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THE ROLE OF DIGITAL TOOLS IN IMPROVING PARTICIPATION IN URBAN PLANNING PROCESSES IN INDIAN CITIES

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Abstract

As public participation and citizen engagement are becoming buzzwords around the world, the role of ICT enabled innovations are challenging traditional modes of communication between governments and citizens. India has taken centre stage with various urban projects with a core ICT element such as the Smart Cities Mission where a bottom-up citizen engagement process was made a priority for the first time. The digital citizen engagement process under the Smart Cites Mission offers valuable insights into lessons learnt when the government tried to engage citizens with a major digital platform in India. A detailed case study of the city of Pune offers deeper insights into factors that may be relevant to adopting digital technologies to enhance participation in urban planning processes in Indian cities. A reference framework emerges from the studies to identify factors necessary for uptake of digital technologies for citizen participation in India while a range of potential tools are compiled at the end to discuss future research directions. The study uses qualitative research methods namely secondary research, literature reviews, case-studies and semi-structured interviews.

Contents

List of Figures

Introduction

Democracies around the world are being challenged by increasing demands from citizens to take part in decision-making processes, many of which relate to decision relating to urban planning or infrastructure development. Many political systems have responded by adapting to these challenges and becoming more responsive and opening up to the public by incorporating more participatory elements. ICT (Information Communication Technology) enabled innovations are playing a central role in the way people and governments are communicating with each other. Technological opportunity is prompting a transformation of relations between citizens and governments and are striving to go beyond enhanced service delivery. While there is rich scholarship on smart cities in the global North, research on the topic is only emerging in the global South (Datta, 2015; Odendaal, 2011; Shin, 2017) (Datta, 2018). However, the take up of smart cities in the global South has been extremely fast and countries like India, China, Saudi Arabia and Korea are considered the largest consumers of the global smart city market (McKinsey, 2011) (Datta, 2018). Smart cities often aim to transform social, political and economic life of cities through digital technologies. This chapter tries to analyse factors that can help better understand the potential of digital tools in influencing participation in urban planning and which factors play a role in determining participation in cities.

1.1   The potential of E-Participation in Urban Planning

Limits of existing formal participation are mainly two-(i) It is not attractive to many citizens because it is not transparent how their contributions will be handled and to what degree of influence they may exercise and (ii) formal participation in planning processes does not achieve its objectives because it puts citizens against each other and force them to speak in polarizing terms. In order to achieve mutual understanding, time is needed and thus a longer process of exchange of arguments are necessary. Thus, deliberative consultation is a necessary step to well-reflected votes.

There is agreement in the research community that citizens' attitudes and behaviour, such as readiness to engage in public affairs and trust in political institutions cannot be changed by simply introducing new technical tools in existing procedures and cultures. It is not sufficient to assess the usability of electronic

tools with concepts and methods of information systems and human computer interaction research or to assess the outcome by counting the number of users or contributions. Rather, the application of technical tools have to be analysed in the context of the different participatory procedures and the respective institutional contexts.
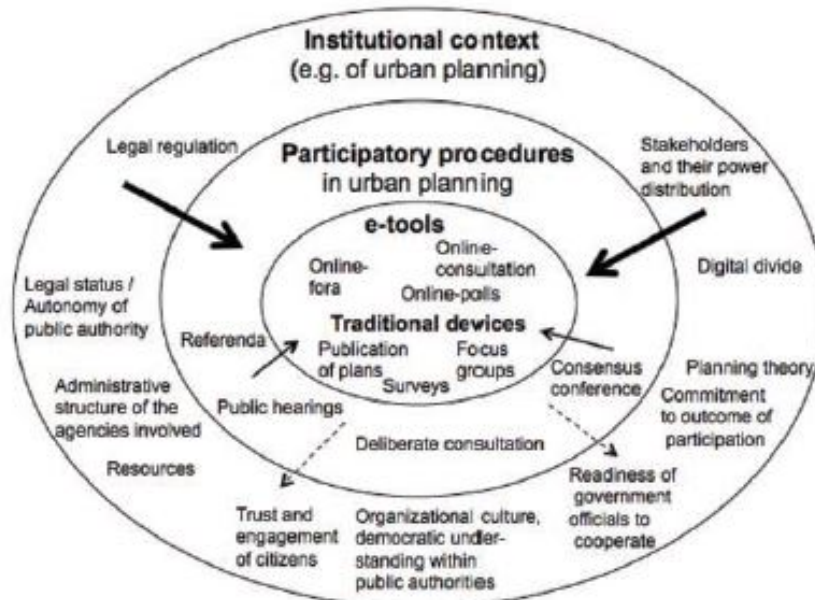
Figure 1.1: E-participation in the context of urban planning (Silva, Carlos Nunes, Herbert Kubicek, 2010)

1.1.1   Different degrees of citizens' participation

Sherry Arnstein defined eight levels of participation. The bottom rungs of the ladder define non-participation such as manipulation and therapy that substitute genuine participation. The real objective of these levels is not to engage people to participate in planning but to enable people in power to 'educate' or 'cure' participants. Levels 3 and 4 progress to levels of 'tokenism' with allowing for citizens to hear and have a voice. Placation is a higher level of tokenism because of the role of citizens to advice however with power-holders retaining the right to decide. Partnership enables citizens to negotiate and engage in trade-offs with power-holders while the highest levels include delegated power and citizen control where citizens obtain a majority of decision-making seats or full managerial power (Arnstein, 1969).
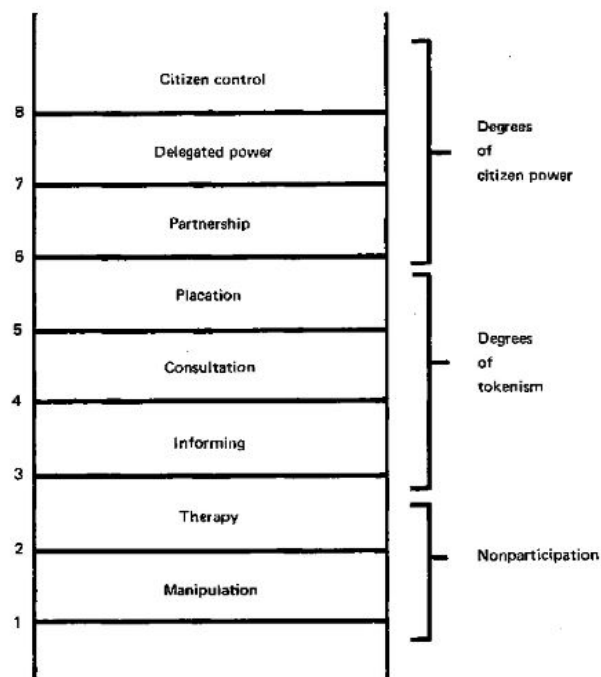
Figure 1.2: The eight rungs on a Ladder of Citizen Participation (Arnstein, 1969)

The Organisation for Economic Cooperation and Development (OECD) uses a broad classification with three main forms of citizen participation:

- Information

- Communication

- Cooperation

Two pre-conditions for successful participation of citizens in urban planning can be derived from:

- They must offer real influence of the public

- They must provide space for deliberation to get to common preferences

Four additional requirements for successful participation that can be derived are:

- Accessibility

- Transparency of the decision-making and consultation process

- Responsiveness

- Accountability of public institutions

For each form of citizen involvement, several electronic devices or tools can be employed. OECD classifies the three forms of eParticipation from the previous broad discussion as follows:

- Information (eEnabling)- a one-way relation in which government produces and delivers information for use by citizens

- Consultation (eEngaging)- a two-way relationship in which citizens provide feedback to the government- this is based on the prior definition by the government of the issue on which citizens' views are being sought

- Active participation (eEmpowerment)- A relation based on partnership with the government, in which citizens actively engage in the policy-making process.

The OECD framework will be used further in the study as it offers a broad classification allowing complex participation procedures to be measured against it relatively easily. Also relevant is the fact that other 'ladders' of participating may be re-interpreted along the OECD framework defining broadly the three levels of participation- Communication, Consultation and Cooperation.

Introduction of information and communication technologies allow urban planning departments and planners to implement conventional practices and carry out new actions through new tools, such as geographic information systems, virtual reality technologies and others with the aim of improving conventional decision-making processes.

> *"As urban planning to a large extent consists of information with some spatial relation, it is important to link and integrate the participation tools with geographical information systems (GIS) providing the reference points for the consultation.*
>
> *-(Silva, Carlos Nunes, Herbert Kubicek, 2010)"*

Cooperation

- Neighbourhood planning office
- Development trust
- Round tables
- Workshops
- Mediation procedures
- Consensus conference
- Advocacy planning
- Neighbourhood committees
- Focus groups

Consultation

- Award scheme
- Consultation
- Citizen request sessions
- Face to face/door to door
- Invitation of NGOs to council meetings
- Experimentation
- Town-hall meetings
- Ideas competition
- Appeal services
- Citizens' expertise
- Simulation
- Complaint forms
- Action planning event
- Community planning forum
- Surveys and polls
- Complaint hotlines

Information

- Written official plans with maps
- Leaflet
- Visualisation
- Games
- Booklet
- Newsletter
- Oral presentation
- Site visit
- Street stall
- Road-show
- Hotline

Devices used for citizen participation
Source: Adapted from Silva, Carlos Nunes, Herbert Kubicek, 2010 and drawn by author

1.1.2   E-participation tools and their fit within a multi-dimensional context

The general requirement of putting eParticipation tools in their procedural and institutional context can be operationalised by referring to organisational, cultural, legal, economic and technical aspects.

Organisational fit-   Organisational fit refers to managing the communication process of developing and applying technical tools. In many cases there are at least three parties involved on the supply side of eParticipation tools- political decision-makers, offices/department responsible for the issue (zonal planning, traffic, etc.) and the ICT department. Often there is no clear agreement on the distribution of task and objectives-a political decision is implemented however the rules regarding moderation and contributory rules are not clear. Thus, any large eParticipation process has to be managed well. On the side of the citizens or public, a difference between individuals and communities need to be considered.

Cultural fit-   In the context of urban projects, e-participation should correspond to the professional norms of urban planners, norms of elected councillors and officers regarding local politics and democracy as well as attitudes of citizens towards politicians and their ideologies of political or civic society organisations. In some studies it was found that a restricted understanding of local democracy is the main barrier for limited offers of eParticipation. To many politicians, the role of local government is not democracy but service delivery (((Silva, Carlos Nunes, Herbert Kubicek, 2010)). On the flip-side, many urban planners consider their profession as developing plans for the public, but not with them and as critique of their professional expertise. They often see citizen participation as a threat to the quality of plans. Only when a culture of local democracy is developed and citizens regain their trust in their electorate will they re-engage.

Legal fit-   There are several legal requirements for citizen participation in different areas of urban planning. The tools have to conform to the respective legal requirements. In e-government, authentication of consulted citizens may be required by the law.

Economic fit-   While e-government activities are expected to provide cost-savings, eParticipation projects will cause additional expenditure for a long time because they will be offered as an additional communication channel as long as there is a digital divide. In order to achieve a degree of equality, public access points and support have to be provided, these are very expensive. Until a culture develops that demands eParticipation, no costs for traditional methods can be saved.

Technical fit-   Technical fit refers to the fact that the eParticipation offer has to be integrated into existing ICT infrastructure and special software programs and tools used in the offices and departments involved. Empirical evidence from a few examples of electronically supported formal consultation in

urban planning suggests that exchanging documents between the workflows of consulting party and consulted agencies is a major barrier. Other issues included downloading maps effectively (only if citizens have broadband access) and ease of accessing documents from outside depends on the quality of internal document management systems.
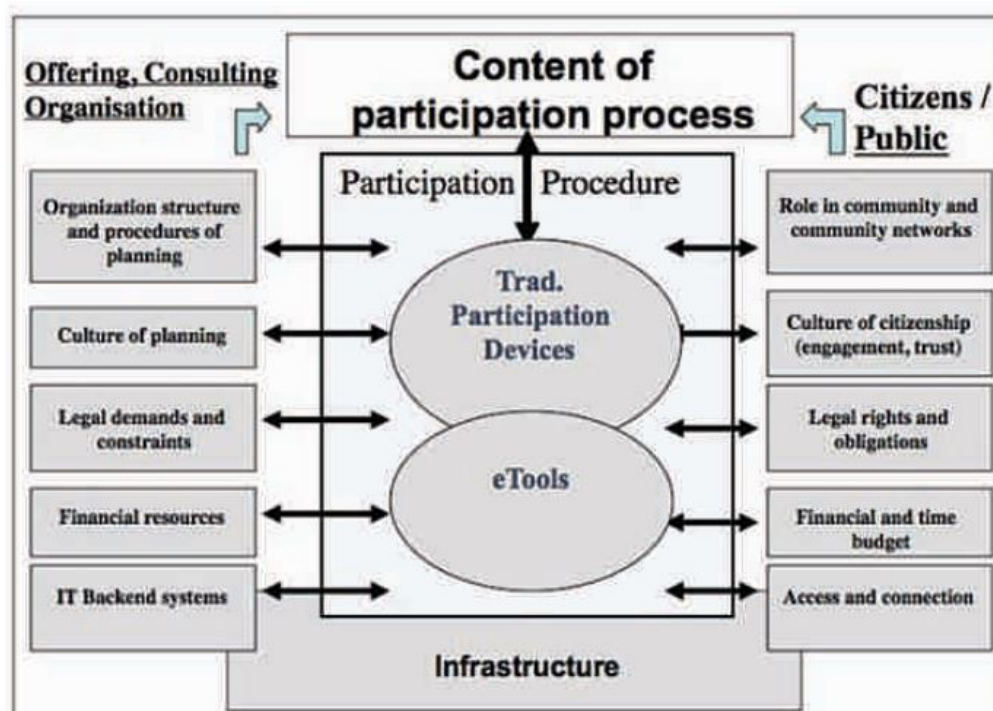
Figure 1.3: Five-Dimensional double sided fit of eParticipation tools (Silva, Carlos Nunes, Herbert Kubicek, 2010)

Other factors-

Building trust and confidence- Trust is a pre-requisite for citizens' engagement in participation processes. If citizens do not trust political bodies and politicians, they will not follow invites for participation in a participation process launched by this body.

Greater motivation can be expected when the decision-making authorities commit themselves to adopt the outcome of a process.

Balance between professional expertise and political fairness-To better appreciate what citizens can contribute, practical experience with cooperative procedures is very important. Once a co-operative process has been started, prejudices disappear. When co-operation is extended to co-production, the focus shifts on the way in which citizens can contribute to solve the problem at stake. A carefully

designed trail with citizens' participation can be the first step in a larger change process of participatory urban planning.

Considering different levels of engagement-   Broad representation in multiple concurrent participatory processes should not be expected as no citizen will have time to engage in several processes at the same time. Different technical tools can be provided by for at least three levels of engagement by Web 2.0 technologies-

- An inner circle of heavily engaged citizens who write comments in electronic forums, attend meetings, etc. This group produces content.

- Surrounding the inner circle is an intermediary circle of people interested in the subject. They do not want to produce content but are ready to review and comment in an anonymous way, for this group, ratings are an appropriate way to be involved.

- Both circles are watched by a group of people reading the content generated by their fellow-citizens, they pay attention to how the offering agency responds. They often get interested via a newspaper or local television report and only then look at the associated web-page. Some studies estimate that 3 percent lie in the inner circle, 10 percent in the intermediary and 40 percent in the outer circle. In this case, trust could be built effectively by employing Web 2.0 based ratings and extending an active communication strategy to traditional mass media. However, this value will change from context to context.

  Legally binding procedures and Multi-channel applications   Legally mandatory consultation procedures must also have an online offer. As eParticipation makes it possible for people who cannot go to an office to look at a housing plan, a multi-channel approach is mandatory-socially and economically disadvantaged communities need to be offered additional support. A lack of technical security also leads to the inability to have a valid authentication procedure.

1.2   Social media and mobile technologies for participation

Public participation is considered an important part of a democracy and urban planners and researchers have studied various ways to improve collaboration, communication and interaction between experts and the public.A whole range of tools have emerged since- referendum, public hearings, public surveys, town hall meetings or focus groups; key characteristics of such methods require citizens to be physically present at a specified time and place. Unsurprisingly, such methods bring forth several problems such as limitation of time and costs, lack of motivation in citizens, difficulties of including

socio-economically weaker citizens among other issues.

The end of the 1990's saw the rise of Geographic Information Systems (GIS). GIS opened the door to making spatial information available to all stakeholders and hence propagated the idea that maps can convey ideas persuasively. The emergence of public participation geographic information systems (PPGIS) came about with the intent to increase informed citizen participation in decision-making. More recently, innovative geo-visualization such as Google Maps or Open Street Map, made possible by Web 2.0 technologies have created important opportunities for almost any citizens with an internet connection to create and publicize their own maps and geographic information. For example, smart-phones are making it possible to 'geo-tag' physical objects in real life or online content through GPS technologies thus providing location-aware information. Goodchild (2007) (Kleinhans et al., 2015) coined the term 'volunteered geographic information' which refers to digital spatial data created by individuals who use geo-visualisation interfaces to circulate their data.

The use of social media and mobile communication technologies such as Facebook, Youtube, Twitter, Google+, Instagram among other social media platforms have hastened demands for new forms of participatory planning and self-organising governance by citizens. Compared to other forms of partici-pation, portability is a major advantage removing barriers to access and allowing participation "on the go". Mobile participation or *"the use of mobile devices to broaden participation of citizens and other stakeholders by enabling them to connect with each other, generate and share information, comment and vote"* (Höffken and Streich, 2013: 206 (Silva, Carlos Nunes, Herbert Kubicek, 2010))

Mobile participation is expected to attract a much wider interest group than conventional partici-pation tools, especially young adults and youth who are often difficult to engage in public affairs or participation schemes. An example could be Stereopublic, a crowd-sourced app that finds the best places for peace and quiet. People walking around the city geo-tag their favourite quiet spots, adding pictures, recording audio files and file the spot under different mood categories depending on how the person feels (Stinson, 2013-11-22). On the other hand, older people may not feel comfortable with using new technologies.
A promising technology for citizen engagement involves digital visioning techniques using gaming strategies. PPGS acting as a predecessor. Such tools open up methods for bottom-up experiments with new technologies. Gaming strategies, computer aided design, virtual environments and digital games are other methods that are potential ways to engage users in a sensory and imaginative way. In particular, the capacity to access the expertise of quieter voices is acknowledged as a key advantage in online crowdsourcing approaches in participatory planning. ICT, social media and mobile technologies open up new possibilities for policy-makers but also empower and foster self-organisation of citizens (Kleinhans et al., 2015).

1.3   Preconditions for citizen participation in decision making

While it is difficult to consider that citizen engagement can be anything but positive, there are certain conditions under which community participation is costly and ineffective and some conditions under which it may thrive and produce the greatest gains in effective citizen governance.

1.3.1   The advantages of citizen participation

The debate swirling around citizen participation is no longer representative of government versus citizen participation, but what type of citizen participation process is best. Arguments in favour of enhancing citizen participation frequently focus on benefits of the process itself. The participation process is seen as a transformative tool for social change, and additionally is intended to produce better decisions. Thus, there are two tiers of benefits to consider (process and outcomes) and two beneficiaries (governments and citizens) in evaluating effectiveness of the citizen-participation process.

Table 1 Advantages of Citizen Participation in Government Decision Making		
	Advantages to citizen participants	Advantages to government
Decision process	Education (learn from and inform government representatives) Persuade and enlighten government Gain skills for activist citizenship	Education (learn from and inform citizens) Persuade citizens; build trust and allay anxiety or hostility Build strategic alliances Gain legitimacy of decisions
Outcomes	Break gridlock; achieve outcomes Gain some control over policy process Better policy and implementation decisions	Break gridlock; achieve outcomes Avoid litigation costs Better policy and implementation decisions

Figure 1.4: Advantages of citizen participation (Irvin and Stansbury, 2004)

- **Education**- An in-depth citizen-participation process can help to transcend barriers to effective policy. Informed and involved citizens become citizen-experts and understand technically difficult situations and holistic, community-wide solutions. Governments can also, through regular contact with citizens, learn which policies are likely to be unpopular and how to avoid such policy failures.

- **Political Suasion**- A more powerful motivating factor to incorporate citizen participation may be the prospect of a more cooperative public. Often, an impetus for public involvement may

come from a need to obtain acceptance as a prerequisite to successful implementation.

- **Empowerment**- Political suasion working in an opposite direction is a possibility with community activists having regular contact with key government decision makers and being able to convey viewpoints in a non-confrontational atmosphere.

- **Breaking Gridlock**- Participatory initiatives can vastly improve social outcomes as inputs from citizens allow factions to compromise and find solutions to problems that seemed unsolvable before. Opening the process could enable decision-making that could not have been made unilaterally.

- **Avoiding Litigation costs**- Public participation is often expected to reduce the probability of litigation, however, collaborative efforts in regulatory negotiations did not result in less litigation.

1.3.2   Disadvantages of citizen participation

Certain problems in citizen-participation processes may be overcome by effective re-structuring (if resources allow), other problems may be associated with the context suggesting that some communities are poor candidates for citizen-participation initiatives and better outcomes may be achieved with other decision-making methods.

Table 2 Disadvantages of Citizen Participation in Government Decision Making		
	Disdvantages to citizen participants	Disdvantages to government
Decision process	Time consuming (even dull) Pointless if decision is ignored	Time consuming Costly May backfire, creating more hostility toward government
Outcomes	Worse policy decision if heavily influenced by opposing interest groups	Loss of decision-making control Possibility of bad decision that is politically impossible to ignore Less budget for implementation of actual projects

Figure 1.5: Disadvantages of citizen participation (Irvin and Stansbury, 2004)

- **Cost**- Citizen participation often requires time-heavy commitments, slow decision-making in governmental organisations may be exacerbated in the process of educating citizens on the intricacies of the problem and may pull resources away from the agency's mission and reduce on-ground results.

- **The difficulty of diffusing citizen goodwill**- Decision-making works best when groups are small and homogeneous. In larger communities, however, 10 or 20 representatives may not be able to turn around popular opinion as they would probably form a small part of their community.

- **Complacency**- Many assume that if the right vehicle for empowerment and engagement were offered, citizens would actively support democratic processes. However, working out policy-decisions and implementation details are usually avoided by citizens. In cases where the public is likely to accept the mandate, a participatory process is not necessary. Studies show that while citizens intend to participate, very few followed up by phoning for more information to join a participatory process.

- **Representation**- Sometimes citizen participation processes allow special-interest views to dominate decision-making due to some participants such as representatives from business and government agencies that are paid for their participation. It is also often an issue that citizen-participation committees are usually overpopulated with members of the top socio-economic groups. Certain citizens also find it difficult to engage on account of priorities to provide for their families.

- **Lack of authority**- If citizens are misled into thinking their decisions will be implemented and then are ignored then resent may develop over time. Such predetermined decision-making may have a demoralising effect and may eventually increase public dissatisfaction.

- **Wrong decisions**- The mandate of a citizen group can be a powerful tool, however, it may also ratify selfish decisions that favour the most powerful and persuasive members of a collaborative group instead of the wider public.

1.3.3   Ideal conditions for citizen participation

The following conditions describe ideal conditions for the implementation of enhanced citizen participation in agency decision-making.

Low-cost Indicators

- Citizens readily volunteer for projects beneficial to the community

- Key stakeholders can easily reach meetings and are not too geographically dispersed

- Citizens have enough income to attend meetings without affecting their ability to provide for families

- Presence of a homogeneous community so that the group requires fewer representatives of interest groups as smaller groups mean speed decision-making

- The topic is not too complex that representatives need to master complex technical information quickly

High-benefit Indicators

- The issue in question is grid-locked and a citizen mandate is required to break it

- High hostility towards government entities and the government seeks validation from the community members to successfully implement policies

- Community representatives with strong influence agree to serve as representatives

- The group facilitator has credibility with all representatives

- The issue is of high interest to stakeholders and may be considered 'crisis stage' in the event of no change in actions

1.3.4 Non-ideal conditions for citizen participation

Citizen participation may be ineffective and wasteful in some cases when compared to traditional, top-down decision-making under certain conditions. In the following conditions, it may be better to use revenues for a streamlined decision-making process while distributing the rest to the implementation process.

High-cost Indicators

- An obliging public is reluctant to get involved and the issue is considered the job of government employees

- The region is geographically large and presents obstacles like heavy traffic making face-to-face meetings difficult

- There are many socio-economic groups and factions (a small organised dissenting group within a larger one)requiring a large participatory group

- Low-income residents are key stakeholders but cannot participate due to work and family priorities

- Complex technical knowledge is necessary before participants can make decisions

- The issue is not recognised as a problem by the public and there aren't any competing policy alternatives familiar to the public

Low-benefit Indicators

- The public is not generally hostile towards governments and their entities

- The government has had prior success in implementing policy without citizen participation. This means that the voting process is sufficient to guide policy-making behaviour.

- The population is large, thus making it difficult for involved stakeholders to influence a majority of the population

- There is a greater possibility of the decisions of the group to be ignored, no matter how much effort was put into the formation of the group. The group does not have the authority to make policy decisions.

- The decisions of the group and the government are likely to be the same

1.4   Challenges in using digital tools in citizen participation

Currently existing measures to inform public and collect potential disagreement are based on traditional media and citizens are required to look up plans and project descriptions in municipal offices where they are displayed. A public debate on urban planning has become increasingly confusing in terms of communication channels, principles and opinions. A promising approach to deal with this issue is to active involve inhabitants in public processes.

What does a process of urban planning look like and how does it take place? How can we enhance this process by employing mechanisms of public participation? Urban design and development processes generally employ stages and phases as appropriate instruments to ensure successful design outcomes.

| Pre-design analysis | Briefing | Professional design | Execution |

Figure 1.6: An urban design process scheme (Münster et al., 2017)

Professional pre-design methods often use tools like programming to collect and organise relevant data. Programming defines the needs of the user and includes a project's functional needs. Generally, it incorporates the definition of users and the purpose of users, the functions and programs and other special factors. Tools for pre-design may also include through structured formats of multiple stakeholder briefings and workshops. However, it is argued that this simple linear model is not the right way to solve real problems. The key idea is to involve end-users as early as possible in the overall process, and maintain direct participation as far as possible.

Participatory planning activities can be delivered both through physical and virtual communication channels. Here, one-way and two-way communication channels are both of paramount importance, because one-way communication channels are required to reach the target audience and inform them, while the two-way communication channels allow for actual participatory activities.

Research shows that most cities have only a small number of methods of participation that are not too complex to undertake. Common methods include city walks and handout of information material. Elaborate methods such as crowdsourcing platforms are growing. This indicates the fact that municipalities need assistance with know-how and concrete instructions to assist the use of more customized tools.

Examples of Communication Channels
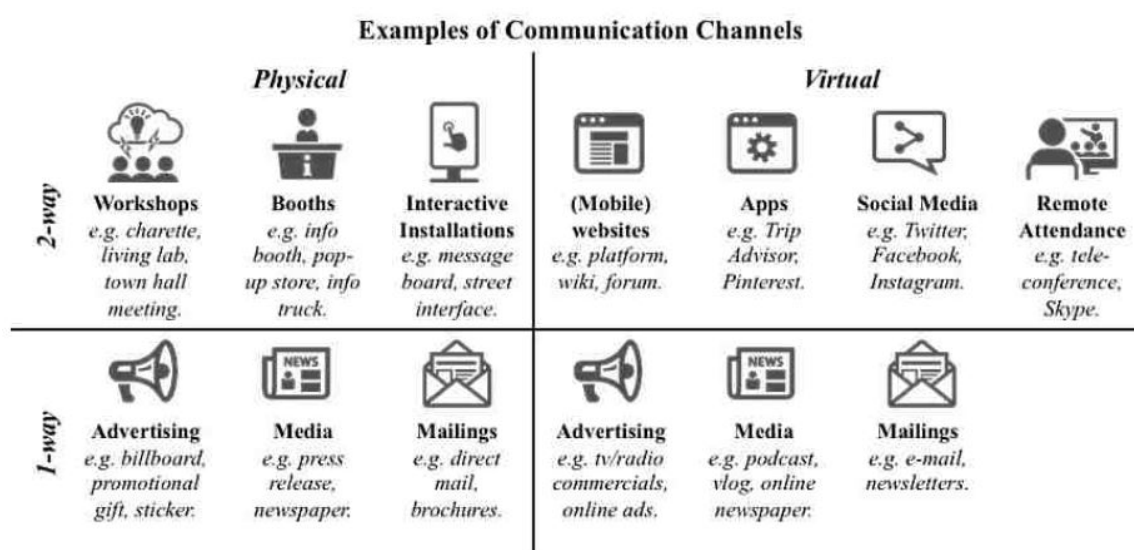
Figure 1.7: Overview of communication channels: physical, virtual, 1-way and 2-way (Münster et al., 2017)

Fewer formats are capable of managing large participant numbers. Several city authorities have published online participation platforms. Online communities and discussion forums provide excellent participatory instruments to integrate expert knowledge and citizen commitment within decision making. In social networks and internet platforms, citizens can be easily involved in important decision making processes. Further opportunities for urban planning based on community engagement come from crowdsourcing, co-creative digital media and neogeography tools.

1.4.1 Implications of digital participation technologies in urban planning

Social media-based contributions to open design spaces appear to be a promising avenue also for urban planning. Digital participation technologies have the potential to reshape professional practice in urban planning and development. It is necessary to enable constructive participation in early pre-design phases. This way, changes are still possible on a feasible basis (Münster et al., 2017).

1. **Crowdsourcing knowledge**- Digital participation tools enable utilisation of a wider knowledge base in comparison to conventional design practices. It is also possible to tap into the creativity and experiences of non-professionals, especially local citizen experts.

2. **Design evidence**- Design sentiment analysis is an example of how new evidence can be provided for designers and planners already in the design process. Projects can be developed in acknowledgement of public response and to test the acceptance and attitude of the public in early project phases.

3. **Interaction**- Digital participation technologies provide for an interactive and communication-oriented planning process by allowing direct exchange between all stakeholders. This exchange can become a key activity between planners and users.

4. **Agile design**- An iterative and agile work-process may emerge, in contrast to previously sequential and linear workflows that have shaped urban planning and design in the past.

1.4.2   Challenges

The key challenges identified are (Münster et al., 2017)-

- Few users- Publicly initiated participatory activities often lack a sufficient number of users. Lacking information on the process, barriers in culture, understanding or accessibility could be issues that need to be considered.

- Wrong users- Self-selection biases may arise, as they often occur in any situation in which individuals select themselves in a group. Thus, participants choosing to take part in the urban planning process rarely represent a majority of inhabitants.

- Communication issues- Prior thoughts, beliefs and feelings may influence participants. Also, framing effects such as presentation formats and techniques or media channels and the level of knowledge of the presented problem and objectives to be achieved may influence participants. Communication of complex design issues to the public in early project life cycle is hard to convey, keeping in mind that concepts have not been shaped by then and are hard to convey to non-specialists.

- Process deficits- Disagreement could increase as a result of the process in comparison to if it had never taken place. this may happen because of lack of transparency, inclusion and fairness and may lead to poor decisions.

Challenges

Few users	Change of needs
Opinion leaders Random sampling Sampling by lottery	Gamification to enhance motivation **Informing**- Visual techniques- task imple- mentation and high scores **Consultation**-Mobile data collection tools- crowdsourcing data **Collaboration**-Gamified mobile apps contributing to planning process
Communication issues	Process deficits and managing feedback
Online + Offline Technical information Visual descriptions Process design ⊞	Natural language processing Analysing textual feedback Sentiment analysis

Figure 1.8: Key challenges and promising approaches (Adapted from Münster et al., 2017 and drawn by author)

Considering these challenges, the following questions and recommendations (Münster et al., 2017) need to be considered:

1. For successful public participation, it is key to provide an accurate representation of all possible opinions in the community- a wide variety of people from different ages, cultures and social backgrounds. Digital readiness, accessibility and communication channels have to be considered and analysed.

   "Because citizen participants are not paid for their time, committees may be dominated by strongly partisan participants whose livelihood or values are strongly affected by the decisions being made, or by those who live comfortably enough to allow them to participate regularly (Irvin and Stansbury, 2004)"

   Some propose citizen juries as alternative models of participation to voluntary participation programs, where citizens are randomly selected from the population. Some also argue that even though citizen juries were more representative, voluntary citizen-participation panels were better than citizen juries at educating participants and arriving at more effective decisions.

   Recommendation:
   Non-representative participant selections is one of the biggest theoretical and practical challenges in participatory urban planning. Current ways to organise public participation are by inviting participants representing stakeholder organisations, inviting all members by mail, public billboards,

radio and televisions and using online surveys to reach the complete relevant public.Three modern ways to overcome 'selection bias' is-

- Finding participants in relevant stakeholder organisations though opinion leaders

- Sampling by representation via random lottery

- Sampling via indirect methods

2. With the increase in complexity of every phase of the process, the impact of activities on the outcome decreases. As urban planning projects easily take 15 years o more from problem identification to realisation, citizen's needs and desires often shift.

   Recommendation:
   Gamification or "the use of game design elements in non-game contexts" offers mechanisms to enhance user motivation to participate and contribute to planning processes. Three ways of citizen participation in urban planning can be distinguished.

   - Informing the public: Visualisation techniques such an augmented reality offer a variety of innovative solutions to effectively support informational purposes, included are also mobile devices to display planning in-situ.This approach can be gamified by implementing tasks and high-scores.

   - Consulting the public: Formats focus on citizens as local experts and strive to collect neighbourhood knowledge by using mobile data collection tools. Stereopublic is an example of such a tool that captures noise levels and displays them on a map. Maplocal is an application that allowed crowdsourcing and mobilising communities to gather information about their neighbourhood.

   - Collaboration with the public: Gamified mobile apps such as Community Circles and Community PlanIt are designed for citizens to not only contribute to the planning process but also learning about the process.

     Gamification strategies show potential not only to arouse curiosity but also improve long-term motivation to participate. Commenting and rating project proposals, sharing own ideas or playing goal-oriented project missions can be rewarded with points or badges. Formats of discovery motivate people to explore their district to find urban issues of public interest.

