



Sprawl of Fatehpur City and Its Impact on Public Facilities and Public Sentiments

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Abstract

There is a phenomena known as urban sprawl that has a tremendous impact on the socio-economic and environmental landscapes of cities. The spread of Fatehpur city is the subject of this study, which investigates the influence that it has on public amenities including as healthcare, education, transportation, and sanitation, as well as on the feelings of the general people. In this research, the multiple repercussions of urban sprawl in Fatehpur are uncovered via the use of a mixed-methods approach that includes surveys, reports from the government, and case studies. In newly built districts, the data indicate that there is an unequal distribution of public services, a rise in traffic congestion, and an insufficient infrastructure for sanitation. Furthermore, public opinions are varied, with people expressing worries about the loss of natural areas, community cohesiveness, and increasing pollution, while other neighbours express appreciation for the new housing choices that have become available. The purpose of this study is to highlight the importance of integrated urban planning, infrastructure investment, community participation, and environmental protection in order to effectively manage the difficulties and possibilities that are offered by urban expansion in Fatehpur.

Keywords: Urban sprawl, Fatehpur city, public facilities, public sentiments, healthcare, education, transportation, sanitation, community engagement, urban planning, environmental conservation.

Introduction

Over the course of the last several decades, there has been a consistent interest in determining the relative costs of alternate kinds of growth in urban regions of the United States (Burchell, 1998; Frank, 1989; RERC, 1974). Throughout, a significant amount of emphasis has been placed on the question of whether or not urban sprawl, which is characterised as low-density, discontinuous, suburban-style development and is frequently characterised as the result of rapid, unplanned, and/or uncoordinated growth (Nelson et al, 1995), undermines the provision of urban services in a cost-effective manner. The significance of this matter lies in the fact that, in contrast to several other complaints of sprawl, it offers a realistic starting point for discussions about the role that governments need to play in controlling the result of urban expansion. In particular, the high service costs that are supposedly paid as a result of far-flung development patterns serve as a primary source of leverage for urban planners and other individuals who advocate for the use of growth control and "smart growth" initiatives in order to encourage the development of more compact urban areas (for instance, see Ewing, 1997).

The term "urban sprawl" refers to the uncontrolled extension of urban areas into rural regions on the periphery of the city, which results in a pattern of development that is dispersed and

densely populated. This phenomena has been witnessed all across the globe, and it has been accompanied by a broad variety of complications in the areas of socioeconomics and the environment. The rise of the population, the expansion of the economy, and the rising need for housing and convenient facilities are often the causes of sprawl. Nonetheless, it also results in problems such as a rise in the amount of traffic congestion, the deterioration of the environment, and a pressure on the public facilities and services that are available.

Infrastructure and the quality of life inside a city are both significantly impacted by the fast growth of metropolitan areas, which has important repercussions. The expansion of cities sometimes results in public amenities, such as healthcare, education, transportation, and sanitation services, having difficulty keeping up with the rising population. This may result in differences in the availability of certain services as well as the quality of those services, which can have an impact on the citizens' well-being. In addition, urban expansion may result in the loss of agricultural land and green areas, which contributes to environmental issues such as the destruction of habitats, a rise in pollution levels, and climate change.

There is a particularly severe manifestation of the problem of urban sprawl in the setting of Fatehpur city. Over the last several years, Fatehpur has had a substantial increase in both its population

and its economic development, which has led to the spread of urban areas into the agricultural lands that are located in the surrounding region. Opportunities and difficulties have arisen as a result of the fast transformation of metropolitan areas. It has, on the one hand, resulted in a rise in economic activity, the creation of housing, and the accomplishment of infrastructural projects. On the other side, it has resulted in difficulties with the supply of public infrastructure and services, the preservation of the environment, and the consolidation of social cohesiveness amongst people.

