

Reviewing Post-pandemic Public Realm at **Neighbourhood Level - Vadodara**

Thesis submitted in
Partial Fulfilment for
The Award of the Degree of
Master of Urban and Regional Planning

By
Shreya Naresh Patadia

Second Semester, MURP II – 2020-21

Primary Guide: Dr. Bhawana Vasudeva

Secondary Guide: Ms. Hiral Shah



Master of Urban and Regional Planning (MURP) Program

Department of Architecture

Faculty of Technology and Engineering

The Maharaja Sayajirao University of Baroda

D. N. Hall, Pratap Gunj, Vadodara, Gujarat, India

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CERTIFICATE

Reviewing Post-pandemic Public Realm at Neighbourhood Level - Vadodara

The contents presented in this Thesis represent my original work and it has not been submitted for the award of any other Degree or Diploma anywhere else.

Shreya Naresh Patadia

This Thesis is submitted in partial fulfillment of the requirements for the
Degree of Master of Urban and Regional Planning
at the Department of Architecture
Faculty of Technology and Engineering

The Maharaja Sayajirao University, Vadodara, Gujarat, India

The present work has been carried out under our supervision and
guidance and it meets the standard for awarding the above stated degree.



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ABSTRACT

Urban public spaces have a considerable influence on the picture of cities and are of great importance for the urban culture and city life. Public spaces are significant in terms of physical and psychological concerns of human development. Recreation is the most important thing for any social animal and public spaces shapes community ties in Neighbourhood, making it active and safe. It helps prevent crime, stimulate actions, enhance local economy, enhance recreation and give health benefits at the same time. Cities and public spaces have been shaped by a series of disasters and pandemic; which have forever changed their development, culture and infrastructure. The outbreak of the Covid-19 pandemic resulted in disruption of the daily life of the city dwellers and restrictions were imposed on the usage of public spaces formulating policies like quarantine, social distancing and contact tracing to mitigate the risk of further spread. In the wake of Pandemic Covid-19, entire system of planning is under reconsideration in terms of health, safety and accessibility. Will this pandemic cause abandonment of public spaces or intensify their magnetic attraction has been a matter of concern. Thus, this study caters issues and problems pertaining to public spaces before and after pandemic in Vadodara.

This study combines a theoretical background with qualitative research methods and reviews the situation of public realm at Neighbourhood level during and post pandemic. It investigates the carrying capacity, inclusiveness, safety and accessibility of the spaces with regard to meeting the need of the community. This study attempts to create a balance between demand and supply of public spaces through rationally bringing the developer (planning) and community (community needs) on the same grounds reducing the evident gap. Concept of form-based code for micro level area-based planning and privately owned public spaces need to be practiced on ground to attain healthy and safe public spaces where comprehensive participation of community, expert agency and government authorities is required. Micro level changes in operational policies are required as per the need of situation.

DEDICATION

I dedicate this thesis to my family for nursing me with affection and love and their dedicated partnership for success in my life.

ACKNOWLEDGEMENT

The Dissertation on “Reviewing Post-pandemic Public Realm at Neighbourhood Level – Vadodara” is a report as a part of curriculum in Final year of master’s program (Masters in urban and regional planning) at MSU, Vadodara. I have tried my best to present to you this information as clearly as possible and I hope it will be comprehended by wisest spectrum of researchers and students for further knowledge.

It would not have been possible without the kind support and help of many individuals. I would like to extend my sincere thanks to all of them.

I would like to express my profound gratitude and deep regard to my primary guide Dr. Bhawana Vasudeva for her exemplary guidance, valuable feedback and constant encouragement throughout the duration of the project. Her valuable suggestions were of immense help throughout my project work. Her perceptive criticism kept me working to make this project in a much better way.

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ABBREVIATIONS

TPS	Town Planning Scheme
POPS	Privately Owned Public Spaces
FBC	Form Based Codes

CHAPTER 1 - INTRODUCTION

1.1 PUBLIC SPACES: DEFINED

A public space is a place that is generally open and accessible to people. Roads (including the pavement), public squares, parks and beaches are typically considered public space. In cities, Public Space is the network of streets, squares, and parks that constitutes and represents urban communities. Public space is, because we are civic society.

Public open space is outdoor spaces with free access for people (Jacobs, 1961; Madanipour, 1999), such as cafes, retail, bazaar, parks, streets and pedestrian paths. Public open space is success while it becomes conducive place for social interaction (Danisworo, 1989; Whyte, 1985), attracts many visitors to do their activities in there (Danisworo, 1989; Whyte, 1985), with wide range of activities occur (Rivlin, 1994; CABE and DETR, 2001), individual or group (Rossi, 1982; Gehl, 2002), informal and suitable for recreation (Whyte, 1985: Project for Public Space, 2000), democratic and non-discriminative (Car, 1992), accessible for all class and age of people, including disable people and informal sector (Gehl, 2002:CABE and DETR, 2001).

'Public' can mean:

- owned by a national or local government body
- owned by 'public' body (e.g., a not-for-profit organization) and held in trust for the public
- owned by a private individual or organization but made available for public use or available public access, see privately owned public space (POPS)
- Depending on which of these definitions are adopted, any of the following could be called Public Space:
 - a public park
 - a town squares

- a greenway which is open to the public but runs through farmland or a forest
- a chowk, opla
- sidewalks
- markets

1.2 PUBLIC SPACES: THEN AND NOW

In the ancient period, the sizes of the villages were small and surrounding open countryside was quite abundant. Also, the studies on Vedic villages confirm that open space was either a private open space in front of the house or a common court. In the ancient civilization of Greece and Rome a number of public spaces were traditional: the market place, gymnasias for athletes, and sacred burial groves. Each of these were designed and set aside for specific purpose. Hence there was no organised public space found. In Islamic cities, open space was an integral part of the city structure. Open space as courtyards were frequently used in madrasas, mosques and buildings of secular nature.

Many of the great public space of Rome and other Italian cities date from Renaissance era. Parts of old cities were rebuilt to create elegant squares, long street vistas, and symmetrical building arrangements.

Between 1600 and 1750, Ambitious monarchs constructed new palaces, courts, and bureaucratic offices. The grand scale was sought in urban public space: long avenues, radial street networks, monumental squares, geometric parks and gardens.

These large monumental public spaces were designed for various functions of the society, to benefit the public, and religious purposes. Starting with the ancient mythological wars and public gathering, the initial public space originated with the huge open grounds often used as battle grounds and symbol of dominance of power, most commonly being the Kurukshetra Battle ground, Panipat Battle ground. These open grounds were used as place for temporal activities changing from setting of military camps,

political gatherings, battle ground, religious processions, fairs, trades, place for games etc. The grounds in those time were boundless and natural open spaces. Later came the grounds and open spaces with specific boundaries. In present times, the concept of —public space in urban areas is not only limited to urban parks and preserves. Public space such as streets, schoolyards, outdoor sports complexes, cemeteries and public squares are all important spaces.

1.3 ROLE OF PUBLIC SPACES IN CITIES

The public space capitalises on building design, scale, architecture, and proportionality to create interesting visual experiences, vistas, or other qualities. It accommodates multiple uses and multiple users. It is accessible via walking, biking, or public transit. It uses, protects, and enhances the environment and natural features. Public Space promotes Activities and Sociability. Public space reflects the community's local character and personality, foster social interaction and create a sense of community and neighbourliness, provide a sense of comfort or safety to people gathering and using the space, encourage use and interaction among a diverse cross-section of the public.

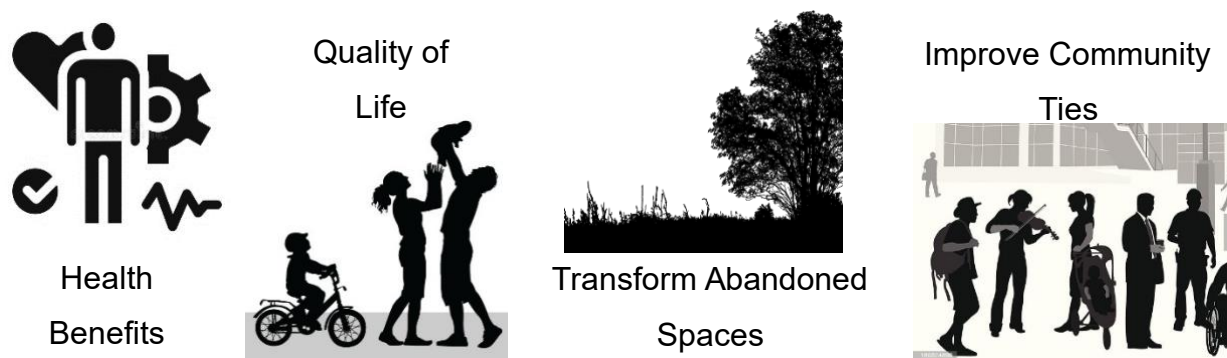


Figure 1 Significance of public spaces

It provides light and ventilation to the living areas and indirectly affect the health of the community and the individual as well. Also, functions as lung space by improving the air quality and reducing noise level from the source to the built area. They can be organised in a way to mitigate the effects of extreme climatic conditions and by providing a more comfortable area for

the residents. These space allows interaction of the housewives in afternoons, and children to find a place to play and thus it allows people to come together informally.



Figure 2 Significance of public spaces

1.4 REGIONAL SIGNIFICANCE OF PUBLIC SPACES

The climate in which we live has a tendency to determine our outlooks and life ways. It can sharply influence particular environments - and their effects - for every type of civilization. Even from the slightest variations in climate, one can witness different kinds of social systems and cultural attributes which are frequently reflected in architectural styles, building traditions, and the Planning and design of public spaces. Drastic shifts in weather systems can affect human behaviour to more than simply a limited extent where dramatic seasonal variation exists.

For e.g., Distant planning of built mass helps in gaining huge open space and more sunlight in temperate and cold climate, Compact planning of built mass helps in gaining shaded open space in tropical; hot and desert climate whereas Distant planning with plenty trees helps in gaining shaded open spaces in tropical rainforest.

European cities, influenced by classical Greek and Roman urban design, often have charming paved plazas at the centre, surrounded by impressive public buildings. While large uncovered paved plazas are not suitable for India's hot climate, Neighbourhood chowks, bazaars and streets in Indian cities have for long been functioning as public spaces, where people gather

not just to buy their daily necessities, but also to pick up the 'gossip of the day'.

1.5 NEIGHBOURHOOD PUBLIC SPACES IN INDIA

Public spaces have different categories to serve as places for social connections, religious activities, hubs for economic opportunities and places for recreation.