3. Communication of the process/project to non-expert citizens who do not have experience in understanding professional language, reading plans and technical drawings and lack of awareness

of technical constraints is important.

Recommendation:

Technical data like legal framework, dimensions of construction should be available to the crowd.The more citizens are allowed to participate, the more there will be a bottom-up process like crowdsourcing. The problem should be announced clearly with all necessary data available. with an interesting agenda, the goals to be reached and why the public is needed. With the help of icons, pictures, labels and further descriptions, the different roles can be made visible for every end user. The participation process may consist of several rounds with different tasks and issues. It should answer: **"What to do?"**, **"Until when to do?"** and **"How to do?"** Augmented reality is best used in in-situ to make an expanded reality tangible. A proposal is more accepted when people are involved in the planning process instead of reading out it.

4. Facilitating participation with large numbers of people is a common challenge. Digital platforms have the ability to reach 10,000+ people.

   Recommendation:

   Capturing concerns, agreements and ideas and to react appropriately play a central role in involving inhabitants in urban design and planning processes. A huge amount of feedback is not possible to be analysed in a qualitative way. Citizen feedback occurs through multiple platforms such as newspapers, social media and other platforms. To main challenges of feedback processing are-

5. Analysing and monitoring huge amounts if emotional feedback data based on different communication channels as source of information, and,

6. A specific output format offering useful knowledge to improve planning for experts like architects or authorities

   Automation of analysing textual feedback data is done by sentiment analysis or opinion mining. It may be defined as a computational study of people's opinions, attitudes and emotions towards an entity where the entity can represent individuals, events or topics. Different kinds of sentiment analyses can be done with different methods such as lexicon-based approaches, machine learning among others. One shortcoming of sentiment analysis may be that no further insights are provided into aspects that cause the sentiments, this knowledge can be helpful for urban planners and a authorities to adjust their planning according to reasons leading to a specific sentiment.

Thus, the use of digital tools allows opportunities to easily involve large numbers of participants and overcome restrictions of joining the same locality.

1.5   Why India?

India is home to the world's second largest internet user base that consists of 630 million subscribers - this is greater than the population of the United States of America, the United Kingdom, Russia and South Africa put together (British Broadcasting Corporation, 2019-10-17). As one of the world's fastest growing economies and a young nation India is running at an unprecedented pace and scale of digital adoption. The rapid digital adoption is however driving a 'mobile-first' ecosystem where mobile is at it's heart. Coupled with India's track record in jugaad (or frugal innovation), digital adoption offers the potential to create massive disruption in consumption (World Economic Forum, n.d.). Indian cities are now taking centre stage and are growing faster than those of any other country in the coming years (Dalberg, n.d.). By 2030, India is set to see a 37 percent increase in urban population with over seven Indian cities having a population of 10 billion. The Government of India is responding by launching several urban schemes and mission with technology at the core. The government's report on Smart Cities asserts-

> *"to accommodate this massive urbanisation, India needs to find smarter ways to manage*
> *complexities, reduce expenses, increase efficiency and improve the quality of life"*
> *-(Dalberg, n.d.)*

However, India faces massive challenges in digital technology adoption as well, the greatest issue being gender and digital divide, especially among the urban poor. With an increasing focus on the digital, it is critical to take a step back and think of technology with people at the centre.

Indian context

2.1 The quiet digital revolution in India

India is undergoing an upheaval in a sweeping digital revolution in the last few years. 1.2 billion people are now registered on Adhar, the national bio-metric identity program announced in 2009. More than 80 percent of Indian adults have at least one digital financial account. India has more than 450 million mobile internet users and is expected to grow to 667 million by 2022 (Vinika D. Rao, 2019), second only to China. With one of the lowest data costs in the world, the trend is set to continue. It is not just the urban middle class, but also nearly half of India's 250,000 village councils are now connected by fibre optic networks. Indians download more apps than any country except China and spend more time on social media (an average of 17 hours a week) which is more than in China or the United States. An analysis of 17 mature and emerging economies revealed that India is digitising faster than all other countries in the study, except Indonesia (Kaka et al., 2019-03-27). Interestingly, India's digital revolution is propelled by rural masses. Rural India registered a 45 percent growth in monthly active internet users in 2019 (www.bestmediaifo.com, 27/06/2021). Local language and videos are the underlying factors for the internet boom in rural areas. Voice, Video and Vernacular (3 Vs) are predicted to become significant usage factors for internet users. In an interview with TechCrunch, Payal Arora contemplates that a huge proportion of the new users are yound and their top priorities are often listening to music and communication on social media like Facebook. Cheap phones and increasingly affordable phone plans such as Jio in India are helping another billion get on the internet, however, this is driven by the desire to have fun and promote leisure usage. She suggests that Jio's success in India was because of it's strategy by the 'ABCD' principle dictating the online market in India-based on the fact that most Indian consumers use most of their data to access content on Astrology, Bollywood, Cricket and Devotion sites (Crichton, 2019-03-08).

2.2 India in numbers

Figure 2.1: India- States and Union Territories (Maximilian Dörrbecker, 2020)

India is the second largest country in population and seventh largest country by land area. It is the most populous democracy in the world, bounded by the Indian Ocean in the south, the Arabian Sea in the south-west and the Bay of Bengal on the south-east. It is bordered by Pakistan in the north-west, China, Nepal and Bhutan to the north, Bangladesh and Myanmar in the eats and Sri Lanka in the south. It covers an area of 3,287,263 square kilometers and has a population of 1.4 billion and a population density of 455 per square kilometer (World Bank, 2017). The percentage of urban population in India is 34.47 percent as of 2019. India has been divided into 28 states and 9 union territories. States elect their local government themselves while union territories are ruled by administrators sent by the central government.
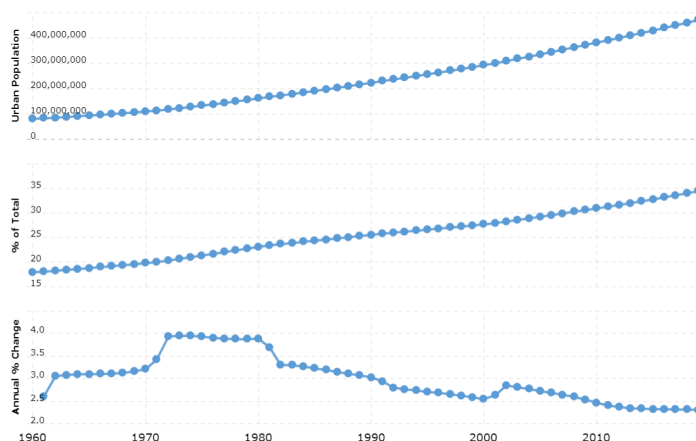
Figure 2.2: India- Urban population from 1960 to 2019 (macrotrends.net, n.d.)

2.2.1   A quick glance

Area (in sq. kms)	3,287,263
Population*(in million)	1400
Median age	28.7 years
Urbanisation (in percentage)	34.47
Most populated city	30.29 million (New Delhi)
Government type	Federal parliamentary republic
GDP per capita	6.75 USD
Urban population growth percentage (World Bank, 2018)	2.3

2.2.2   The Urban Planning system in India

The Constitution of India is the supreme law of India and declares India as a sovereign, socialist, secular and democratic republic. The executive, legislative and judicial branches of government receive their power from the constitution and are bound by it.

Basic government structure-   Modelled after the Westminster system for governing the state, the Union government is mainly composed of the executive, the legislature and the judiciary, in which all powers are vested by the constitution in the prime minister, parliament and the supreme court. The president of India is the head of state and the elected prime minister acts as the head of the executive and is responsible for running the Union government. The parliament is bicameral in nature with the Lok Sabha being the lower house and the Rajya Sabha being the upper house. The judiciary system

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*approximated

contains an apex supreme court, 24 high courts and several district courts, all inferior to the supreme court.

Similar to the Union government (central government), individual state governments each consist of executive, legislative and judiciary. A union territory has it's own government and are federal territories governed, in part or in whole, by the central government of India. There are three spheres of government: central, state and local.
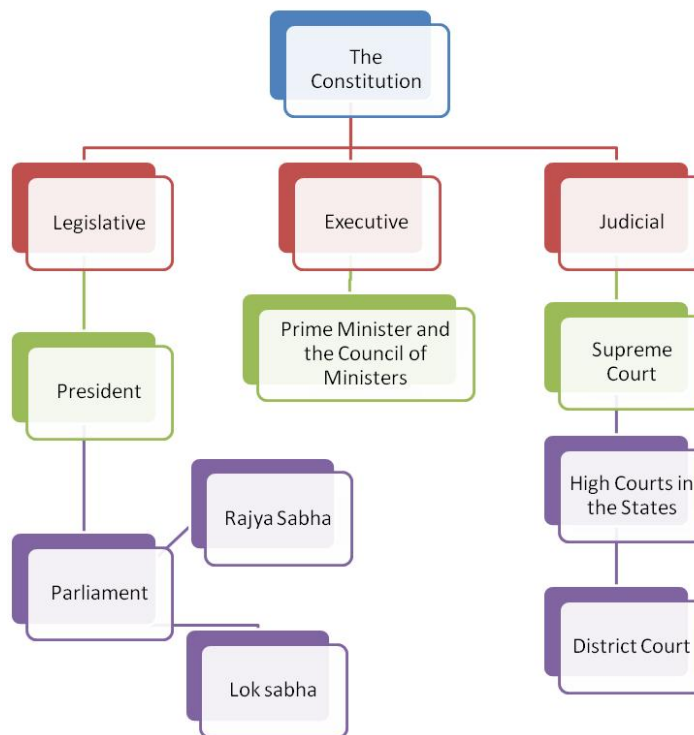
Figure 2.3: The Constitution of India and the three branches of government (Nagaland GK, 2018)

Political system- The lower house (Lok Sabha) represents the people of India as a whole and the upper house (Rajya Sabha) represents the states of the Indian federation. State governments in India are the governments ruling over 28 states and 9 union territories and the head of the Council of Ministers in a state is the Chief Minister. Power is divided between the Union government and state governments. Each state has a legislature that consists of a Governor and either one house (Vidhan Sabha or Legislative Assembly) or two houses (Vidhan Sabha and Vidhan Parishad (Legislative Council)).

Administrative structure

Many Indian states are divided into divisions which have official administrative governmental status, they currently exist in 17 of 28 states. The divisions are further sub-divided into blocks or tehsils

or taluqs. These are divided further into community development blocks, each typically consisting of about 100 villages (Encyclopedia Britannica, 13/06/2021). Villages are often the lowest level of subdivision in India, the governmental bodies at the village level are called Gram Panchayat. Each Gram Panchayat covers a large village or a cluster of smaller villages. The smaller subdivisions (villages and blocks) exist only in rural areas.
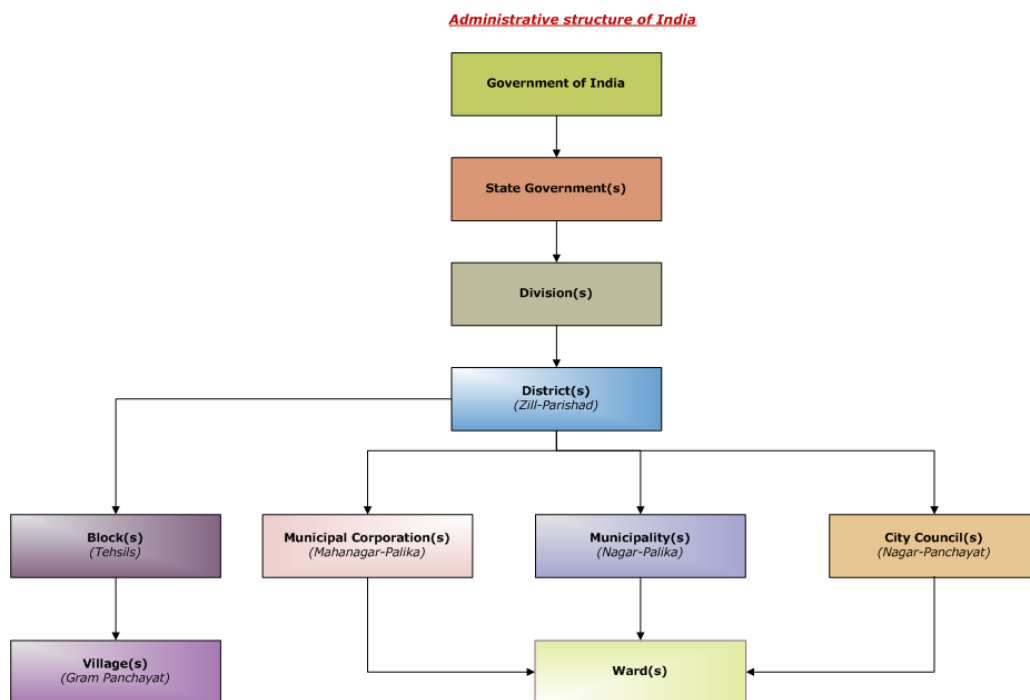
Figure 2.4: The administrative setup and hierarchy in India (publicadministrationtheone.blogspot.com, 2012)

The 74th amendment to the Constitution of India in 1992 brought constitutional validity to municipal or local governments. Key urban areas were classified as statutory towns and census towns. The major categories of statutory towns are-

- Municipal corporation- larger urban areas with a population greater than 1 million

- Municipality- smaller urban areas with a population more than 100,000 and less than 1 million.

- Nagar panchayat- areas in transition from rural to urban area with a population between 11,000 and less than 25,000 inhabitants.

Figure 2.5: The three types of municipalities ("Municipal Corporation Budgets — Budget Basics beta documentation", 07/03/2021)

An illustrative list of functions that may be entrusted to municipalities has been incorporated as the Twelfth Schedule of the Constitution. The schedule defines 18 new tasks in the functional domain of of the Urban Local bodies as follows (openbudgetsindia.org, 2016):

1. Urban planning including town planning

2. Regulation of land-use and construction of buildings

3. Planning for social and economic development

4. Roads and bridges

5. Water supply for domestic, industrial and commercial purpose

6. Public health, sanitation conservancy and solid waste management

7. Fire services

8. Urban forestry, protection of the environment and promotion of ecological aspects

9. Safeguarding the interests of weaker sections of the society, including handicapped and mentally-challenged

10. Slum improvement and up-gradation

11. Urban poverty alleviation

12. Provision of urban amenities and facilities such as parks, gardens,playgrounds

13. Promotion of cultural, educational and aesthetic aspects

14. Burials and burial grounds, cremation, cremation grounds and electric crematoriums

15. Cattle pounds;prevention of cruelty to animals

16. Vital statistics including registration of births and deaths

17. Public amenities including street lighting, parking lots, bus stops and public conveniences

18. Regulation of slaughterhouses and tanneries

Summary

Parameter	India
Government type	Federal republic
Head of government	Prime Minister
Executive branch	Union Council of ministers appointed by the president on the recommendation of the prime minister
Legislative branch	Bicameral Parliament consists of the Lok Sabha and Rajya Sabha
Administrative sub-division at first level	28 states and 8 union territories
Administrative sub-division at second level	Division (only in some states)
Administrative sub-division at third level	Districts (zilla parishad)
Adminstrative sub-division at fourth level	Block (rural) and municipal corporation, municipality, nagar-panchayat (urban)
Administrative sub-division at fifth level	Gram panchayat (rural), Ward (urban)

2.2.3   Spatial development concept and strategy in India

While city planning in India dates back to ancient times notably the Mohenjodaro civilization, modern day urban planning processes are rooted in India's colonial history. Municipalities in colonial India were established in early 19th century with a view to transfer financial burden of local administration to local cities' council. A statutory status to the ULG (Urban Local Body) was not provided until 1873. The ULG was established in the Presidency capitals of Calcutta (now Kolkata), Bombay (now Mumbai) and Madras (now Chennai). The current urban planning regime in India is rooted in the Town and Country Planning Act of the United Kingdom of 1947, and is primarily focused on detailed land use zoning.

After independence in 1947, a centralization approach was taken to manage the emerging new form of urbanisation. This trend is revealed in the rapid growth of metropolitan cities and stagnating small towns. The four super-metros (Calcutta, Mumbai, Delhi and Chennai) constituted 52.7 percent of the total million-plus cities' population in the sixties. Two decades later, it was realised that comprehensive attention should be given to urban planning and land policy because urban areas are the engines of economic growth. In 1954, Central Council of Local self-government was established and started taking up urban community development programs. In 1963 the organisation and state ministers for town and country planning took some policy measures to solve urban issues- (i) to make urban local bodies in urban areas where they do not exist (ii) Promotion of town area committees and Notified Area committees into full-fledged municipalities (iii) Spreading the limits of bigger municipalities outward.

Recognising metropolitan identity-   In the early 1970's four major metropolises constituted their development authority to formulate master plans.

Name of the development authority	Year of establishment	Area in sq. km 2011	Population 2011 '000
DDA (Delhi Development Authority)	1957	1696	167.53
KMDA (Kolkata Metropolitan Development Authority)	1970	1886.67	141.12
CMDA (Chennai Metropolitan Development Authority)	1974	1189	86.96
MMRD (Mumbai Metropolitan Development Authority)	1975	4354.50	209.98

Figure 2.6: Development authorities of Delhi, Mumbai, Kolkata and Chennai (JOY, 2015)
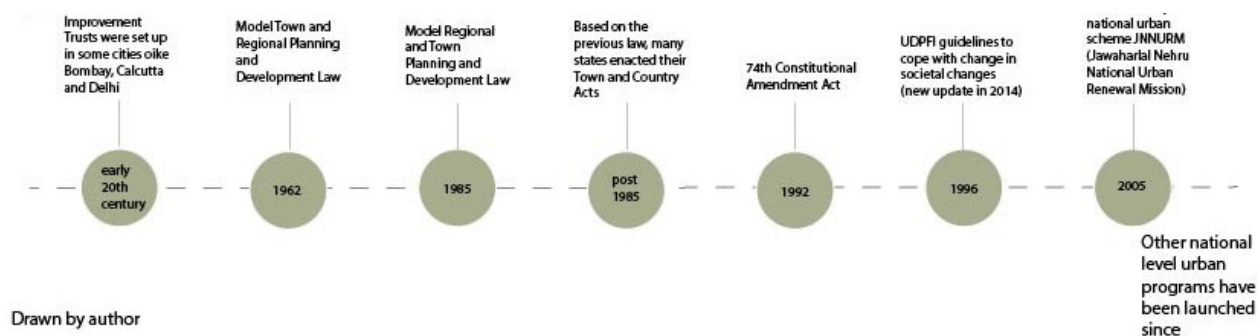
Figure 2.7: Principle measures in spatial planning in India. Source- Drawn by author

Post 1990's urban planning- Economic liberalisation in the early nineties and decentralisation through the 74th constitutional amendment act in 1992 were key policy changes in the urban planning realm of India. To push entrepreneurial planning, the central government prepared the Urban Reform Incentive Fund that led to a string of changes such as repeal of Urban Land Ceiling Acts and levy of user charges and resource mobilisation by urban local bodies.

The planning commission is an apex body that guides the trajectory and focus of urban planning in each plan period (5 years). In 2015, the government replaced the Planning Commission with a new policy making body called National Institution for Transforming India Commission (in short- NITI Ayog) Urban policy and planning immediately after the colonial period focused on physical constraints and population growth of metropolises. After a decade of publication of master plans it was realised that they are not able to solve problems of metropolitan areas.

India's federal policy with a decentralised governance structure means that key competencies such as land, public health, water supply are delegated to the states and the central government assumes an advisory role, local bodies are vested with functions of urban planning and regulation of land-use. However, fiscal federalism is highly skewed towards the centre and are seldom equipped to undertake key infrastructure works.
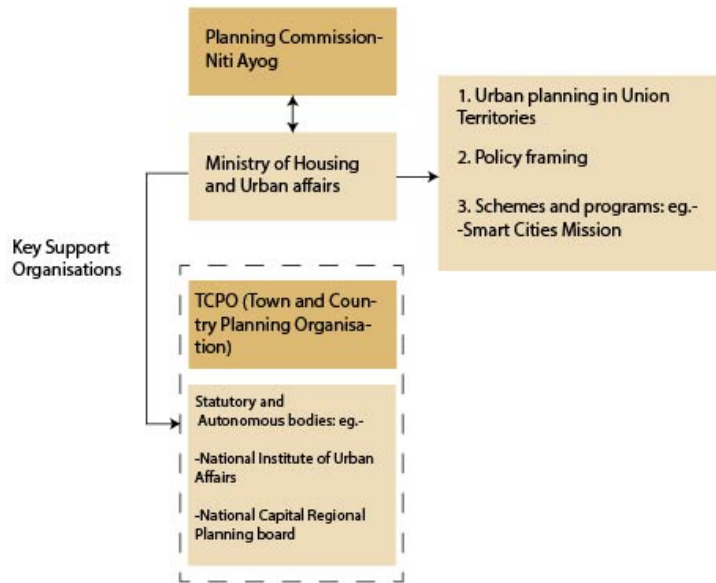
Figure 2.8: Urban policy framework at central level. Source- Adapted from (Kesar, n.d.)
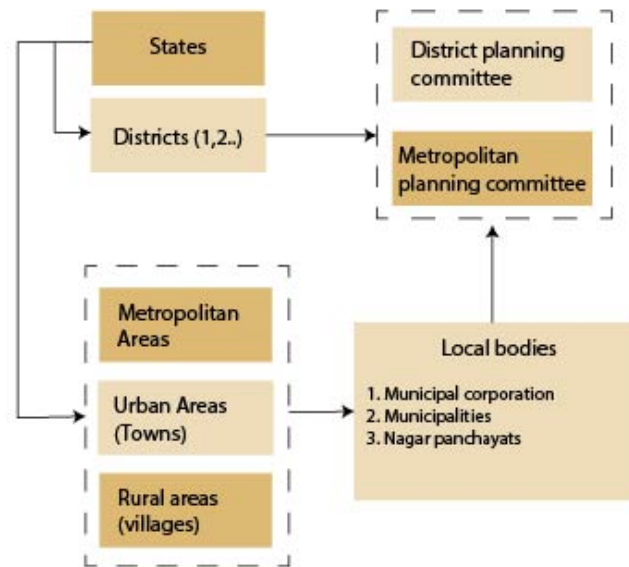
Figure 2.9: Urban policy framework at state level. Source- Adapted from (Kesar, n.d.)

Major authorities relating to planning in India

Central level Ministry of Housing and Urban Affairs, National Institution for Transforming India (NITI) Commission, Town and Country Planning Organisation

State level State planning boards and city development authorities

Role of governments in urban spatial planning

Level of government	Function
Central level	Strategic, legal and advisory leadership
State level	1. Transferring functions, funds and functionaries to local government 2. The town planning function is held by many state governments
Regional level-	1. District planning committees prepare development plans for their respective areas 3. District planning committees and metropolitan committees are key coordinating agencies to prepare draft development plans at the district and metropolitan scale by actively engaging with local bodies and other agencies. However, very few states have implemented metropolitan and district plans.
Local level (Ahluwalia, 2019)-	1. Preparing a master plan, city development plan, city mobility plan, city sanitation plan, e-governance 2. Meeting benchmarks set by the Government of India 3. Limited financial autonomy in mobilising resources and setting user charges, taken over by the state government in most cases

2.2.4 Planning tools in India

The URDPFI guidelines, 1996 (Urban and Regional Development Plans Formulation and Implementation Guidelines) provided a framework and plan preparation and implementation process. Since then, many developments have taken place in the field of urban planning due to rapid growth of urban settlements, globalisation of the economy and advances in information and communication technologies. The URDPFI guidelines were revised in 2014 to holistically understand and proactively involve the Government of India Ministries/Agencies and State Governments for guiding urbanisation. Local bodies and state administrations adopt a variety of plans that are listed below-

Planning tools for state planning

Perspective Plan (20-30 years)-Perspective Plan defines the vision and focuses on the spatio-economic development policies, strategies and programs towards the intended development of the state. The perspective plan of a state could include the State Urbanisation policy. The plan is based on state resource mapping and addresses long term policies regarding development of infrastructure and resource mobilisation. The purpose of a perspective plan is to provide an overall framework for preparation of detailed plans.

Planning tools for regional planning

Regional Plan (20 years)-Regional plan is to be a comprehensive plan at an appropriate scale (district/inter-district, investment region or special area) for the integration of urban nodes with the semi-urban and rural areas. The detailed planning of the urban nodes will be addressed by development plans at the next stage of planning.

Planning tools for local government planning

Development Plan/Master plan (20-30 years with a review every 5 years)-Development plan is a statutory plan prepared under the relevant Act within the framework of the approved perspective plan. It makes known publicly the intention of the local authority regarding physical, social and economic development. The approved Development Plan allows the local authority to implement development of the land area specified under the plan with the help of local area plans and projects.
'Development Plan' is used differently in different states. Some states use it for a integrated multi-sector plan such as District Development Plan. In other States, it is a statutory land use plan, approved and adopted by the local authority and its proposals are precise and definite, notifying property owners the manner in which their properties will be affected. Some examples of this are the Delhi Master Plan, Hyderabad Metropolitan Development Plan, etc. Here, both the plans, Development Plans and Master Plans have the same functions and impose similar controls.

Local Area Plan-In view of the 73rd and 74th Constitutional Amendment Act, planning decision and implementation of plans should be dis-aggregated to bring the process closer to the local people. Local Area Plans are to be prepared to guide the development or re-development of land, conservation of buildings and amenities available and managing the area to enhance health and safety of the residents to support economic development as well as enhancing the quality of living, environment. Local Area Plans need to specify the implementation details to comply with government policies.

Special Purpose Plan-Special Purpose Plan can be prepared for specific development sectors depending on its economic and environmental importance. Depending on the urgency or need of the sector, Special Purpose Plans for specific subjects can be prepared. However, these plans need to be within the framework of the Regional Plan, Development Plan or Local Area Plan in the jurisdiction of the local authority. These plans may emerge to serve the purpose of urban planning needs under different Central and State Government grants, funding schemes or programs.

Annual Plan-An Annual Plan would contain the details of the new and ongoing projects that the local authority intends to implement during each financial year. It is prepared by the local authority in each financial year to identify the new projects that it will 8undertake for implementation during the year, taking into account the physical and fiscal performance of the preceding year and the priorities, policies and proposals contained in the approved Regional Plan, Development Plan or Local Area Plan. Annual plans provide a mechanism to monitor progress of development plan and various projects.

Project/Research-Projects are derived targets of the sequences of plans which focus on items of execution, investments, costing and returns. Conceived within the framework of the perspective plan, development plan or other plans in the planning system, projects ate the working layouts with all supporting infrastructure and documents including cost and source of funds.
The projects could be for any area, old or new, any activity or land use like residential, commercial, industrial, recreational, educational or health related or for research and development in the field of planning.
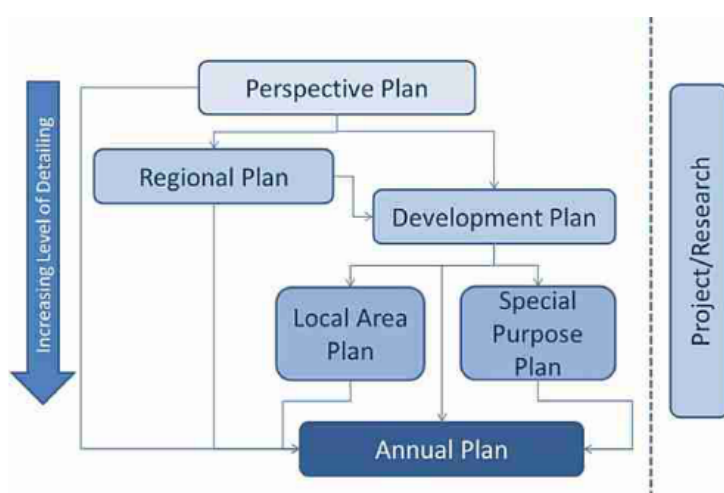
Figure 2.10: Relationship of the planning system. (Government of India-Ministry of Urban Development, 2015-01-01)

2.3   Participatory tools and procedures in India

The 73rd and 74th Constitution Amendment Acts in 1992 provided constitutional mandate for decentralisation of governance and creating units of local self-government in urban and rural settlements. In section 243 S, the Act provides for setting up of ward committees to bring governance and citizens closer. Several successes have emerged from rural decentralisation with Panchayati Raj institutions, however, this is greatly lacking in urban decentralisation. Even though great challenges are faced by rural decentralisation, this institutional arrangement has managed to trickle down to the lowest levels of gram sabhas with every registered voter being a member. The similar provision of setting up ward committees in urban areas, however, could not take off barring a few states. Ward committees, wherever established, have a representation ratio that is ten times larger than their rural counterparts. (The Energy and Resources Institute, 2010)

2.3.1   Traditional public participation in India

In India's formal democratic governance of three tiers (national, state and local), some scholars describe existing participation of citizens in governance in India as being 'organic' or 'induced' (Menon and Hartz-Karp, 2019b). This categorisation gives greater clarity to participation examples in India, even though public participation cannot be neatly divided into these two categories.

Organic participation

India has a wealth of experience in organic participation that often involve struggles and advocacy of people and organisations in areas of housing, livelihoods, transport, etc. that resulted in the creation of positive legislation and initiatives like the Right to Information Act. Civil Society Organisations are also engaged in a wide spectrum of activities facilitating people's participation through generating awareness and service delivery. These have had an 'important role in making Indian democracy alive and participatory' (Goswami and Tandon, 2013, p. 656) (Menon and Hartz-Karp, 2019b). Gaps in organic participation also exist, for example, exclusion of the informal working class. A case in point would be state-civil society partnerships such as Advanced Locality Management groups in Mumbai that are exclusionary of lower socio-economic groups.

While organic participation is an integral part of Indian democracy and has achieved large wins, it may be an inadequate process for the public at large. Despite limitations of broad participation, and the often exclusionary decision-making, organic participation can be vital to strategically introducing governance reform.

Induced participation

The 74th and 73rd Constitutional Amendment Acts (CAA) provided structures for local self-government to be created at city, district and village levels with elections every five years and electoral quotas for different marginalised groups. '...participation promoted through policy actions of the state and implemented by bureaucracies...and comes in two forms: decentralisation and community-driven development' (Mansuri and Rao, 2013, p. 286) can be exemplified by these two Amendments. The formal institution of gram sabha is recognised as a significant step towards strengthening democracy. The gram sabha is a deliberative village assembly within the representative structure of a gram panchayat. Instituted in 1992, the gram sabha offers the opportunity to participation deliberation about political issues. The most notable example of gram sabhas is found in Kerala People's Campaign for Decentralised Planning. The gram sabha meets at least twice a year and all citizens with a right to vote are automatically members of the sabha. They are open meetings and are presided by local elected officials, They are also always held on holidays and in public buildings or open spaces. The assemblies are prepared for by publicity and the distribution of various planning documents. Gram sabhas are valuable examples of 'oral democracy' where the equal right to participate in talk-centric institutions is seen as a way of deepening democracy (participedia.net, n.d.).

Th two main decision-making processes involved are the master planning process and annual budgets and plans. Other formal institutions that support civic participation are mandatory public hearings, free access to information, public scrutiny and feedback on policy processes, the citizen's right to file objections and concerns and public notice of agency decisions that have helped improve public service delivery and claiming entitlements. Some gaps in participatory institutions have been listed as follows (Menon and Hartz-Karp, 2019b)-

- **Inadequate structure and mandate-** Take-up of the Constitutional Amendments for devolution and decentralisation of government functions and funds to carry them out have been left to the state governments. Thus, take-up has been different in different states and urban areas in India lack a structure and formal assembly for public governance that is analogous to the gram sabha. Elected representatives tend to be removed from the people. While amendments like the Maharashtra Municipal Corporations Act included a fifth tier of urban governance in the form of Area Sabhas (assembly), there are no rules to implement it.

- **Inadequate procedures and unclear influence-** Procedures like the master planning processes incorporate 'consultation' or 'hearings' forms of public participation. However, hearing committees may choose to overrule objections without providing a reasoned responses. It is also unclear to what extent or if public inputs are considered in decisions.

- **Non-deliberative-** Hearings or master plan suggestions and objection procedures enable the public to record objections and suggestions but decision-making processes do not incorporate

opportunities for public participation in a manner that could help evolved thinking about the issue.

- **Non-transparency-** The strong influence of a highly politicised bureaucracy created by politicians for mutual benefit is a major obstacle to meaningful participation.

- **Narrow conception of participation-** There is an increasing interest in and critiques about public participation relating to the rise of smart city projects, city management and so on. However, critics have said that it is important to recognise the public as citizens integral to public decision-making rather than involving them narrowly as consumers or economic entities- for example 'manufactured consent'.

- **Sustenance of support for facilitation and administration-** Often, voluntary facilitator efforts cannot be sustained and the quality of deliberation declines. Effective fund utilisation is possible when NGO's or community workers are proactive and support the community to deliberate.

2.4 Institutionalised mechanisms

2.4.1 Ward committees

As per the Act, a city with a population greater than 3 lakhs (0.3 million) should constitute ward committees consisting of one or more wards. The ward committees are expected to address local issues by participating in planning, financial and administrative functions having a direct bearing on the related wards. The Act also prescribes that the State legislature must make provisions for the composition and territorial area of a ward committee and the manner for filling seats of the committee. In case of a ward committee being formed with one ward, the ward councillor becomes the ward committee chairman, whereas if there are a greater number of wards, the councillors elect the chairperson from amongst themselves. Ward committees also have seats reserved for women (1/3rd) and scheduled tribes and scheduled caste. The States also decide the fiscal resources and tasks to be delegated to ward committees. However, States have either not constituted the ward committees as yet or have interpreted the provisions differently. Up to 2006, 19 out of 29 states enacted the related legislation of which only seven were implemented (Maiti and de Faria, 2017). The following sections reveal an in-depth review into the existing situation of ward committees in some States.