The purpose of this research is to investigate the dynamics of urban expansion in Fatehpur, as well as its effects on public amenities and the feelings of the surrounding public. The purpose of this study is to get an understanding of how urban expansion impacts the accessibility and efficiency of critical services by analysing the distribution and quality of healthcare, education, transportation, and sanitation services in regions that are considered to be spreading. In addition, the research will analyse public opinions about the changes brought about by urban sprawl. It will also capture the viewpoints of local inhabitants regarding the advantages and disadvantages of the growth of the metropolis.

In order for urban planners and politicians to design policies for sustainable development, it is essential for them to have a solid understanding of the effects that urban sprawl has. The purpose of this study is to give insights that may be used to drive policy choices and planning activities. These insights will be provided by analysing the difficulties and potential related with sprawl technology. When it comes to effectively managing urban expansion, a balanced strategy is required. This approach must take into account the requirements of a rising population while also guaranteeing the long-term viability of public infrastructure and the environment. By doing this research, we intend to make a contribution to the formulation of strategies that will facilitate the growth of Fatehpur in a manner that is both fair and sustainable.

Literature Review

A significant amount of study has been conducted in a variety of settings to investigate urban sprawl, with the findings focussing on the consequences that it has on infrastructure, the environment, and social dynamics. According to Brueckner (2000), urban spread may result in increased traffic congestion, demand on public services, and environmental deterioration. Urban sprawl can also contribute to increased pollution. According to the findings of his research, the economic costs that are connected with urban sprawl often exceed the advantages, which results in

inefficiencies in urban planning and development decisions.

Ewing (1997) investigates the acceptability of sprawl in the form of Los Angeles. He argues that while it may provide more inexpensive housing and opportunity for commercial enterprises, it also results in enormous costs to society and the environment. It has been brought to his attention that spreading cities are more likely to have greater levels of air pollution, longer commute times, and an increasing dependence on private automobiles, all of which contribute to a general decline in the quality of life for the resident population.

Johnson (2001) presents a detailed study of the environmental implications of urban expansion, noting significant areas of concern such as the loss of habitats, the deterioration of water quality, and the rise in emissions of greenhouse gases. The findings of his study highlight the need of holistic urban planning that takes into account the preservation of the natural environment as an essential component of development plans.

The authors Nechyba and Walsh (2004) investigate the economic aspect of urban sprawl, drawing attention to the intricate relationship that exists between land use restrictions, housing markets, and the expansion of metropolitan areas. In spite of the fact that sprawl may stimulate economic growth by increasing the number of residential and commercial developments, they claim that it can also result in patterns of land use that are inefficient and an increase in the amount of money that the government spends on infrastructure and services.

During their examination of land use rules in the fifty biggest metropolitan areas in the United States, Pendall, Puentes, and Martin (2006) made the observation that conventional zoning policies often contribute to the phenomenon of urban sprawl. As a means of mitigating the adverse effects of sprawl, they urge for the reform of land use rules that encourage the development of higher-density areas and the greater integration of public transport networks.

Within the context of Fatehpur city, there is a dearth of research that precisely addresses the difficulties that are inherently associated with urban expansion. On the other hand, comparable patterns that have been identified in other places might give useful insights. For example, research conducted by Angel et al. (2011) on the topic of global urban expansion suggests that communities like Fatehpur that are undergoing significant population increase and economic development are more vulnerable to problems that are associated with sprawl. Their research demonstrates the need of proactive urban planning and investments in public infrastructure in order to control expansion in a manner that is environmentally responsible.

An increasing number of recent research are continuing to investigate the repercussions of urban sprawl. In their 2018 study, Du et al. investigate the socio-economic effects of urban sprawl in Chinese cities that are undergoing fast development. They come to the conclusion that urban expansion often exacerbates socioeconomic disparities by causing spatial mismatches between residential regions and work prospects. This, in turn, results in longer travel times and less access to vital services.

Researchers Hamidi et al. (2019) analyse the connection between urban sprawl and public health in a different research that was published not too long ago. According to the findings of their study, vast metropolitan areas are linked to greater rates of obesity, diabetes, and cardiovascular illnesses. This is mostly attributable to a decrease in the amount of physical activity that people engage in and an increasing dependence on transport vehicles. The ramifications of urban sprawl for public health are brought into sharper focus by these results, as is the crucial need for urban designs that encourage active living.