In Indian cities, public spaces are broadly segregated into five classes (MoHUA 2015):

- Local level parks and playgrounds
- Community level park and open space
- District level park
- Sub city parks/complex/playgrounds
- Forest covers

Besides these formal spaces, urban streets, pocket parks, incidental or residual spaces and roof tops have gained traction as other important forms of open spaces performing similar functions.

They have been important since ages starting from Greek Agora till today to the public squares. There are various types of public spaces depending upon their scale, function, user groups, climate and location, context, etc. All these public spaces have major influences on various factors of the surrounding context like built forms, movement, environment etc. Public flow and activities of open public spaces affects the surrounding built mass. Neighbourhood Public spaces in India includes formal and informal public spaces.

Informal Public spaces traditionally mean markets, vendor zones, streets and edges, nooks and corners of the road.



Figure 3 Informal public spaces



Figure 4 Formal public spaces

Formal Public Spaces includes Parks, Gardens, Sports complexes, lakes, Community halls etc.

1.6 PUBLIC HEALTH CRISIS AND URBAN REFORMS

In history, the aspect of public health evolved in high-density urban areas over a period of time. The link between public health and urban planning is not complex as the intention is common: To provide safe and healthy environments in which citizens can live, work and play (characteristics of an ideal, happy city). This also includes the role of land use and built environment (public buildings, mixed land uses, pedestrian walkways open spaces and waterbodies) and its impacts on the health of population.

Every pandemic in the past has taught us lessons over the importance of our responses and preparedness to fight the same. It is important to think about our responses at the end of the pandemic, while at the same time being ready for urgent issues like community disintegration, social disconnection, human waste and sanitation issues.

Timeline	Public health crisis and related urban reforms
14th century	<p><u>The bubonic plague</u></p> <p>It inspired radical improvements of the Renaissance in which cities expanded their borders, opened larger open spaces over suffocated public spaces and hired specialised professionals like architects and surveyors.</p>
17th Century (1720)	<p><u>The Great Plague of Marseilles</u></p> <p>This is an example of medieval and industrial cities implementing urban planning practices to aid disease control and how management of water waste helped remake cities post pandemic.</p>
18th century	<p><u>Haussman model of zoning in urban planning</u></p> <p>It emphasised functionality and a hierarchical order of land use which separated residential areas from other land uses, especially industrial land use.</p>
1860s	<p><u>Cholera and malaria outbreaks in New York city</u></p> <p>They led to the establishment of the Metropolitan Board of Health. It comprises of building and zoning codes to control overcrowding, mandated better sanitary conditions and propelled infrastructure investments that have influenced city services.</p>
18th and 19th century	<p><u>Yellow fever and cholera outbreaks</u></p> <p>These outbreaks globally identified the need for modern sewerage and sanitation systems like citywide sewer systems</p>
19th and 20th century	<p>A few reports in the 19th and 20th centuries highlighted the importance of relationship between public health and urban planning. For instance, in 1999, the World Health Organization published a report titled Healthy cities and the city planning process which that emphasised ensuring</p>

	healthy urban planning of the urban poor population of cities in the world.
20th century	<u>Tuberculosis, typhoid, Spanish flu and polio</u> Originated urban planning reforms like waste management, slum clearance, single-use zoning etc.

Table 1 Public health crisis and urban reforms

Public health has shaped modern city planning since the 1800, when sanitation and overcrowding were seen to be directly linked to the spread of infectious diseases. It has, since, molded the planning and architecture of cities, which is again seeing a wave of change after COVID-19.

The components which tie a city together at a smaller level like the open spaces, streets and buildings have also experienced a shift in their use and preferences. Open spaces have materialized not just as stress relievers during the ongoing pandemic, but also as spaces which improve immunity. Streets and parking lots have been rediscovered as extended public spaces while our homes have been reinvented as our workplaces, gyms, and gardens in whatever capacity they can.

1.7 NEED OF STUDY IN VADODARA

In the globalization hub of Western-India, the city Vadodara stands true to its name – “Sanskari Nagari”, which still celebrates its rich heritage and culture to its fullest.

The social life of people in Vadodara is not only a part of their culture but also part of their routine, which can be perceived from the world’s largest “Garba-gathering”; to every day’s post office hour “Chai-meetup”; to relishing their free time by the sides of bridges across the city.

Vadodara had glorious past but failed to maintain it. It has huge number of open spaces but it lacks at interactive and quality public spaces leading to increasing incidental activities encroaching the main spines.

Also, with increasing urbanization the city is continuously swelling whereas the public spaces are shrinking and are unable to cater the need of the increasing population.

Year	Population	% rise	% share of recreational facilities	Recreational facilities area according to norms (10 sq. m. /capita)	Ideal % share of recreational facilities/area (area of VMC is taken as 149 sq. km.)
1981	7,34,473	-	2.58	7344730	4.9
1991	10,31,346	40	-	10313460	6.9
2001	13,06,035	26.6	1.17	13060350	8.7
2011	16,66,703	27.6	-	16667030	11.1

Table 2 Existing and standard required share of public spaces in Vadodara

Thus, it is important to take into account the issue of quality public spaces as per needs of the community.

To further study the same, a pilot survey was conducted on city-wide public spaces of Vadodara considering different parameters. The Parameters identified are :

- User Groups
- Uses of Public Spaces
- Duration of Use
- Accessibility
- Nature of Space
- Flexibility of use
- Density of the Space

Macro and Micro Level public spaces are identified and analysed with each parameter where accessibility and nature of space plays important role in governing the footfall (density) and use of that space.

It is observed that incidental spaces such as streets and edges, vending zones are equitable, easily accessible and flexible, thus thickly dense. Also, the most preferable public spaces frequently and by all age group of people are the Neighbourhood public spaces.

Thus, Neighbourhood scales public spaces were selected for the study. TP Scheme is the smallest unit of planning. TPS consists of various different Neighbourhoods and communities. In Gujarat, Neighbourhoods are planned using the mechanism of TP Scheme. The change in planning at the smallest scale would indeed cater the needs collectively of the entire city. Thus, a part to whole approach is preferred considering TP scheme in Vadodara as a study area.

		1				2			3			4			5		6		7	
Sr. No.	List of Public Spaces	User Groups				Uses		Duration of Use			Accessibility			Nature of Space		Flexibility of Use		Density		
		Kids	Teenagers	Youth	Elderly	Necessary	Spontaneous	Social	Morning	Afternoon	Evening	Poor	Average	Good	Organized	Unorganized	Flexible	Rigid	Thick Space	Thin Space
1	City-Wide Parks																			
	Kamatibaug	•	•	•	•		•	•	•		•		•	•			•		•	
	Gotri Garden	•	•		•		•		•			•		•			•		•	
	Ajwa Garden	•						•			•	•					•			•
2	Neighborhood Parks	•			•		•		•		•		•	•				•		•
3	City-Wide Markets																			
	Kanderao Market				•	•	•		•				•		•			•	•	
	APMC Market				•	•	•		•				•		•			•	•	
4	Neighborhood Markets		•	•	•	•			•		•			•	•	•	•		•	
5	Open Grounds																			
	Polo Ground			•	•		•	•	•		•			•		•	•		•	
	Navlakhi Ground			•	•		•	•	•		•			•		•	•		•	
6	Neighborhood Playgrounds	•	•	•			•	•	•		•			•	•		•			•
7	Water-Edge																			
	Sindhrot Mahi Riverfront				•			•	•		•		•			•	•			•
8	City-Wide Lake																			
	Sursagar Lake				•	•		•	•		•			•	•			•		•
9	Neighborhood Lakes	•	•	•	•		•	•	•		•			•	•			•		•
10	Heritage Precincts																			
	Lakshmi Vilas Palace																			
	Sevasi Stepwell																			
	Pavagadh																			
11	Neighborhood Sports Complex	•	•	•			•		•					•	•			•		•
12	Public Plazas																			
	Mandvi				•	•			•	•		•				•	•		•	
	Kirti Stambh				•	•			•	•		•				•	•		•	
	Dairy Den Circle				•	•			•				•			•	•		•	
13	Malls Forecourts	•	•	•	•		•	•			•			•	•			•		•
14	City-Wide Transit Hub																			
	Vadodara Railway Station		•	•	•	•			•	•	•			•		•	•		•	
	Chayapuri Railway Station		•	•	•	•			•	•	•			•		•	•		•	
	Vishwamitri Railway Station		•	•	•	•			•	•	•			•		•	•		•	
	Central Bus Depot		•	•	•	•			•	•	•			•		•	•		•	
	Makarpura Bus Depot		•	•	•	•			•	•	•			•		•	•		•	
	Nizampura Bus Depot		•	•	•	•			•	•	•			•		•	•		•	
15	Transit Nodes		•	•	•	•			•	•	•			•		•	•		•	
16	Food and Vending zones (Ratri Bazars)		•	•	•	•			•	•	•			•		•	•		•	
17	Streets and Edges		•	•	•	•			•	•	•			•		•	•		•	
18	Under-Bridge		•	•	•		•		•	•	•			•		•	•		•	
19	Amenity Spaces	•	•	•	•		•		•	•	•			•		•	•		•	
20	Chowks		•	•	•			•	•	•	•			•		•	•		•	
21	Otta	•	•	•	•			•	•	•	•			•		•	•		•	

Table 3 Pilot Survey on public spaces of Vadodara

CHAPTER 2: STUDY FRAMEWORK

2.1 RESEARCH PROBLEM

It is observed that In-spite of varied norms in planning and development, especially for public spaces; informal, unorganized and later known as illegal encroachments are formed which are actively used by public whereas the specially designated zones are underused, vacant or dead spaces.

Thus, there is a need to find the gap between the two and spaces needs to be planned keeping these user preferences and their connections to the environment in mind.

Also, the gap between carrying capacity of any public space and the rise of population over a period of time makes a public space uninviting and dysfunctional specially in such times of pandemic.

It is important to deal with such issues to revive the life back in the city.

2.2 RESEARCH QUESTIONS

- What kind of public spaces does generally people prefer?
- Which parameters affects public spaces?
- Which factors governs the activities of any public spaces?
- What is the impact of pandemic on public spaces?

2.3 Aim

- To create optimally inclusive and safe public realm at neighbourhood level

2.4 OBJECTIVES

- Review public realm of residential neighbourhood
- Assess the effect of pandemic on public realm of residential neighbourhood
- Ensuring utilization of required spaces for the public realm

2.5 SCOPE

Public spaces considered for study are to serve as places for social connections, religious activities, hubs for economic opportunities and places for recreation.

Besides formal spaces like parks, playgrounds & forest covers; urban streets, pocket parks, incidental or residual spaces and roof tops are also considered in the study.

Impact of COVID-19 pandemic on public realm is addressed in the study.