Functions of the Ward Committee

The Community Participation Law made provisions for (i) Area Sabha within every ward (ii) Elections of members for each Area Sabha into the WC, and, (iii) Funds, functions and functionaries for the WC. The WC is entrusted with the following functions-

- Supervision of municipal work

- Water and sanitation requirements

- Identification and upgradation of slums

- Enforcing building bye-laws

- Evaluating the needs of the Area Sabha

- Public health information dissemination

- Protection of the environment

- Area planning

- Data collection

- Identification of people for subsidies

The functions delegated to local bodies vary from State to State. However, limited functions have been delegated to ward committees wherever they have been constituted (The Energy and Resources Institute, 2010). In most cases, ward committees are largely advisory bodies with no or limited financial powers. West Bengal, Madhya Pradesh, Maharashtra and Kerala are states that have conferred financial powers to the ward committees.

Composition

The composition of ward committees across the states vary considerably. The number and nomination of elected members differs and the method of nomination and nominating authority is also different in each state. Andhra Pradesh, Greater Mumbai, Tamil Nadu, Delhi and Haryana have only elected councillors as members of the ward committees. In other states, ward committee members are nominated by the State, Mayor Municipal Commissioner or elected representatives. Typically most states (eg. West Bengal or Madhya Pradesh) have members that are residents of the ward/wards that come under the purview of the ward committee. Other nominated members are usually those having knowledge and experience in municipal administration.

Proximity between citizens and government

The average population covered in each ward varies from state to state as well. For example, in Maharashtra, 16 ward committees have been constituted out of 227 electoral wards. The average population in each ward is 0.75 million. Similarly in Delhi, there are 12 ward committees and each represents a population of 0.8 million on average.

2.4.2   Area Sabhas

Under JNNURM (Jawaharlal Nehru National Urban Renewal Mission), States were required to enact the Community Participation Law (CPL), also known as Nagar Raj Bill, and constitute ward committees and area sabhas as per the 74th CAA. The State governments were required to pass this Bill with modifications as per their wish if they wished to access funds under JNNURM. The central model proposed to divide each municipal ward into several 'Areas' each consisting of about 3000 voters. The voting population of an Area would be called **Area Sabha**, which has been given some powers (Inclusive Cities Observatory, 28-06-2021). The Nagar Raj Bill was one of the suggested reform processes to encourage participatory decision-making. The central government generated a model Nagar Raj Bill which different States were expected to enact. The Act is not applied in all States, however, some states like Kerala and Karnataka has already introduced similar measures before.
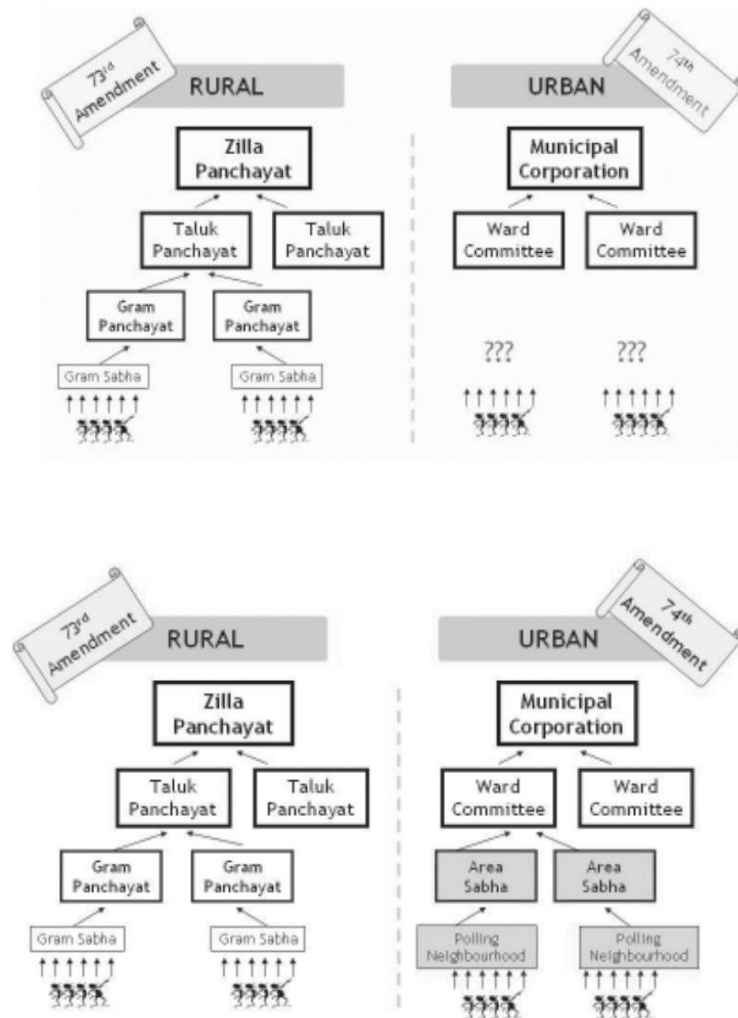
Figure 2.11: The Community Participation Law created Area Sabhas in urban areas to correspond to Gram Sabhas in rural areas (Centre for Civil Society, 2007)

Each Area Sabha elects one member into the Ward Committee (WC)- the WC is chaired by the elected councillor of the ward, the WC will also have the right to funds and the municipality will provide the administrative setup.
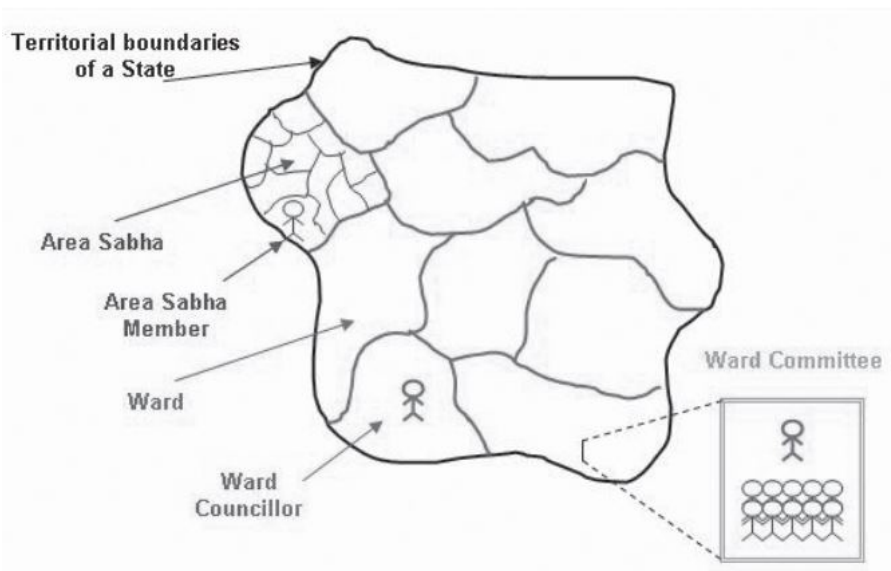
Figure 2.12: The Community Participation institutional structure (Centre for Civil Society, 2007)
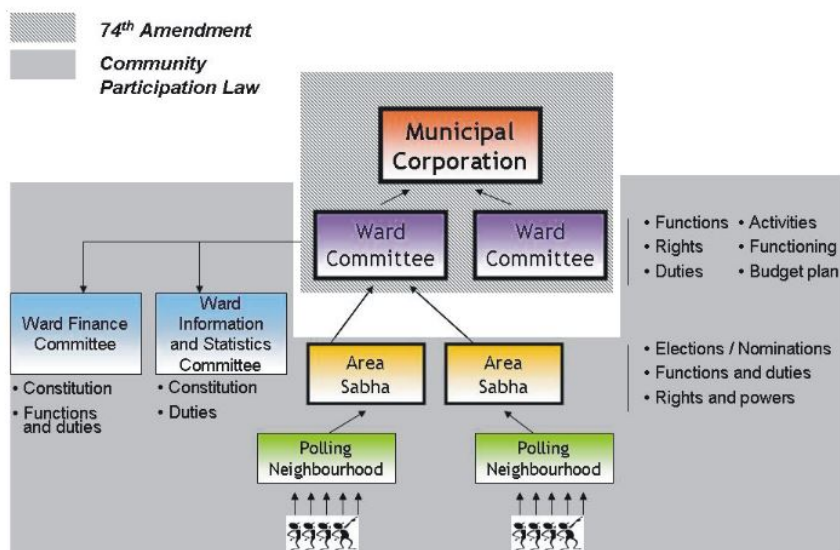
Figure 2.13: Overview of the Community Participation Law (Centre for Civil Society, 2007)

In order to allow for effective functioning of the Area Sabhas, it is necessary that there are reforms done at the municipal level- (i) Municipal corporations should be entrusted with city planning functions along with other functions mentioned in the Twelfth Schedule of the Constitution and (ii) Mayors and councillors should be given executive powers.

2.5   Institutionalised efforts

2.5.1   Kerala

The Kerala Municipality Act was enacted in 1994 and was made applicable to municipal corporations, municipal councils and town panchayats (The Energy and Resources Institute, 2010). After designating 35 to 40 percent of the state's development budget to local self-government institutions in order for them to prepare their own schemes and implement them, Kerala carried out what is arguably the most extensive adult education empowerment programs in India. State, district and local level training programs were conducted to institute these changes. Also called the People's Plan Movement, neighbourhood groups (NHGs) were also a major reason for the difference the program made, especially in rural Kerala. Neighbourhood groups were formed spontaneously of 40 to 50 families as a solution to the limitations of the Gram Sabha as a forum for discussions. NHGs have an important role in carrying out functions supplementing the discussions and decisions of the Gram Sabha (thekudumbashreestory, n.d.). The success of the decentralisation campaign can be seen in Cochin, which has 74 ward committees, each are connected to one electoral ward where neighbourhood groups and resident welfare associations offer strong participation. Ward committees' meetings in Cochin take place with vocal participation. There is however criticism on the slow response of the municipal corporation to ward committees' requests (Maiti and de Faria, 2017).

2.5.2   Maharashtra

In Maharashtra, 19 out of 23 municipal corporations have constituted ward committees. A limited number of members of neighbourhood groups and resident welfare associations may also be a part of the ward committee. Maharashtra introduced it's own Community Participation Law but did not enact it. In Mumbai, the number of ward committees are limited to 25, because of which the population of each ward is very high. Advanced Locality Management Groups (ALMs) are well known in Mumbai, they are a partnership of citizens and the MCGM (Municipal Corporation of Greater Mumbai) for creating infrastructure and awareness (Maiti and de Faria, 2017). ALMs may be perceived as a duplication of ward committees, however, they provide a channel of engagement for the middle class residents to coordinate with the local government. Ward Committees are seen as channels of engagement for vulnerable groups.

2.5.3   West Bengal

Ward Committees have been established and are functioning in West Bengal for a long time. The West Bengal Amendment Act of 1993 provided for the constitution of ward committees in each municipal

ward. Each ward committee that meets the population requirements to form one, is constituted by elected and nominated members. Ward committees in West Bengal are also based on population sized of each ward. Participation in the draft development plans are conducted with a wide range of stakeholders such as Ward Committees, Neighbourhood Groups (NHGs), Neighbourhood Committees (NHC) and Community Development Society (CDS). All NHGs in a ward together form an Area Development Society (ADS). Neighbourhood Committees (also known as Moholla Samitis) represent polling booth areas in civic elections (Maiti and de Faria, 2017).

2.5.4 Karnataka

Until 2010, Bangalore was the only municipal corporation to have formed ward committees. Recently, in 2021, Mangalore has also formed ward committees. Bangalore also allows a limited number of ward committees like Mumbai, resulting in each ward often having thousands of voters.

2.6 Non-institutionalised efforts

Historically, top-down master-planning approach for cities have been disconnected with needs of smaller scale planning and desired outcomes. To compensate for the gaps between Master Plan proposals on paper and its on-ground translation, many programs and projects have been initiated to integrate existing planning processes with citizen voices. Some programs were also initiated by local governments but were never institutionalised. The following are a few examples of such initiatives-

2.6.1 Main Bhi Dilli campaign

Main Bhi Dilli (translated as- 'I am Delhi too') is a people's campaign that tries to make planning in Delhi more inclusive and representative by engaging citizens in the 2041 Master Plan process. At the time this is written, Delhi's Master Plan (2021-2041) is being formulated. Former experiences with previous plans have highlighted the undemocratic and non-participatory nature of the planning process (Mainbhidilli, n.d.). The campaign uses public meetings and media to make the city engage with its own development visions. Several organisations are partnering in the campaign. One of the most interesting parts of the campaign is the use of a participatory toolkit designed by the Social Design Collab, one of the partners in the campaign, for workshops by the Main Bhi Dilli campaign to spread awareness in communities that are often left out of the planning process on the planning processes on Delhi's upcoming Master Plan. The tool is an interactive, map-based too that has been finalised on user feedback from pilots supported by various NGOs in Delhi. The toolkit encompasses activities that cover different chapters of the Master Plan from housing, transport, public space using maps, mascots,

ballot charts and bindis.*

Figure 2.14: A map based toolkit is used to spread awareness of the Delhi Master Plan 2041 (Social Design Collaborative, n.d.)
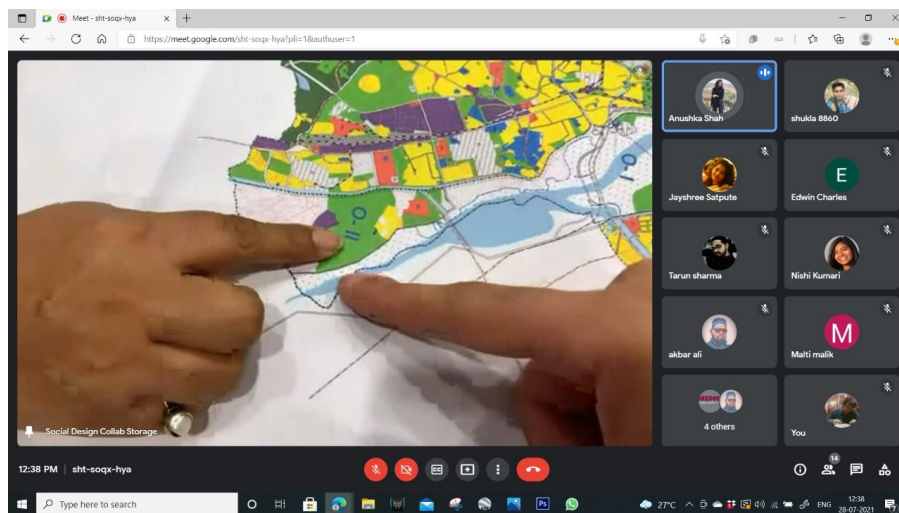
Figure 2.15: A hybrid format of a community engagement workshop (Social Design Collaborative, n.d.)

2.6.2 Janaagraha

Janaagraha is a non-governmental organisation (NGO) that was created to promote democratic participation.Janaagraha had a campaign focusing on creating a 'vision' for each ward with citizens' input

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*Bindi is a colored dot worn on the center of the forehead, originally by Hindus and Jains from the Indian subcontinent. (Wikipedia, 2021a)

between June and December 2003 (Maiti and de Faria, 2017). Also called the Ward Vision Campaign, the program was developed as a formal process for citizens to draw up priorities (Janaagraha, 2004). Some major innovations in the Ward Vision Campaign were breaking down each ward into smaller, recognisable areas or neighbourhoods, process initiation based on issue identification and expert panels to provide necessary information to participants.
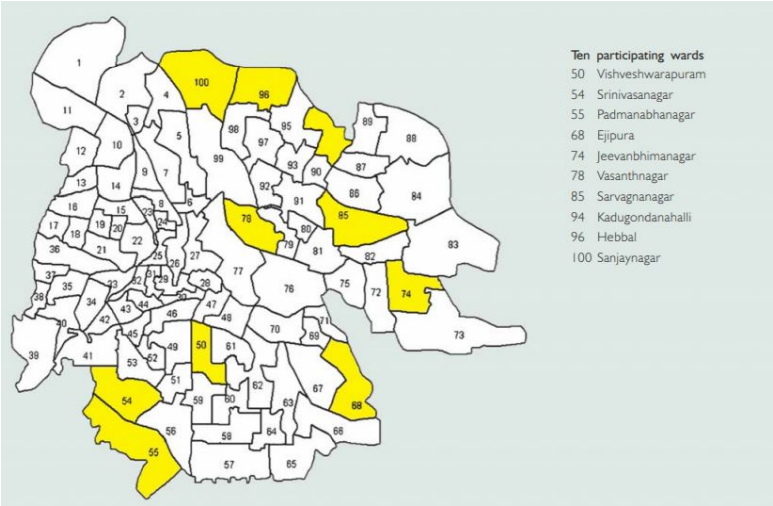
Figure 2.16: The participating wards (Janaagraha, 2004)

The communication of the campaign was done using a multi-channel approach such as auto-rickshaws with announcements, contacting RWA (Resident Welfare Associations), direct mailings or phone calls,door-to-door, hoardings, local newspapers, flyers, web-based message boards, etc. The campaign also targeted reaching the urban poor as it required special efforts.
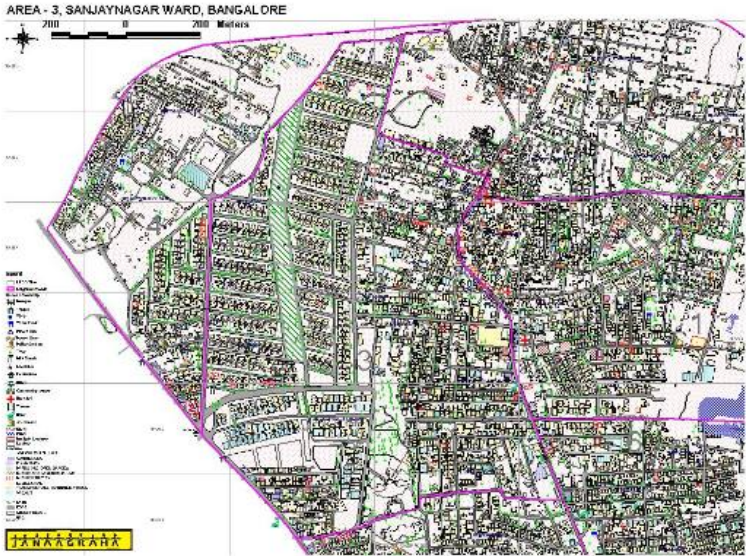
Figure 2.17: Maps were considered a primary tool for workshops (thematicsinfotech, 2017)

After the first phase which focused on numbers, the campaign was about space. High-quality, state-of-the-art digital maps with updated spatial data with a good resolution were used as the central planning divide. Maps were recognised as a primary tool for the workshops as they were language-independent, cut across social boundaries, citizens could add, modify or delete data to the maps and the information generated would be invaluable to the local development authority.

2.6.3   Bhagidari scheme

The Bhagidari scheme was introduced to resolve issues faced by Delhi metropolis through people's involvement in the process. 'Bhagidari' literally means collaborative partnership. The scheme sought to promote partnership between government and citizens and collaborate with government agencies in identifying and solving urban issues (Maiti and de Faria, 2017). Bhagdars were representatives from resident welfare associations (RWAs) and bureaucrats from public utility agencies- there were also members of industrial and market associations and authorised residential colonies. A volunteer-based program, the scheme attracted more than one thousand Bhagdars in the following decade after it was launched. The program did not have planning features, but helped in the improvement of service provision and implementation of small urban improvement projects. Eventually, a Bhagidari cell was added to the Chief Minister's office as the project underwent a decentralisation process with the creation of coordinators at the revenue district level. Workshops with citizen groups were held with RWAs and MTAs (Merchant and Traders Associations) to discuss selected issues with officials of various departments that are participating in Bhagidari scheme. Based on the output of the workshops, the solutions were sent to concerned departments and regular meetings were held to implement and monitor solutions (Kumar Gaurav, 2004). Criticism of the scheme was that there was some resistance to the concept from the government and the citizens as citizens were used to having communication with the government through the grievance redressal cell mechanism and bureaucrats felt threatened by the perceived erosion of power. The scheme also had been criticised to have systematically to exclude urban poor and was never institutionalised as change of political power played a role in discontinuation ((Maiti and de Faria, 2017)).

2.6.4   Gujarat Mahila Housing Sewa Trust

The Gujarat Mahila Housing Sewa Trust organised a campaign on urban planning in Ahmedabad. They planned 20 street plays in different slums in Ahmedabad with the intention of 'demystifying' the statutory planning process of Ahmedabad in an engaging manner. The play triggered understanding of the mechanisms and ways through which they can participate in the city's planning process. With an emphasis on the concept of urbanisation and town planning processes followed in Ahmedabad, the play explains the the two-step process of formulation of Development Plan and detailing out Town Planning

Schemes for smaller portions of the city. They used various examples that communities relate to (how to read colours on the map, demolition of slums, etc.) The audience is also made aware of Development Control Regulations prepared along with the Development Plan. The play also highlighted the means through which communities can participate- such as where citizens can visit to view plans and how to write to the authorities sharing concerns/demands/suggestions when a Development Plan or Town Planning Scheme is published in newspapers to invite suggestions and objections (Gujarat Mahila Housing Sewa Trust, n.d.).

Figure 2.18: The campaign on urban planning with street plays in Ahmedabad Gujarat Mahila Housing Sewa Trust, n.d.)

2.7   Summary

Effective citizen participation within an existing administrative set-up is a complex process and requires building of capacities among both governments and citizens. Decentralisation requires institutional, legislative and political support at different levels of governance. A lack of clarity in roles and responsibilities are also a perceived threat in devolution of powers. A state of mistrust between government bureaucrats and elected representatives and citizens is a threat to developing meaningful participation.

> *"It is about the culture of urban planning. There is a perception that citizens are lower than bureaucrats. That when a citizen needs something from his/her municipality, he has to beg for it. The service providers in this case are seen as the bosses. This behaviour is there for a lot of services. In this sense, participation exercises may be done just for the sake of it. The culture of participation needs to change, this is a behavioural change and cannot happen overnight. We have the chance to show by examples what happens when decisions are made in a transparent manner and that it is an important way forward to*

creating this change."

-Interviewee 3 (Project manager of the Sustainable Urban Development- Smart Cities (SUD-SC) project in India the German Corporation for International Cooperation GmbH and Urban Planner)

Sub-dividing planning areas on the basis of common socio-cultural and economic back-drop might be a solution to protect interests of all groups. Urban areas in India have master plans, however, Local Area Plans have the potential to be effective platforms to enable participation in planning processes because of current limitations of the Master Plan (discussed later). Enabling multiple platforms of engagement that address different levels of participation can help in achieving active participation and build transparency.

"We have to make a clear distinction between information, engagement and collaboration when we talk about participation. We often talk about participation without realising that what we are talking about is actually spreading information or soliciting feedback and engagement which is not participation. Participation is misunderstood in India, like in many other countries. Traditionally in Indian urban planning, there is something called 'objection' or 'suggestion'. That is not participation, that is a tokenistic approach. Even in urban schemes like JNNURM where for the first time, people were invited to offer their views on a plan, it was the city elite that was invited. That included academic members, politicians, bureaucrats and excluded the views of the urban poor. Every plan creates inequalities, that is known. However, we need to take responsibility for the effects of that and to find a balance. "

-Interviewee 4 (Professor of urban planning at an Indian university)

Building the capacity for participatory planning should be incremental, where development of powers and resources may be made available post evidence of competence in different levels up the ladder (Maiti and de Faria, 2017)).
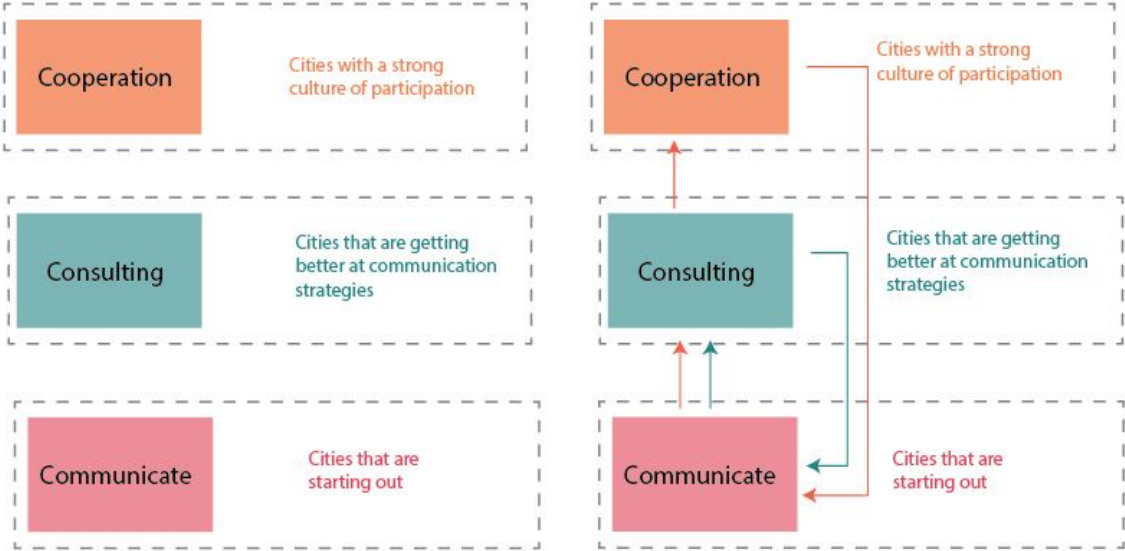
Figure 2.19: Incremental participation based on evidence based competences to climb up the ladder (Source- Drawn by author)

Strengthening each level is key to incremental building of capacity for participatory planning, before moving to the next level of participation. Thus, cities with strong communication strategies in reaching citizens may employ consultation based strategies while simultaneously maintaining the level of strong communication strategies they have already achieved. Cities with an existing strong culture of participation, strong institutional and legislative mechanisms along with political leadership, should use cooperation based strategies while simultaneously maintaining their strong consultative and communicative strategies of participatory planning.

Digital citizen engagement in India

3.1 Introduction

The urban space of India is currently seeing a lot of dynamic change. Traditionally, urban reform measures in India have had to deal with lack of information on urban areas and low skills of functionaries (Aijaz, 2021-04-06). To address this, and other urban issues currently crippling India, there are several urban programs and initiatives that are trying o address this. A large part of such programs have a digital focus and tries to build digital infrastructure and tools to generate data-sets for all urban centres in India. For example, the National Urban Digital Mission (NUDM) aims to resolve problems and address people's requirements. The mission attempts to support urban governments and stakeholders in solving various urban problems and includes partners in academia, civil society, start-ups, etc. The program intends to integrate existing open government platforms such as Aadhaar, Unified Payments Interface, Goods and Services Tax Network and cross-leverage digital initiatives from the Ministry of Housing and Urban Affairs of the Government of India.

Various digital platforms like India Urban Data Exchange (IUDX) and Smart Cities Open Data Portal (under the Smart Cities Mission) and SmartCode to allow for sharing of urban data between data producers and data consumers that were not available in the past. These digital reforms are aimed at improving conditions of urban areas to address long pending issues of data availability, development of custom solutions and capacity building of stakeholders. In 2021, a National Geospatial Policy was launched to develop the geospatial ecosystem in the country and intends to make it easier to create and share geospatial data.

While digital technologies in urban India focus mainly on service provision and delivery in the G2C (Government to Citizen) sphere, the Smart Cities Mission brought citizen engagement in the digital sphere at the centre. It started a conversation on people's participation by making it a component of the Mission. This section tries to identify characteristics of digital technology use in India and lessons learnt from the digital citizen engagement initiative under the Smart Cities Mission.

3.2   Characteristics of internet usage in India

There has been an increase in internet penetration across cities with the top 8 metro cities having an internet penetration of 65 percent (Nielsen Holdings, 2019).
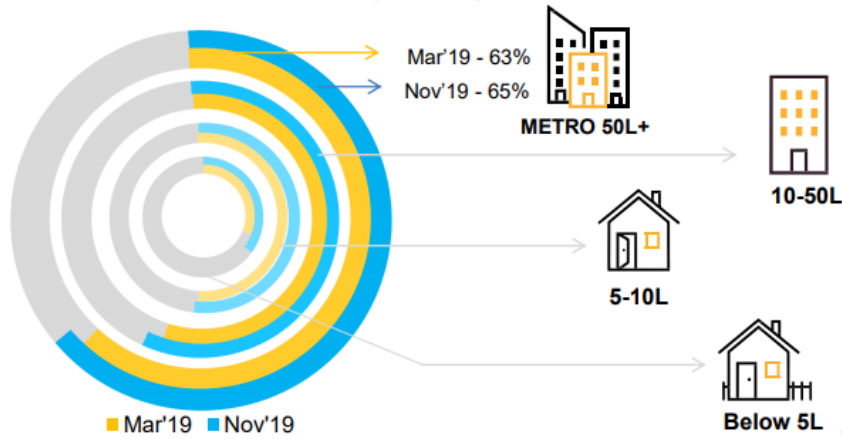
Figure 3.1: Urban internet penetration (Nielsen Holdings, 2019)

Among states, the National Capital Territory of Delhi registered the highest internet penetration while within metros, Mumbai has the highest internet population of 13 million (Nielsen Holdings, 2019).
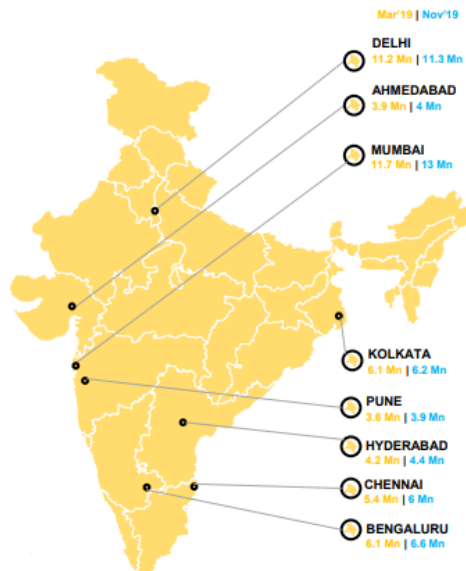
Figure 3.2: Urban internet penetration in metro cities (Nielsen Holdings, 2019)

Two-thirds of internet users in India are in the age group of 12-29 years. This age group corresponds

to 70 percent of internet users in rural areas. The proportion of people in the age group of 12 to 29 years and 30+ are roughly 50:50 in Mumbai and Chennai.