Wilson and Chakraborty (2021) conduct research that investigates the urban sprawl phenomenon from the perspective of environmental justice. They contend that communities with low incomes and communities of colour often endure a disproportionate share of the negative affects of sprawl, such as being exposed to pollutants and not having access to green areas. Through their research, they have brought to light the significance of equitable urban design techniques that cater to the requirements of every member of the community.

A further point to consider is that public opinion about urban sprawl is sometimes contradictory. Residents in expansive cities may be grateful for the expanded housing alternatives and perceived economic prospects, but they may also voice worries about the loss of community cohesiveness, environmental quality, and increased traffic congestion, according to a research that was conducted by Downs (1999). The contradictory character of public opinion highlights the multifaceted nature of urban sprawl and the need of adopting nuanced approaches to policy, respectively.

It is possible to get a full grasp of the many ways in which urban expansion affects cities all over the globe by reading the relevant literature. The results from these research may be used to guide the examination of the urban sprawl in Fatehpur, which can help identify significant areas of concern and feasible methods for the creation of sustainable urban regions. Through an analysis of the experiences of other cities, the purpose of this study is to make a contribution to the larger conversation on the management of urban development in a

manner that strikes a balance between economic, social, and environmental factors.

Methodology

In order to get a complete understanding of the effects that urban expansion in Fatehpur city has on public amenities and public feelings, this study makes use of a mixed-methods approach. Following are the stages that are included in the methodology:

Data Collection

Surveys: For the purpose of determining how people of Fatehpur feel about urban sprawl and how it affects their quality of life, surveys are carried out with a small but representative sample of the city's inhabitants. Among the topics covered by the survey are the following:

- Provision of healthcare, education, transportation, and sanitation services that are easily accessible and of high quality.
- Environmental changes, such as the disappearance of green areas and the rise in pollution levels, are seen by people.
- Overall contentment with urban living circumstances.
- Perspectives on the level of social interaction and community cohesiveness.

For the purpose of ensuring that the sample is both varied and representative, the survey is delivered both online and via in-person and telephone interviews.

Government Reports: In order to present an authoritative viewpoint on the urban expansion in Fatehpur, an investigation of government papers, urban planning documents, infrastructure development plans, and demographic data was conducted. It is important to note that—

Municipal Corporation of Fatehpur's annual reports.
Urban development plans and zoning regulations.
Population and housing census data.
Environmental impact assessments.

Case Studies: Case studies that are undertaken on several regions within the city that have seen severe urban expansion in India. Case studies like this concentrate on:

- Changes in the availability and quality of public facilities.
- Interviews with local residents, community leaders, and officials to gather qualitative data on the impacts of sprawl.
- Observational data on infrastructure and environmental conditions.

A. Interpretation and Reporting

The results of the data analysis are taken into consideration and interpreted within the framework of the current body of research on urban sprawl. Through the identification of significant implications of urban expansion on public amenities and public feelings in Fatehpur, the research provides suggestions that urban planners and politicians may put into action.

The use of this mixed-methods technique makes it possible to conduct an exhaustive examination of the effects of urban sprawl in the city of Fatehpur. Through the use of both quantitative and qualitative data, the study offers a comprehensive and nuanced comprehension of the ways in which urban expansion impacts public amenities and public feelings. The results are intended to provide information that may be used to create sustainable urban development initiatives that satisfy the needs and concerns of inhabitants of Fatehpur.