2.6 LIMITATIONS

Public spaces of a particular TP scheme in Vadodara is studied giving an insight to the impact of pandemic on neighbourhood level spaces as a whole.

2.7 RESEARCH METHODOLOGY

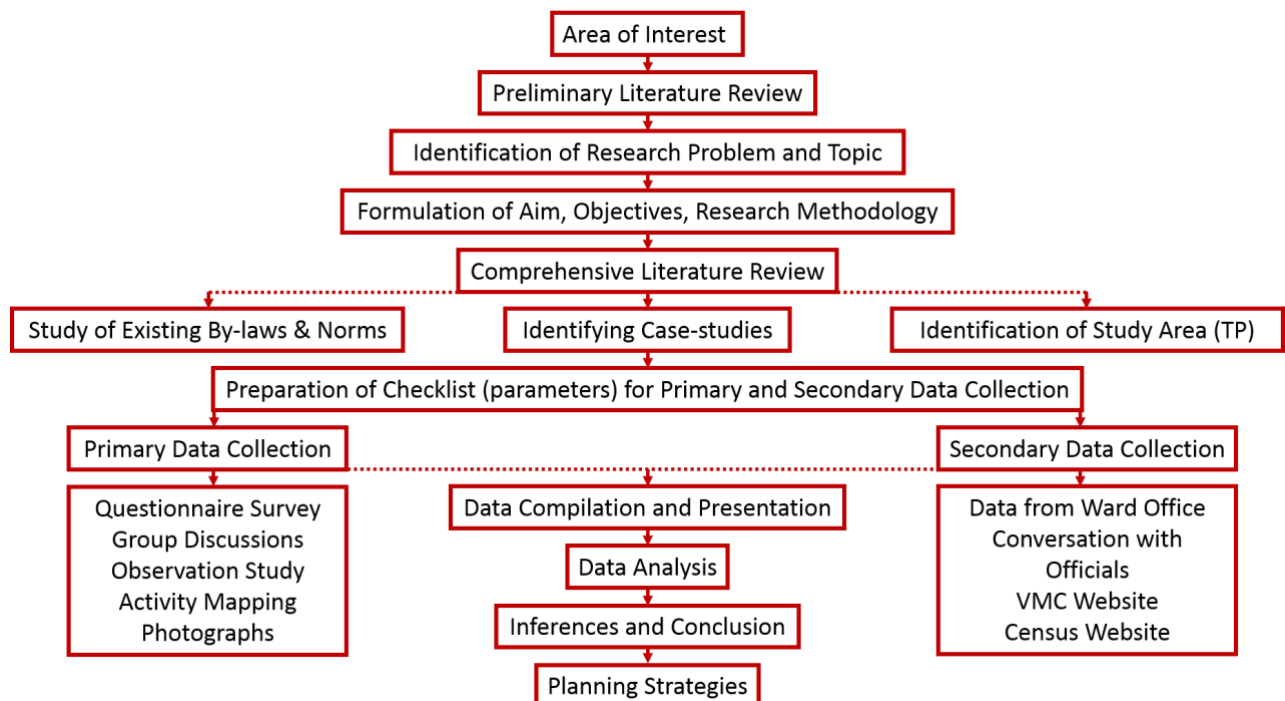


Figure 5 Research methodology

CHAPTER 3: READINGS AND OUTCOMES

While the urban population of India is swelling, the open space accessible to people is shrinking. In 1968, there were a mere ten cities that could boast a population of a million or more. Today there are fifty-five and each of them are four times the size they were four decades ago!. Unlike the West, a great deal of India's social life and recreation takes place out-of-doors! India is a nation of street side stalls; hang out places and informal encounters. This is what makes India a vibrant social environment and what dulls the senses in the West. Ar. Christopher Charles Benninger use the word conviviality to characterize this very positive quality of Indian urban fabric. Conviviality depends on the existence of accessible public domains; places where there is unrestricted access, where there is a minimum comfort level in terms of safety, cleanliness and room for gathering. Our personal standards are not high, a pan shop will do! But we must have our places to gather, chat and meet strangers. Conviviality is India's ancient answer to cold hearted, pay-as-you-go, canned entertainment. It is encounters with old friends and serendipity brushes with strangers that make the Indian street socially dynamic and emotionally exciting. Like water and air, open spaces were once believed to be free! But more and more open spaces are shrinking and being privatized. The quality of a —public domainll is being robbed from us as we ape the west in building privately owned malls and amusement parks. This forces more and more people onto the roads, as even footpaths are being curtailed to provide movement channels for more vehicles and places for them to park. Like water and air, open spaces have become commodities to be packaged, conditioned and sold to those who can afford them. Air conditioning, bottled water and pay-to-enter public domains are animals of the past decade. They were largely unknown in one's recent memory. Given the reality of rapidly expanding population, rising land values, densification of cities and the resulting enclosing and packaging of everything, there is a new role for designers to enter the fray and to design —public domains.ll While the

transformation of open spaces into private domains is rampant, there are excellent examples in the Sub-continent where designers and public authorities have reversed this process, often using traditional Indian precedents as a basis to move forward.

3.1 LIFE BETWEEN BUILDINGS: USING PUBLIC SPACE

Published By: Island Press

Author: Jan Gehl

Key take-aways in the Book:

The book asked for concern for the people who were to move about in the spaces between the buildings, it urged for an understanding for the subtle qualities, which throughout the history of human settlements, had been related to the meetings of people in the public spaces, and it pointed to the life between buildings as a dimension of architecture, urban design and city planning to be carefully treated.

Jan Gehl's Method of research & general approach is inspired by Jane Jacobs:

"Go out there and see what works and what doesn't work, and learn from reality. Look out of your windows, spend time in the streets and squares and see how people actually use spaces, learn from that, and use it." – Jane Jacobs

This book explains how our cities, our architecture, and our planning influence life between buildings, and our lives in general, how physical environment influences outdoor activities and states that People are interested in people, not houses. It also discusses how Life in buildings and between buildings seems in nearly all situations to rank as more essential and more relevant than the spaces and building themselves. The author believes "First life, then spaces, then buildings – the other way around never works." Building design as a means to an end, not an end itself.

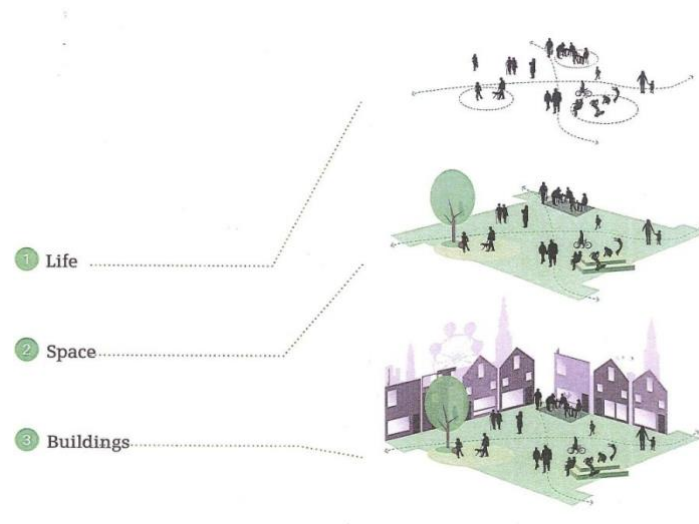


Figure 6 Hierarchy of planning

Jan Gehl suggests Building 5-6 storeys high buildings with human-scaled spaces and a good public realm closing the streets to cars wherever possible and discusses the gap between traditional and modern spaces.

Traditional	Modern
Meeting Spaces	Left Over Spaces
Focus on Spaces	Focus on Objects
Few Iconic Buildings	Full of High-rise Buildings
People at Centre	Cars at Centre

Table 4 Planning of public spaces

Jan states Activities drive people to visit the place. The purpose of using the space ranges from necessary, to optional, to recreational activities.

Necessary activities include those that are compulsory-going to school or to work, shopping, waiting for a bus or a person. These activities will take place throughout the year, under nearly all conditions and are independent of the exterior environment.

Optional activities include such activities as taking a walk to get a breath of fresh air, standing around enjoying life, or sitting and sunbathing. These

activities take place only when exterior conditions are favourable and are dependent on exterior physical conditions.

Social activities include children at play, greetings and conversations, communal activities of various kinds. These activities are “resultant” activities, because in nearly all instances they evolve from activities linked to the other two activity categories.







Physical environment quality			
	Bad quality	Good quality	Selective tendency
<u>Necessary</u> activity			Equalization
<u>Spontaneous</u> activity			Good quality salient
<u>Social</u> activity			Good quality modest

Table 5 Preference of activities

3.2 INDIA MUST REVIVE OR BUILD THIRD PLACES IN ITS CITIES

Published By: Hindustan Times

Author: Swati Ramanathan (chairperson, Jana Urban Space Foundation, and co-founder, Jana Group)

Key take-aways in the Article:

Sociologist Ray Oldenberg coined a phrase for a social hangout, which is not workplace, nor home-place, but is a third place (or third space). Third places are in-between spaces that provide people with active and passive recreation — something to do, somewhere to go to, friends to connect with. Parks, libraries, community halls, cafes, bazaars all qualify. The smallest unit of any urban settlement is the neighbourhood. Most of the third spaces are found in neighbourhood. Third places directly impact the health of local businesses, livelihood, housing market, thereby increasing the tax base of

the city. Families are more likely to set roots in vibrant and safe neighbourhoods, people are more willing to leave their couches for active recreation.

3.3 TACTICAL URBANISM - SHORT-TERM ACTION FOR LONG-TERM CHANGE

Published By: Island Press

Author: Mike Lydon

Key take-aways in the Book:

Tactical Urbanism is a learned response to the slow and siloed conventional city building process. For citizens, it allows the immediate reclamation, redesign, or reprogramming of public space. For developers or entrepreneurs, it provides a means of collecting design intelligence from the market they intend to serve. For advocacy organizations, it is a way to show what is possible to garner public and political support. And for government, it's a way to put best practices into, well, practice—and quickly!

Rose Kennedy Greenway Conservancy began activating the forlorn spaces; demonstration gardens, street art, food trucks, and low-cost movable tables and chairs have breathed new life into the greenway. "Low-cost modifications were never part of the master plan per se but demonstrate that improving otherwise lifeless public spaces need not cost millions of dollars."

The "silos of excellence" (as Marohn calls them) developed to administer the various government city-building services (e.g., planning, engineering, housing, public works) have created a type of discordant government software (e.g., culture, codes, policy) that eventually translates to the creation of the city's hardware (e.g., buildings, streets, parks).