AGE DISTRIBUTION IN %

	12 to 15 YRS	16 to 19 YRS	20 to 29 YRS	30 to 39 YRS	40 to 49 YRS	50+ YRS
ALL INDIA	14	17	34	20	9	6
URBAN	11	14	33	21	12	9
RURAL	16	19	36	18	7	4
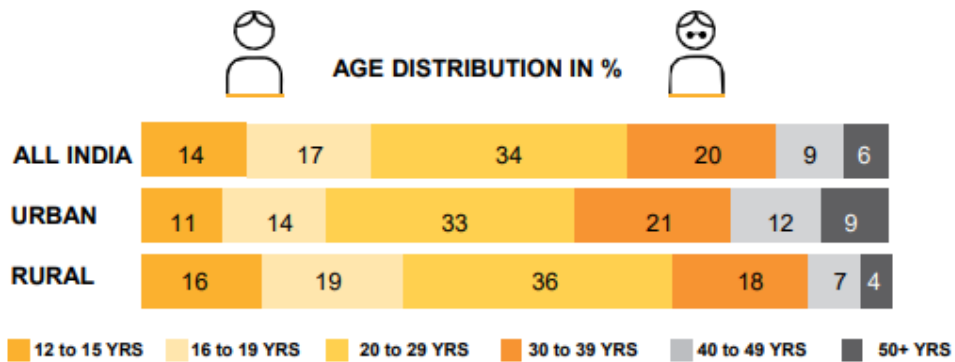
Figure 3.3: Distribution of internet users by age (Nielsen Holdings, 2019)

Nearly 70 percent of the internet population in India are daily users.
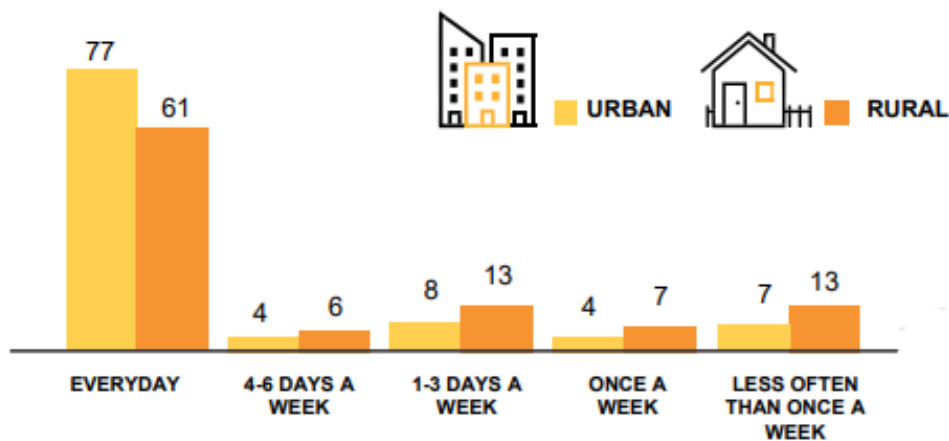
Figure 3.4: Frequency of internet usage in percentage (Nielsen Holdings, 2019)

Mobiles are the dominant device for accessing internet both in rural and urban areas. Factors may be the affordability of mobile phones with cheap mobile internet plans.
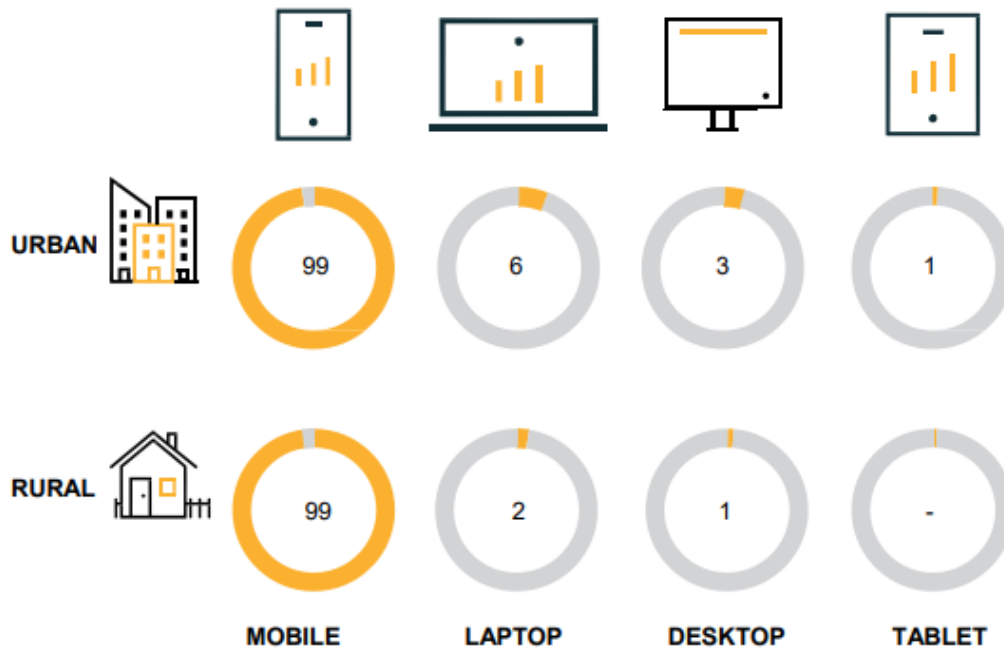
Figure 3.5: Devices used to access internet (Nielsen Holdings, 2019)

More than 90 percent of people access internet from home, internet consumption while travelling is more prominent in metro cities as every 4 out of 10 people use internet while on the move. issues of connectivity, quality of service and affordability of internet make it difficult to access internet on the move in rural areas. Among metro cities, Mumbai is the only city where more than half of internet users access internet while travelling.
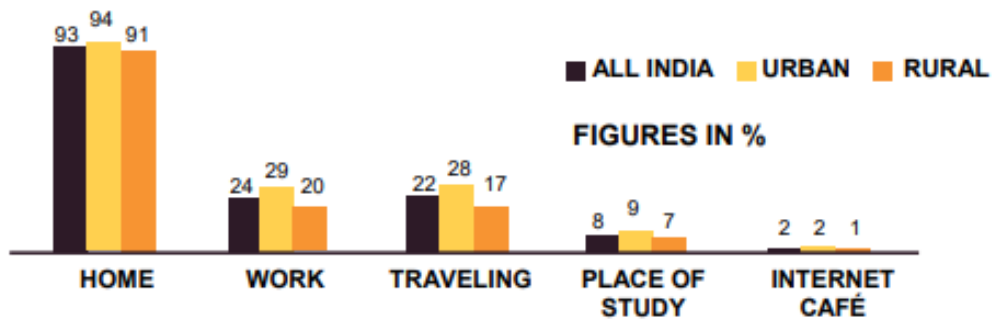
Figure 3.6: Points of internet access (Nielsen Holdings, 2019)

The bulk of internet traffic is routed via mobile data packages. With lower costs across different operators, 4G is the most preferred choice of internet connectivity.
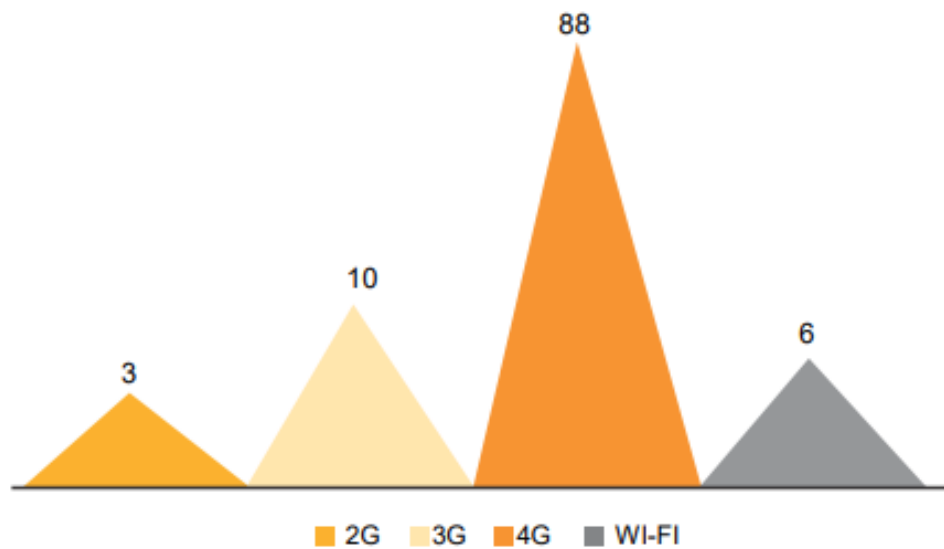
Figure 3.7: Connection type (mobile) (Nielsen Holdings, 2019)

Social networking is the top activity done on the internet with 9 out of 10 individuals using internet for social networking or chatting followed by entertainment (watching or downloading movies, music and videos). 1 in 3 internet users use internet to read or watch the news online while around 25 percent people use it for email. In metro cities, use of email and reading news online is more prevalent with more than 40 percent users accessing it.
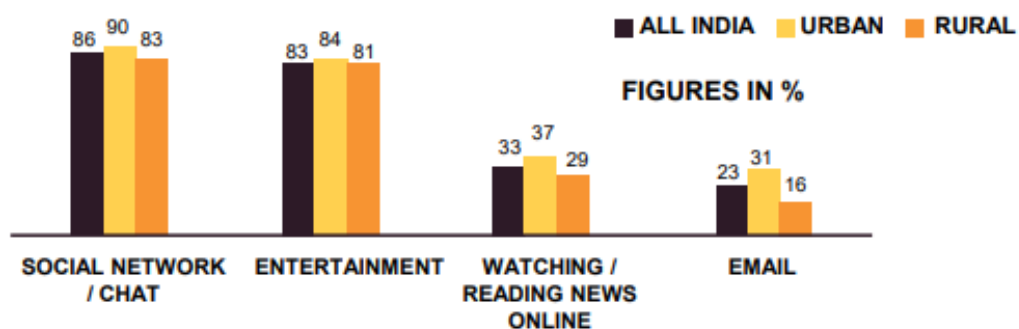
Figure 3.8: Activity on the internet (Nielsen Holdings, 2019)

Close to one-third of users access internet for more than one hour on Sundays and holidays compared to a normal working day. Time spent on the internet continues to be higher in urban India compared to rural India, this is even higher in metro cities.
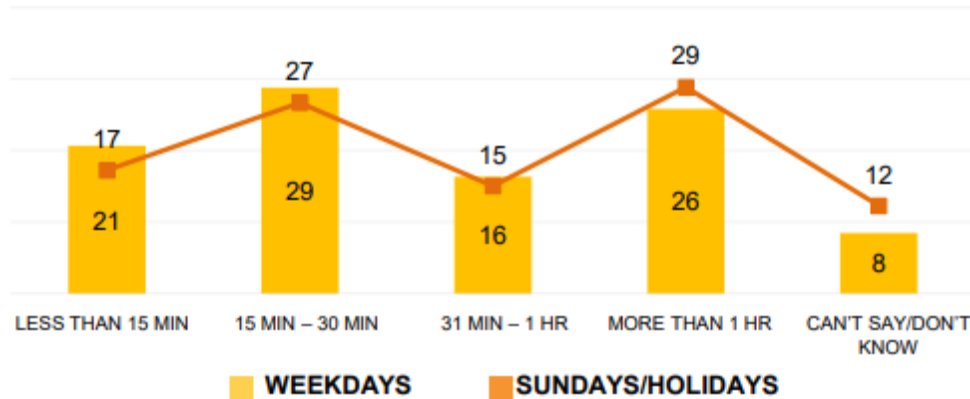
Figure 3.9: Time spent on internet (Nielsen Holdings, 2019)

With 504 million active internet uses, India is the second largest online market in the world (Keelery, 2021-08-02). For the first time, rural areas have more internet users than urban areas and is set to increase more in the next years. The top 8 metro cities have an increasing internet penetration standing at 65 percent as of November 2019. 2/3rd of internet users in India are in the age group of 12 to 29 years, this age-group also represents more than 70 percent of internet users in rural areas. 70 percent of internet users in India are daily users and mobile is the primary device to access internet in the country. Affordable mobile phones with cheaper data plans for mobiles has led to this. Most people (90 percent) access internet from home and internet while travelling is more prominent in the metro cities. The primary activity on the internet is social networking or chatting with 9 out of 1o individuals use it for this purpose followed by entertainment like watching/downloading music, movies and videos. 1 in 3 individuals use the internet to watch or read news online and a quarter use it for email. In metro cities, usage of email and accessing online news is more prevalent. One-third of users spend more than an hour during holidays compared to a normal working day while time spent on the internet is higher in urban Indian compared to rural India and is highest in metro cities.

3.3   The 100 Smart Cities Mission of India

In 2015, the Government of India rolled out the 'Smart Cities Mission' aiming to drive economic growth and improve the quality of life in 100 selected cities. The program aims to enable local development and harness technology as a means to create smart solutions for citizens. The federal government launched ICT based citizen engagement through a website (MyGov.in) to engage citizens in debates, vision sharing through essays and e-voting for smart city service prioritisation. A majority of the 100 cities have engaged citizens through the online platform, which was also a precondition for accessing central grants to roll out smart city projects.

The Indian definition of the smart city significantly played down the connected Internet of Things

(IoT) and Big data to emphasise the importance of local situatedness. The Smart City guidelines made the case that-

> *"there is no universally accepted definition of a Smart City. It means different things to different people. The conceptualisation of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents." (GoI, 2015, p. 5)*

The objective of the Smart Cities Mission is to promote cities that provide cities that provide core infrastructure and a decent quality of life to its citizens. Some core features of comprehensive development in Smart Cities are-(i) Promoting mixed land-use in area-based developments-planning for 'unplanned areas' (ii) Walk-able neighbourhoods (iii) Transit-oriented development (iv) Preserving open spaces (v) Making governance citizen-friendly (vi) Giving an identity to the city (vii) Applying Smart Solutions to infrastructure and services in area-based development in order to make them better (Ministry of Housing and Urban Affairs, Government of India, June, 2015)

Strategy of Smart Cities Mission-

The strategic components of Area-Based development in the Smart Cities mission are city improving (retrofitting), city renewal (redevelopment) and city extension (greenfield development) plus a Pan-City initiative in which smart solutions are applied covering larger parts of the city.

Figure 3.10: Three models of area-based smart city development (Ministry of Housing and Urban Affairs, Government of India, 2021)

3.4   Citizen engagement under the Smart City Mission

The Smart City Guidelines include citizen consultation and engagement as a necessary criteria for a Smart City Proposal to be accepted. It mandates the use of the online platform MyGov.in to fulfill these criteria.
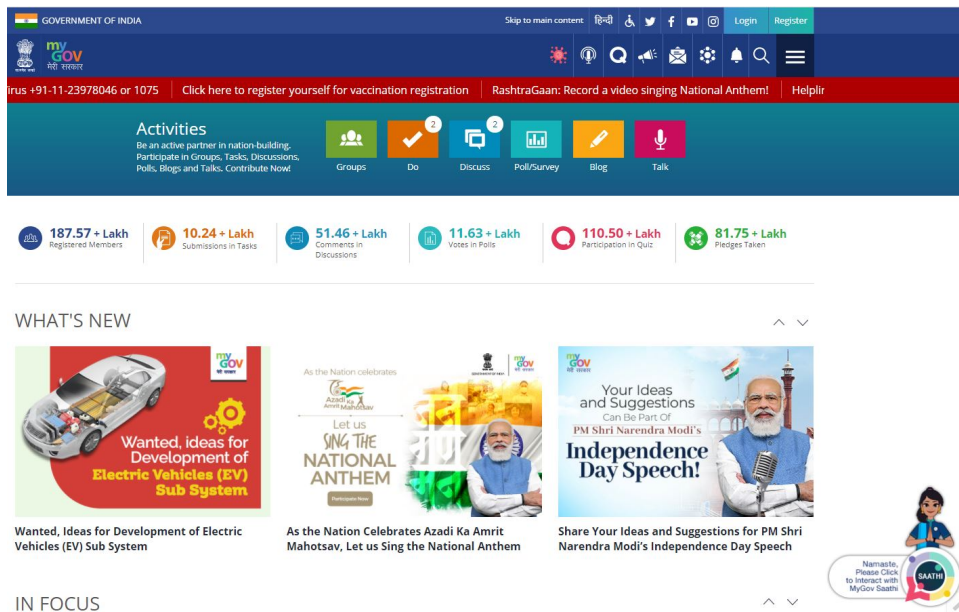
Figure 3.11: Screenshot of MyGov.in (MyGov.in, 10-08-2021)

Some of the criteria are-

1. Regarding the proposal development-

   The Proposal development will lead to creation of a smart citizenry. The proposal will be citizen-driven from the beginning, achieved through citizen consultations, including active participation of groups of people, such as Residents Welfare Associations, Tax Payers Associations, Senior Citizens and Slum Dwellers Associations. During consultations, issues, needs and priorities of citizens and groups of people will be identified and citizen-driven solutions generated.

2. Under 'Process followed'-

   Details of process for co-creating every step (ideas, strategies, implementing mechanism and financial solutions) through an extensive consultation process with:

   - *-citizens*
   - *-vulnerable sections of society (disabled, children, elderly etc.) ward committees and area sabhas*
   - *-important citizens groups (associations, organizations and institutions such as local chamber of commerce)*

   And,

   How much of social media, community, mobile governance have been used during citizen consultation?
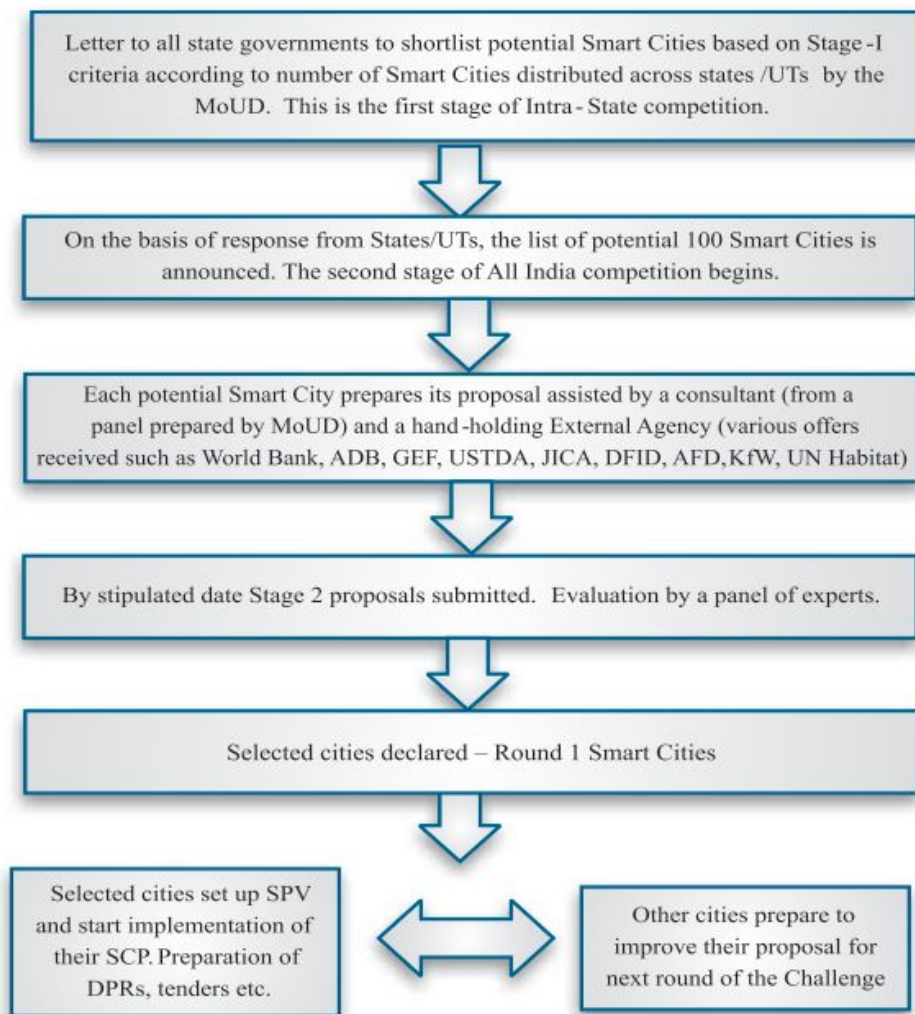
Figure 3.12: Different steps in the selection of Smart Cities (Ministry of Housing and Urban Affairs, Government of India, June, 2015)

The Smart Cities Mission also offers a guideline on methods to ensure citizen participation. A list of activities is outlined to be completed within certain timelines. The guidelines mention the use of the national engagement platform MyGov.in, but also encourage use of other ICT consultation methods to engage citizens other than face-to-face consultations.

The guideline is illustrated below-

Round 1 → Profiling the city, defining it's vision, determining city goals, identifying area-based developments and Pan-city Smart Solutions

Disseminate the process and inviting citizens' participation (MyGov Talk)	City-level talk by Minister/Mayor outlining Mission details and expecta-tions	Recorded audio-visual animations, ads in local newspapers, Twitter, Facebook, online banners (radio spots, local TV)	State or City level	2 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved
Developing vision statement for the City and definition of goals (MyGov Talk)	Essay contest 'My dream city'- will focus on (i) issues (ii) citizen solutions (iii) citizen priorities	Twitter, Facebook, letters to school principals, campaigns in govt. schools, incentives to schools, Wi-fi hotspots in slums, TV, mobile enables methods, manuscripts, pictorial forms, graffiti boards in school/colleges/public transport, etc	City level	2 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved
Solicit and shortlist ideas regarding Smart Solutions for the City, which can improve the infrastructure and services in the entire city (MyGov Discussion followed by Poll)	Consultants to prepare a list of potential smart solutions in public domain-forms Pan-City proposal	Webinar, Twitter, Facebook, Ideas Camp, face-to-face consultations with domain experts/institutionsby the City, Wi-Fi hotspots placed in slums, local radio spots, TV/mobile enabled methods, manuscripts, pictorial forms	City level	3 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved
To identify the areas to be taken up for Area-based development (MyGov Discus-sion, etc)	City identifies areas for devlop-ment through discussions with all stakehold-ers-abstract estimates made	Twitter, Facebook, Press releases, Ward-lev-el consultations, engaging citizen volun-teers, Ideas Camp, oreliminary videos to be prepared and disemminated, Wi-Fi hotspots placed in slums, local radio spots, TV/mobile enabled methods, manuscripts, pictorial forms	City and Ward level	3 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved

Drawn by author

Round 2 → Providing feedback on the Pan-City and Area-based proposals and their development through multiple iterations

Area based development (MyGov Discussion)	Draft Area-Based development proposal to be prepared-revisions possible	Websites, Twitter, Facebook, Radio spots, Ward-level roadshow, Wi-Fi hotspots placed in slums, local radio spots, TV/mobile enabled methods, manuscripts, pictorial forms	City and Ward level	2 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved

Pan City Proposal (MyGov Discussion)	Draft Pan City proposal to be prepared and placed in the public domain	Websites, Twitter, Facebook, Radio spots, Ward-level roadshow, Wi-Fi hotspots placed in slums, local radio spots, TV/mobile enabled methods, manuscripts, pictorial forms	City and Ward level	2 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved

Round 3 → Finalisation of the Smart City Proposal for the City in the proposed format

Area based plan and Pan City Proposal (MyGov Blog)	Final Area-Based development proposal and Pan City proposal prepared and placed in public domain	Twitter, Facebook, websites, Local paper Ads/ TV/Radio	City and Ward level	1.5 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved

Discussion on project implementation and financing (MyGov Blog)	Final complete Smart City Proposal will be prepared and placed in public domain	Twitter, Facebook, websites, Local paper Ads/ TV/Radio	City and Ward level	1.5 weeks
	Activity description	Recommended tools	Relevant adminstrative level	Timeline in which to be achieved

Drawn by author

Primary platform- MyGov.in route for online citizen engagement

Secondary platform- Associated activities to complement MyGov.in

Round 1

Disemmination — State/city

Essay contest- 'My dream city'

Talk

Develop vision statement — Proposed smart-city solutions — City level

Do

Shortlist ideas for solutions — inputs for Pan-City proposal — City level

Discuss

Poll

Identify areas for Area-based development — City and ward

Discuss

Icon dictionary

Icon	Label	Icon	Label	Icon	Label	Icon	Label	Icon	Label	Icon	Label	Icon	Label
	ward level road-show		preliminary audio/video recording		Twitter		Pictorial form of presentation		Universities/college		Public transportation		Adults
	ideas camp		Wi-Fi hotspot		Facebook		Radio spots		Graffiti boards		School		Campaign in government schools
	press release		Slums		Television		Mobile enabled methods		Webinar		School children		Letters to school principals
	ads in local newspaper		Online banners		Incentive to schools		MyGov 'Talk' tool		MyGov 'Task' tool		MyGov 'Discuss' tool		MyGov 'Poll' tool
	face-to-face consultation												

Drawn by author

Primary platform- MyGov.in route for online citizen engagement

Secondary platform- Associated activities to complement MyGov.in

Round 2

Area-based development

City and ward

Draft proposal prepared

Discuss

Pan-City proposal

City and ward

Draft proposal prepared

Discuss

Round 3

City and ward

Area-based and Pan City proposal

Blog

Discussion on project implementation and financing

Blog

City and ward
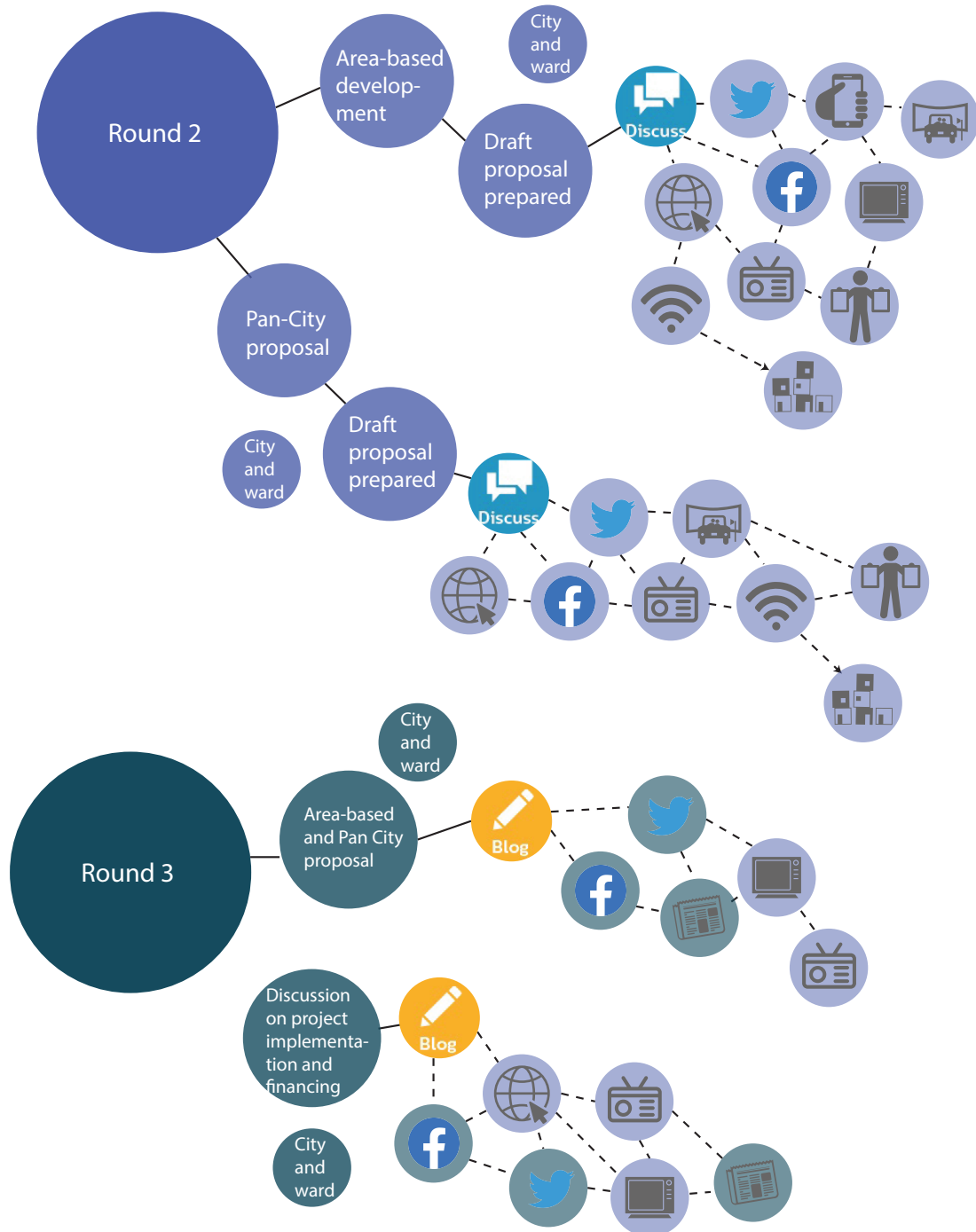
Icon dictionary

	Website		Wi-Fi hotspot		Facebook		Radio spots		Twitter		MyGov 'Discuss' tool		MyGov 'Blog' tool
	ads in local newspaper		Slums		Television		Mobile enabled methods		ward level road-show		Pictorial form of presentation		

Drawn by author

3.5   The online engagement platform- MyGov.in

MyGov.in is a dedicated national citizen engagement platform which attracts participants from across cities and states of India to debate on issues of national and local interest. The portal has 80 groups of various government departments and ministries. The six interactive mediums to engage citizens in this platform are-
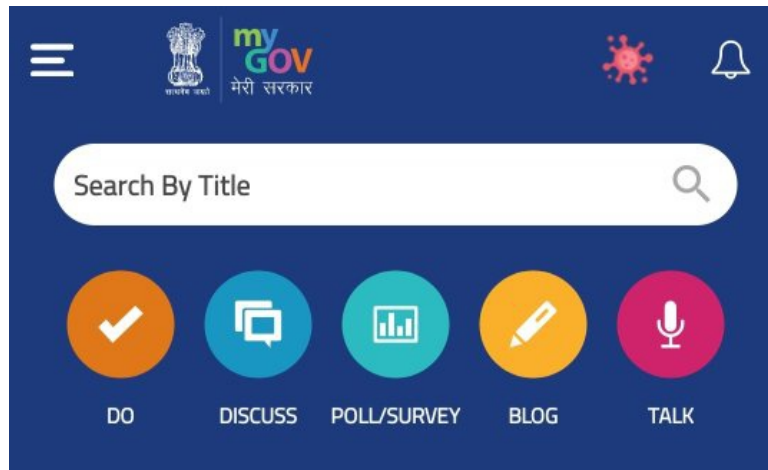
Figure 3.13: Different components of the online citizen engagement platform- MyGov.in (Ajit Kumar, 2020)

- **Group based discussions** on issues impacting different sectors such as housing, industry or environment

- **Online and on ground tasks** where people can submit essays on given topic and participate in various competitions such as logo, vision, tagline design competitions

- **Discussions** on specific local themes where people can comment. Comments can be viewed by fellow comm-enters

- **Survey and polls** where participants can vote for selecting services and projects of their choice

- **Writing blogs** and sharing of experiences on issues of concern

- Hold and post **talks** at real-time to invite citizens to engage in dialogue with political figures and policy makers

The platform currently has 17.4 million registered members and attracted nearly 1 million submissions on 2052 tasks. 4.7 million comments were made in 888 discussion themes*.

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*Based on the time at which this was written

A key feature of the platform is that it is hosted and managed by the central government and is therefore a highly top-down approach of building connections between citizens and the government. This was enforced by a competitive ranking methodology across 100 cities for granting central aid to the cities where a maximum of 20 percent weight-age was given to the level of citizen engagement. Thus, the cities had no option but to engage with citizens through this platform and other means to achieve higher ranks and access central funding ((Praharaj et al., 2017)).

While MyGov was seen as a platform to engage citizens in different programs and issues, it was the Smart Cities group that accounted for 45 percent of all discussion posts (Bansal, 2016-07-23).

Figure 3.14: The 'Poll' section under 'Smart Cities' group in MyGov platform (MyGov.in, 26-06-2021)

The following pages highlight the methods used by the first 20 winning cities to engage citizens. While many cities focused exclusively on MyGov, many cities employed creative strategies to engage citizens (Ministry of Housing and Urban Affairs, Government of India, 2016).

Insights into methods employed for citizen engagement by the first 20 winning cities in the Smart Cities Challenge
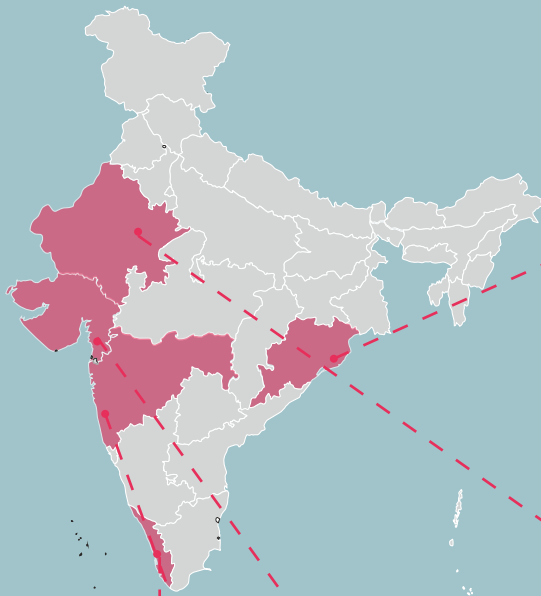
Bhubaneswar

15 kiosks set up across the city

6 flash mobs

5000 household surveys for area-based development

32% population reached

Population- 8,40,834
City area- 135 sq km
Youth population- 20.1%

Jaipur

75000 citizens reached in ward-level consultations

Booths in 10 prominent locations to collect data through questionnaires

1000 citizens reached in public places

Using 1000 auto-rikshaws as bill-boards

Population- 30,46,163
City area- 484.6 sq km
Youth population- 20.6%

Pune

939 ideas crowd-sourced through the city mobile application

A war room to implement and monitor citizen engagement

50% house-holds reached

60 engineering colleges participated in digital hackathons

Population- 31,24,458
City area- 276.4 sq km
Youth population- 18.5%

Surat

Painting competitions to collect innovative ideas

30 drop-boxes located in strategic locations like libraries, science and civic centres and zonal offices

Population- 44,67,797
City area- 335.8 sq km
Youth population- 22%

Kochi

Logo design competition

5000 house-holds engaged across 73 wards

100 articles featured in print media

6 meetings with self-help and disadvantaged groups

Population- 6,02,046
City area- 107.1 sq km
Youth population- 14.5%

Adapted from Ministry of Housing and Urban Affairs, Government of India, 2016 and drawn by author

Insights into methods employed for citizen engagement by the first 20 winning cities in the Smart Cities Challenge

Jabalpur (circle annotations)
- News stories in newspapers
- Emails to citizens
- Door-to-door consultations to collect forms
- Events such as concerts hosted
- SMS messages to mobile users
- 20% population reached

Jabalpur
Population- 10,55,525
City area- 152.5 sq km
Youth population- 20.2%

Visakhapatnam (circle annotations)
- Focus-group discussions
- Door-to-door campaigns and question-naires
- Responses on yovizag.com website collected
- 6 kiosks and 20 booths with internet for filling surveys
- Workshops with Resident Welfare Associations, slum associations, etc.

Visakhapatnam
Population- 17,28,128
City area- 513.6 sq km
Youth population- 18.6%

Davangere (circle annotations)
- Hoardings, banners and posters across 41 wards
- Questionnaires through Facebook, Twitter, MyGov
- Educational and promotional videos on YouTube
- Seminars and workshops for citizens

Davangere
Population- 4,34,971
City area- 77.1 sq km
Youth population- 20.6%

Solapur (circle annotations)
- Student volunteers reached out to 12,500 low income households
- SMS messages for feedback
- Meetings in 38 wards
- Focus-group discussions
- Festivals used to solicit feedback
- 'Run for unity' walkathon
- Hard-copy inputs for the vision

Solapur
Population- 9,51,558
City area- 178.6 sq km
Youth population- 20.7%

Ahmedabad (circle annotations)
- SMS campaigns for awareness and opinion poll
- Partnership with local NGOs to reach slum-dwellers
- Press conferences
- In-person and online surveys
- Volunteers and city representatives met citizens in public places

Ahmedabad
Population- 55,77,940
City area- 468.9 sq km
Youth population- 19.3%

Adapted from Ministry of Housing and Urban Affairs, Government of India, 2016 and drawn by author

Insights into methods employed for citizen engagement by the first 20 winning cities in the Smart Cities Challenge

Face to face conversations

Social media campaigns

Workshops with citizens

Questionnaires and polls the primary medium

Street plays in major markets and slums for awareness

New Delhi Municipal Council

Population- 2,57,803
City area- 42.7 sq km
Youth population- 21.9%

Two separate teams to handle offline and online activities

Janabhoomi committees of 5-6 residents from each ward helped municipality interact with citizens

SMS messages

Social media- Facebook, Twitter, Youtube, Google Hangouts, email, MyGov

Kakinada

Population- 3,12,538
City area- 57.4 sq km
Youth population- 20.3%

Face to face consultations

Local media publishing of articles

25% population reached, 58% were young people

Flyers and souveniers at large events

Run/Walk for Smart Indore

Indore

Population- 19,64,086
City area- 172.4 sq km
Youth population- 19.7%

Town hall meetings

Focus group discussions

Citizen forums

Articles in local newspapers and articles

Mobile vans in neighbourhoods for awareness and survey

Citizen pulse survey

Coimbatore

Population- 10,50,721
City area- 105.6 sq km
Youth population- 15.94%

Questionnaires at ward-level meetings

Public meetings

Crowdsourcing of vision statements from city's mobile app

Door-to-door campaigns and workshops

Educational campaigns in professional organisations, colleges and wards

Belgavi

Population- 4,88,157
City area- 99.6 sq km
Youth population- 18.5%

Adapted from Ministry of Housing and Urban Affairs, Government of India, 2016 and drawn by author

Insights into methods employed for citizen engagement by the first 20 winning cities in the Smart Cities Challenge
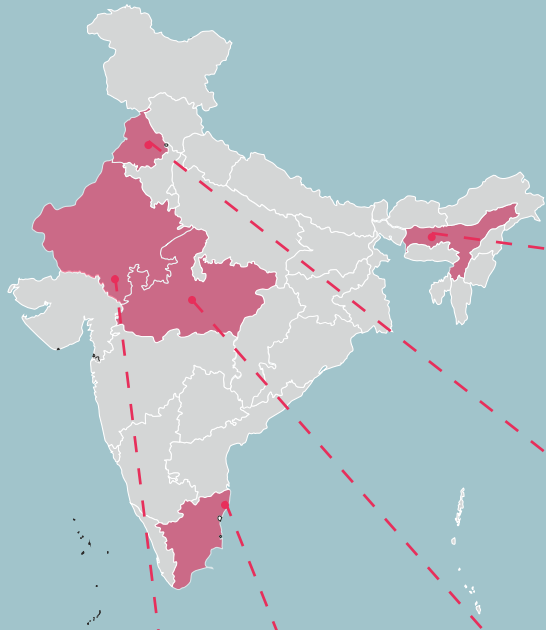
100 questionnaires in each ward

Radio, TV, local newspapers

Participation of children in Smart labs

Social media campaigns in Facebook, Twitter, MyGov

Door-to-door random sampling survey

Guwahati
Population- 9,57,351
City area- 219.06 sq km
Youth population- 18.6%

Training of representatives and surveying in slums with Wi-fi enabled tablets

Focus groups

Concept cards to explain types of development

Door-to-door surveys

Bhopal
Population- 17,98,218
City area- 285.9 sq km
Youth population- 21.3%

Door-to-door surveys

Focus groups

Public booths

Mobile vans

Primary tool used was MyGov.in

Extensive use of translation in social and print media

Ludhiana
Population- 16,18,879
City area- 159.4 sq km
Youth population- 19.8%

80% families contacted- wide range of stakeholders

Focus group discussions with ward residents, slum dwellers, tourist guides, etc.