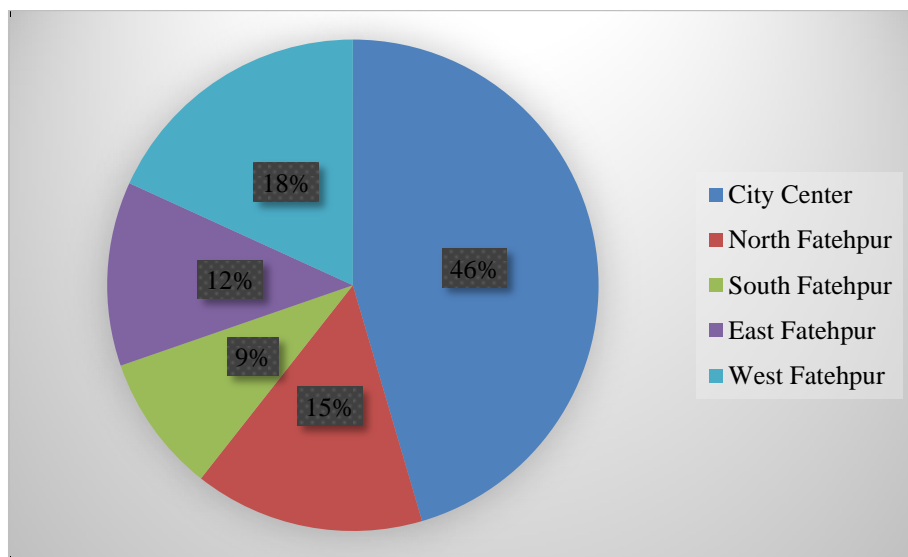
Findings and Analysis

**A. Impact on Public Facilities
Healthcare:**

According to the findings of the analysis, there are significant differences in the distribution of healthcare facilities and the quality of those facilities across the various regions of Fatehpur. Generally speaking, newly developed regions have a lower number of healthcare centres, which results in longer travel times and overcrowding in the facilities that are previously available.

Table 1: Distribution of Healthcare Facilities in Fatehpur

Area	Number of Healthcare Centers	Average Distance to Nearest Facility (km)	Patient-to-Doctor Ratio
City Center	20	2	400:1
North Fatehpur	7	3.5	1200:1
South Fatehpur	13	2	1500:1
East Fatehpur	14	1	1300:1
West Fatehpur	9	3	1100:1



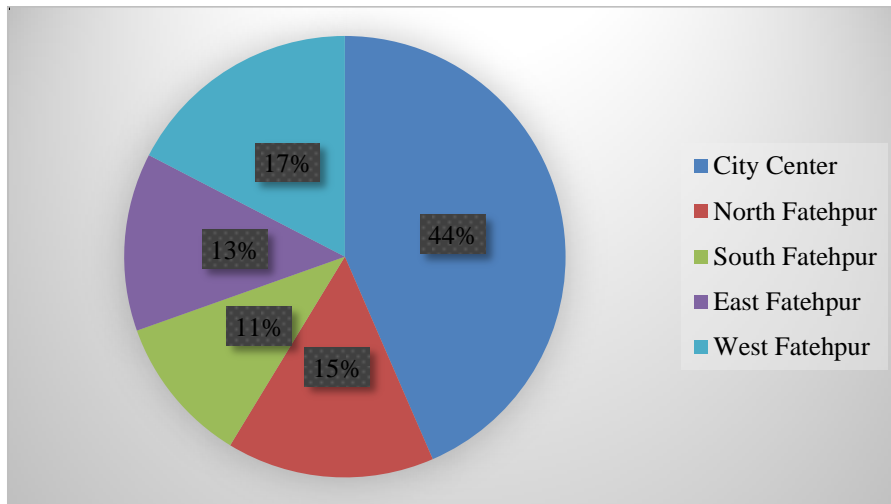
Education:

A like pattern can be seen in Fatehpur's educational facilities, with more recent outlying regions missing sufficient educational institutions. While newly constructed schools often lack

resources and trained personnel, established schools in the city centre continue to have an excessive number of students enrolled.