3.4 EXISTING BY-LAWS, NORMS AND GUIDELINES

3.4.1 URDPFI guidelines

- The ideal open spaces in the city is 10-12 sq.m. per person

- The open spaces shall be provided at the rate of 1.4 to 1.6 ha per 1 000 persons.
- The lower income areas shall be provided with more open spaces and the area under facilities like community halls etc. can be merged with the open spaces to suit their local requirements.

3.4.2 GTPUDA

- Chapter V : sub section 3e of section 40 states A town planning scheme may make provision for any of the following matters, namely: the allotment or [earmarked] of land for roads, open spaces, gardens, recreation grounds, schools, markets, green-belts, dairies, transport facilities, public purposes of all kinds.
- Gardens and open spaces should be 5% of total TP area

3.4.3 AMRUT Smart City Mission

- Targeted open spaces in the city is 10-15 sq.m. per person
- Local Area based Plans create a framework for enhancing the public spaces, and areas under roads by enabling redevelopment of the existing built-up environment. This involves adoption of tools such as Form Based Codes (FBCs).

3.4.4 CGDCR

- Recreation zone (REZ) This zone is primarily meant for green open spaces such as parks and gardens in the city with minimal development with limited FSI and height.
- Parks, Gardens and Open Space – PGO (P) this zone is also primarily meant for green open spaces such as parks and gardens in the city with minimal development with minimal development with limited FSI and height.

CHAPTER 4: REFLECTION OF THE STUDY

4.1 BACKGROUND STUDY

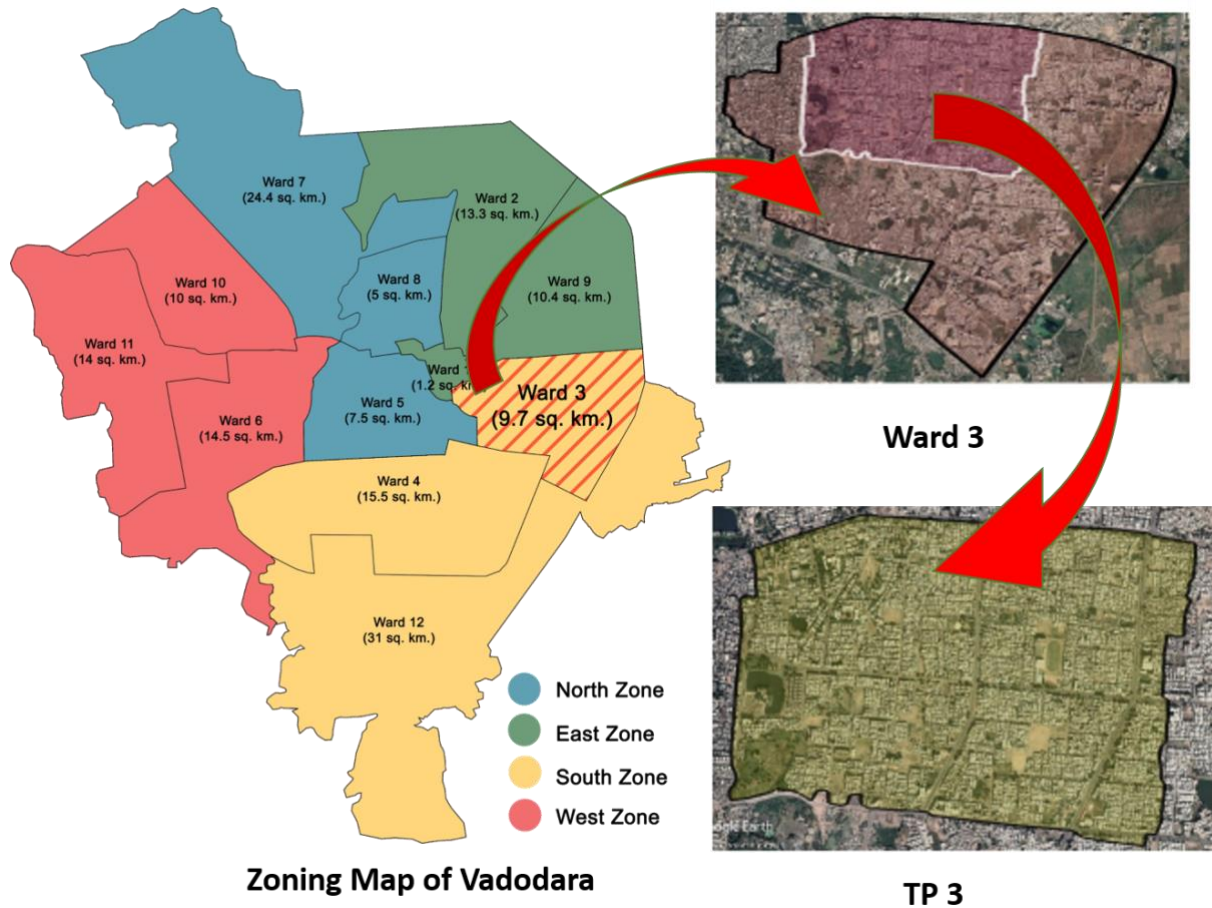


Figure 7 Study area

Vadodara also known as Baroda, is the third largest city in the Gujarat State. It is the administrative headquarters of Vadodara District and is located on the banks of the Vishwamitri River, 141 kilometres (88 mi) from the state capital Gandhinagar. The railway line and NH 8 that connect Delhi and Mumbai pass through Vadodara. The city got its name due to abundance of Banyan (Vad) trees found in the city. The city is also known as Sanskari Nagari (The Cultural City) and Kala Nagari (the city of art) of India.

Vadodara city is divided in 4 zones, each zone having 3 administrative wards.

TP3 (Kasba-Waghodia-Danteshwar) lies in Ward 3 in the South Zone of Vadodara (VMSS). It is the oldest TP scheme in Vadodara that was approved finally in 1985. After all the variation and deviation, it was approved in 2013.

TOWN PLANNING SCHEM NO.	AREA HECT.	DRAFT SUBMIT GOVT.	Draft Approval Date	Preliminary Approval Date	Final Approval Date
3. WAGHODIA RD-VADODARA KASBA-BAPOD- DANTESHWAR(G)	331.84	9.9.1966	21.11.68	03.09.85	03.10.85
3. T.P.3 FIRST VARIATION	F.P.NO 429,404,4054 06,407,428/1, 428/2.	9.6.1994	20.12.95	08.02.99	17.04.2000
3. WAGHODIA RD-VADODARA KASBA-BAPOD-DANTESHWAR SECOND VARIED	F.P.NO 651/1,651/2,6 0/1, 60/2	12.10.2000	29.06.01	20.02.13	20.02.13
3. T.P.3 THIRD VARIATION U/S 70(2)	F.P.NO469,65 2,742,778,779 ,780,805,951	15.5.2007	15.05.07	-	30.06.07

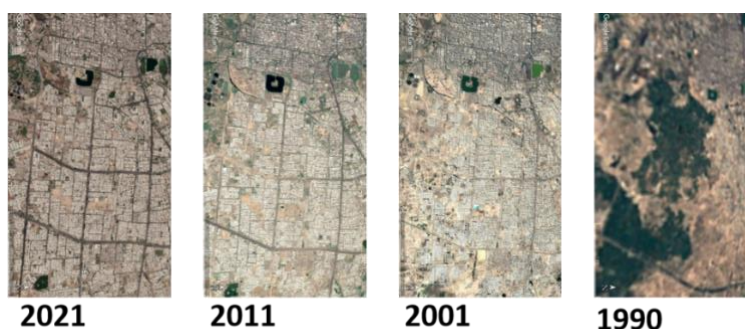
Table 6 Process of TP 3

TP 3 consists of 9.8 sq. km. area with population of 1.07 lakhs having density 110 PPH more than the average density of Vadodara city.

	Ward 3	VMSS
Population (Lakh)	1.07	14.06
Area (Hectare)	980	15870
Density (PPH)	110	89

Table 7 Population of Ward 3 and VMSS

4.1.1 Evolution



4.1.2 Connectivity



Railway Station: 5.3 Km

Airport: 5.6 Km

Bus Station: 6.1 Km

NE 1: 2.2 Km

TP 3 is well connected through all the transport hubs making it easily accessible for people commuting from anywhere.

Figure 8 Connectivity

4.1.3 Context

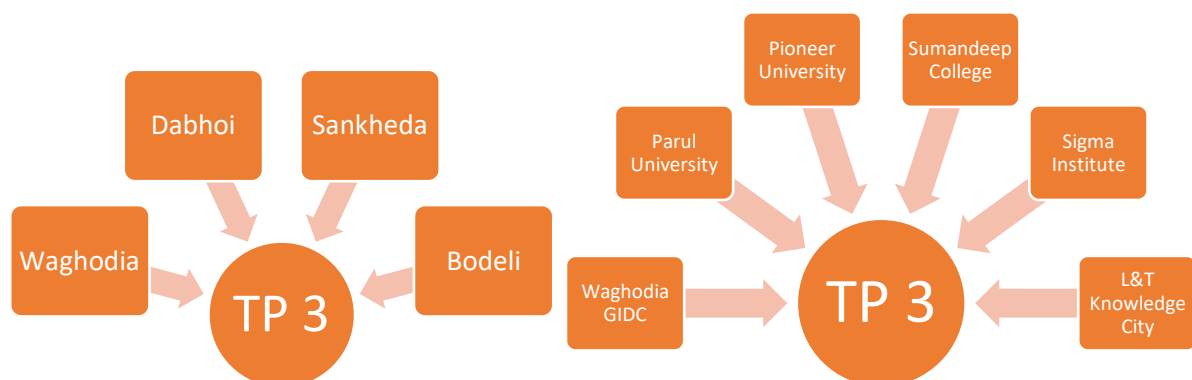


Figure 9 Context of TP3

TP 3 is situated on the eastern fringe of Vadodra municipal boundary. It has various villages, educational institutions and industrial area in the immediate context which has a high influence on the development of this area.

There is a high level of in-migration observed in this area for three main reasons:

Better opportunities and lifestyle

Educational purpose

Jobs and business purpose

4.1.4 Population Projection

Sr. No.	Year	Population
1	2001	94,588
2	2011	1,41,314
3	2021	1,68,392
4	2031	1,95,470
5	2041	2,22,548

Table 8 Population Projection TP3

With continuously increasing population, the need for public spaces increases and the carrying capacity of public spaces decreases. This leads to congestion.