Seminars and information booths

Dedicated mobile app

Udaipur
Population- 4,51,100
City area- 56.9 sq km
Youth population- 19.4%

SMS messages

Neighbourhood workshops

Ward consultations in the city

Social and print media

Radio programs

Chennai
Population- 46,46,732
City area- 175 sq km
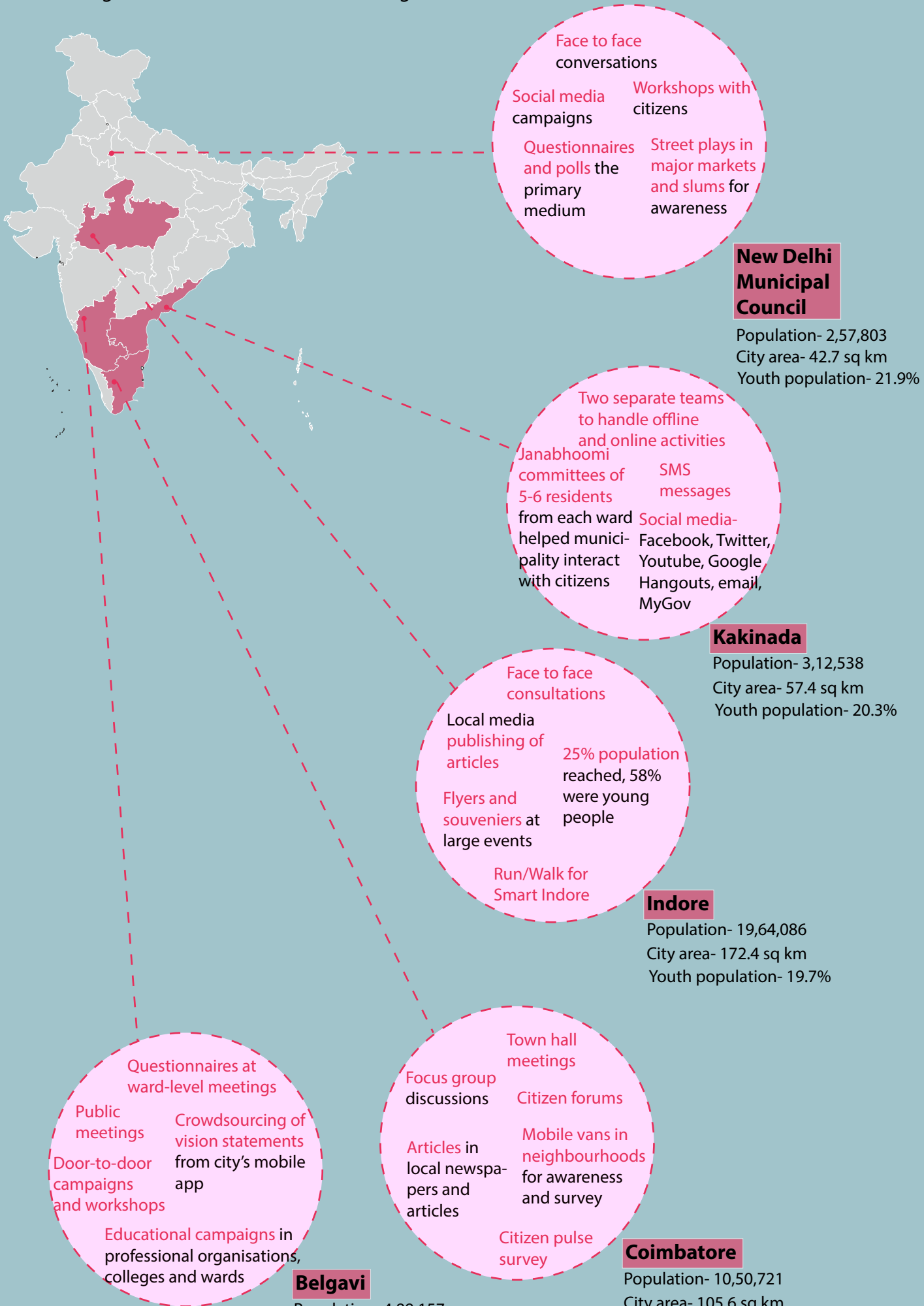Youth population- 17.2%

Adapted from Ministry of Housing and Urban Affairs, Government of India, 2016 and drawn by author

The Municipal Commissioner of the city of Jaipur said,

> *"This whole process of engaging people in such large numbers is a first in itself (Ministry of Housing and Urban Affairs, Government of India, 2016)."*

95 percent of the winning 20 cities used MyGov to engage citizens and many used cash prizes for contributing ideas. Many cities used creative tactics like live events and mobile vans to spread awareness to disseminate information and get input in the competition process. 70 percent of the winning cities had used WhatsApp and SMS to communicate and source feedback from the citizens by this time. Winning cities used a mix of traditional (for example, ward-level meetings) and digital methods of engagement to reach out to a large segment of the population. Some praised the initiative that it was able to relate with people, engage citizens and conceive and ideate and then put it all within a framework. 75 percent of the winning 20 cities also created their own website and mobile app to mobilise inputs from citizens over the time of the competition while 75 percent of these cities conducted household surveys (Ministry of Housing and Urban Affairs, Government of India, 2016).

> *"We usually concentrate on following the budget and the implementation of the schemes, but the real experience of going to the people, and hearing them out – the kind of energy that produces, the positivity that produces – that was something new for us."*

> *The Municipal Commissioner of Jabalpur (Ministry of Housing and Urban Affairs, Government of India, 2016)."*

The citizen engagement effort of the top 20 cities saw a lot of energy from the citizens with 30 percent cities mobilising volunteers to bolster their citizen engagement efforts. 90 percent of these cities also created a Facebook page to communicate with citizens. Most cities also surveyed citizens at major locations across their cities. Thus, the first round of the Smart Cities Mission saw the largest citizen engagement exercise ever done in urban India and citizens turned up in large numbers. City officials mentioned that the process was 'challenging but worthwhile'.

While the effort is commendable and a welcome first step, citizen engagement under the Smart Cities Mission still could not achieve meaningful participation as citizens were still only 'asked' and thus the process was designed to be consultative and citizens could not always actively take part in the process. The following OECD framework tries to measure the effort to identify which level of participation was achieved*.

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*It takes into account the tools according to the citizen engagement guide published under the Smart City Mission as different cities adopted their own methods

The filled circles indicate the tools outlined under the
citizen engagement guide of the Smart Cities Mission

Cooperation

Neighbourhood planning office

Development trust

Round tables

Consensus conference

Advocacy planning

Workshops

Mediation procedures

Neighbourhood committees

Focus groups

Consultation

Award scheme

Consultation

Citizen request sessions

Face to face/door to door

Invitation of NGOs to council meetings

Experimentation

Town-hall meetings

Ideas competition

Appeal services

Citizens' expertise

Simulation

Complaint forms

Action planning event

Community planning forum

Surveys and polls

Complaint hotlines

Information

Written official plans with maps

Leaflet

Visualisation

Games

Booklet

Newsletter

Oral presentation

Site visit

Street stall

Road-show

Hotline

Source: Drawn by author

3.6   Challenges in citizen engagement under the Smart City Mission

This sections tries to understand the challenges and issues faced in citizen engagement in the Smart Cities Mission through a study of various secondary research studies, website observations and semi-structured interviews.

3.6.1   Digital divide

A study conducted by Praharaj et al., 2017 reviewed the performance of Indian smart cities in attracting citizens to engage in discussions in the MyGov.in platform. To do this, the research focused on two components of the platform (1) number of comments observed in the specific discussion on the smart city proposals and (2) the number of submissions of essays from citizens sharing their vision of smart city. These two were chosen because the rest of the activities could not be statistically measured and were generic in nature. The study also mapped internet penetration and mobile phone ownership across the cities with secondary data collected from Census of India 2011. They performed a correlation analysis to explore the relationship between access to digital infrastructure, socio-economic status of cities and their influence on the intensity of e-Participation.
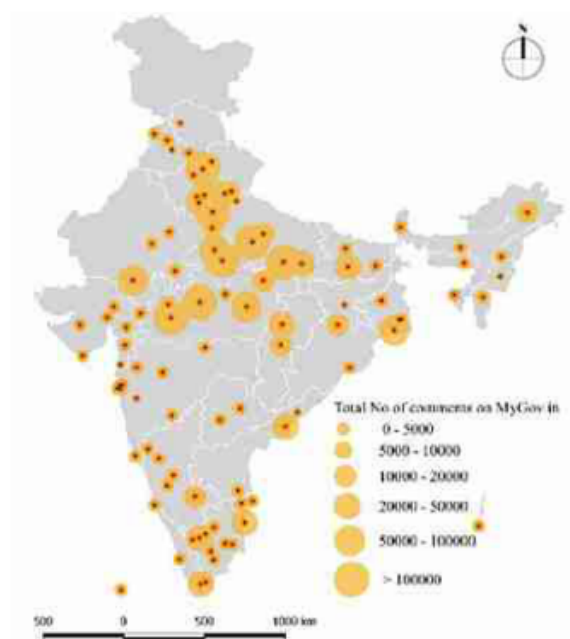
Figure 3.15: Intensity of eEngagement across Indian cities (Praharaj et al., 2017)

The study found that 7 cities recorded more than 0.1 million comments but 28 cities did not even

attract 100 participants in MyGov.in. Bhopal attracted the maximum number of discussion (0.17 million) followed by Kanpur (0.16 million). Cities like Aligarh and Saharanpur also did extremely well. However, cities like Durgapur, Kavaratti, Aizawl and Bidhannagar gather less than 100 comments.

- Large metropolitan cities like Mumbai, Delhi, Chennai, Ahmedabad, Hyderabad, Jaipur and Bhubaneswar among others failed to draw significant online citizen engagement.

- In contrast, medium-sized cities like Bhopal, Indore, Jhansi, Aligarh, etc and smaller towns like Pasighat, Udaipur, Bihar Sharif, Jabalpur and Haldia were successful in spearheading citizen engagement through digital consultation.

The study found that in the 100 identified cities, an average of 22 percent households have computer ownership in India. This means 1 in 5 households households in India own a computer. The numbers, however, vary greatly from city to city with some cities having half its households owning a computer while some recorded only 9 percent households owning computers. Most 'master-planned' cities like New Delhi, Bidhannagar, Ghaziabad, Pune and Navi Mumbai showed high levels of computer ownership while smaller towns took the lead in mobile phone possession with some cities having more than 90 percent of households using mobile phones.
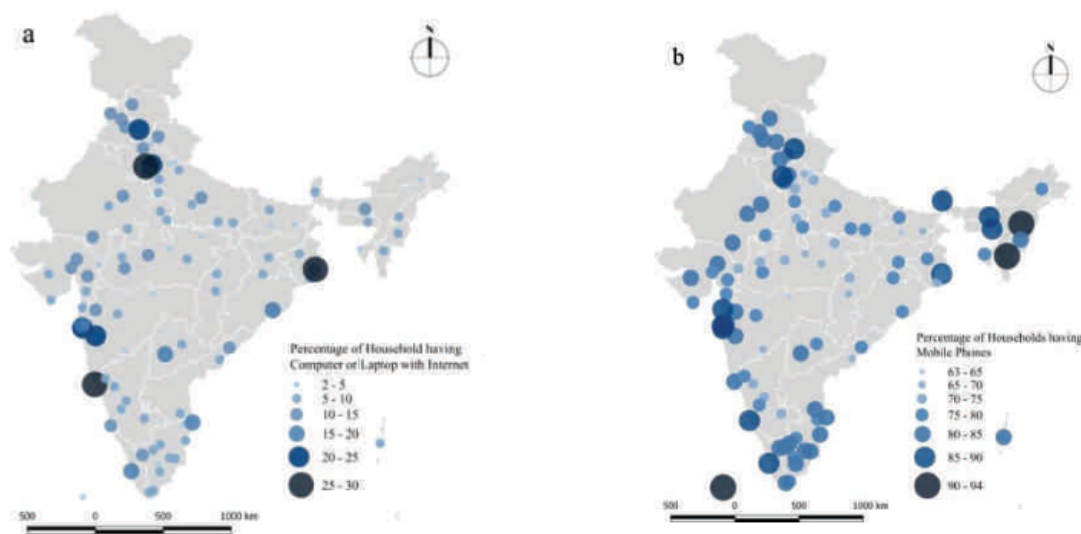
(a) Household level internet penetration (Praharaj et al., 2017)

(b) Mobile phone ownership across 100 smart cities*(Praharaj et al., 2017)

Figure 3.16: Household level internet penetration

The following figure compares households with internet penetration from this study with a figure showing metro cities (grade 'X') and other cities (grade 'Y') in India based on a classification of cities done by the Government of India. There are several classifications of cities in India such

as statutory towns, census towns, etc., however, this was chosen as it best identifies the major differences across metro cities and other smaller towns.
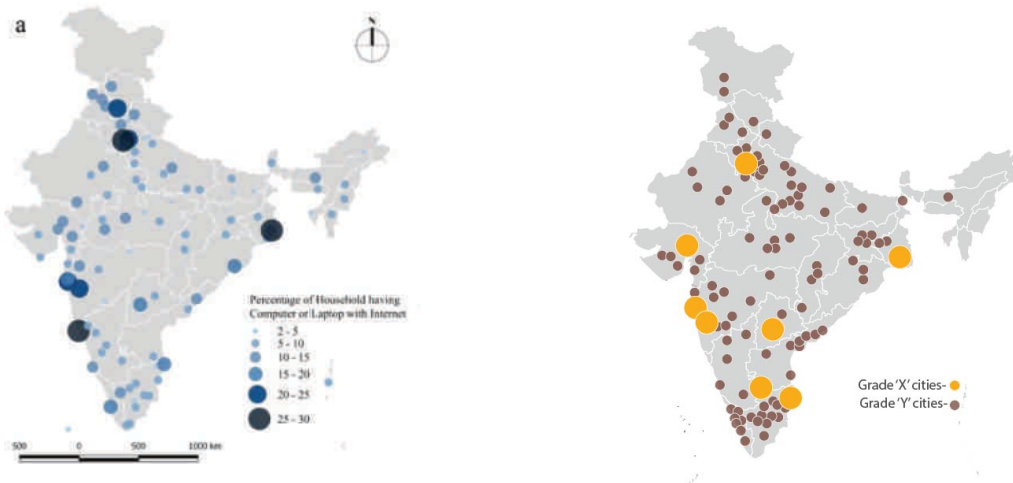
(a) Household level internet penetration (Praharaj et al., 2017)

(b) Grade X and Y cities in India*(Drawn by author)

Figure 3.17: The comparison of the figures highlight that the yellow dots (grade 'X') are the cities with a higher number of household computers
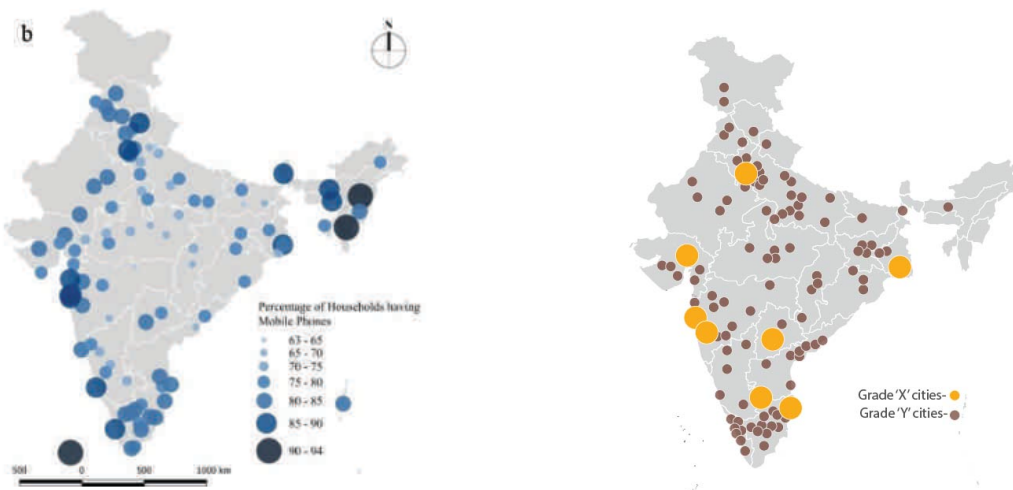
(a) Mobile phone ownership across 100 smart cities (Praharaj et al., 2017)

(b) Grade X and Y cities in India (Drawn by author)

Figure 3.18: The comparison of the figures highlight that the brown dots (grade 'Y') are the cities with a higher mobile phone ownership

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*This classification of Indian cities is used by the Government of India to allocate House Rent Allowance to public servants. Cities are classified on the basis of their population, cities under grade X are considered India's 'metros'- Mumbai, Delhi, Kolkata, Chennai, Bangalore, Pune, Hyderabad, Ahmedabad. (Wikipedia, 2021b)

The following cities are classified under grade 'Y'- Agra, Ajmer, Aligarh, Amaravati, Amritsar, Asansol, Aurangabad, Bareilly, Belgaum, Bhavnagar, Bhiwandi, Bhopal, Bhubaneswar, Bikaner, Bilaspur, Bokaro Steel City, Chandigarh, Coimbatore, Cuttack, Dehradun, Dhanbad, Bhilai, Durgapur, Dindigul, Erode, Faridabad, Ghaziabad, Gorakhpur, Gulbarga, Guntur, Gwalior, Gurugram, Guwahati, Hamirpur, Hubli-Dharwad, Indore, Jabalpur, Jaipur, Jalandhar, Jammu, Jamnagar, Jamshedpur, Jhansi, Jodhpur, Kakinada, Kannur, Kanpur, Karnal, Kochi, Kolhapur, Kollam, Kozhikode, Kurnool, Ludhiana, Lucknow, Madurai, Malappuram, Mathura, Mangalore, Meerut, Moradabad, Mysuru, Nagpur, Nanded, Nashik, Nellore, Noida, Patna, Pondicherry, Purulia, Prayagraj, Raipur, Rajkot, Rajahmundry, Ranchi, Rourkela, Ratlam, Salem, Sangli, Shimla, Siliguri, Solapur, Srinagar, Surat, Thanjavur, Thiruvananthapuram, Thrissur, Tiruchirappalli, Tirunelveli, Tiruvannamalai, Ujjain, Bijapur, Vadodara, Varanasi, Vasai-Virar, Vijayawada, Visakhapatnam, Vellore (Government of India- Ministry of Finance, 2017).

The study concluded that cities with smaller population size with semi-rural characteristic have been experiencing lower levels of digital infrastructure and internet penetration while modern planned cities across India perform comparatively well in contrast to it's national peers but are below global benchmarks.

"Digital divide is greater in urban areas than rural areas in India. We have to look at digital divides in Indian cities, we are not focusing on it enough. In the context of digital divide, participation gets further exacerbated. We need to adopt a gender lens as well, the digital divide is more among women in India. One needs to be aware and mindful of it, while we are formulating these solutions. Gender and digital divide are very important in India."

-Interviewee 5 (Senior Technical Expert and Urban Planner at the German Corporation for International Cooperation GmbH)

Factors influencing engagement on MyGov.in

A mathematical correlation was computed to assess the relationship between the city population that participated on the smart city discussion in MyGov.in and the level of digital infrastructure including socio-economic attributes of the city. It found out that intensity of eParticipation on the platform negatively correlated to (1) Access to internet (2) Ownership of mobile phones (3) Literacy rate, and, (4) Higher concentration of skilled workers (work participation rate, secondary and service sector workers).

The summary of the study is that-

- Engaging people in online platforms for civic deliberations is not simple a matter of digital infrastructure, but is influenced by a complex set of socio-economic and political variables.

- Higher access to digital infrastructure such as internet and mobile phones may have a detrimental impact on eParticipation.

- Socio-economic variables such as high literacy rate and availability if skilled workforce does not necessarily need to high intensity of digital political engagement.

- India's MyGov.in is being managed by the central government and lack local level engagement, this could be identified as a key reason for low levels of participation in the majority of cities including ones with a considerable share of population within internet coverage. Thus, the role of local government and local level platforms are thus key to carrying out meaningful engagement.

- Aspiring smart cities with diverse technological and socio-economic contexts must design locally dedicated platforms to capture the imagination and effectively engage with local residents.

- The awareness and interest in citizens in engaging with governments and range of stakeholders plays a larger role than their abilities and digital skills.

- Cities should focus on digital initiatives based on objective local assessments of citizen's behaviours and aspirations. Governments should be careful in understanding people's aspirations and reach out to a range of stakeholders before laying out ICT driven smart city platforms and policies.

- Cities with small and medium population size have been able to engage people more effectively than the ones with metropolitan character. This proves that civic intimacy at play between citizens and governments and its relation to the scale of urban spread.

- Cities being forced to compete with their counterparts has succeeded in fostering a culture of competitiveness while planning for smart and connected cities.

3.6.2   Representation bias and citizen disconnect

The study by Datta, 2018 analyses publicly available smart city documents and applications, the website from the ministry of urban development which hosts online citizen consultations and smart city applications submitted by different municipalities. A second aspect of the study was related to the space of a series of four stakeholder workshops held in India from January to June 2016 in four cities- Varanasi, Chandigarh, Navi Mumbai and Nashik. The workshops brought together a range of participants from government departments, private developers, ICT companies, NGOs, residents' welfare associations, slum dwellers' associations and so on. In depth observations of formal presentations, arguments debates and discussions alongside video and audio recordings were made. Further to the workshops, participants in Navi Mumbai and Nashik were interviewed in person and Skype.

The study observed that even though the Smart City Mission guidelines make the case that,

> *"there is no universally accepted definition of a Smart City. It means different things to different people. The conceptualisation of Smart City, therefore, varies from city to city and country to country, depending on the level of development, willingness to change and reform, resources and aspirations of the city residents. (GoI, 2015, p. 5) "*

each city authority had to appoint consultants to tender for the final deployment of smart technologies chosen exclusively from a list prepared by the federal ministry of urban development meaning that private sector involvement was obligatory, this went against the locally situated idea of the Smart City. The study notes that enumerating data on consultations that were served promoted a 'reductionist version of citizenship' where participation was reduced to merely a category of governance.

The study made the following observations-

- The language of consultations in the digital platforms were English, although responses were sometimes in Hindi or other regional languages. The platform lacked presence of more regional languages, with the exception of some states and some individual pages.
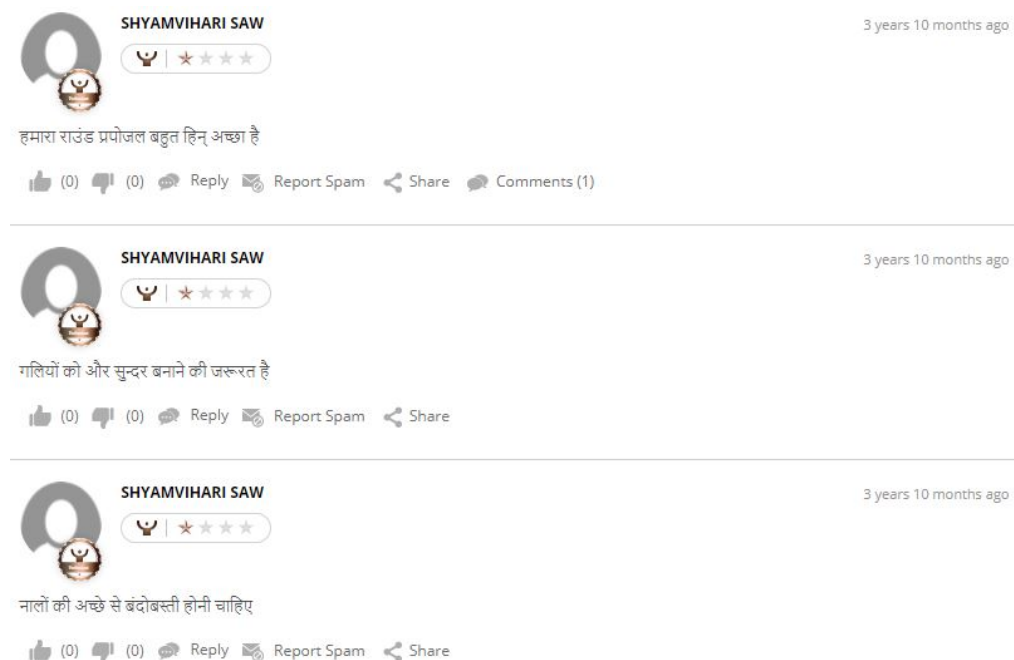
Figure 3.19: Comments in Hindi were common on the platform (Government of India, n.d.-a)

- The platform required skills that were clearly absent among those with lower education and digital capabilities.

- A large part of the citizen feedback in the online consultation involved suggestions on improving basic services, provision of physical and social infrastructure and so on. Yet, smart city proposals often aimed at 24/7 water supply, public wifi, e-rickshaws and so on.

- Local planners and consultants accepted that although urban basic services were priority themes in citizen consultations, their smart city proposals focused on those that fit within the ICT-driven prescriptive guidelines of the Smart City document.

- The online citizen consultations extended historic social inequalities from the urban to the digital realm. Comments ranged along elimination of open defecation, removal of hawkers and street markets, and so on which was mainly represented by the middle-class.

> Every colony has a slum attached to it. Unless we think of relocating them or improve these places and provide them basic amenities, our idea of smart city could be affected. In the absence of toilets they defecate in the open. they use the pavements to live, sleep, throw waste, etc. we must do something urgently.
>
> Jai Hind
>
> 👍 (0) 👎 (0) 💬 Reply 📧 Report Spam ⭐ Share

Figure 3.20: Heavy representation bias from the middle and upper classes in cities (Government of India, n.d.-a)

- In the Nashik workshop, the Deputy Mayor (a locally elected official) said to the Commissioner (a civil servant)-

  > *"Smart city, smart city, everyone is talking about the smart city. But did anyone try to analyse the reality behind it? The Central Government will give 500 million (Rs), and that is their maximum limit. The State Government will provide 250 million (Rs), so a total of 750 million. Now revenues of [municipal] Corporation are about 3,000 million (Rs), which suggests 2,250 million (Rs) will be citizens' money. But the Central and the State Government will keep control on this 3,000 million."*

  He was referring to the rolling out of universal financial packages to all the 100 smart cities despite huge variations in their demographic, social, political and economic contexts. This concern suggests that as the geographies of smart cities and complex and uneven, so are the ways that these are received and challenged by urban authorities.

- The smart city policies seem to ignore the role of the local government as a new SPV (Special Purpose Vehicle) needed to be set up to oversee the implementation of the Smart City proposal which bypasses institutional arrangements.

- Nashik and Navi Mumbai sought to challenge the ways that the smart city transformation imposed a top-down financial transactions that privileged the power of the federal state. Local councillors argued that this would lock them into long-term path dependencies with the corporate sector.

Figure 3.21: Navi Mumbai has opted out of the Smart city mission (Phadke, 2016-09-20)

According to an article in the Indian Express, a BMC (Brihanmumbai Municipal Corporation)-

> *"The BMC submitted its proposal to the state government during previous rounds of the Smart City competition. However, it had 14 conditions attached, which were mainly about how the BMC should have a major say in the Smart City proposals for Mumbai. The conditions were not acceptable to the government (Nair, 2017-06-22)"*

The study claims that while India's smart cities program can be seen as the test-bed of a global smart citizenship, this transformation is a top-down vision that aims at service efficiency and compliance. It highlights the consequences of the top-down nature of the engagement effort where citizens' real needs were overtaken by the ICT-prescriptive nature of the urban scheme causing cities like Navi Mumbai to opt out. It also highlights the lack of representation of the urban poor thus pushing further marginalisation of the urban poor.

3.6.3   Lack of feedback and communication

This study by Malhotra et al., 2019 analyses the MyGov platform in detail and tries to gauge the challenges associated with the functioning of such platforms in a diverse country like India. The study relies on data gathering techniques like conduct of semi-formal interviews, website observations and reference of secondary data including government reports and academic publications. The study has been analysed from the lens of three areas namely political, social and technical.
The summary of the findings are as follows-

1. **Political perspective**

   - Varied level of responsiveness from authorities- Various sub-sections gathered huge participation as citizens are motivated. However these have been observed to show different

levels of responsiveness from the government. Where the 'Do' section had several groups declaring the results quite sooner as compared to the 'Discuss' and 'Poll's sub sections which have shown no response from the government after taking suggestions.

- Incomplete feedback process- There is little evidence on the website as to whether citizen's contributions have been taken or not. The formulation of the new National Education Policy planned to utilise suggestions from the citizens and garnered over 9000 responses, but there was no communication from the government after that. It was also observed that regular updates were available on the Ministry's website but no such communication was available on MyGov. The 'Polls' section did not have many submissions, the ones that did had no communication whether the outcome of the poll was utilised or not.

- Absence of authority as a moderator in discussions- The 'Discuss' section showed an absence of an authority who can moderate the discussion. Without a moderator, confusion is created amongst the citizens and they may be deterred from commenting in further discussions.

- Lack of communication between authorities- Information being available on the main website and not on MyGov defeats the purpose of MyGov as a citizen engagement platform. This was observed in the New National Education Policy and this deters citizens to trust MyGov.

2. **Technical perspective**

- Presence of outdated content- Some content is observed to be regularly updated and maintained such as recent talks by the Prime Minister, however, some content is present for a long time. Some discussions under 'Discuss' has not been closed by the authorities.

- Dependence on third party for Cyber security- The technical support is provided by the National Informatics Center which comes under the Ministry of Electronics and Information Technology.

- Heavy website due to excess content- The website is easy to use, however, it offers a lot of content on the main web page which makes the website heavy and difficult to lead.

3. **Social perspective**

- Limited reach of the platform to the Indian population- The total population engaged is quite low compared to the population to whom internet is accessible. The usage of MyGov is most by people in the age groups of 18-35.

- Limited effect on policy matters- The platform provided an avenue for citizens to give suggestions on policy implementation. However, regarding policy implementation, only a

few success stories are present. There was no communication regarding the terms of the status of winners of polls or changes that occurred as a result of implementation of the results of the poll.

3.7 Summary

Several issues have come to light through the three secondary studies done on MyGov.in. Lack of hyper local information, digital divide, inequality and representation bias, lack of local languages and the general technocratic and top-down nature of the Smart Cities Mission highlight the need for more locally designed platforms keeping in mind greater socio-economic and political factors that influenced digital participation on the platform of MyGov.in. The effort did, however, manage to stoke great interest in citizens.

> *"With the advent of the Smart Cities Mission, interest in citizens' engagement has in-creased, since this was a criterion for selection. However, Smart Cities' public engagement has mostly involved surveys and consultations, rather than inclusive, empowered, public deliberation (Menon and Hartz-Karp, 2019b)."*

However, using this platform was a first step as it was the only platform that was used for citizen engagement and governance in India already.

> *"MyGov was the only available platform and was familiar to citizens. It was already established as a citizen engagement platform for governance in the country. So it was chosen as the key platform for citizen engagement under the Smart Cities Mission. It was used especially in the initial phases of the Smart Cities Mission, however, in the later phases some cities realised that it lacks hyper-local information in the local contexts of cities."*

> *-Interviewee 2 (Former Indian Smart Cities Fellow)*

The number of comments and suggestions on the platform, however, may not be necessarily an all-telling factor defining the intensity of e-Engagement on the platform because sometimes people also posted comments that did not have any relation to the topic in discussion.