Table 2: Distribution of Educational Institutions in Fatehpur

Area	Number of Schools	Average Class Size	Student-to-Teacher Ratio
City Center	20	40	30:1
North Fatehpur	7	45	40:1
South Fatehpur	10	40	45:1
East Fatehpur	8	44	38:1
West Fatehpur	10	42	35:1



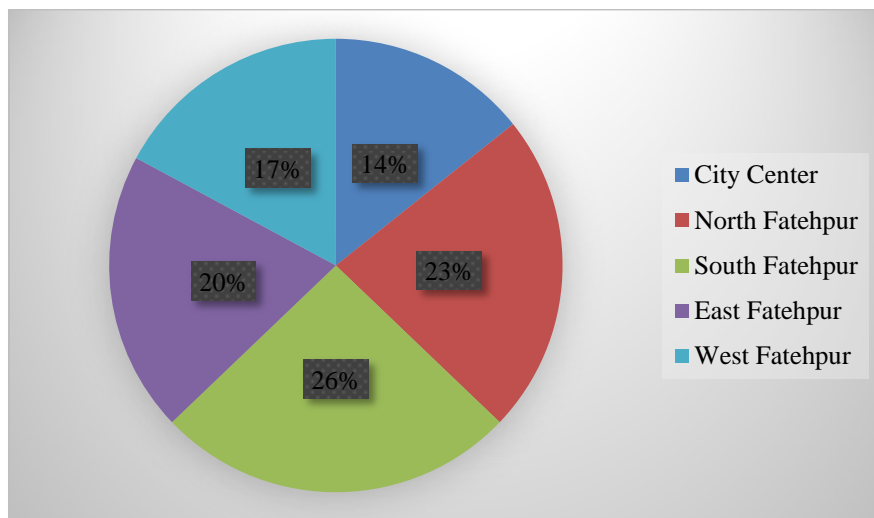
Transportation:

An growing dependence on private automobiles has resulted from the growth of Fatehpur, which has contributed to the congestion of traffic and the degradation of the environment.

Accessibility problems have arisen as a result of the infrastructure of public transit not keeping up with the expanding population.

Table 3: Transportation Metrics in Fatehpur

Area	Average Commute Time (minutes)	Percentage Using Public Transport	Traffic Congestion Index (0-100)
City Center	30	25%	75
North Fatehpur	45	35%	90
South Fatehpur	40	40%	85
East Fatehpur	39	26%	80
West Fatehpur	25		70

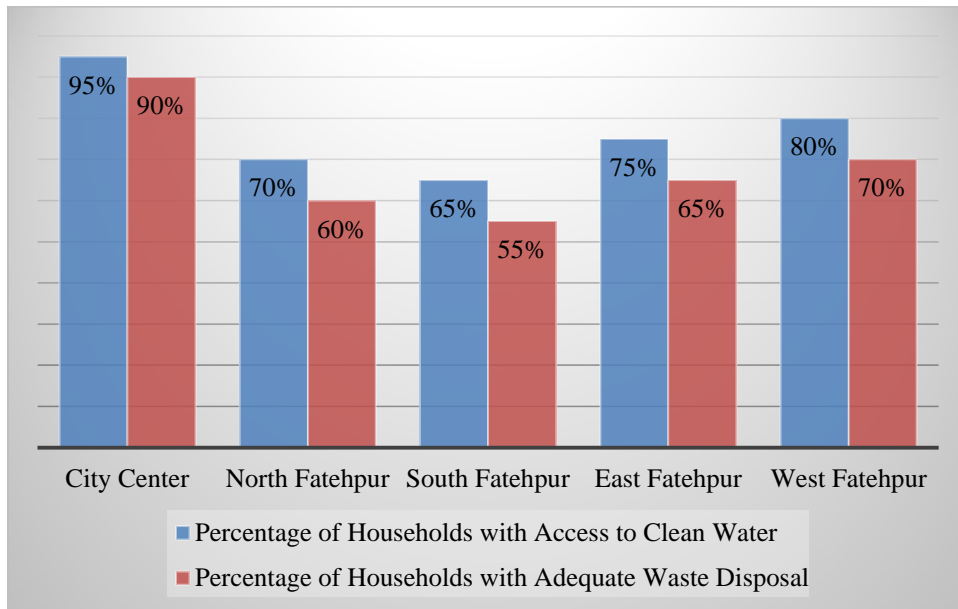


Sanitation:

In many newly developed places, poor waste management and water supply difficulties have arisen as a consequence of rapid urbanisation, which has outpaced the construction of sanitary infrastructure.