4.2 EXISTING LAND USE STUDY

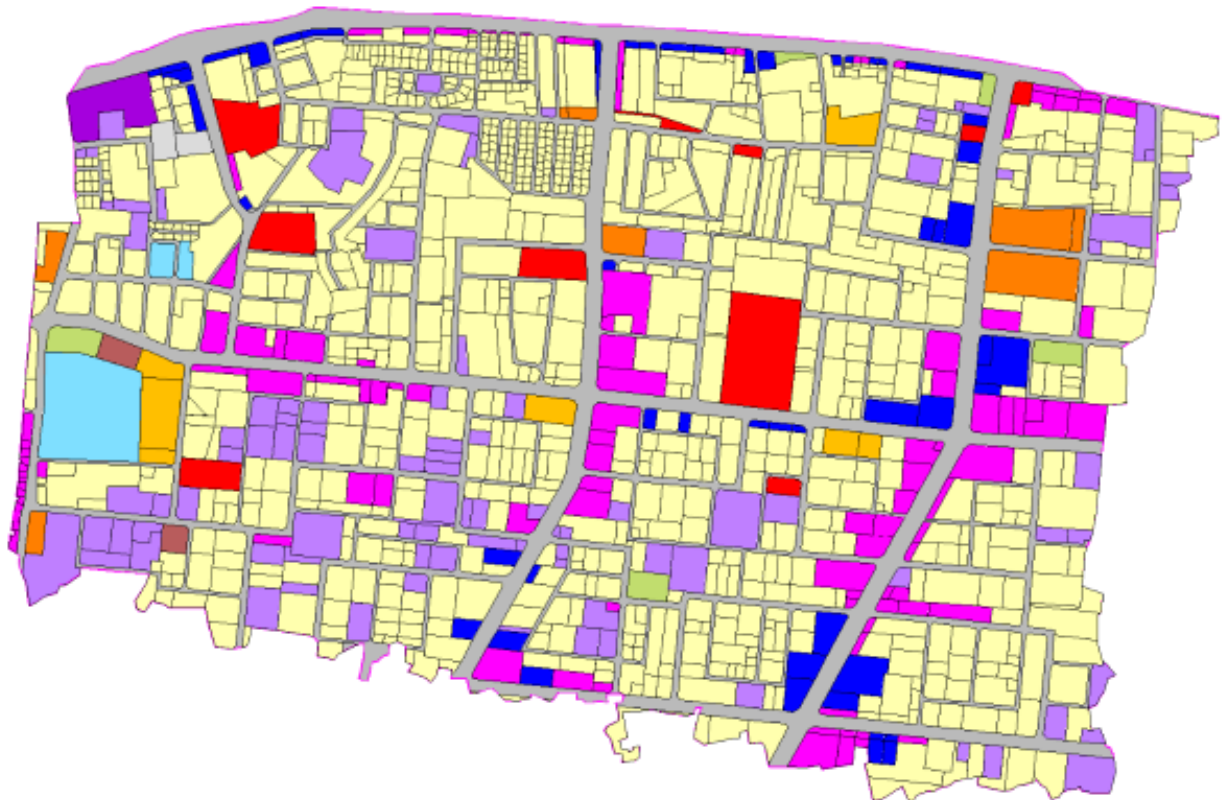




Figure 10 Landuse Map TP3

People move in from nearby villages like Waghodia, Dabhoi, Sankheda, Bodeli and many more for better opportunities and lifestyle. They influence the culture and use of public spaces.

Students move in for educational purpose due to immense presence of educational institutes like Parul University, Babaria, Sigma, Sumandeep and many more. This influences the residential area being converted into hostels and pgs for accommodation of this group of people. They also influence the public spaces by increasing use by the youth.

People working at Waghodia GIDC, L&T Knowledge city prefer to reside in this area due to close proximity.

Thus, there are various age groups, occupations and community people found in this area.

With this, there is an increased need for neighbourhood level public spaces to serve varied group of people residing here.

Here, Existing share of public spaces are as follow:

- Public purpose 3.02%
- Garden 0.63%
- Vacant Land 8.41%
- Road Network 19.49%

Whereas, according to the norms the required share of recreational and public spaces is:

Year	Population	URDPFI (sq. km)	% share	GTPUDA (Sq. km)	% share
2011	1,41,314	1.4	14%	0.49	5%
2021	1,68,392	1.68	17%	"	"
2031	1,95,470	1.95	20%	"	"
2041	2,22,548	2.22	23%	"	"

Table 9 Required share of public spaces in TP3

Thus, it is seen that there is a huge gap between the existing and required percentage share of public spaces. Potential Public spaces like vacant land and streets should be considered at planning level to fulfil the need of public spaces.

4.3 ACTIVITY MAPPING

Activities and multifunctional spaces makes a city vibrant. Thus, activity mapping defines a character of the place.

4.3.1 Node Mapping



Figure 11 Node Mapping

Public spaces are vibrant around the nodes with a major pause point for everyone moving around. Informal activities and vendors play an important role in stimulating activities, along with a major stop for public transport, a place for an offline GPS and gossip of the day. TP 3 has 9 major nodes connecting the area with the city efficiently.

Legends:

- PRIMARY ROAD
- - - SECONDARY ROAD

CIRCLE

1. Vrundavan Char Rasta
2. Parivar Char Rasta
3. Gurukul Char Rasta
4. D-mart Tran Rasta
5. Kaladarshan Char Rasta
6. Uma Char Rasta
7. Ayurvedic Tran Rasta
8. Ayurvedic Clg Tran Rasta
9. Shashtri Baug Char Rasta

4.3.2 Community Mapping

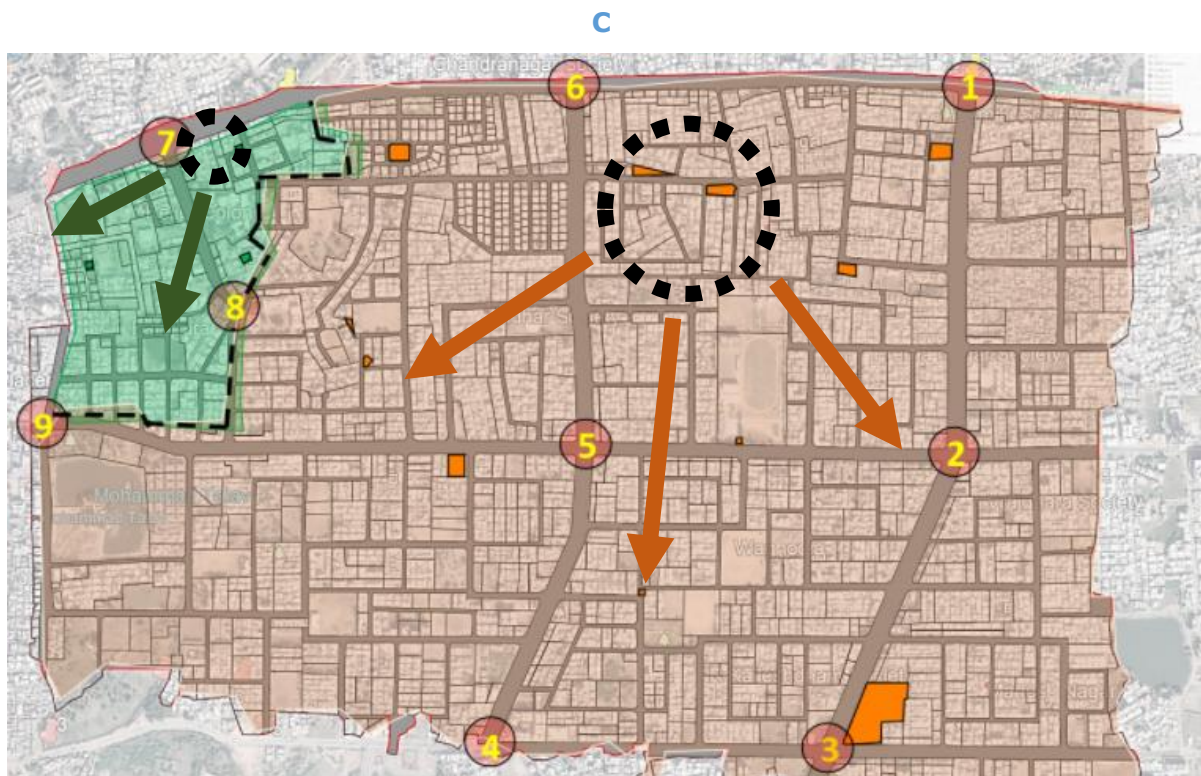


Figure 12 Community Mapping

There are two communities seen, majorly Hindu spread over the area of TPS with a very little stretch of Muslim community. Various public spaces and community spaces are observed around fostering them to continue staying in the neighbourhood and connect well socially with each other. Community halls, religious places and people of the same community around offers people to stay in this place.

4.3.3 Formal public spaces



Figure 13 Formal Public Spaces

Various formal public spaces like gardens, community halls, sports complex, skating ring are found in a TPS. These spaces are specially planned for and have operational restrictions, restricted entry, and rigidity of use. Also, during the time of pandemic, these formal spaces are closed and restricted for use.

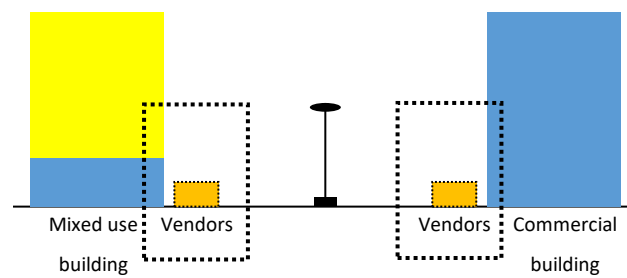
4.3.4 Informal public spaces



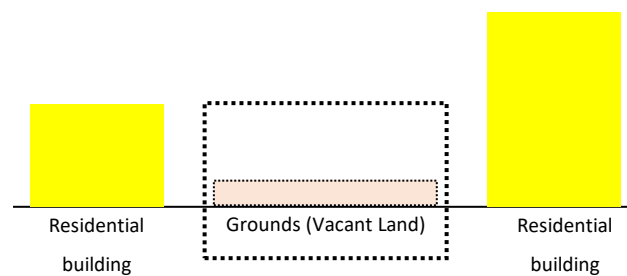
Figure 14 Informal Public Spaces

Various informal public spaces like commercial edge, streets, food vendors, vegetable vendors, market spaces and vacant land (maidan) are found in a TPS. These spaces are incidentally developed over time to cater the need of users around. These spaces are open for all, more inclusive in nature and are multifunctional.

4.3.5 Character of public spaces



Incidental Public Realm



Use of Vacant Land for Recreation



Formal Public Spaces

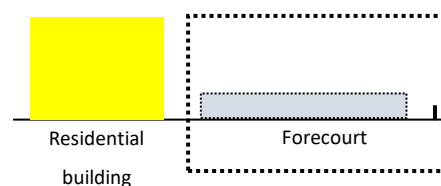


Figure 15 Forecourts

It is observed that the informal public spaces do not have any designated boundaries and are usually multifunctional whereas formal public spaces always have a boundary and restricted use to it.