> *"MyGov was a platform that many people used, but in the end, people were often posting quite random things in the comments that were not relevant to the topic at all."*

> -Interviewee 1 (Former India Smart Cities Fellow and consultant to the Ministry of Housing and Urban Affairs, Government of India and long-time resident of Pune)
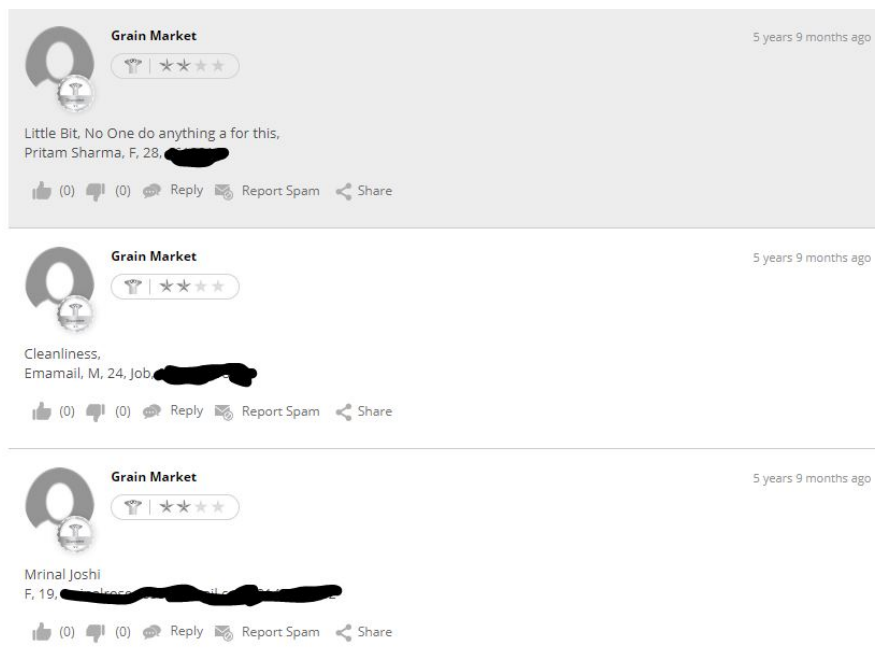
Figure 3.22: Examples of non-related comments (contact details have been hidden) (Government of India, n.d.-b)

Direct engagement between city governments and its residents is a mission point as the scope of MyGov.in is targeted to a much wider community- this means interactions are more passive and outcomes are not tangible (Praharaj et al., 2017).

While it is clear that there are more complex factors that determine digital participation from citizens, it is not entirely clear which factors they might be. For this, a detailed case-study of Pune's citizen engagement effort under the Smart Cities Mission has been taken up in the next chapter. The study allows us to deep-dive into what seems to be a very successful and extensive citizen engagement effort among India's cities- this can offer insights into factors that affect e-Participation in Indian cities.

Case-study- Pune

4.1 Introduction

The Pune smart city proposal is known to have carried out one of the largest citizen engagement initiatives in India. In total, the exercise was carried out from July 2015 to October 2015 (Shruti Vaishampayan , Rahul Deshpande, Tushar Jadhav, 2020). The citizen engagement initiative was carried out through multiple phased approaches with targeted strategies to cover all of the city's population. Pune claims to have reached 50 percent of total households through an offline and online campaign with a huge response from the citizens with a a total of 3 million inputs received.

Home to several social movements, Pune is said to have a rich legacy of participation in governance. A wide range of stakeholders such as NGO's, citizen groups, resident associations and special interest groups regularly interact with local authorities. Famously referred to as the 'Oxford of the East' and the cultural capital of Maharashtra, Pune also has more than 30 percent graduate workforce. that triggered the IT revolution in the city (pmc.gov.in, n.d.).

Figure 4.1: Pune, India (World Easy Guides, 2014)

Population (2011)	31,24,458
Area	250.56 sq. km
Population density	12470 people per sq. km
Class of corporation	Municipal Corporation

Table 4.1: Urban profile of Pune (Pune Municipal Corporation, 2015b)

(a) Pune, Maharashtra   (b) Ward map of Pune
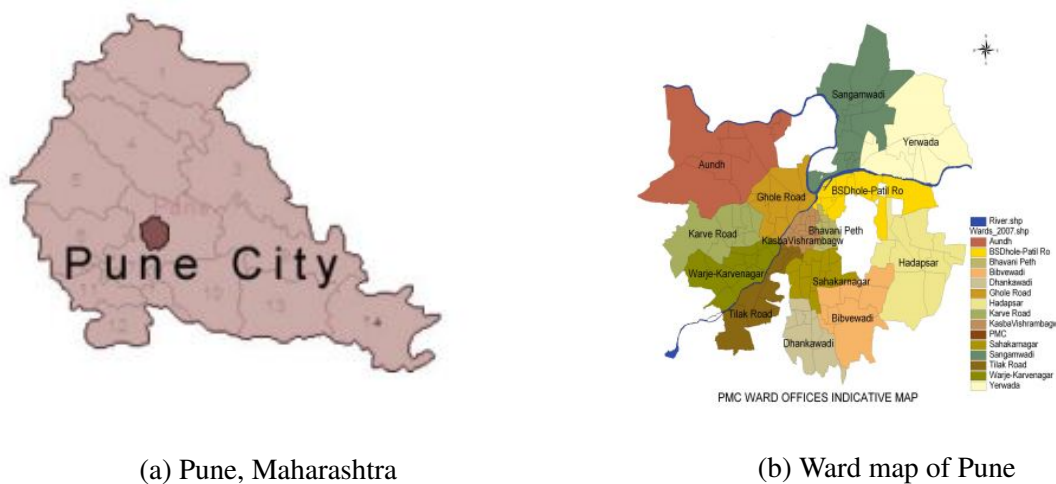
Figure 4.2: L- Pune district and R- Pune Municipal Corporation area (Pune Municipal Corporation, 2013)

4.2   Institutional and organisational structure

Established in 1950 under the Bombay Provisional Municipal Corporation Act (BMPC) Act, 1949, Pune Municipal Corporation (PMC) is divided into four main zones sub-divided further into 15 administrative wards. Each of the 15 wards are then further subdivided into a total of 76 'prabhags'. Each of the 76 'prabhags' have two councilors or corporators. The Mayor is elected by the councilors and holds office for two and half years. Each ward has a ward committee that consists of all elected representatives of all the prabhags under the ward and appointed members from NGOs, academic institutions, etc (Pune Municipal Corporation, 2015a).
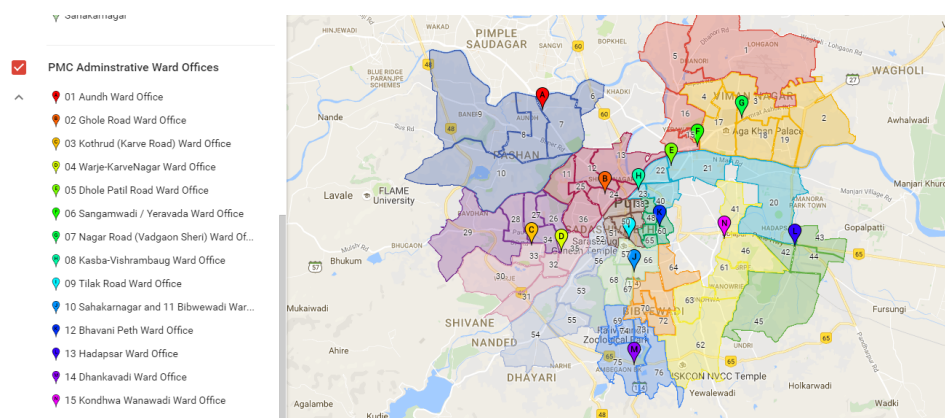
Figure 4.3: Administrative divisions and subdivisions in Pune (eloksevaonline, 2016)

Administrative wards may also have prabhag samitis the functions of which range from prioritisation of schemes and development programs to infrastructure related functions like suggesting locations of street lights. Meetings of the councilors (General Body) are held at least once a month, other committees work in the city along with the General Body.
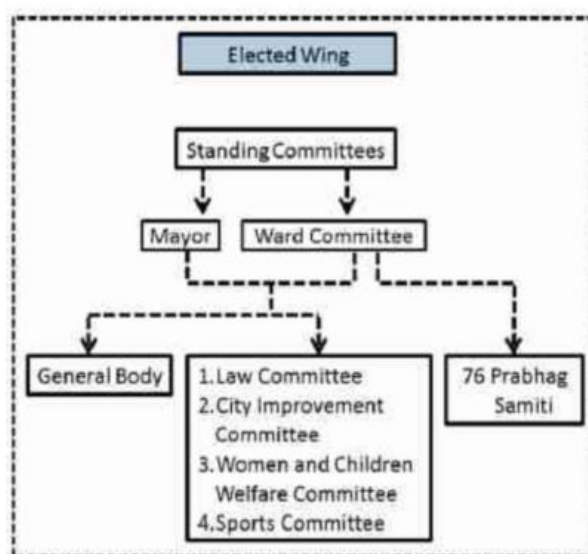
Figure 4.4: Organisational structure of the elected wing of PMC (Pune Municipal Corporation, 2015a)

Councilors and the prabhag samiti are crucial as they are the interface between citizens and the administrative ward offices.

4.3 Pune's citizen engagement under the Smart Cities Mission

The Pune smart city proposal has created one of the largest citizen engagement initiatives in India (Shruti Vaishampayan , Rahul Deshpande, Tushar Jadhav, 2020). The citizen engagement exercise was

carried out from July 2015 to October 2015 and claims to have covered 50 percent of Pune households through an extensive online and offline campaign. A 400 member team that was made up pf PMC officials and multiple partners worked to carry out the process (Pune Municipal Corporation, December 2015).

4.3.1   Process organisation

The organisation of the process of citizen engagement was proposed to have three main stages- 1. Preparatory phase, 2. Proposal development phase, and 3. Action-Reflection phase.

- **Preparatory phase-** A well-planned process was at the heart of Smart City Pune's citizen engagement initiative. A cell was set up to carry out major functions namely- to develop communication materials in different formats and languages, to provide necessary information in usable forms for citizen deliberation, to deign events and workshop processes, to collate inputs and provide these in forms that can be useful for further projects or for proposal development, to maintain documentation of events and to provide response to the public at all stages of the process.

  The cell was also responsible for developing guidelines for public outreach processes, arranging facilitator's training programs, developing partnerships and internships to draw expertise fro NGOs, civic groups, experts, etc., conduct training and skill sharing workshops and manage web presence and media outreach. PMC also intended to commission a communication strategy to support the process like developing a logo, etc.

- **Smart Pune proposal development phase-** This step aimed to inform citizens about the Smart City Challenge Process, to provide examples from Pune and other cities and obtain citizen inputs for aspects like desirable smart city elements, prioritisation of problems to be solved suggestions and ideas for solutions and what kind of commitment and engagement should be expected from citizens in areas selected for Smart City projects.

  The process of 'samvad' (meaning 'conversation') was proposed to be done to collect inputs from citizens through different tools and levels such as ward samvad, focus group samvad and online samvad.

- **Action-Reflection Phase-** The aim of this phase was to enable citizen engagement through project life cycles. Under the action support phase, citizens would be supported in different ways to participate better- for example, development of databases of experts and good practices, online and face-to-face short courses on composting, solar energy, etc and skill sharing workshops.

  The Monitoring and Feedback part is intended to create citizen committees to enable participation and monitoring of project implementation. A mix of ICT tools and face-to-face meetings and

discussions were to be used for project information, timelines, budgets, benchmarks for different civic services, performance ratings, citizens juries and citizens' review meetings.
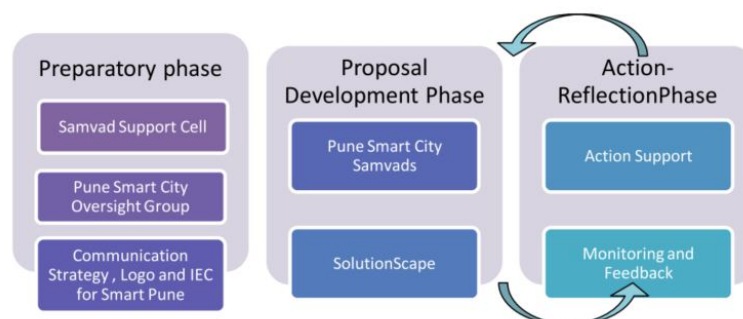
Figure 4.5: Smart Pune Samvad process (Pune Municipal Corporation, 2015a)

4.3.2 Strategy

The 'USP' of Pune's citizen engagement process was through a 5S approach which can be described as follows-

- **Speed-** Completing the process from design, engagement to data analysis to solution development in 100 days.

- **Scale-** Reaching a majority of citizens covering all wards and areas and reaching different socio-economic and demographic segments of the population

- **Structure-** A 9-phase approach to the Pan-city solution and Area-based development components of the smart city mission

- **Solutioning-** Focuses on identifying problems to be addressed and crowdsourcing to develop real and implementable solutions

- **Social audit-** Syndication with and acceptance of citizens

The Smart City Pune team drove a four-pronged effort before launching the citizen engagement initiative- it consisted of 1. Defining each stage of citizen participation and the objective of each stage, 2. Defining the modes of citizen engagement to be used, 3. Creating a partner ecosystem, and 4. Creating a war-room to monitor and track the citizen engagement process.

Figure 4.6: Pune's 5S approach to citizen engagement (Pune Municipal Corporation, December 2015)

4.3.3   Pune's citizen engagement model

Taking cue from the Smart Cities Mission guidelines, Pune's Smart City team structured the citizen engagement effort into nine phases. The first five phases were targeted towards the entire city under pan-city development while the last four phases were run for the area-based development project- in the area identified for the local area development initiative.The details o the phases for the pan-city initiative are below-

- **Phase 0- Smart City Macro strategy (10 days)**

    This phase provided framework for citizen engagement which serves as a time guideline for the rest of the proposal preparation process. A grid was created to reach out to different sections of citizens in Pune- 7,500,000 forms were printed. Volunteers were trained to execute polling booth based connect strategy. Smart city hoardings were set up across the city and a meeting with Ganesh Mandals of Pune were done. Ganesh mandals are small groups that organise the biggest festival of Maharashtra, Ganesh Chasturthi locally around the city.

- **Phase 1- Envision (11 days)**

    Citizens were engaged at scale to ask them-

    1. What is their city of the future?

    2. What are the top three issues they would like to get addressed in this future city? (Pune Municipal Corporation, December 2015)

    A war-room made sure all the responses were digitized and recorded by the Response Management Team that comprised of smart city volunteers that ranged across a wide range of citizens including students, interns, PMC employees, partner organisations and more. The end-product was to create a citizen-driven 'wordle' based on the frequency of the words used.

- **Phase 2- Diagnose (14 days)**

    Data collected from the previous phase was analysed on demographic parameters and six key issues were identified. The six sectors were transport and mobility, water and sewage, solid

waste management, environment and sustainability, safety and security and energy. Citizens voted to identify the most critical goals for the city.

- **Phase 3- Co-Create (10 days)**
  Major issue areas and definite goals were thrown open to the public- discussion forums invited solutions from the citizens. After citizens offered their solutions, top concerns and issues were categorized and sent to experts for generating and refining solutions.

Figure 4.7: One of the top three solutions from citizens under 'Solid waste management' (Pune Municipal Corporation, December 2015)

- **Phase 4- Refine**
  Two day long mini-labs were conducted with citizens and elected representatives for 3 priority sectors. Corporators and citizens were invited to work with PMC to refine the solutions in each sector.

- **Phase 5- Share (30 days)**
  After collating and analysing data with local and global experts from the relevant sectors, PMC shared sector-wise solutions with citizens through focus group discussions and workshops.

Figure 4.8: The 5 phase approach for pan-city proposal development (Pune Municipal Corporation, December 2015)

A different citizen engagement process was run for the area based development proposal. The process for identifying the area for the local area development was done with citizen along discussions with urban planners and elected representatives.

- **Phase 6- Selection of development type**
  Area evaluation and selection were done in this phase. After the type of development was chosen, a 10 point assessment criteria was created to profile areas based on discussions with sectors experts, engineers and architects. After shortlisting based on ward data analysis and focus group discussions with urban planners, citizens were engaged over 6 days where Aundh-Baner-Balewadi (ABB) was chosen. Common consensus was reached after evaluation by experts and elected representatives.

- **Phase 7- Area-based competitions**-
  50 plus teams from architecture colleges in Pune did extensive profiling of the area through walk-throughs and workshops and participated in the local area development competition.

- **Phase 8- Engagement with residents of ABB**
  A citizen engagement process was done for 10,194 citizens that had 0.2 million inputs (60 percent of ABB households). Citizens were asked about issues in basic services and what vision they have of the area.

- **Phase 9- Sharing and acceptance**
  The final proposal was shared with citizens and citizens were asked to pledge acceptance of the final proposal.

Figure 4.9: The 4 phase approach for the area-based proposal development (Pune Municipal Corporation, December 2015)

4.4 Modes of citizen engagement

4.4.1 Pune's outreach in numbers

Pune used both offline and online methods to engage citizens to design it's proposals under pan-city ad area-based development. Face-to-face encounters were facilitated by distribution 0.75 million forms that were distributed to households across all 15 wards. 307,991 households filled the form and 0.15 million citizens signed up as smart volunteers (Pune Municipal Corporation, December 2015). More than a 100 meetings with different groups took place from the Pune stakeholder grid. 10 leasing newspapers covered the campaign through 20 articles in 45 days. Different radio channels broadcasted messages.

Under online methods used, Pune's smart city portal registered 70,778 registrations in a moth while the Facebook page got considerable attention as well. Twitter was also quite popular with thousands of tweets and retweets. The mobile app received almost 7000 responses and approximately 500 ideas from citizens. YouTube was also reasonably popular among online methods.
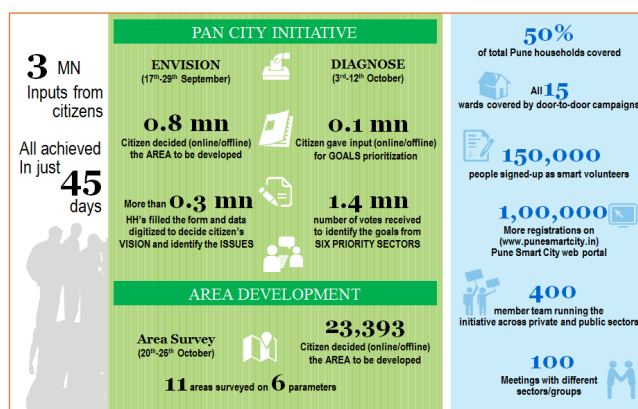
Figure 4.10: A summary of the citizen engagement effort (Pune Municipal Corporation, 26-07-2021)

4.4.2   Outputs of the different phases

A word cloud was created on basis of the inputs of citizens, or a 'wordle' to identify what citizens would like to see in Pune. The top six vision ideas were also identified along with their percentages.
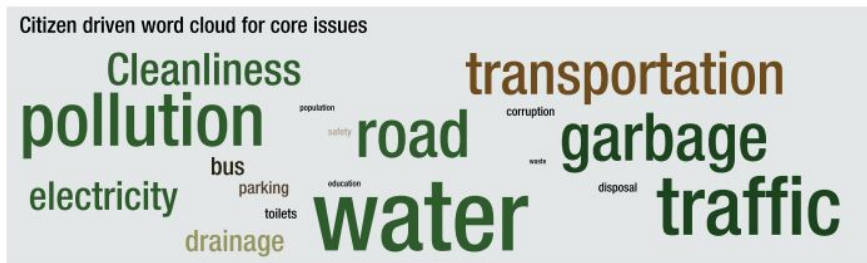
Figure 4.11: Citizen-driven word cloud (Pune Municipal Corporation, December 2015)
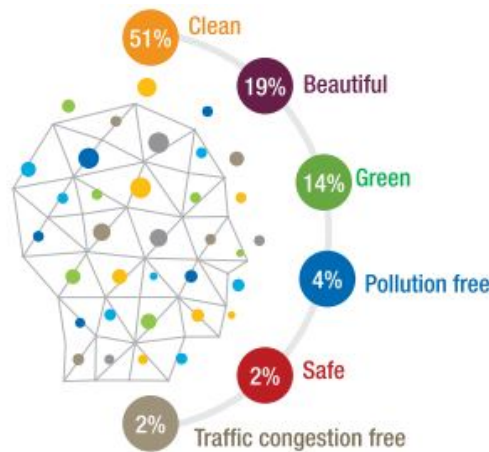
Figure 4.12: The top six vision ideas along with percentage (Pune Municipal Corporation, December 2015)

Figure 4.13: The top six sector preferences regarding issues aligned to Smart City features (Pune Municipal Corporation, December 2015)
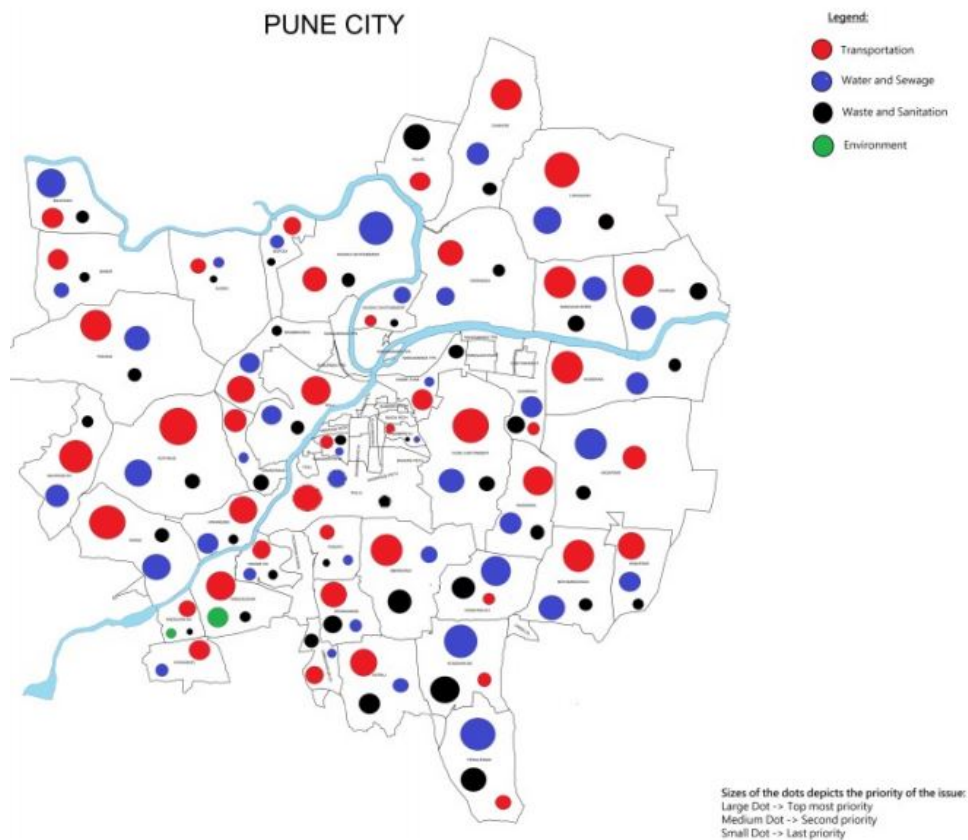
Figure 4.14: Summary of area-wise issues that were identified (Pune Municipal Corporation, December 2015)

Citizens were asked to provide solutions for the top goals identified for which an interactive platform was built where citizens could submit new ideas and also support others' ideas by liking or sharing them.

For local area development, Pune asked six questions to ask citizens to identify an area in the city. The questions mainly asked- which is area most important as Pune's identity?, which areas citizens would prefer to invest in as an entrepreneur, which area is considered recreational hub for the youth or in general in Pune, which area you would like to live in and which area will benefit a largest cross section of society. Of all the areas, Aund, Baner and Balewadi was chosen on basis of maximum points awarded. The top smart city features that are missing and were selected for the area were water supply (45 percent), citizen participation (40 percent), waste management (36 percent), health (35 percent) and waste water management (35 percent) (Pune Municipal Corporation, December 2015).

The different modes of citizen engagement used in Pune could be classified under five main methods.
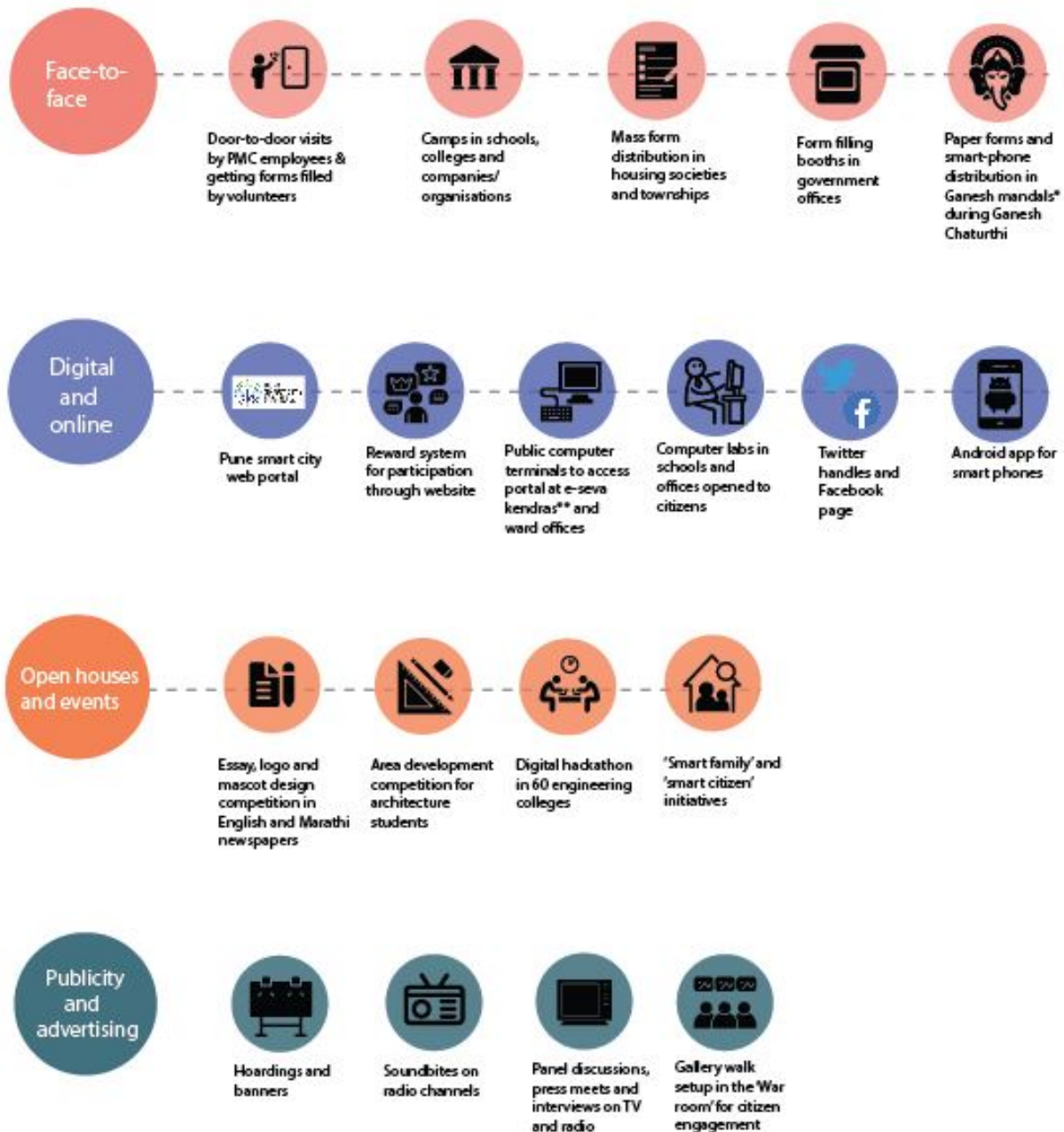
*Ganesh Chaturthi is the biggest festival in Maharashtra
**e-seva kendra- internet websites for government services

Figure 4.15: Modes of citizen engagement used in Pune (Source- Adapted from Pune Municipal Corporation, December 2015 and drawn by author)

The filled circles indicate which tools were used in Pune's citizen engagement effort under the Smart Cities Mission

Cooperation

Neighbourhood planning office

Development trust

Round tables

Workshops

Mediation procedures

Consensus conference

Advocacy planning

Neighbourhood committees

Focus groups

Consultation

Award scheme

Consultation

Citizen request sessions

Face to face/door to door

Invitation of NGOs to council meetings

Simulation

Experimentation

Town-hall meetings

Ideas competition

Appeal services

Citizens' expertise

Surveys and polls

Complaint forms

Action planning event

Community planning forum

Complaint hotlines

Information

Written official plans with maps

Leaflet

Booklet

Visualisation

Games

Newsletter

Oral presentation

Site visit

Street stall

Road-show

Hotline

Devices used for citizen participation
Source: Drawn by author

4.5   Existing participatory initiatives and mechanisms

Several initiatives in Pune have contributed to a strong culture of participation from different segments of the society. The following sections outlines briefly some of the most important initiatives that the city has undertaken.

4.5.1   Strong institutional and legislative background

Ward committees and prabhags have not only been institutionalised, but are also active and play a very important role in Pune. The General Body of the wards meet at least once a month and prabhag samitis play a critical role in reducing the gap between citizens and the local government.Pune also has WISE (Ward Infrastructure Services and Environment) which is a method for grading different areas of the city based on a list of 26 indicators including population, slum population and the status of infrastructure such as roads, sanitation, drainage, etc. This information is available on a separate website which can be publicly accessed so citizens can undertake a social audit of projects in their neighbourhoods based on the knowledge of status of infrastructure and services in their ward.
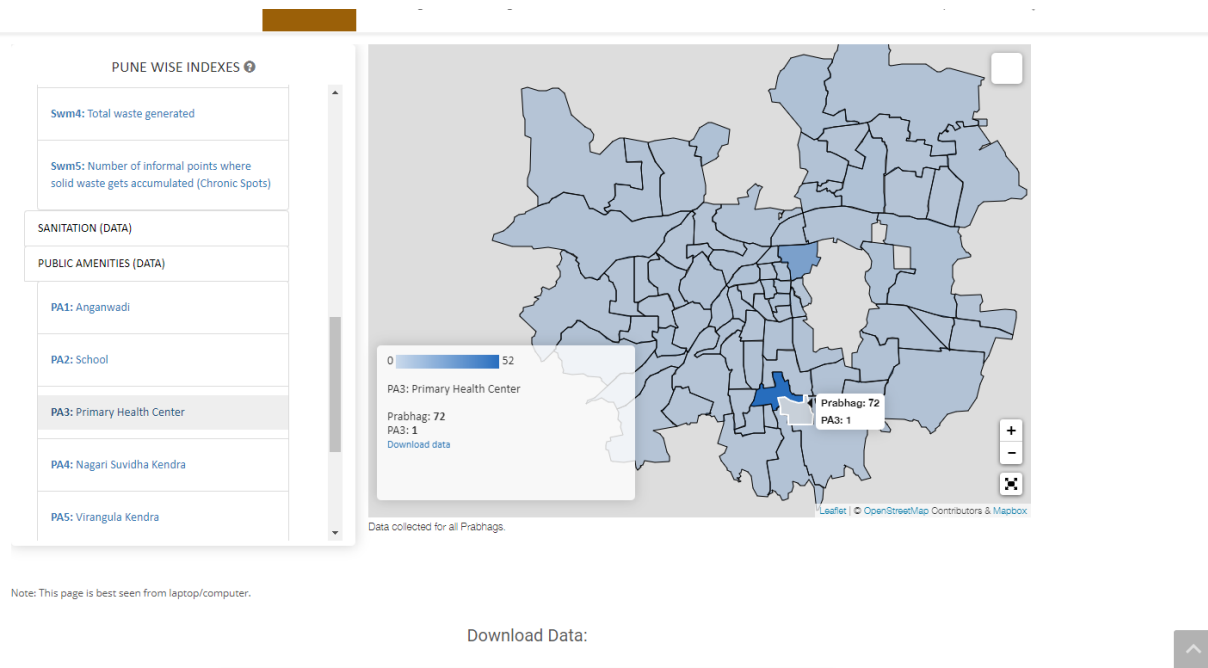
Figure 4.16: Pune's WISE offers a range of infrastructure mapped spatially (Pune Municipal Corporation and Centre for Environmental Education, n.d.)

Mohalla committees are also quite active in Pune and often aid the city in various administrative functions. For example, mohalla committees helped election officers in Pune to increase the voter list as at that time, 94 percent voters were registered and the mohalla committees were asked to help

them reach the remaining 6 percent that were not registered (Prachi Bari, 2018-10-20). Pune could effectively use their ward offices as campaign hubs and have been able to utilise ward committees as well as mohalla committees. Pune is the only city other than Mumbai to have devolved 14.5 functions (out of 18 delegated functions recommended) in line with the 74th Constitutional Amendment Act that aimed to promote decentralisation and strengthen urban local bodies (NITI Ayog, 2018-07-11).