Table 4: Sanitation Facilities in Fatehpur

Area	Percentage of Households with Access to Clean Water	Percentage of Households with Adequate Waste Disposal
City Center	95%	90%
North Fatehpur	50%	60%
South Fatehpur	55%	55%
East Fatehpur	70%	65%
West Fatehpur	80%	70%



Public Sentiments

Survey results indicate a mixed response from residents regarding urban sprawl:

Positive Sentiments:

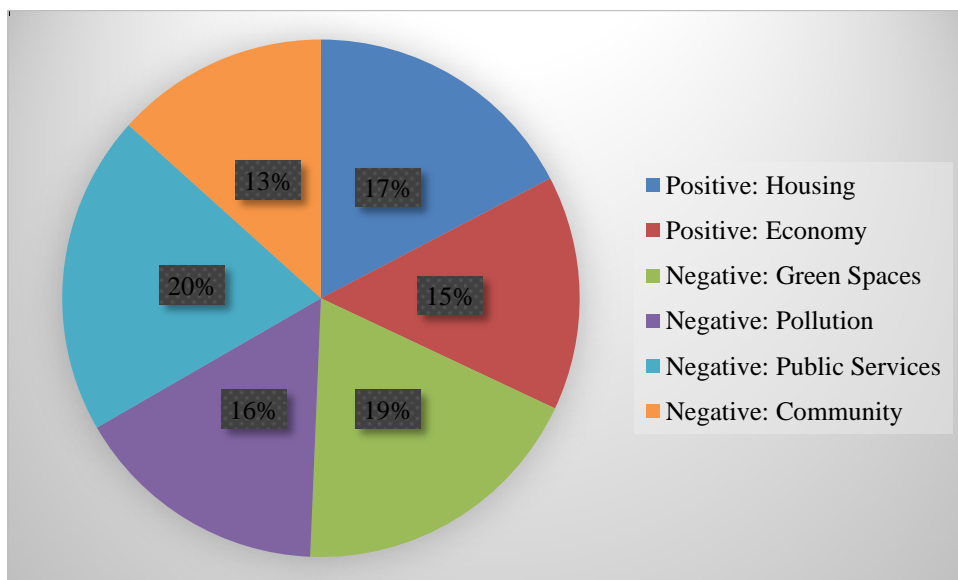
- Increased housing options (reported by 65% of respondents).
- Perceived economic opportunities (reported by 55% of respondents).

Negative Sentiments:

- Loss of green spaces (reported by 70% of respondents).
- Increased pollution (reported by 60% of respondents).
- Strain on public services (reported by 75% of respondents).
- Diminished community cohesion (reported by 50% of respondents).

Table 5: Public Sentiments on Urban Sprawl in Fatehpur

Sentiment	Percentage of Respondents
Positive: Housing	65%
Positive: Economy	55%
Negative: Green Spaces	70%
Negative: Pollution	60%
Negative: Public Services	75%
Negative: Community	50%