4.4 NATURE OF RESPONDENTS

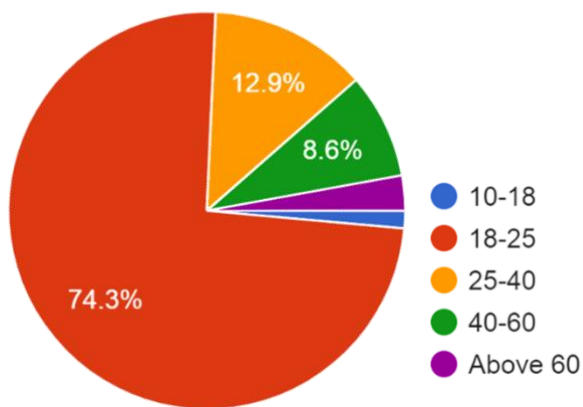


Figure 16 Age Group

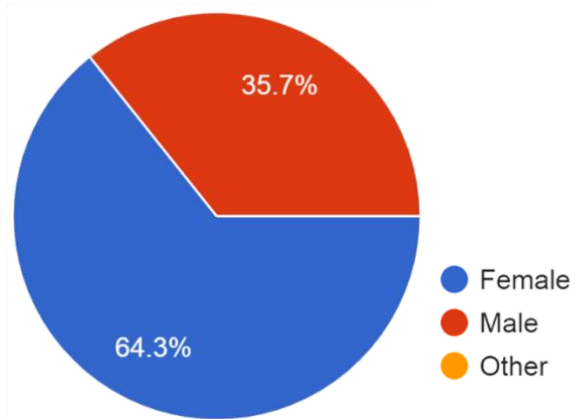


Figure 17 Gender

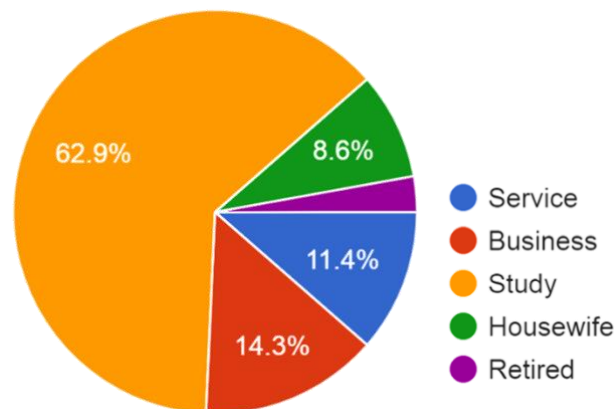


Figure 18 Occupation

4.5 FUNCTIONS OF PLACE

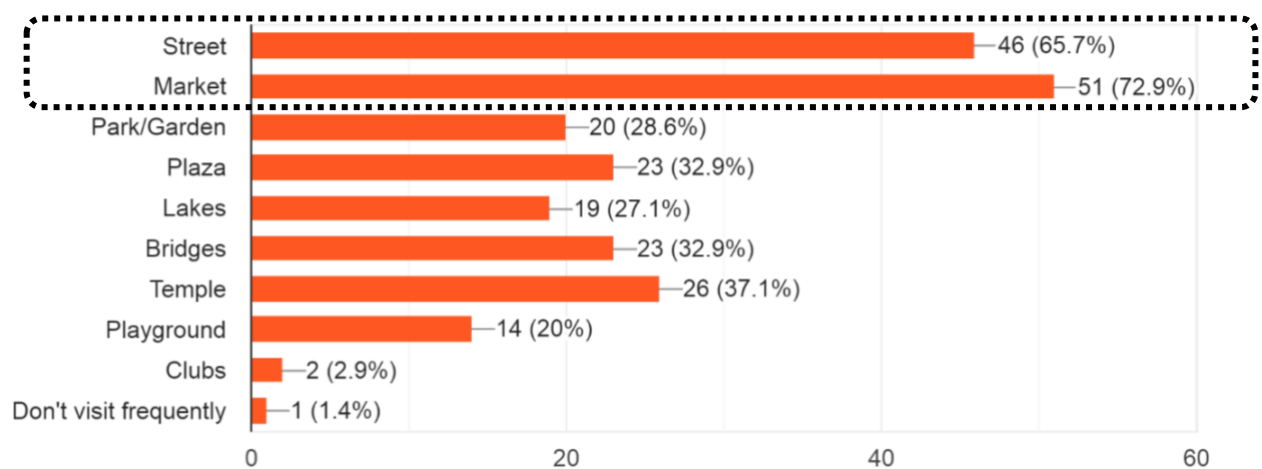


Figure 19 Public spaces visited frequently

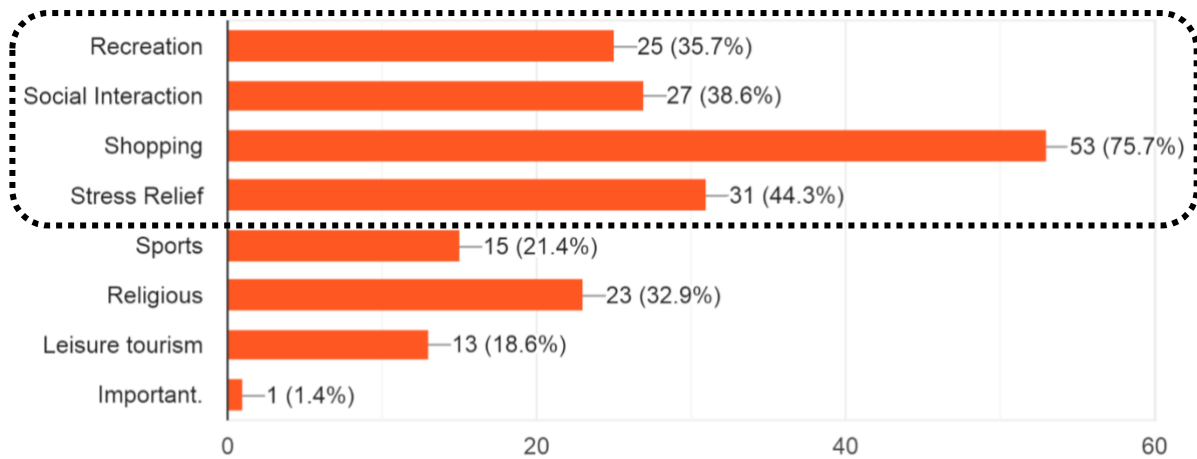
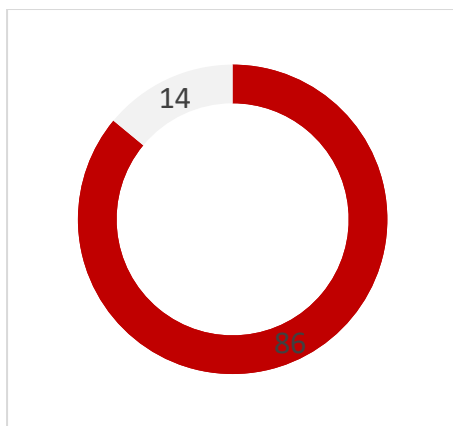
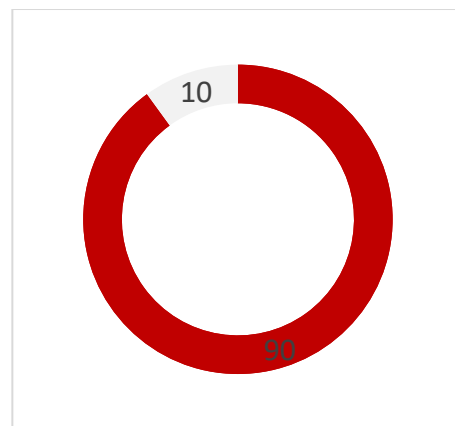