4.5.2   Pro-active information provision

The Pune Municipal Corporation provides information on several issues such as citizens' charter, annual budget, various policies and programs, Development plan, detailed project reports very proactively. The website of PMC is a very important means of accessing information and seems to be updated often and is maintained well. A lot of information is available in Marathi, the local language, to the extent that some information is also available only in Marathi.
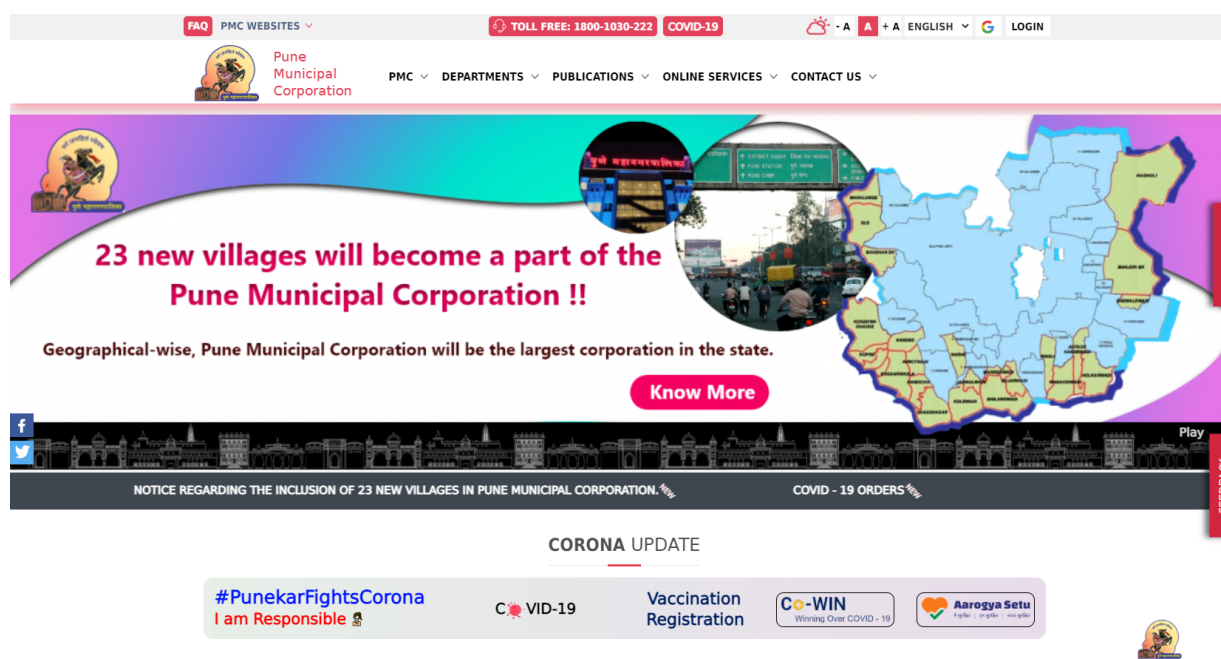
Figure 4.17: The website of PMC (Pune Municipal Corporation, 28-07-2021a)

PMC also has a mobile application that allows for viewing general information on PMC and it's building permission department, tracking of projects and building approval status online, knowing your building permission document list, viewing site plans, development plans, etc.

4.5.3   Pune data store

The Pune Data store has been created by PMC as a step to 'freeing Pune's data'. Aimed at promoting open governance, the city intends for citizens to hold and use data that is help by public organisations.

The data store can be accessed through a separate website and has a large range of data sets such as information on bus routes, monthly statistical reports, vehicle population statistics, etc. It also contains links to data portals of the Government of India, the Government of Maharashtra, Pune Corporation and has open data handbooks that compile information on legal, societal and technical aspects of open data.
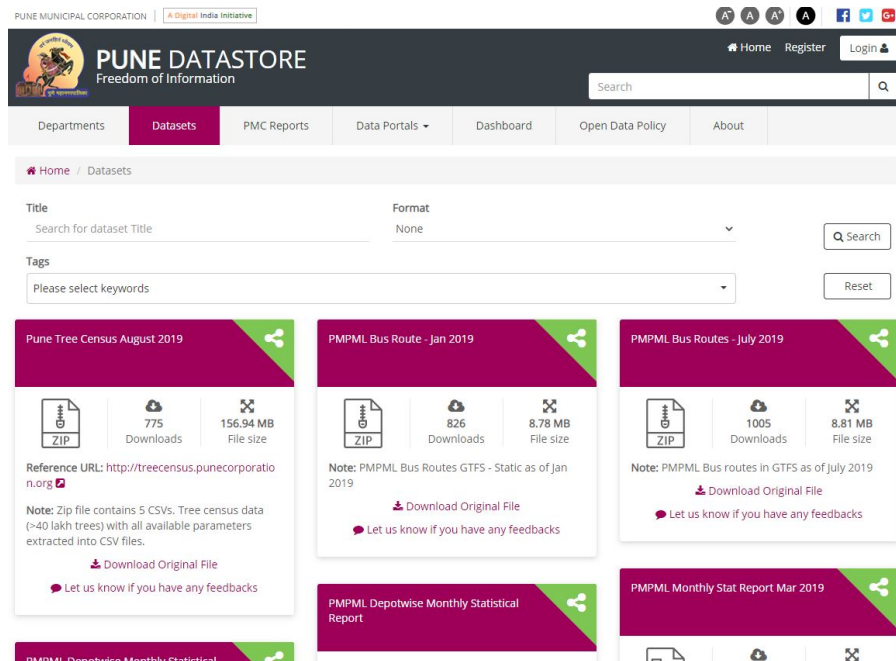
Figure 4.18: Pune Data store (Pune Municipal Corporation, 28-07-2021b)

4.5.4 PMC CARE

PMC CARE is a mobile application from the PMC that is aimed to provide an efficient channel for citizens and PMC staff to provide information and answers to frequently asked questions on any mobile device. Features of the application include viewing the FAQs and responses given by PMC, department selection to see related FAQs, viewing answers in English and Marathi. submitting new questions through the application, providing feedback to a specific FAQ response and sharing the information on social media channels.

The application aims to go beyond addressing grievances and providing 'responsive governance' (Pune Municipal Corporation, 2016) and aims to harness digital technology in addition to existing ones. It bases the app on three key pillars of Assistance, Response and Engagement. The citizen CARE executives are also trained to take feedback and complaint or raise a ticket so that citizens don't have to adjust their busy schedules to visit a ward office. A toll free number is used for this dedicated call centre.
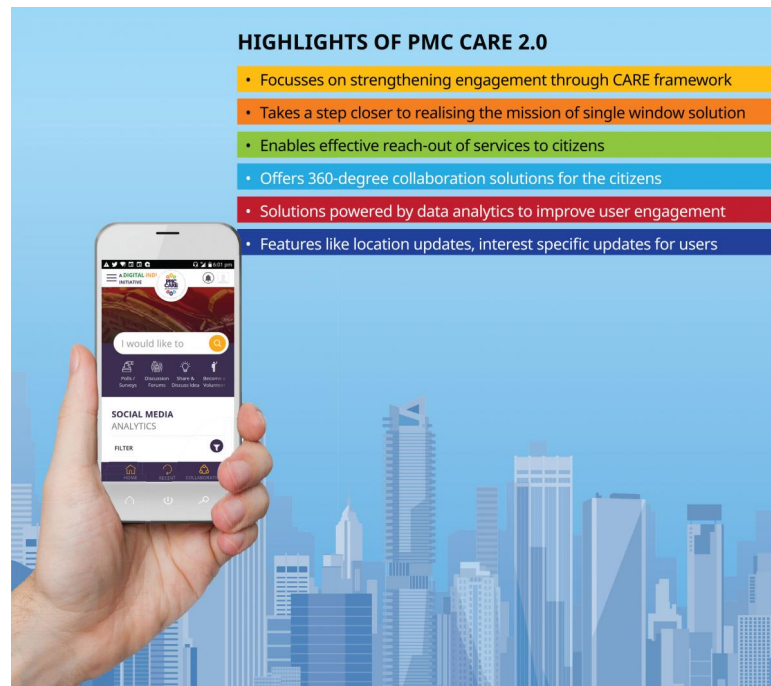
Figure 4.19: PMC CARE mobile app (Home | Pune Municipal Corporation, n.d.)

4.5.5 Online complaint redressal mechanism

The Online Complaints Management system allows citizens to submit complaints and suggestions through the website or email- this is in addition to the traditional mode of written submissions. Citizens can register on the website and also check the status of the complaint.
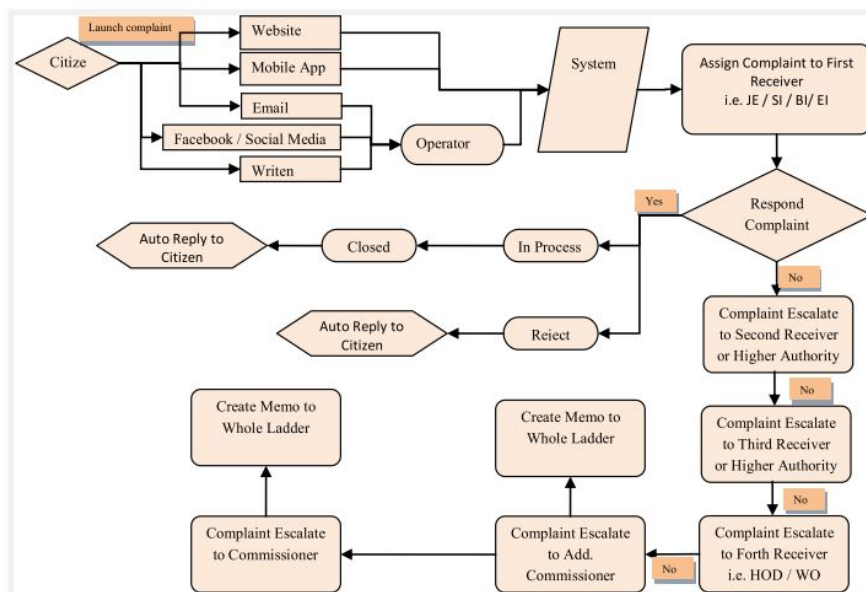
Figure 4.20: Flow diagram for e-governance Complaint Management System (Pune Municipal Corporation, 2015b)

4.5.6   Online newsletter and social media

PMC has an active Facebook page where all updates are posted and are kept updated, there is also an online newsletter that keeps citizens updated on new developments from PMC.
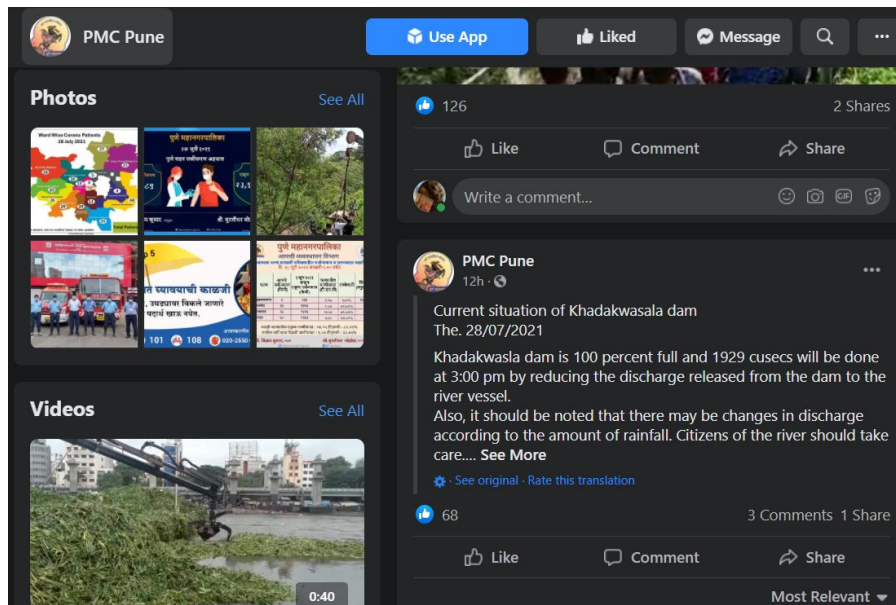
Figure 4.21: The Facebook page of PMC (Facebook, n.d.)

4.5.7   Centre for Citizenship and Environment Education

The Centre for Citizenship and Environment Education, also known as Indradhanushya is a public facility of PMC to create environmental awareness and responsible citizenship. The institute has several functions of which some are- environmental education, information ad outreach, an exhibition centre that showcases Pune's history and heritage along with other themes such as sanitation, urban biodiversity and local city governance and has a library, auditorium and outdoor spaces. The centre also conducts it's own programs and provides a platform to organise workshops, seminars, documentaries, etc (Pune Municipal Corporation, n.d.-a).

4.5.8   Participatory budgeting

Pune became the first Indian city to successfully implement participatory budgeting in 2005. Every year, PMC publishes an advertisement and invites suggestions from citizens regarding civic works that should be included in the forthcoming municipal budget. A 'Citizen Suggestion Form' is available online and at the ward office where citizens have a month to fill it up. The proposals are then sent to the prabhag samiti. Regulations mandate that individual projects cannot cost more than 5 lakh rupees (0.5 million rupees), it also indicates that each of the 76 prabhags can allocate a maximum of 50 lakh

rupees (5 million rupees) (Rajit Sengupta, n.d.). People may demand works on pavements, streets, etc. and civil society played a crucial role in popularising the initiative.

4.5.9 Active civic society and organisations

Organisations like Shelter Associates has been working towards providing access to sanitation in informal settlements since 1993. Their core strategy involves setting up a robust spatial data platform to identify families lacking access to basic sanitation, facilitating construction of individual toilets, conducting workshops to increase awareness within the community regarding environmental issues, providing a firm forum sanitation issues and establishing solid waste collection systems (Shelter Associates, n.d.).
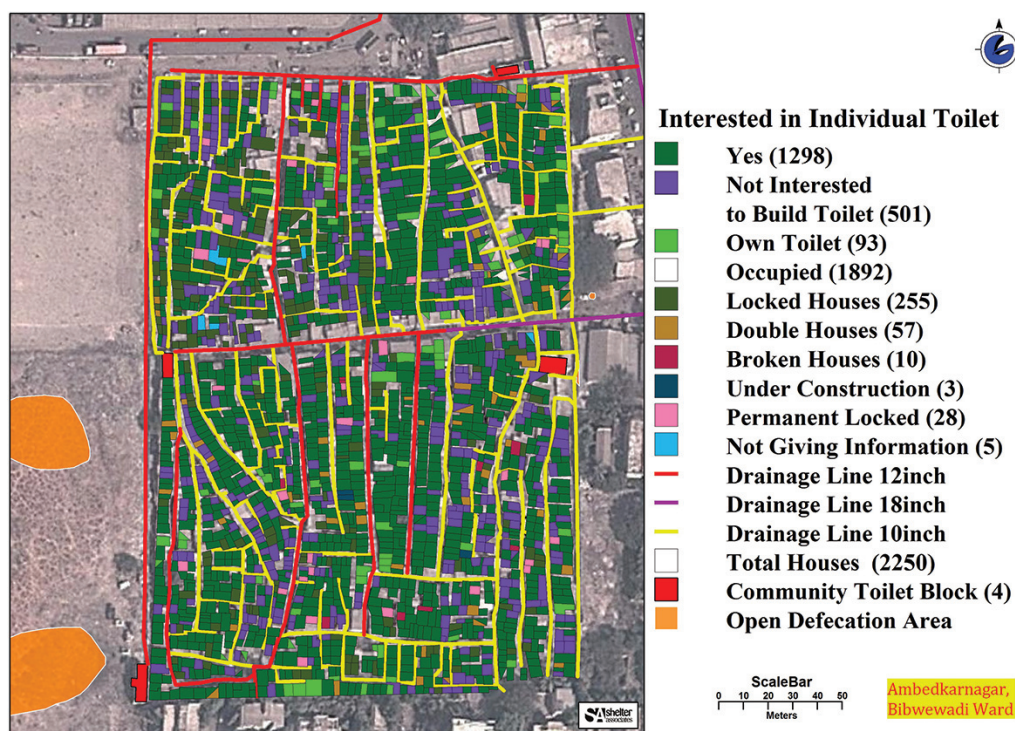
Figure 4.22: An example of a map generated by Shelter Associates based on household surveys to show households with or without individual toilets (Google Earth Outreach, n.d.)

Organisations like CEE (Centre for Environment Education) have played a crucial role in facilitating citizen engagement in various projects for PMC. Mashal is another non-governmental organisation working on community development through people's participation since 1985 (Mashal, n.d.). Parisar in an NGO that advocates for urban planning issues since the 80's. Thus, the presence of many such organisations is an indication of Pune's strong civic society. Pune also has a strong presence of Neighbourhood Housing Groups (NHG's) and Self-help Groups (SHG's) that was considered an important aspect of the citizen engagement effort.

4.5.10   Active citizenship

Citizen activism has been consistent and strong in Pune. In an interview to Development Channel, Nishit Shukla, an independent policy-researcher based in Pune, says-

> *"Citizen level participation is an asset to Pune. I recently attended a citizen's meeting with the commissioner. The residents near a wildlife reserve called Taljai Hills were protesting against construction planned by a project on the hills. A lot of such short-scale movements are driven by residents within the city to build awareness about what is already there."* *(Development Channel, 2019)*

Several citizen groups in Pune also monitor their municipal authorities closely by insisting on inspecting town plans, offering alternative proposals and on not relaxing pressure on authorities thus motivating citizens to be active and aware (Ajit Menon, n.d.).

Figure 4.23: A newspaper article highlighting active citizenship in Pune (Ajit Menon, n.d.)

When interviewed on Pune's citizen engagement under the Smart Cities Mission, Interviewee 1 said,

> *"Pune has a strong culture of participation indeed, citizens are very aware of projects going on in their locality and neighbourhoods. Citizens are also aware of who is their*

representative in local governments such as corporators."

-Interviewee 1 (Former India Smart Cities Fellow and consultant to the Ministry of Housing and Urban Affairs, Government of India and long-time resident of Pune)

4.6   Criticism

The smart city proposal in Pune created a baseline and an aspiration for how citizen's inputs should be used for project identification (Shruti Vaishampayan , Rahul Deshpande, Tushar Jadhav, 2020). However, some have criticised the initiative saying that citizen involvement and transparency got very little attention and that it is a misnomer the Smart City project had 'anything to do with the city' (Nadhe, 2016-06-17).

> *"The way the plan has been developed, it seems it's only about a part of the city"*
> *-Rajya Sabha member and city president of the Nationalist Congress Party (Nadhe, 2016-06-17)*

Representatives also claimed to have been left in the dark about plan details in Aundh-Baner-Balewadi (ABB) area. Others criticised the citizen engagement effort as short-lived.

> *"I am not happy with the situation because I think the citizen engagement effort is something that should keep happening. If the proposal changes after this, citizen engagement efforts should be made again. It should not stop after a sudden period of intense citizen engagement efforts."*
> -Interviewee 1 (Former India Smart Cities Fellow and consultant to the Ministry of Housing and Urban Affairs, Government of India and long-time resident of Pune)

Interviewee 1 also made the observation that leadership was a crucial element in Pune's success, effective leadership helped contextualise the national engagement mission to Pune's local context.

> *"What Pune's SPV CEO and Commissioner did really well was contextualising the engagement effort to Pune. This is why the engagement was so effective. However, clearly leadership played an extremely important role. The moment the role of the SPV and Commissioner were separated, things did not go as well as they were going."*

4.7   Discussion

When comparing with the secondary research on how intense the level of civic engagement was with respect to the total number of comments on MyGov.in, it is interesting to note that Pune does not

feature prominently there. This indicates that even though Pune's citizen engagement exercise was by far one of the largest and most successful among other Indian cities under the Smart Cities Mission, the parameter of analysis by counting the largest number of comments was not a good criteria as far as Pune is concerned. Pune used it's own local platforms to engage citizens where MyGov.in was only one aspect of a much wider exercise. This proves the summary from the study (Praharaj et al., 2017) that engaging people on online platforms for civic deliberation is not only a matter of digital infrastructure but is influenced by a much more complex set of socio-economic and political variables. It also confirms that locally designed dedicated platforms are necessary to capture the citizen's' imagination and effectively engage with local residents.
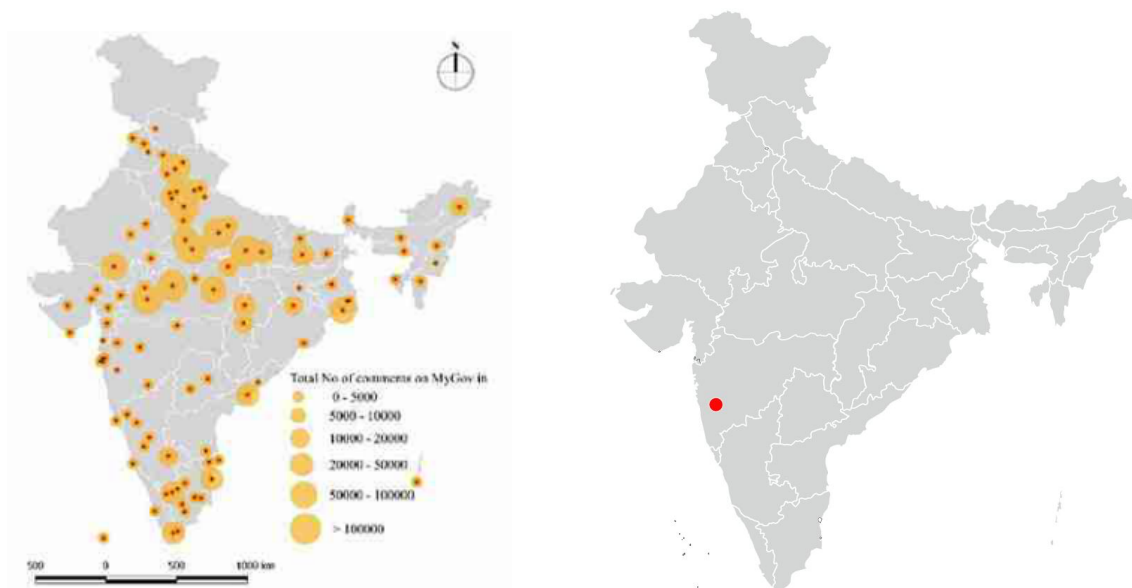
(a) Intensity of e-engagement in Indian cities (Praharaj et al., 2017)

(b) Location of Pune in India (Source- Drawn by author)

Figure 4.24: Comparing the position of Pune based on the intensity of e-engagement on MyGov.in across Indian cities

Pune's strength also lies in the use of spatial technology as is evident from their existing mechanisms of participation. The use of advanced spatial digital tools in urban issues goes back as far as at least the 90's when Shelter Associates used GIS to map informal settlements to map gaps in infrastructure. The dedicated War-room of Pune had a specific team to digitise all responses, making management of citizens' responses efficient and manageable. The presence of WISE (Ward Infrastructure Services and Environment) is also indicative of how Pune effectively used ward spatial data to map and analyse the current status of the wards in order to effectively arrive at solutions for a specific area. It is also clear that Pune has a robust IT system and has good organisational capacity to work with a strategy that focuses on technology, people and processes to maximise citizen impact.
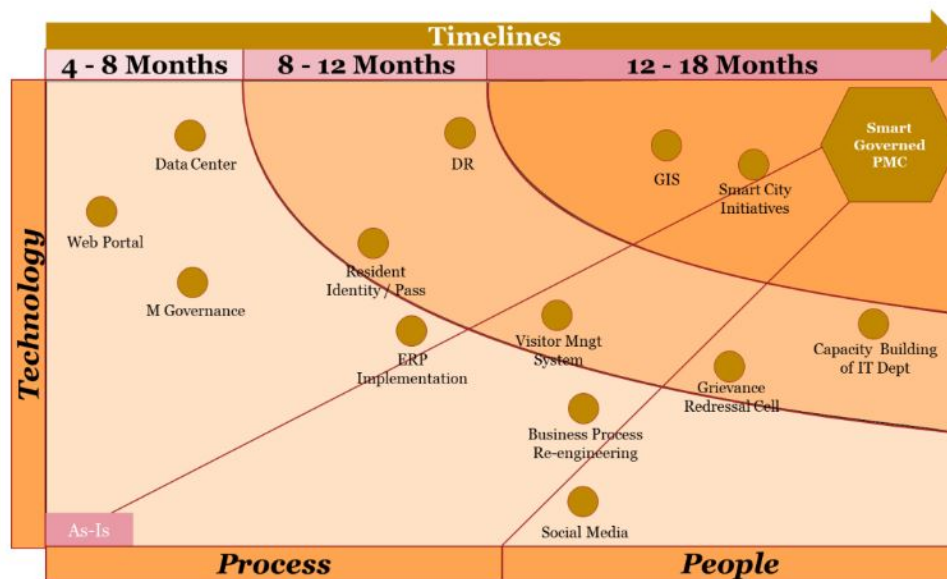
Figure 4.25: PMC's e-governance strategy under the Smart Cities Mission (Pune Municipal Corporation, n.d.-b)

It is not immediately clear what the impact of the open data store of PMC had on crowdsourcing citizen's ideas, however, it indicates great potential for citizens to co-create solutions themselves. In spite of criticism, Pune's intention demonstrated and efforts taken can be lauded. These types of exercises have been carried out throughout the 100 smart cities and has set the stage for meaningful citizen participation to be a norm in the future. The effort has, however, not been kept up in the execution phase and has been mainly accounted for in the conceptual phase (Shruti Vaishampayan , Rahul Deshpande, Tushar Jadhav, 2020).

Learnings from India

From the above studies on digital citizen engagement under the Smart Cities Mission in India in general and Pune in particular, there are three main take-aways that may be highlighted. The first is that the huge interest and enthusiasm of citizens in India shows that India has the potential to leverage active citizenship. Citizens showed up in huge numbers to support their city and offer their views- one factor that may have worked in this favour is that smart cities is a trending topic in India and around the world. The second is that we need to see the same amount of enthusiasm in urban planning related issues in Indian cities like we saw in the Smart Cities Mission. We need to find a way to make urban planning 'cool'. Lastly, India is using digital tools through various platforms and in various ways- what is lacking in the urban planning perspective is spatial information. Keeping in mind the existing methods being used like MyGov.in, local platforms, social media, mobile applications, etc, spatial data is a missing element in the conversation and can be a powerful tool to address pressing issues.

5.1   Active citizenship in India

Not only in the Smart Cities Mission, but Covid-19 showed India's active citizenship in a way that hasn't been seen in some time. As the country of jugaad or frugal innovation, people rushed to create their own solutions in the midst of the deadly pandemic which took an especially dark turn in India. From social media 'toolkits' saving hundreds of Covid patients (Welle, n.d.) to autos turning into ambulances to creative solutions in social distancing- it proved how citizens had to take things in their own hands in the face of a crumbling health system. Frugal innovation is India's opportunity to co-create solutions themselves aiding information provision, data collection, co-creating solutions that can contribute to bottom-up participation in urban planning processes. For this, we need to recognise the role of open data and open-source technologies to give citizens the tools to contribute their expertise and reduce the gap between governments and citizens. India needs to harness and create more of active citizenship.
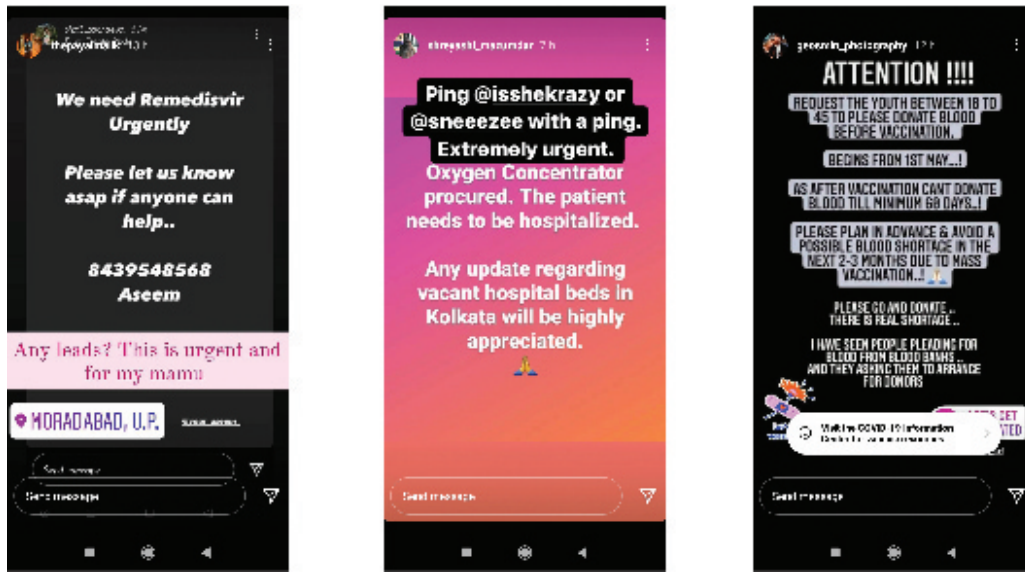
Figure 5.1: The Indian internet was flooded with 'toolkits' that provide details about life-saving medicines, status of beds in hospitals among other things. (Source- Author's Instagram)

"What India needs right now is 'active citizens'. We need to view ourselves as custodians of the country, and we need to keep tabs on the work being done by ttour governments."
-Faye D'Souza (acclaimed journalist) (Cosmopolitan India, n.d.)

(a) A teacher making videos for classes with her mobile phone (Belchandan, 2020-07-20)

(b) A milkman using a small pipe and funnel to give milk while maintaining social distancing (Belchandan, 2020-07-20)

Figure 5.2: Jugaad or frugal innovation can help identify real issues affecting people

5.2   Making urban planning 'cool'

Urban planning is traditionally a technocratic, top-down process in India. More often than not, planning tools like the MasterPlan are not in touch with ground realities. However, there have been a few changes in the last decades with some governments and civil society trying to use participatory models of planning. Continuous participation is key to resolving conflicts and achieving larger consensus. While Covid brought the importance of 'local' to the forefront and several examples show the efficacy of community self-regulatory mechanisms in tackling issues, this same citizen engagement and energy must be now focused on strengthening ward committees and other mechanisms to improve participation in urban planning. Creating awareness is crucial to citizens stepping out of their boxes again and making urban planning issues centre-stage like it was in the Smart Cities Mission which died down after the initial phases.

> *"After this year that we have been through, isn't it time we changed the way we do things in the space of urban planning and governance? Why can't we harness the incredible energy of citizen engagement of the last year in the field of urban planning as well?"*
> *-(Pillai, 2021-06-22)*

5.3   The crucial role of <u>spatial</u> digital tools in improving participation

Studying digital citizen engagement in India under the Smart Cities Mission established the fact that India used digital tools for engaging citizens with varying levels of success. It is, however, clear that digital technology plays and will continue to play an important role in the sphere of engaging citizens in the future as well. The openness to digital technology of citizens and huge demographic advantage of a young population coupled with affordable internet and a strong IT base makes this possible in India. The government also recognises digital technologies as a core component of many of it's programs and schemes in urban India with many even changing direction to a more ICT driven perspective (for example, the mandate of creating GIS-based Master Plans under the AMRUT scheme).

The previous studies clearly highlights the glaring lack of maps. Urban planning being a spatial subject, is automatically signifying the urgent need of spatial information in the use of digital tools. While digital tools have huge potential to reach a large number of people, which is crucial in a country with a high population like India, spatial information can further reduce barriers such as languages, social boundaries and allow citizens to relate to spatial characters, see patterns and eliminate the complication of scale (particularly in the case of digital maps which can be zoomed out or in as

required) thereby also contributing to creating data invaluable to public authorities. These factors are particularly crucial in an extremely diverse country like India with multiple languages, social differences and diverse characteristics. Mapping has already been identified as a crucial tool by the Main Bhi Dilli Campaign, Janaagraha and Shelter Associates.

When it comes to the main challenges (Münster et al., 2017) that may be addressed to involve citizens in urban planning processes, the priority for India lies in communication. This is because people have low awareness of formal planning tools and processes in India. Spatial information and maps can aide communication more effectively due to visual information. A survey was conducted by the Indo-Global Social Service Society on people's awareness on the Delhi Master Plan by asking three basic questions for everyone and was carried out in different locations of Delhi. Most people were unaware about the existence of the master plan that decides the future of Delhi and its residents. Of the people that know about the master plan, very few know something about the master plan (Indo-Global Social Service Society, 2020b).
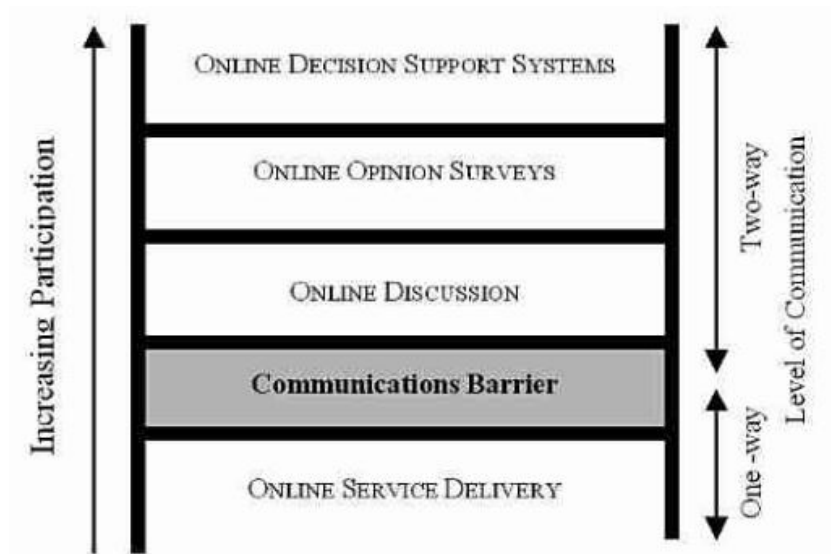
Figure 5.3: Communication becomes bi-directional making participation more interactive through sharing of information, ideas and feedback (Steve Carver, 2001)

The second largest potential of spatial digital tools is in crowd-sourcing and collaborating information from citizens. This allows citizens to take power in their own hands and can create compelling arguments to local authorities regarding what their actual needs are.
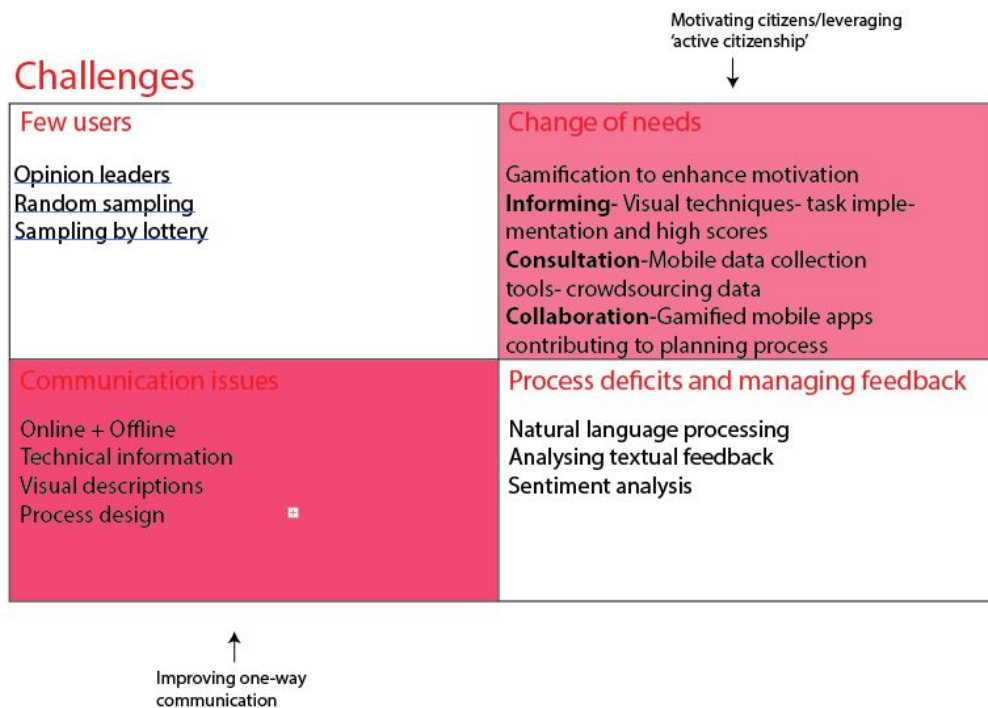
Figure 5.4: Prioritisation of spatial digital tools in improving participation in urban planning processes in Indian cities. Adapted from (Münster et al., 2017) and drawn by author. The darker colour represents first priority, and lighter colour represents second priority.