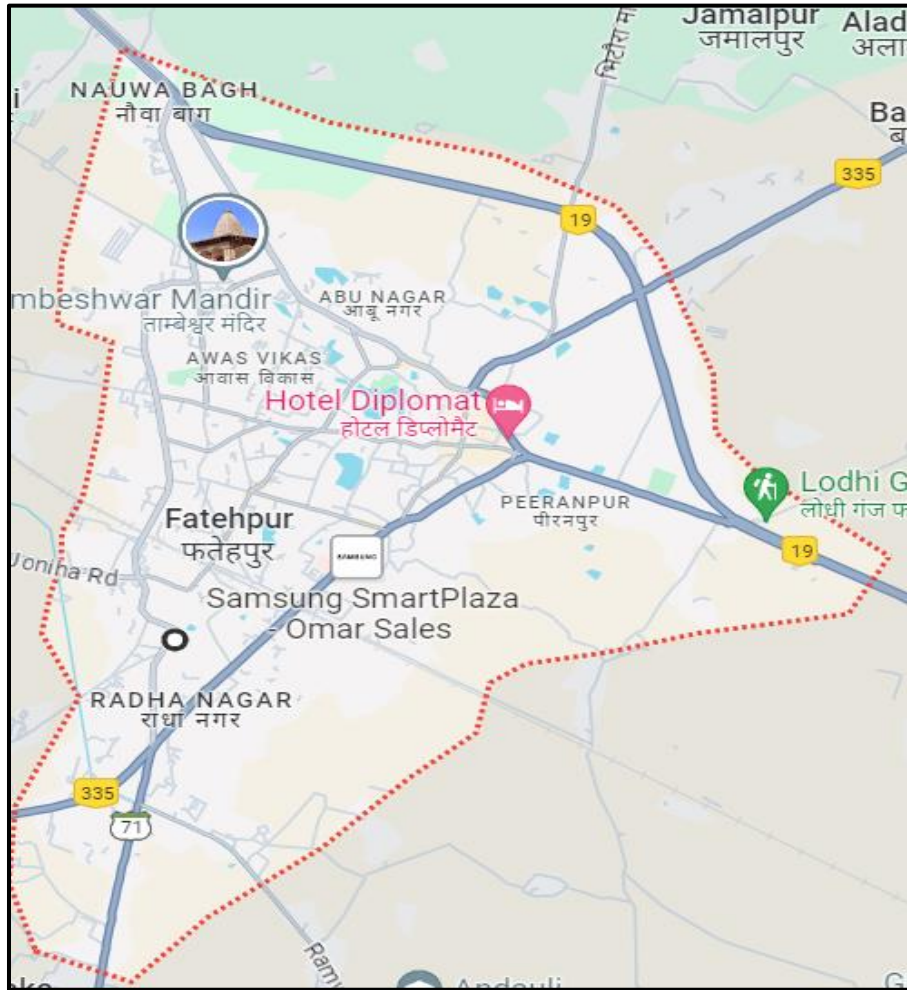


Figure 1: Map of Urban Sprawl in Fatehpur

Case Studies And Best Practices In Sustainable Urban Development And Sprawl Management In India

Ahmedabad, Gujarat

Sabarmati Riverfront Improvement: The Sabarmati Riverfront Improvement Venture in Ahmedabad is a remarkable contextual analysis in supportable metropolitan turn of events. The undertaking planned to rejuvenate the Sabarmati riverfront region, which was recently disregarded and underutilized. The undertaking changed the riverfront into an alluring public space with promenades, parks, sporting facilities, and social spaces. It likewise integrated economical plan components, including water reaping, wastewater treatment, and sun oriented power age. The Sabarmati Riverfront Improvement Task fills in as a model for metropolitan recovery and reasonable waterfront improvement.

Chennai, Tamil Nadu

Mass Quick Travel Framework (MRTS): Chennai's Mass Fast Travel Framework (MRTS) is an illustration of supportable transportation foundation. The MRTS is a rural rail network that interfaces different pieces of the city, giving a solid and eco-accommodating method of transportation. The framework decreases gridlock, brings down fossil fuel byproducts, and advances supportable portability. Chennai's MRTS exhibits the

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significance of putting resources into public transportation to oversee never-ending suburbia and further develop generally speaking transportation productivity.

Surat, Gujarat

Ghetto Redesigning and Reasonable Lodging: The city of Surat has executed fruitful ghetto overhauling and reasonable lodging drives to address the lodging needs of low-pay networks. The Surat Ghetto Recovery and Reasonable Lodging System zeroed in on working on everyday environments in ghettos through the arrangement of fundamental administrations, framework overhauls, and the development of reasonable lodging units. The venture upgraded lodging quality as well as advanced social consideration and local area improvement. Surat's experience exhibits the significance of comprehensive and participatory ways to deal with address lodging difficulties in quickly developing urban communities.

Pune, Maharashtra

Travel Arranged Improvement (TOD): Pune has carried out travel situated advancement standards in its metropolitan wanting to oversee endless suburbia and advance economical turn of events. The city has focused on the improvement of

high-thickness blended use regions around travel hubs, empowering a shift towards public transportation and diminishing reliance on confidential vehicles. This approach has further developed openness, diminished gridlock, and improved the general nature of metropolitan spaces. Pune's TOD drives act as a best practice in establishing manageable and reasonable metropolitan conditions.

