Enhancing Citizen Engagement in Smart Cities Mission in India

SHRUTI VAISHAMPAYAN*
RAHUL DESHPANDE**
TUSHAR JADHAV***

ABSTRACT

Infrastructure projects (urban or otherwise) are meant for greater good of people and therefore reflect their needs. Citizen participation is of utmost importance considering this goal. Studies in the past have attempted to define the success of projects through benefits realisation. In public infrastructure projects the end user is the citizen of that nation. However, meaningful citizen engagement has been a challenge for cities all over the world. With the advent of Smart Cities Mission in India in 2015, this aspect of citizen engagement has been brought to the forefront again as an important objective to be achieved. The mission aims to be truly reflective of citizen's aspirations through a massive public outreach programme. In this paper, the processes followed in citizen engagement during the proposal formation phase as well as during the execution phase are studied. The example of City of Pune, is taken to understand the processes during formulation phase.

Keywords: *Smart Cities Mission, Citizen Engagement, Project Stakeholder Management, Public Participation*

INTRODUCTION

The role of citizen in infrastructure development is a crucial one. In most functioning democracies the people's elected representatives are responsible for making decisions regarding the infrastructure vis-a-vis public transport. The elected representatives in a way represent

---

*Assistant Professor, National Institute of Construction Management and Research (NICMAR), Pune. Email: vshruti@nicmar.ac.in
**Sr. Associate Professor, National Institute of Construction Management and Research (NICMAR). Email: rdeshpande@nicmar.ac.in
***Associate Professor, National Institute of Construction Management and Research (NICMAR). Email: tjadhav@nicmar.ac.in

people's wishes / desires. However, active citizen engagement is also seem to be affecting the execution of a project. The widespread not-in-my-backyard (NIMBY) effect is visible in developed as well as developing world. Di Maddaloni & Davis (2017) discuss the influence of local community on mega projects and offer how inclusiveness can be a part of project planning. In a developing country like India, the citizen point of view is manifested in the form of protests or delay in land acquisition (Narayanan, Kure, & Palaniappan, 2019; Ren, 2017). In this paper, we look at the Smart City Mission programme of Government of India from the perspective of citizens' engagement.

According to Census 2011, Indian cities accommodate nearly 31 per cent of India's population. Smart Cities Mission is one of the landmark programmes of the Government of India launched in 2015. The mission aims to transform 100 selected cities into 'Smart Cities' by including smart solutions along with provision of basic core infrastructure, specifically "adequate water supply; assured electricity supply; sanitation and solid waste management; efficient urban mobility and public transport; affordable housing especially for the poor; robust IT connectivity and digitalisation; good governance especially e-governance and citizen participation; sustainable environment; safety and security of citizens particularly women, children and the elderly; and health and education" as per the Smart Cities Mission Guidelines. Cities are expected to create a Smart City Proposal (SCP) in tune with the guidelines, and enter the 'Smart Cities Challenge' competition. Each selected city is expected to form a Special Purpose Vehicle (SPV) for implementation of the SCP. The SPV is a limited company incorporated under the Companies Act, 2013 in which the State/UT and the Urban Local Body (ULB) will be the promoters having 50:50 equity shareholdings. The SPV is expected to plan, appraise, approve, release funds, implement, manage, operate, monitor and evaluate the Smart City development projects through a Project Management Consultant (PMC).

The Mission Guidelines state objectives and strategies to achieve the same. Urban Local Bodies (ULBs) have the liberty to choose specific projects that each city needs to include and implement based on the city-specific contextual needs. The PMC appointed by the SPV has a crucial role to play as it will essentially develop the SCP and further identify individual projects based on guidelines of the Mission and provide overall technical and project management support to the SPV. Financial support to the tune of Rs 100 crore per city per year is to be provided to each smart city. The total financial support amounting to Rs 48,000 crore will be given by Central Government towards the mission.

The objective of the present article is to investigate: *(a)* the present status of citizen engagement in selected smart cities; *(b)* to evaluate the adequacy of measures taken; and *(c)* application of project stakeholder management theory in enhancing the citizen engagement process.

Methodology

This study focuses on citizen engagement process applied in smart cities in India. The study attempts to investigate whether citizen's point of views are directly or indirectly reflected in the mission implementation.The case of City of Pune in India is used to highlight the process, the extent of involvement of citizens (in terms of number of citizens and type of inputs), its effect on final shape of proposal and key contribution of this step towards smart city development. The ongoing efforts of the smart city citizen engagement process are documented. Further, the application of project stakeholder management theory to the citizen engagement process is demonstrated.The next section presents the literature review highlighting the global scenario and the challenges of smart cities mission in India.

