross-tabulation reveals a strong relationship between infrastructure development and employment generation (Fig. 6). Areas rated as Very Good and Excellent show higher levels of employment creation. This shows that infrastructure acts as a bridge for economic development in fringe regions by attracting businesses and increasing job opportunities**.**

Fig. 6: Relationship Between Perception of Infrastructure and Employment Generation in Fringe Area of SMC due to Infrastructure Development 2025:

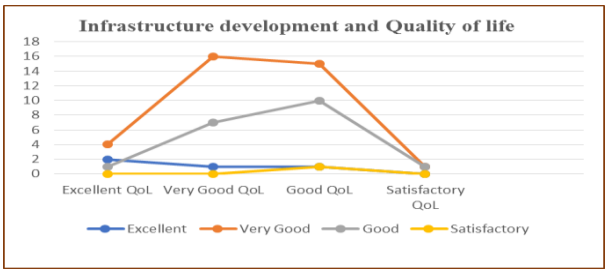


Source: Compiled by the Authors using Field Data, 2025-26.

Infrastructure Development and Quality of Life:

There is a clear positive relationship between infrastructure development and quality of life (Fig. 7).

Fig. 7: Infrastructure development and quality of life Generation in Fringe Area of SMC due to Infrastructure 2025:



Source: Compiled by the Authors using Field Data, 2025-26.

Respondents who rated infrastructure as Very Good or Excellent mostly reported Good to Very Good quality of life. This confirms the role of infrastructure in shaping human well-being, accessibility and social comfort.

Major Findings Of The Study:

Infrastructure development has significantly contributed to employment generation and growth of the small regions. Improved infrastructure has enhanced accessibility to education, transport and basic services. The overall quality of life of residents has improved due to better infrastructure. Environmental issues such as pollution are emerging but are not yet severe for most households and they living in good environment. There is a strong positive relationship between infrastructure development and quality of life leading to a good way of living.

Conclusion:

The study concludes that infrastructure development has played a crucial role in improving the quality of life in the fringe areas of Sanquelim Town in Goa. Improved connectivity, employment opportunities and access to basic services have enhanced socio-economic conditions. However, emerging environmental concerns and uneven development of certain services highlight the need for sustainable and inclusive planning. Balanced infrastructure development is essential to ensure long-term improvement in quality of life while maintaining environmental harmony.

Recommendations:

Development of fringe areas of Sanquelim should be planned carefully so that the basic facilities like water, sanitation, healthcare and drainage are available not only in the town but also in nearby villages. Problems such as

traffic, dust and noise can be reduced through proper road maintenance, traffic regulation and more tree planting. Regular maintenance of roads, streetlights and public services is important for their continued and recurring benefits. Including local residents in planning process can help address real needs. Future development should aim at sustainability and better living conditions rather than just physical growth.

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