Text analysis and transcription of speech would also be extremely important in the Indian context, given that most modes of sourcing feedback from citizens currently is through surveys, essays, forms and other textual medium. However, a huge challenge lies in transcription of the different Indian regional languages or translation of these languages to English.

Focusing on communication (thus, creating awareness and increasing trust) and crowd-sourcing and co-creation of information (consulting and therefore sourcing meaningful feedback and achieving meaningful consultation) can help improve levels of participation from communication to consultation and eventually to collaboration. An incremental approach is crucial in the Indian context as has been established by previous studies in chapter 2.

5.3.1 Spatial digital tools for communication, consultation and collaboration

It is clear the spatial tools can be a game-changer in improving participation in urban planning processes in the Indian context. Moreover, as urban planning largely consists of information with some spatial relation, it is important to integrate and link participation tools with geographic information systems (GIS) providing reference points for the consultation (Silva, Carlos Nunes, Herbert Kubicek, 2010).

Today, there is at least one mature, sophisticated open source software that caters to every aspect of a planning process- such as data collection in the field, crowdsourcing, data processing, analysis, modelling and simulations, spatial extensions to database management systems, web-mapping, visualisation, etc. (Coetzee et al., 2020) Of course, education and training are critical for the future of open source geospatial software. Open geospatial data created by volunteers with local knowledge in geospatial data collection has been recognised as an effective crowd-sourcing mechanism with social media posts and tweets contributing to another source of contributed geospatial data, even though collected in a passive form. A community planning approach with the use of social media, open source software and open data would define an alternative process of production as digital community planning promoting a direct democracy (Falco, 2016).

A study by Hasler et al., 2017 classified a ladder of participation on data production modes based on Arnstein's ladder where the first three rungs of Arnstein's ladder- manipulation, therapy and informing- were classified in the top-down information rung. The top-down and bottom-up information is considered one-way interaction with higher degrees of involvement signifying more numerous exchanges as we go higher up the ladder. In the Indian context, a priority would still lie in information provision through spatial digital tools as citizens are generally not as aware of urban planning tools and processes to participate in them. Enhanced information sharing and increased number of participants due to the huge reach of digital tools thus remains a critical component for the Indian context.

The following sections outline the four broad classifications of tools that can be used for citizen engagement along with examples of such tools that were used or piloted in the Indian context.
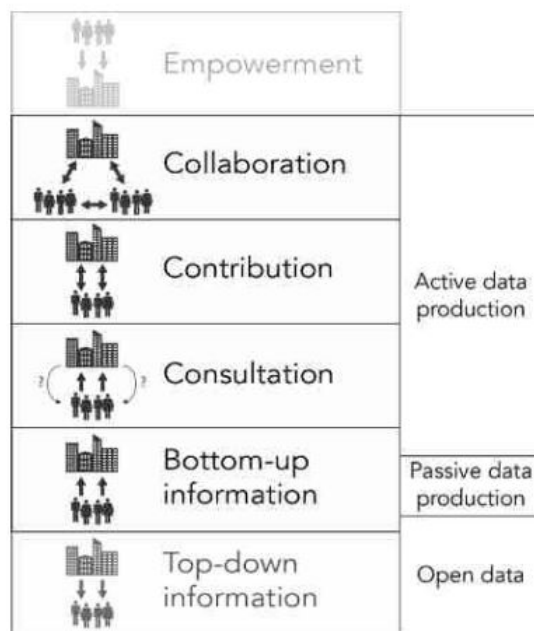
Figure 5.5: New ladder based on accommodation of digital tools (Hasler et al., 2017)

5.4   Recommendations and future research directions

New user-friendly tools and technologies can help citizens prepare visions and strategies for their own community. This may replace the need to await a participatory process to be started by a local government. Such tools and technologies may also allow communities to not need a technician or may hire such a person for a short period of time (to teach community members a particular software). It is also worth noting that in many contexts, a consultative role may be more appropriate rather than citizen empowerment (Falco, 2016). In these cases, the goal would be to achieve meaningful consultation.

5.5   Tools for more direct and enhanced participation in planning processes

Keeping in mind that open data can make citizens producers of content, information and data in a two-way communication with the local government, the following four tools have great potential. The advantage of such tools are that they reduce the cost of data collection and analysis close to zero. Broadly speaking, the tools can be considered as user-friendly technologies that allow citizens to be easily engaged. Such tools are not limited by specific phases of the planning process and may be used at any stage. Before considering them, it is important to consider technical knowledge barriers and digital divide and to acknowledge that the tools may be used to enhance traditional devices for participation rather than replace them.

SoftGIS

Spatially defining a collection of people's concerns, ideas and views

Social media & blogs

Inclusive debates over alternatives

Open Source GIS

Data-driven spatial decision

Decision-support system

Support for complex decision-making and problem solving

Figure 5.6: User-friendly tools with a focus on spatial tools (Adapted from Falco, 2016 and drawn by author)

5.5.1 Public Participation GIS/SoftGIS

The SoftGIS method has it's advantage in it's extreme simplicity in use. However, this is not open-source yet. Applications like Google Maps and Open Street Maps' leaflets may replace it. The web-based tool nature of SoftGIS also falls within the PPGIS (Public Participation GIS) and looks like a map-based questionnaire (Falco, 2016). Tools allowing free collaborative mapping and editing by ordinary citizens may be Google Maps, Open Street Map, etc. While PPGIS is an expert-based system, tools like Yahoo Map! Microsoft Live Maps (Falco, 2016, Rinner et al., 2008) with a user-friendly interface allows anyone to use them.
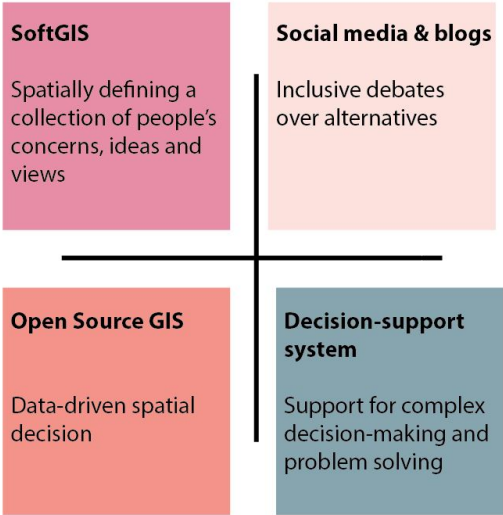
Participatory mapping in India- the case of Cuttack

Mapping plays an important role in collecting data and gathering information with a spatial reference. The Alliance, a partnership between a non-profit organisation called SPARC and two community-based organisations- the National Slum Dwellers Federation (NSDF) and Mahila Milan used Global Positional System (GPS) devices to map informal settlements in Cuttack, India. The goal was to not rely on remote sensing to identify informal settlement locations, so each settlement was visited individually by a mapping team comprising of community leaders and NGO staff. The team met settlement residents to develop a detailed settlement profile and mapped it with the GPS device. After carrying out settlement profiling with the community to collect baseline information, data was collected at the household level for more detailed information.

The mapping team asked the community leaders to walk all the way round the settlement with the GPS device, including where barriers like fences, canals and other barriers may stand in the way. The waypoints were marked every 3 to 5 metres. The waypoint data was imported from the GPS device to Google Earth and the points were connected with the 'path tool'. After the path is closed, Google Earth translated the boundary line into a polygon- thus representing the land area of the settlement. The files were then converted to shape-files and joined with the settlement profile data in Qantum GIS (QGIS). The data could be used for showing settlements at a risk of flooding or without land tenure.

Using a simple GPS device to map and develop a database not only helped create important information. The interactions with the residents led to a grass-root planning strategy. The community leaders and residents wanted to understand the purpose of the visit, what the GPS device did leading to a higher degree of community participation. The data collected was done by the federation members with the respective communities, thus, the data fields in the resulting GIS were fields that the selected communities of the urban poor deemed most important. This project showed how GPS and GIS could strengthen and support the role of residents of low-income settlements in developing the information base for development- it also highlights the process of mapping as an activity rather than an end-product (Livengood and Kunte, 2012).
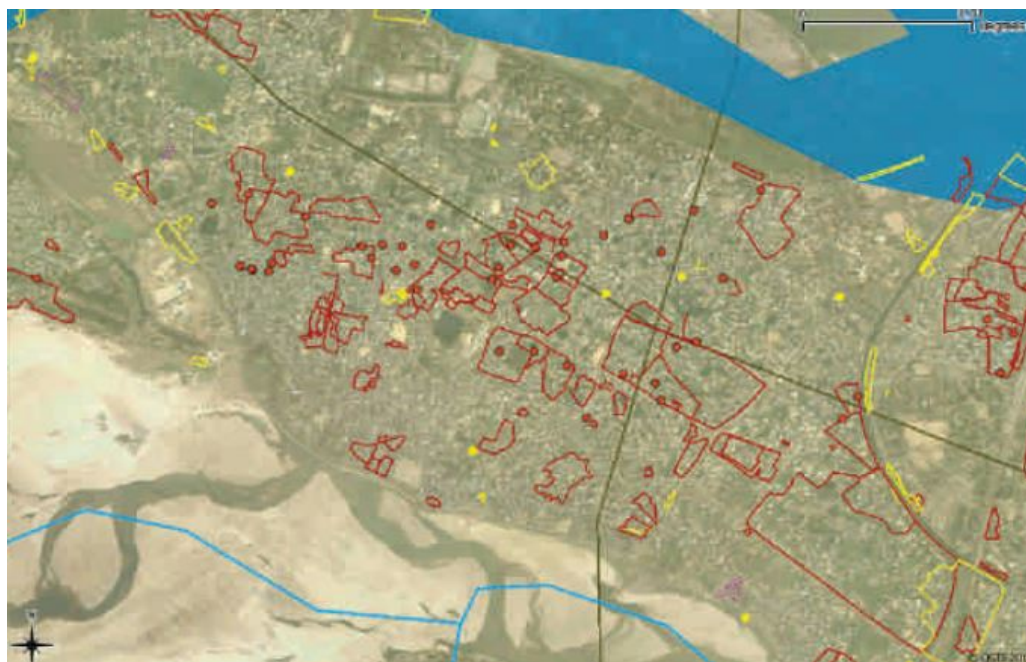
Figure 5.7: An example of the QGIS slum database showing settlements located on privately held land (Livengood and Kunte, 2012)

Similar technologies may be used for gathering data in other cases. Tools like Maptionnaire also allows citizens to create their own map-based questionnaires and civic participation platforms (Maptionnaire | Community Engagement Platform, 20-08-2021).

5.5.2 Open Source GIS

Mainly expert-based tools, they might need some training and setting-up needed by communities that are not skilled. The tools can, however, include steps that make their use easier. Geertman (2008, p. 217) in Pelzer, Geertman, and van der Heijden (2015) defines them as "geoinformation technology-based instruments that incorporate a suite of components that collectively support some specific parts of a unique professional planning task." (Falco, 2016)

The Open City Toolkit*- An open-source, web-GIS based tool

The Open City Toolkit is an open source tool the software of which is based entirely on open source components. It is a web-based geographic information system for multi-touch tables, it is optimised for use by non-experts. The main functionalities of the tool is to visualise and analyse complex urban data jointly among citizens and experts (GitHub, n.d.). Developed in cooperation between the Digital City Science in HafenCity University Hamburg (HCU) and Deutsche Gesellschaft für Internationale

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*the name of the tool changed later due to a clash in naming with another project

Zusammenarbeit GmbH (GIZ), the tool was piloted in India and Ecuador. The tool was tailored to local planning requirements, in India the tool aimed to identify land for affordable housing in the city of Bhubaneswar in the state of Odisha. The tool can be used by anyone without necessarily having a base-map as it runs on OpenStreetMaps and users may upload their own maps to analyse. While requiring some initial technical knowledge in order to deploy and set up the tool, the Open City Toolkit offers great potential to be taken up by communities and citizens as it reduces complications of GIS systems. Being open-source, anyone is able to take the tool and use it and can tailor the tool for specific uses. The tool is also highly modular allowing different modules to be built and developed. The tool may also be used as a power visualisation tool which may be paired with non-spatial data such as dash-boards to convey more complex information such as 'what-if' scenarios. The tool is also developed in languages that are commonplace such as Python allowing software developers and data scientists to take up the tool more easily.
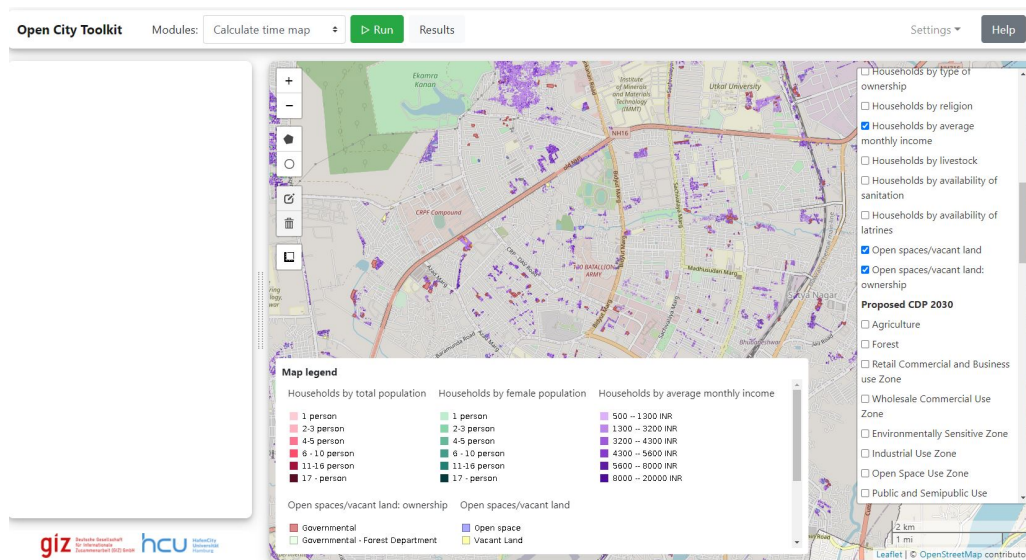
Figure 5.8: The Open City Toolkit used in Bhubaneswar (Digital City Science (Hafencity University Hamburg), Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH, n.d.)

An example of use of the tool in the Indian context- Mapping complaint grievance data spatially
Grievance redressal mechanisms are common in Indian cities and many local governments in cities have a system to collect grievances and address them. This data could be uploaded to the tool and mapped spatially to understand main concerns area-wise in the city helping in understanding recurrence of complaints and trends. Then, specific solutions can be tailored to address a macro-issue that may emerge from spatial analysis. The same process done with a generic GIS tool would involve many more complex steps and expert knowledge. Thus, this tool would allow less expert knowledge in it's use to identify major issues from citizens across a city based on a formal complaint system.

5.5.3 Social Media and Blogs

Social media such as wiki pages, formation of virtual or online communities and blogs can help generate a conversation and debate around an issue of common concern. Social media and blogs offer a powerful way to develop as another means of communication that adds on to other forms of communication, rather than replacing them. Internet use reinforces neighbouring, with neighbours being more in contact than before ((Wenger, White, Smith, 2009; van Varik and van Oostendorp, 2013) (Falco, 2016). Social media also has the potential to attract younger people and categories that generally dont partake in citizen participation and self-organising initiatives.

A study by Rangaswamy and Arora, 2016 identifies the role of digital leisure as a legitimate lens to understand technology use among marginalised populations in the global South and underlines the role that 'participatory digital architectures' of today can play in enabling their voices of expression and aspirations. It looks away from the focus of ICTs as objects of development and support the role of tools like Facebook as social artifacts of the 21st century. New media practices in emerging economies like India are substantively oriented towards leisure and may be considered irrelevant to development project interests, however, these new participatory platforms can fulfill multiple agendas.

Engagements like on Facebook are a powerful precursor to developing technologies, literacies, skills and ecologies of learning (Rangaswamy and Cutrell, 2013) (Rangaswamy and Arora, 2016) such as the mundane use of technology as an immersive and schooling experience. It refers to the astounding face that there is a relatively high updating of digital technologies by user populations least likely to afford and access such tools in slums in India. For example, some observations threw light on people being introduced to the internet through Facebook and reportedly learning English, typing in a keyboard and developing sociable personalities and acquiring general knowledge via Facebook-mediated interactions. Thus, social media plays an important role in adoption of digital technologies especially in the urban poor, accelerated in turn by mobile internet rates that are affordable and often designed micro pre-paid internet day plans, information on which is often available in numerous mobile stores in and around the city.

5.5.4 Decision Support Systems

Decision Support Systems (DSS) are defined as "computer technology solutions that can be used to support complex decision making and problem solving" (Shim et al, 2002, p.111) (Falco, 2016). For example, STAN (Strategic analysis) is a software which is within the category of decision support systems and is freely downloadable. The user interface of the software is simple and the elements on which users can act to analyse and choose a final course of action are alternatives (eg. destination, site), options (eg housing, community centre), criteria (eg. cost) and mutual incompatibility between options ((Falco, 2016)). The software aids in public meetings with community members and can prove to be

useful for selection of alternatives and options.

Pilot application of a digital co-design environment in Pimpri Chinchwad

Based on methods and tools developed within the projects U-CODE (Part of EU Horizon 2020) and Pulse (India Smart Cities Fellowship) a novel co-design environment was developed that facilitated citizen participation online and locally and supplied municipal decision-makers new design and planning intelligence harvested from local communities (Noennig et al., 2020). A real-world pilot was run that would ideally improve a concrete community's situation.

Figure 5.9: Choreography of the pilot implementation in Pimpri Chinchwad (Noennig et al., 2020)

A 10 year old dumpsite was selected in a neighbourhood of the city that was cleaned presenting an area for new design ideas. Citizens were asked to scheme for future usage and design of the area. A local co-design lab was established in a refurbished bus equipped with components of the PULSE and U-CODE pilot to roll out participatory activities to different neighbourhoods. Local citizens were invited to the 'rolling lab' and were asked to work with an interactive touch-table which worked as a co-creative work desk. Design actions could be carried out by dragging and dropping and swiping moves on the table. Additionally, citizens comfortable with using pen and paper could also sketch their aspirations on a 'wishing string' (National Institute of Urban Affairs, n.d.). The Pulse Web interface had helped to collect information and evidence about local citizens' preferences and needs via smart-phones and tablets. The Pulse team had also conducted a surveillance exercise and focus-group discussions with stakeholders to identify root causes of the problem. Once the results were collected, the bet entries were chosen by expert voting to prepare implementation.

The pilot process received good levels of public participation and people were observed to be happy with the chance to participate. The project was successful in changing the behaviour of around 2000 people towards the dumpsite and was reported to have seen a 90 percent decrease in improper garbage disposal and created a sense of ownership among citizens (National Institute of Urban Affairs, n.d.). A system combination approach with traditional modes of participation helped drive a successful co-creation workshop in Pimpri Chinchwad signalling that such systems may be run on a long-term

basis in neighbourhoods making urban development and participation a permanent part of urban planning in Indian cities.

5.5.5 Towards a participatory Local Area Plan

Concepts and methods of traditional Master Planning in India have been primarily confined to aspects of land use, physical infrastructure and development control (Ramakrishna Nallathiga, 18 Jul 2017-b). They have received increasing levels of criticism for being too static in nature, taking a long time to prepare and are infrequently updated, are often based on unrealistic appraisal of economic potential of planning areas and needs of citizens and community representatives and NGOs are not involved in the planning process meaningfully among other issues. A case in point is the study by Indo-Global Social Service Society (IGSSS) titled 'Assessment of People's Awareness on Delhi's Master Plan 2021-41' that has revealed than 80 percent of residents in the city have not heard about the Delhi master plan and do not know how to access or use a land use map (Aravind Unni and Shalaka Chauhan, 2021-02-01). The Local Area Plan offers the alternative to be smaller locality plans that are not 20 year plans and can be implemented by active community participation. In 2018, the Minstry of Housing and Urban Affairs launched LAP (Local Area Plan) scheme in 25 smart city corporations across India. The scheme intends to establish a framework for redevelopment of existing areas through the development of LAP (Ministry of Housing and Urban Affairs, July 2018-b). Bangalore and Pune have seen NGOs, civil society and citizens taking the lead in mobilising citizenry to pursue development of local area plans, participatory budgeting, etc. Studies like the one by Prof. Darshini Mahadevia, Dr. Talat Munshi, Mr. Rutul Joshi, Kalgi Shah, Yogi Joseph, Deepali Advani, Bhavna Vaddadi, 2014 have proposed an LAP methodology that focuses on making the LAP more participatory and using ArcGIS based technical analysis and participatory methods to, for example, arrive at understanding the infrastructural status of a ward in a city.

The same approach may be used for the LAP with open-source, user friendly tools like open-source GIS tools, PPGIS, the use of social media and decision-support systems thus making the process more open and participatory. This reduces the necessity to depend on ArcGIS which can be expensive and complicated to use and can allow complex GIS analyses necessary to evaluate and understand the ward more easily. Visualisation tools may be used in the communication and awareness campaigns, whereas analysis tools may be used in the advanced stages to identity present status. Decision-support systems may also be used in the stages of solution choosing and finding and generating what-if scenarios.

> "..unlike the Union or State Government, people are more comfortable partnering with the local government"
> (-Janaagraha Centre for Citizenship and Democracy, n.d.)

5.6   Reference framework

Based on previous studies and findings, there are several factors that need to be kept in mind before using digital tools for participation in planning processes. As Silva, Carlos Nunes, Herbert Kubicek, 2010 put it, eParticipation tools must be out in their procedural and institutional context and can be operationalised by referring to organisational, cultural, legal, economic and technical aspects of the local context. The studies in digital citizen engagement in India, the urban planning system and participatory mechanisms in India confirm the same- that eParticipation tools must fit in the respective contexts and must be contextualised to fit the setting. A case in point is Pune, which leveraged it's technological, institutional, cultural, organisational and legal rights embedded in a history of strong civic society and active citizenship. Thus, certain conditions may be identified to orient digital tools in their respective context.
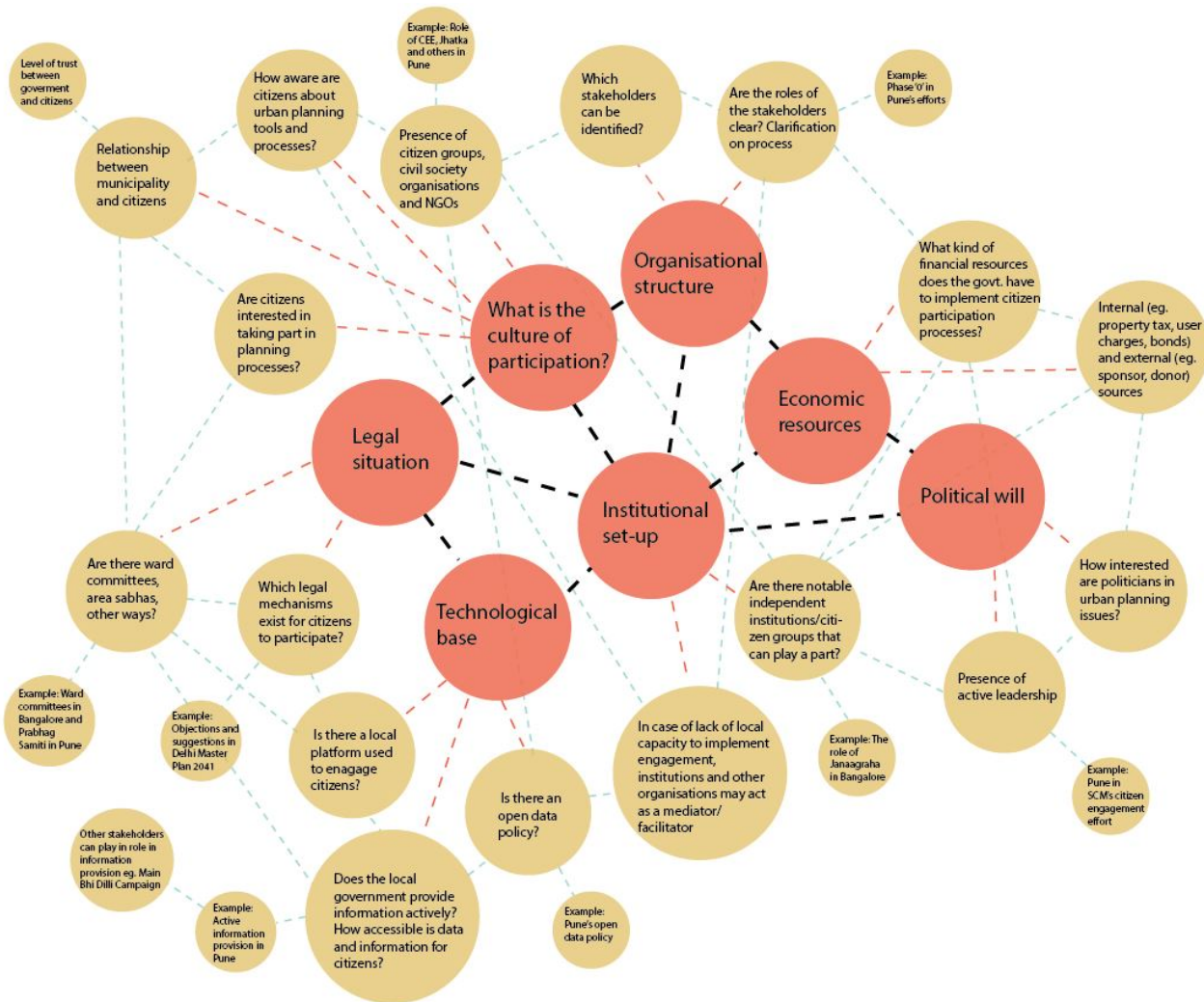
Figure 5.10: Identification of factors that may play a role in integration of digital tools in urban planning processes in Indian cities (Source- Drawn by author)

This can be captured by three main elements- People, Process and Technology.

Framework to identify conditions to integrate spatial digital tools to improve participation in urban planning processes in Indian cities
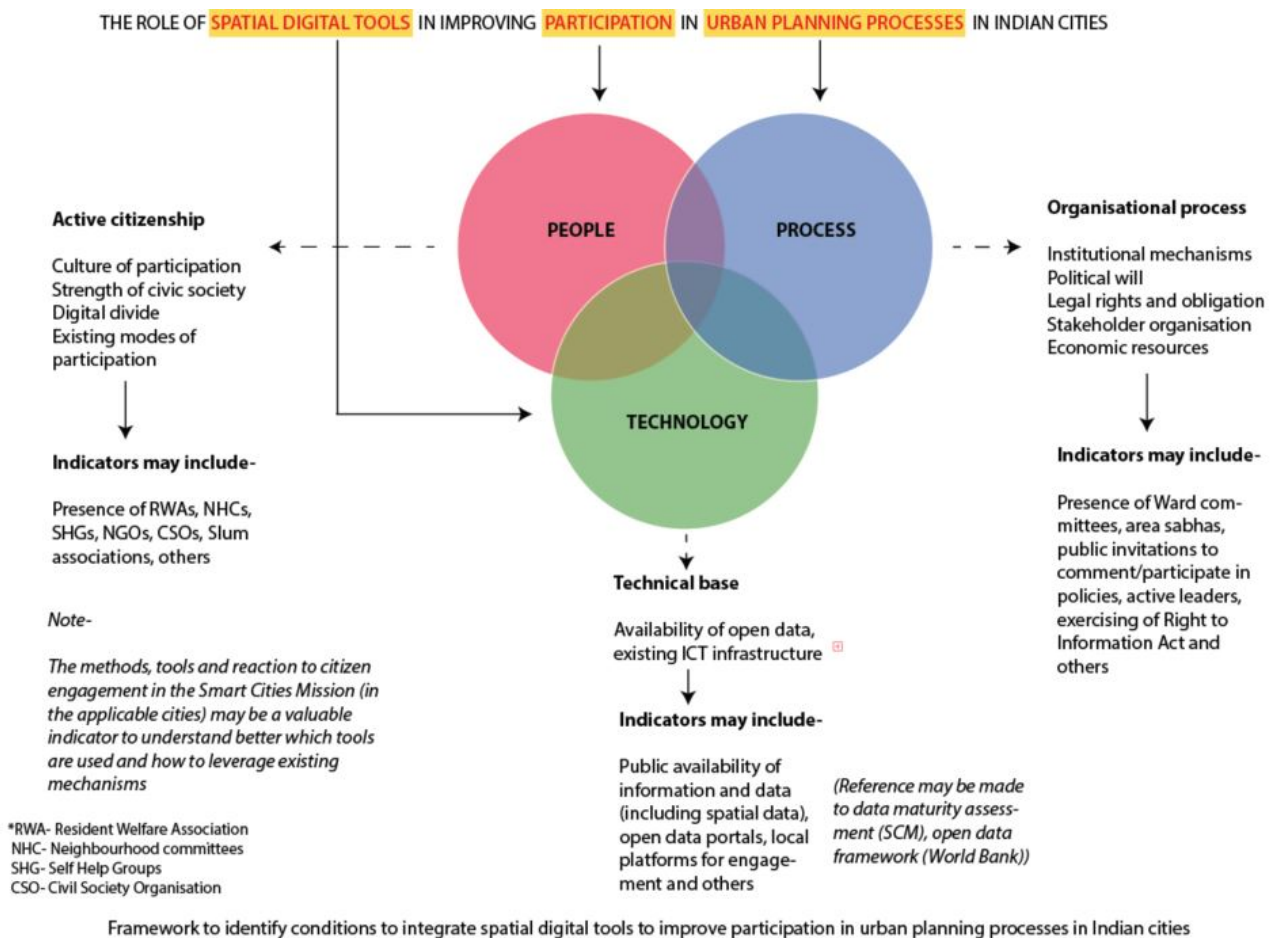
Figure 5.11: Reference framework to identify pre-conditions to integrate digital tools for participation in urban planning processes in the Indian context (Source- Drawn by author)

People- As Pune's case demonstrated, a strong culture of participation is vital to engage citizens, with or without digital tools. Thus, a measure of active citizenship is the first criteria to engage citizens. This takes into account the general awareness and concern of citizens, their willingness to take part in political planning procedures, extent of digital divide and existing modes of participation that are currently in use. Some indicators of that may be understood by the presence of citizen groups like RWA, SHG, NHCs (depending on the state), presence of civil society organisations and NGO and slum association organisations to make special efforts to reach the urban poor that are often marginalised in these efforts.

Process- The process, or the way things happen, are the second criteria to be taken into account. This covers organisational capacity (how is the process in question is organised, the demarcation and

clarity of roles and strategies to exploit potential), institutional capacity (existing institutionalised participatory mechanisms such as ward committees and the role of educational institutions/think-tanks to provide stakeholders from outside the government), political will (how active politicians are, how deep is the interest in the topic, attitudes of politicians to citizen participation and incentive to engage citizens in processes), legal rights and obligations (mechanisms that allow participatory processes to take place- eg. how strongly is RTI (Right to Information) Act implemented, legal requirements for citizens to offer inputs) and economic resources (financial resources needed for management and implementation of a participation process, crowd-funding option from citizens).

Technology-   New advances in ICT, also defined as the application of ICT for the empowerment of citizens and communities (Gurstein, 2007) (Falco, 2016) allow new and more active forms of citizen participation in decision-making processes. New and recent developments in open data, open-government and ICT have allowed positive outcomes for example- mapping technologies, Public Participation GIS (PPGIS), blogs and social media, decision support systems and simulation technologies. Thus, user-friendly, free, open-source software and open data are tools to empower citizens allowing them to produce their own community plan- this helps improve participation and progressing to higher levels of participation. This also allows communities to produce their own data with little technical help from planning professionals and can form the basis for discussion and if necessary, confrontation, with local administration for issues concerning the future vision of the local community. Presence of open data, local engagement platforms and sharing and openness of information (also demonstrated by Pune) are key for citizen participation and empowerment.

With regard to the Indian context, it is clear that decentralisation of governments in the form of ward committees are more crucial in the metro cities of India, as citizen to government proximity is missing due to the huge size and population of these cities. For the same reasons, the role of civic society and slum organisations in metro cities are also very crucial to address digital divide and creating a strong culture of participation. Smaller towns have been able to engage citizens more effectively as we saw through the studies of MyGov.in, this means factors weigh in differently in identifying pre-conditions for the use of digital tools in smaller cities and towns in India. Access to type of devices (mobile and computer) also make a difference in the type of digital tools that may be used. In general, traditional modes of participation must be strengthened through institutional, legal and economic reforms in local governments and appropriate digital tools must be used to enhance these modes of participation. Open data and open-source tools allow community planning practices to be taken over by citizens themselves and can better represent their wants, desires, needs, vision for their own community and social preferences- this can fundamentally change power relations, property

institutions and distribution of wealth (Brown and Kytta, 2014, p. 131) (Falco, 2016). Adoption of digital technologies will need to be incrementally introduced within existing processes that is in line with existing methodologies. India has a unique opportunity to take the future of it's cities in it's own hands and to leverage it's advantage to become a force to reckon with in the world.

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