Literature Review

The literature review presented here is divided into four parts. In the first part, the global experience with the citizen engagement is discussed. In the second and third part literature available on Indian smart cities is presented which depicts the process of citizen engagement and delineates the challenges. In the fourth part, the stakeholder management theories are discussed highlighting the potential role of project stakeholder management.

Citizen Engagement in Cities

Citizen participation has been defined as 'involvement in any organised activity in which the individual participates without pay, in order to achieve a common goal' (Zimmerman & Rappaport, 1988). Public participation is 'the process by which public concerns, needs, and values are incorporated into governmental and corporate decision making' (Creighton, 2005). The communication and interaction between citizens and government needs to be a two-way process with the objective of better decisions supported by the public. Community engagement is an essential element which can help in achieving the right level of commitment for successful delivery of smart city projects (Mazhar, Sarshar, Fayaz, Kaveh, & Bull, 2017). The Ladder of Citizen Participation (Arnstein, 1969) can prove to be a useful tool to classify various smart city initiatives with respect to their intended citizen

participation as studied in case of London (Willems, Van den Bergh, & Viaene, 2017) (Refer Table 1).

TABLE 1: THE LADDER OF CITIZEN PARTICIPATION
(ARNSTEIN, 1969; WILLEMS ET AL., 2017)

Citizen Power	Citizen Control	Citizens have full managerial power
	Delegated Power	Citizens can have dominant decision power
	Partnership	Citizens can negotiate and engage in trade-offs
Tokenism	Placation	Citizens are asked for advice, however without decision power
	Consultation	Citizens are being heard
	Informing	Citizens are informed
Non-participation	Therapy	Citizens are symbolically involved
	Manipulation	Citizens are educated and manipulated without consent

City administrators and urban planners have always tried to improve public participation across the world. Currently in Indian Cities, the cities make their 20-year Development Plans or Master Plans mandated by the State Town and Country Planning Acts. Although the process of public participation is laid out in these acts in the form of suggestions and raising objections to the draft plan prepared by cities, the process is rather perfunctory since it only seeks the participation after the draft plan is prepared, and thus lacks meaningful citizen consultations (Mahadevia et al., 2014). Nowhere in the visioning process are the citizens involved as their role is currently in the form of giving suggestions and raising objections to the proposed draft plan. Even the 73rd and 74th Constitutional Amendments aim at devolution of powers of decision making to the urban and rural local bodies which are closest to the citizens. Despite the provisions in the State Town Planning Acts and the above amendments to the Constitution, public participation in Indian city planning is probably at best represented by Tokenism in the 'ladder of public participation' (Arnstein, 1969; Maiti & De Faria, 2017). Although provisions for public participation have existed in earlier government programmes like Jawaharlal Nehru National Urban Renewal Mission (JNNURM) in form of public consultations required for City Development Plans (CDPs), the implementation of all the above provisions in Indian cities remains poor. In this light, the Smart Cities Mission brings the public participation to the focus and through the use of technology (Kumar & Prakash, 2016) right from its inception stage in every city.

Citizen Engagement as an Integral Part of Smart Cities Mission

Citizen engagement and public participation have been emphasised as part of the Smart Cities Mission Guidelines. The aim of the Mission includes 'good governance' through e-governance and citizen participation. Each Smart City Proposal (SCP) is to be prepared through a 'collaborative process as objectives and funding of government departments, parastatals, private agencies and citizens are to be dovetailed together' (Ministry of Urban Development, 2015, p. 9). While preparing the proposals (SCP), the Mission Guidelines mention that it should 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" (Ministry of Urban Development, 2015, p. 22). While evaluating the proposals, the evaluation criteria for 'process followed' emphasises a process with extensive consultations with citizens including vulnerable sections of the society (disabled, children, elderly), ward committees, area *sabhas* (assembly or gatherings), any associations and organisations such as the Chamber of Commerce, etc.

Challenges in Citizen Engagement in Smart Cities Mission

While the emphasis of the Mission is on public participation; Information and Communication Technologies (ICTs) and e-governance are tools recommended for the same. There are many challenges faced by all tiers of governments - Central, state as well as Urban Local Bodies all over the world. Praharaj et al. (2017) note that digital divide, i.e. the unequal access to infrastructure is a challenge in citizen engagement as even access to a computer or mobile phone or an internet connection for each household are not ensured in Indian cities. Researchers also note that available digital infrastructure is primarily used for entertainment and does not necessarily guarantee public participation in civic affairs. Data from 100 cities in India demonstrates that complex socio-economic and political variables play a larger role in engaging citizens more than mere availability of digital infrastructure. As a part of Smart Cities Mission, the Government of India initiated the citizen engagement through their website, 'MyGov.in'. The objective of this dedicated website was to engage the citizens in activities such as debates, vision sharing, e-voting for smart city services, etc. The level of digital participation for Indian smart cities 'MyGov.in', was compared with similar initiatives taken at global level, with few examples such as 'Talk London' and 'My ideal city Bogota'. This study highlights the importance of role of local government and ownership of digital

platforms in attracting the citizen engagement in smart city projects. The study also revealed the platform 'MyGov.in' was managed by the central government and had less interaction at local level. This was identified as one of the critical parameters for low level engagement in majority of Indian smart cities including those cities with considerable population having internet coverage.