Figure 20 Purpose of Visit

Accessibility

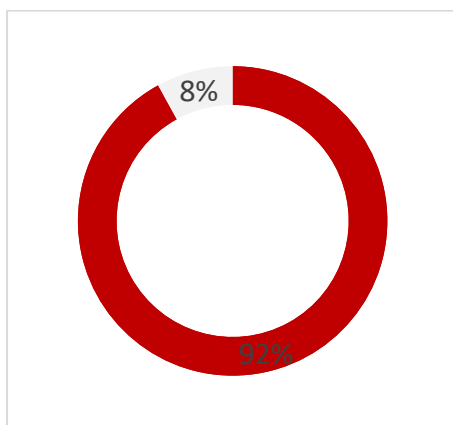


Ease of Movement

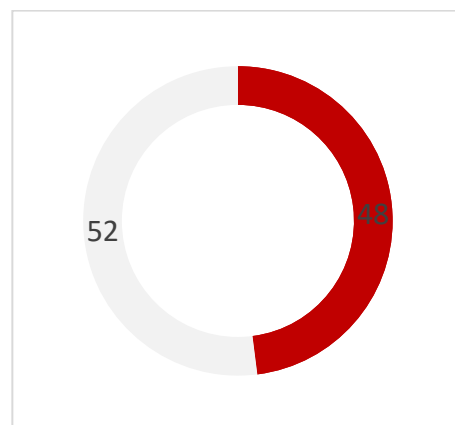


Accessible by walk

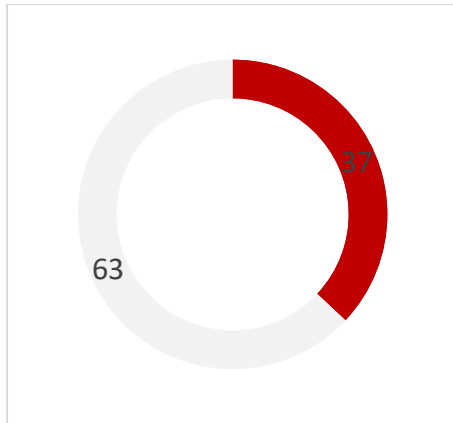
Inclusiveness



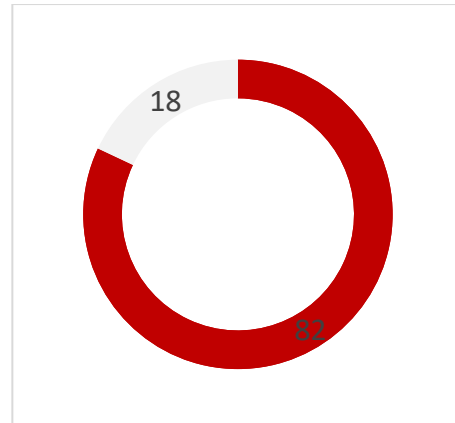
Community



Class

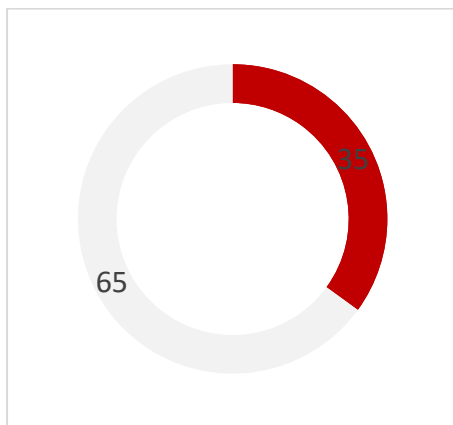


Physical Disability

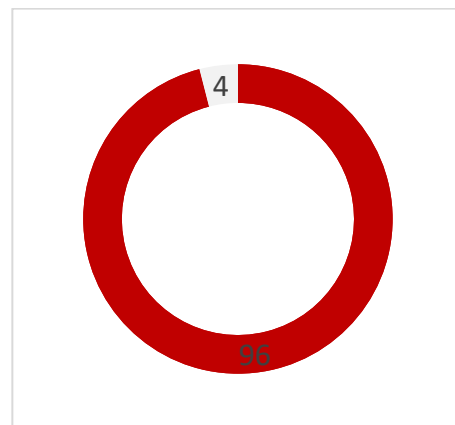


Non-ticketed

Flexibility

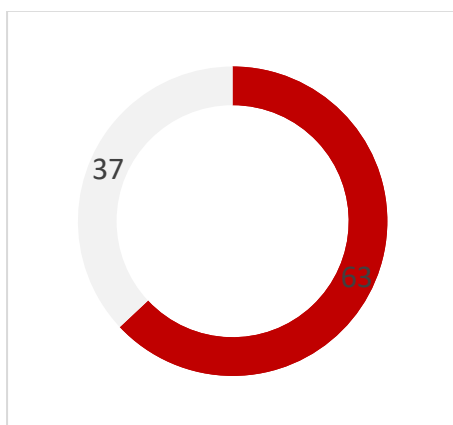


Time Flexibility

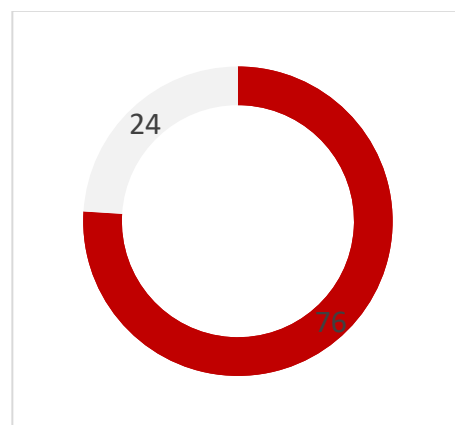


Multifunctionality

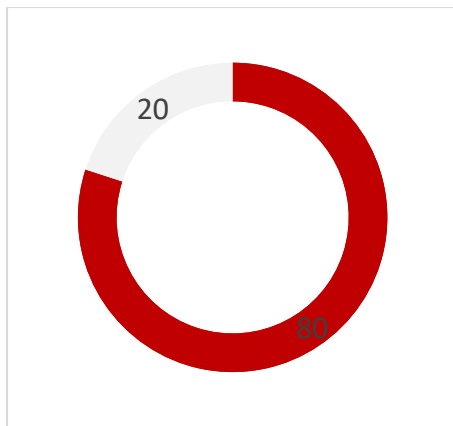
Facilities



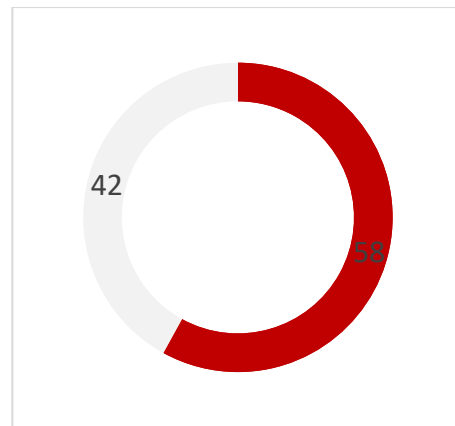
Lights



Sit out space



Public Toilets



Garbage disposal

4.6 TIME AND FREQUENCY

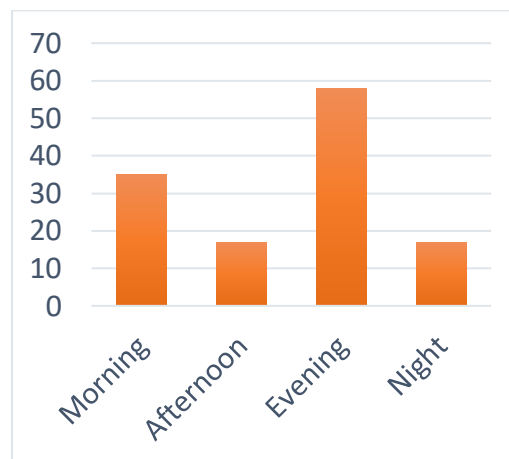


Figure 21 Time of Visit

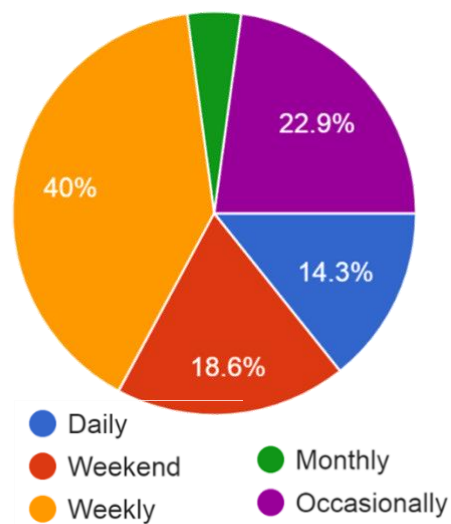


Figure 22 Frequency of Visit

4.7 IMPACT OF PANDEMIC

How often do you prefer to socialize outside?

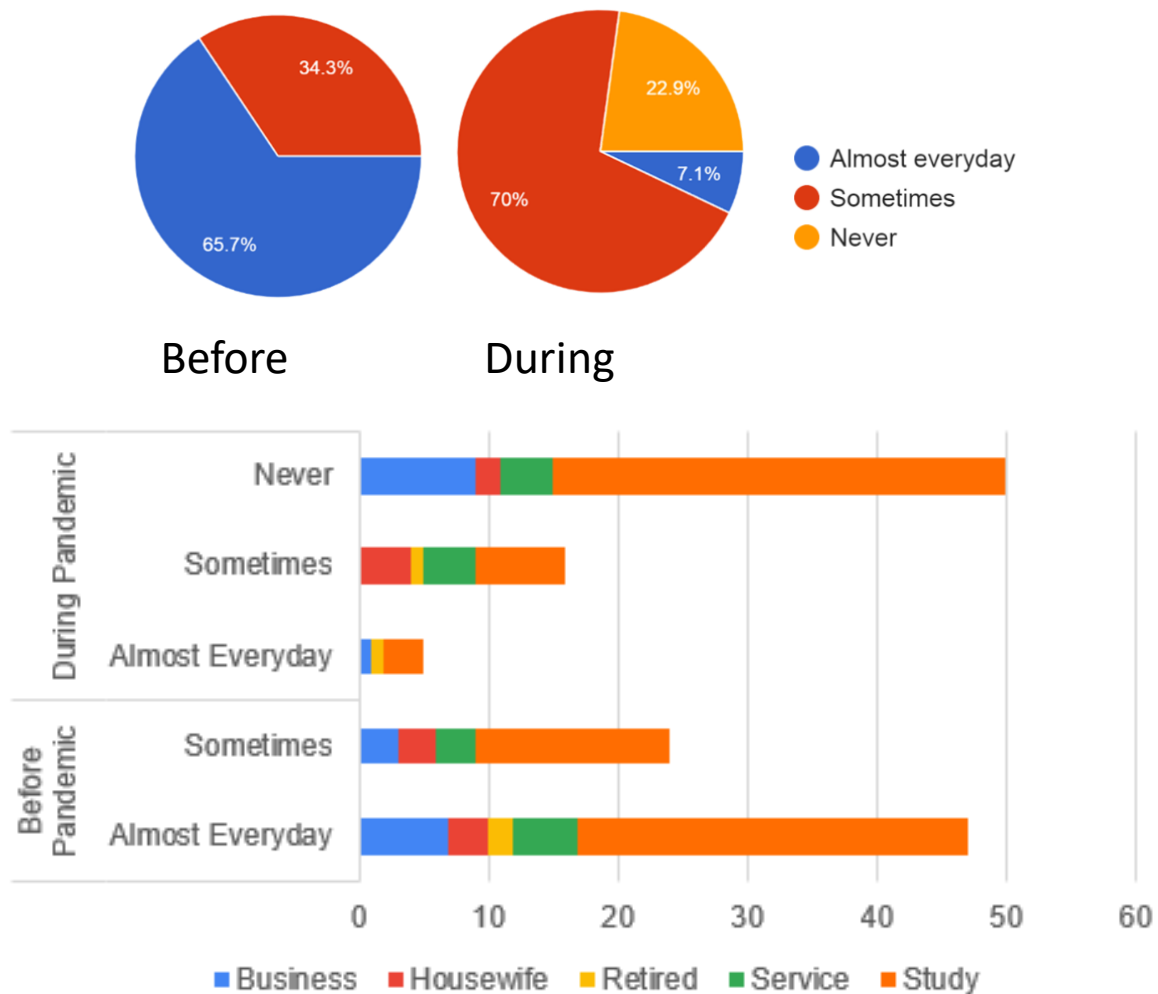


Figure 23 Preference to socialize outside

Effect of mitigation policies on reduction of Social Interaction (Least-Most)

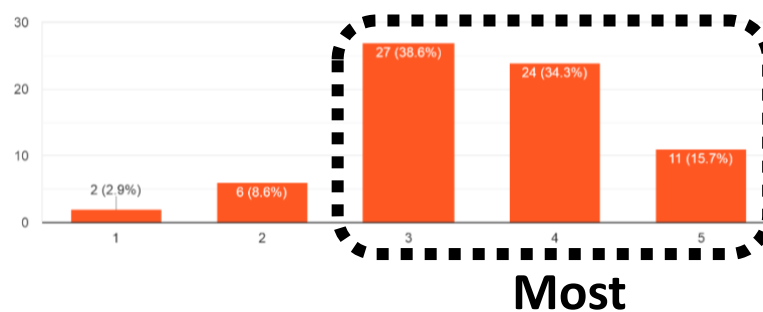


Figure 24 Effect of mitigation policy

Quarantine Policy and Social distancing policy has evidently reduced social interaction at public spaces during pandemic.