Discussion

The discoveries feature the requirement for a reasonable way to deal with metropolitan improvement in Fatehpur. While spread can bring monetary advantages and lodging open doors, it additionally presents critical difficulties to public offices and local area prosperity. Successful metropolitan preparation and strategy mediations are expected to economically oversee development.

Recommendations

Coordinated Metropolitan Preparation: Foster extensive metropolitan plans that incorporate lodging, transportation, and public administrations to guarantee adjusted development.

Foundation Venture: Focus on interest in open offices, especially in medical services, training, and disinfection, to stay up with metropolitan development.

Local area Commitment: Include occupants in arranging cycles to guarantee that improvement lines up with local area needs and feelings.

Ecological Preservation: Carry out arrangements to safeguard green spaces and deal with the natural effects of urbanization.

The spread of Fatehpur city presents the two open doors and difficulties. While it can drive financial development and advancement, it likewise strains public offices and influences public opinions. Resolving these issues requires an organized exertion from policymakers, metropolitan organizers, and the local area to guarantee feasible and comprehensive metropolitan turn of events.

Conclusion

The spread of Fatehpur city and its consequences on public amenities as well as public feelings have been carefully investigated in this research from a comprehensive perspective. The results demonstrate that urban expansion has had a significant influence on a variety of areas of life in Fatehpur via its effects. As the city has grown into peripheral rural regions, the distribution of public amenities has become more unequal. This is because of the expansion of the metropolis. As a result of the concentration of healthcare centres, educational institutions, transportation infrastructure, and sanitation services in the city centre, newly built suburbs continue to be neglected. Because of this discrepancy, travel times have increased, facilities have become congested, and there has been a substantial demand placed on the infrastructure that

is already in place. This highlights the need of timely investments in services in order to keep up with the growth of metropolitan areas. There is a notable lack of consensus among the general public on urban sprawl. Residents are concerned about the loss of green areas, increasing pollution, and the burden that the expansion of the city is putting on public services. This is despite the fact that the growth of the city has brought extra affordable housing alternatives and economic prospects. Concerns like these are a reflection of bigger difficulties about the quality of life and the cohesiveness of communities in the face of fast urban expansion. It is abundantly evident that when it comes to urban planning, comprehensive and integrated planning is absolutely necessary in order to manage expansion in a sustainable manner. In order to efficiently meet the requirements of a rising population, urban development policies need to be aligned with the design of public amenities, transportation, and housing construction. It is imperative that investments in infrastructure be linked with the rate of urban growth in order to guarantee that all inhabitants have equal access to their critical services and to preserve the quality of life for all people. It is recommended that a number of suggestions be made in order to overcome these difficulties. To begin, there should be a greater emphasis placed on the integration of urban planning. This would ensure that growth is controlled in a manner that strikes a balance between the expansion of housing and the offer of public services. Furthermore, there should be a greater allocation of resources towards the establishment of hospital, educational, and sanitary infrastructure, particularly in regions that are seeing significant development. Third, it is essential to include the community in the planning process in order to match the development with the requirements of the residents and to resolve their complaints. In conclusion, measures that promote environmental conservation need to be put into place in order to save green areas and lessen the negative effects that sprawl has on the overall ecology. Specifically, particular solutions for regulating urban sprawl might be further investigated in further study, perhaps via comparison studies with other cities that are experiencing significant population growth. On top of that, doing research into the long-term consequences of urban sprawl on public health and social dynamics would give very helpful insights into the viability of urban expansion. In conclusion, urban sprawl, despite the fact that it affords many chances for expansion and development, also poses a number of serious obstacles. Through the implementation of a well-rounded and comprehensive strategy, Fatehpur is able to more effectively manage its development, so guaranteeing

that the positive consequences of growth are realised while simultaneously limiting its negative repercussions.

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