Use of Aarogya Setu App at public spaces

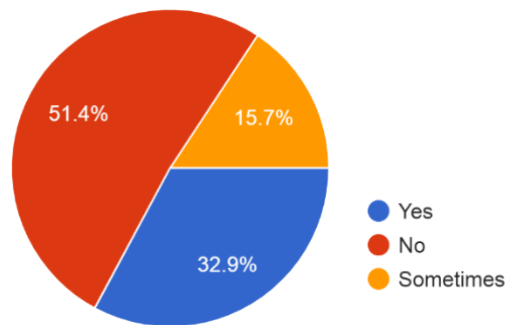


Figure 25 Use of aarogya setu app

Age Group	Occupation	Preferred Public Spaces	Preferred Time	Preferred Location	Post-Pandemic (Formal Public Spaces Closed) Remarks
10-18	Students	Sports Complex, Playgrounds, Neighbourhood Parks and Gardens	<ul style="list-style-type: none"> • Afternoon • Evening 	<ul style="list-style-type: none"> • Society • Community • Neighbourhood 	Home all time still uses Playgrounds more frequently.
18-25	Students	Sports Complex, Playgrounds, Neighbourhood Parks, Gardens, Cafes, Malls, Streets, Food Vendors	<ul style="list-style-type: none"> • Morning • Afternoon • Evening • Night 	<ul style="list-style-type: none"> • Neighbourhood • Near college campus • Streets and Nodes 	Home all time still gathers near streets and food vendor places.
	Working	Streets, Food Vendors, Long Drives, Leisure trips	<ul style="list-style-type: none"> • Evening • Night 	<ul style="list-style-type: none"> • Near home & Office/Workspace 	WFH leaves no time to spend at public spaces.
25-60	Working	Neighbourhood Parks and Gardens, Streets, Food Vendors, Long Drives, Leisure trips	<ul style="list-style-type: none"> • Morning • Night • Weekends 	<ul style="list-style-type: none"> • Near home & Office/Workspace • Within 100kms for Leisure trip 	WFH leaves no time to spend at public spaces still visits markets sometimes for necessity.
	Housewife	Markets, Streets, Parks, Temples	<ul style="list-style-type: none"> • Evening 	<ul style="list-style-type: none"> • Neighbourhood 	No evident change in use of public spaces.
Above 60	Mostly Retired	Streets Corners, Parks and Gardens, Markets, Temples	<ul style="list-style-type: none"> • Morning • Evening 	<ul style="list-style-type: none"> • Neighbourhood 	Mostly indoors due to health risk.

Table 10 Age focus area

4.8 WASTE GENERATION & MANAGEMENT AT PUBLIC SPACES

Waste generated at public spaces is generally solid waste. Waste like plastic, paper, bottles, glasses, food from the eateries is generally seen at public spaces which are not dumped in a systematic manner causing unhygienic surrounding. They are biodegradable and recyclable waste.

June 2017, the Government of India announced a **“National Strategy” to phase out all forms of single-use plastic by 2022**, to eliminate not only plastic bags and bottle but also other items such as plastic cutlery, straws, Styrofoam containers and coffee stirrers all those mainly found at public spaces. However, the bans have not been successfully enforced due to poor state capacity.

According to the **12th Schedule of the 74th Constitution** Amendment Act of 1992, urban local bodies (ULBs) are responsible for keeping cities and towns clean. However, most ULBs lack adequate infrastructure and face various strategic and institutional weaknesses, such as poor institutional capacity, financial constraints, and a lack of political will.

Problem:

- Low motivation, travelling distance and social factor lead to disposal in open spaces, drains and around the road-side bins.
- Use of non-biodegradable, one time use plastic products
- Lack of spread of awareness and attractive solutions by ULBs

Solution: Innovative waste management techniques and incentives

- Put The Plastic For Recycling And Get A Reward – Columbia’s
- People Can Trade Trash For Free Health Care – Indonesia’s
- Consume less: Motto: Refuse.....Reduce....Reuse... Recycle This means consuming fewer resources, reusing whatever we can and finally recycling what cannot be reused. This process greatly reduces the garbage.
- “Spot fine” in case of littering or violation of rules in terms of use by ULBs
- Capacity building of ULBs and cooperation my community

4.9 MAJOR OUTCOMES

- Welcoming hybrid ways of working during COVID-19 pandemic acts as catalyst for a new workstyle and workplace. With this, the post work breaks and meets at nooks and corners changes as well. People have started appreciating what is around their residence. This has increased the micro-movements within the neighbourhoods during pandemic. Thus, public spaces of TP level are used more than ever.
- Formal public spaces like gardens, sport complexes etc are operational under restrictions during pandemic and internet has taken over public spaces for socializing. But this might fail as there is a compelling link between exercise and a strong immune system..
- Trips out are limited to the necessary activities like street side vendors and markets and people have started coming down to informal spaces for refreshment purpose. Thus, an increased use of informal public spaces like streets, maidans, housing cluster chowks etc is observed.
- Informal public spaces are not considered while planning. Thus, with its increased significance in such times, it should be included in planning.

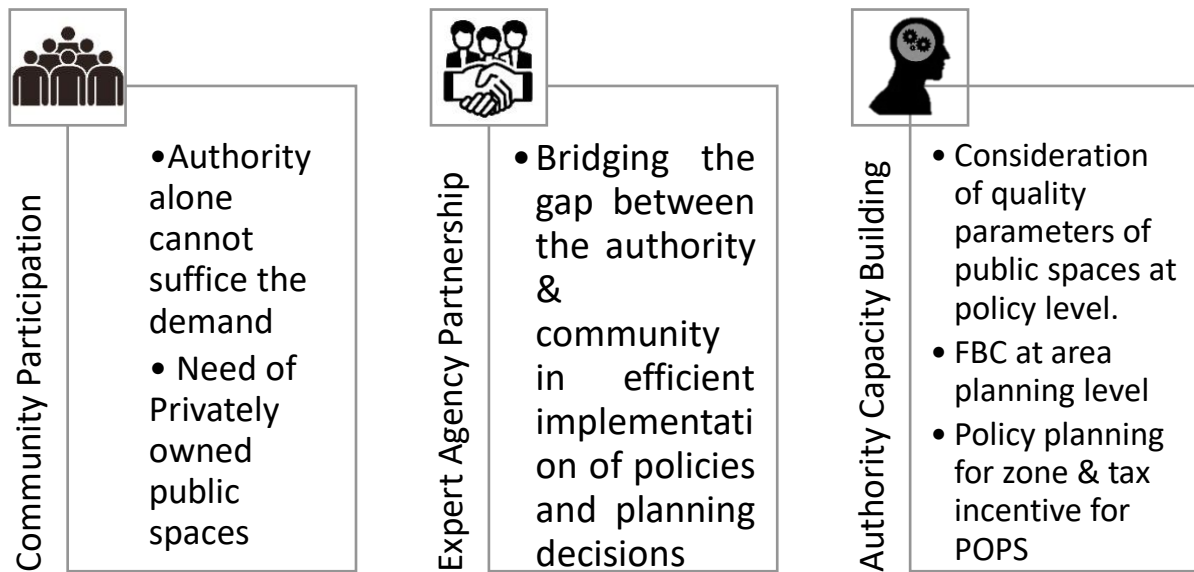


- There is need for balanced mechanism and a co-working environment while planning public spaces. Local Authority along with community

participation and expert agencies should work on making the public spaces efficient.

- Apart from pandemic, public spaces remains workable for all the circumstances if they are planned efficiently and carrying capacity of spaces are taken into account wisely.

CHAPTER 5: RECOMMENDATIONS



Privately Owned Public Spaces (POPS) is a good way to get public space for free as the city does not have to allocate any of its land or its money. They correspond to the pursuit of the efficiency of land use and make optimal use of available space possible.

They are distributed throughout the densely developed areas, they can benefit citizens by providing space for relaxation and social interaction.

It lets people occupy and use them with free, open and democratic access. Land development tools like the Floor Space Index provisions, Accommodation reservation and Transfer of Development rights helps in creating the existing pool of public spaces.

Thus, they have **“great potential to play a significant role as urban oases” and ensures “inclusive” and “optimal” use of public spaces.**

Form based codes (FBC) is a planning and zoning tool that for regulating development using physical form rather than land use as organizing principle for the code. It aims at contributing to better quality of life by fostering predictable built results and a high-quality public realm. Form-based codes address the relationship between the form and mass of buildings in relation to one another as well as to the public realm.

FBC is a bottom-up development approach which aims to achieve economic, social and environmental sustainability while ensuring contextual planning that is functional and in accordance with the development goals of the city. The keystone of FBC is community involvement in not only determining community needs and priorities but also in its development and implementation

Thus, this ensures the utilization of required public spaces contextually.

Both POPS and FBC can be implemented with the help of expert agencies as a medium between community and government authority.

According to 73rd Amendment Act , Powers are given to ULBs through decentralization process in India. This should be efficiently used in order to ensure efficient development of public spaces at local area level (TPS) .

APPENDICES

APPENDIX I: QUESTIONNAIRE SURVEY FORM

Respondent Profile

Name

Age Group

- 10-18
- 19-25
- 26-40
- 41-60
- Above 61

Gender

- Female
- Male
- Other

Occupation

- Service
- Business
- Study
- Housewife
- Retired

People and Public Spaces

What are the public places you visit frequently?

- Street
- Market

- Park/Garden
- Plaza
- Lakes
- Bridges
- Temple
- Playground
- Others

What is the purpose of your visit?

- Recreation
- Social Interaction
- Shopping
- Stress Relief
- Sports
- Religious
- Leisure Tourism
- Others

When do you visit?

- Morning
- Afternoon
- Evening
- Night

How frequently do you visit?

- Daily
- Weekend
- Weekly
- Monthly
- Occasionally

Public spaces post-pandemic

Rate Effect of quarantine policy & social distancing on reduction of social interaction in public spaces. (Least-Most)

- 1
- 2
- 3
- 4
- 5

How often did you prefer to socialize outside before pandemic situation?

- Almost everyday
- Sometimes
- Never

How often did you prefer to socialize outside during pandemic situation?

- Almost everyday
- Sometimes
- Never

Do you use Aarogya Setu App while at public space?

- Yes
- No
- Sometimes

Do you think pandemic will permanently change our relationship with public spaces?

- Yes
- No
- Maybe

APPENDIX II: GROUP DISCUSSION QUESTIONS

Questions were analysed as per the age group & occupation

- What are the preferred public spaces for members of your family and why?
- What time do they prefer to visit public spaces and why?
- Where do you prefer to visit and why?
- What are the changes in pattern due to pandemic?

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