While selecting the right online participatory tool, city governments should consider their own organisational capacity, community capacity, planning problems and participation goals, norms and regulations and the capacity of the tool (Afzalan, Sanchez, & Evans-Cowley, 2017). Other challenges to citizen engagement include contextual factors such as digital illiteracy, accessibility to digital infrastructure and institutional framework; technological factors such as technological advancement and data management; and organisational factors such as process related challenges and availability of human resources, etc. (Falco & Kleinhans, 2018).

Smart cities involve various different stakeholders that work together. These include governments, industries and universities (Leydesdorff, 2000) and citizens as their main stakeholder along with NGOs, planners and developers. Apart from technological challenges, lack of collaboration and poor communication within different stakeholders of the Smart City, namely governments, various organisations, institutions, NGOs, and citizens is one of the challenges of Smart Cities. Apart from the concerns of how to enable citizens technologically, it is important to motivate and involve citizens, and convey the value of smart city projects to them through continuous communication (Tara Alshahede, 2018). It is also important to not to depend entirely on one form of public participation but explore different forms of participation and roles citizens can play throughout the project right from development to implementation (Cardullo & Kitchin, 2017)
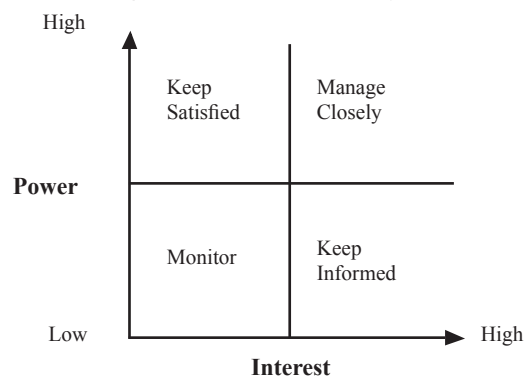
Project Stakeholder Management

The Project Management Body of Knowledge (PMBOK) (Project Management Institute, 2017) emphasises on 'stakeholder management' as one of the critical knowledge areas for project success which can provide useful inputs for citizen engagement. It notes that process of stakeholder identification and engagement must happen in the initiation phase of the project. This includes identification of people, groups or organisations that could impact or be impacted by the project. Stakeholders can be internal or external to the project team or they can be internal or external to the project scope. The stakeholder theory is mainly focused in the areas of project strategy as well as

project evaluation factors such as project success, project risk and project performance (Littau, Jujagiri, & Adlbrecht, 2010). The role of stakeholder theory is increasing and expanding simultaneously. The project management organisation in general or the project manager in particular is responsible to manage the interest of multiple stakeholders throughout the entire project management process. Sutterfield et al. (2006) have recommended a 'strategic project stakeholder management framework' for maximising the positive impact and minimising the detrimental impact of stakeholders on the outcomes of a particular project. Stakeholders outside the project organisation (external stakeholders) offer more complexities especially in megaprojects as they demonstrate diverse interests (Ninan, Mahalingam, & Clegg, 2019). Crawford and Helm (2009) have demonstrated the supporting role of project management in public sector governance. Project stakeholder management has also been an area of investigation in the past (Eskerod, Huemann, & Ringhofer, 2016; Williams, Ferdinand, & Pasian, 2016; Zhai, Xin, & Cheng, 2009) 2007. The necessity of citizen engagement has been recognised as a vital component of project delivery (Chow & Leiringer, 2020) and therefore has gained more attention in the research domain of project management. The research efforts typically conceptualise public engagement using either a relational or risk management approach to stakeholder management. Processual view has been advocated which considers public engagement as dynamic and emergent. The stakeholder analysis recommended by PMBOK (Project Management Institute, 2013) is represented by Fig. 1.

The stakeholders are classified into four segments depending upon the interest and power associated with a given project. The citizen partnership comes under the category of external stakeholders. The

Fig. 1: Stakeholder analysis

Source: Project Management Institute, *A Guide to the Project Management Body of Knowledge*, (PMBOK Guide), 6th Edition.

citizen engagement in public projects especially of types such as Smart Cities must have active participation from the general citizen as well as representative government authorities.

The salience model(Mitchell, Agle, & Wood, 1997) is another popular theory for identification and categorisation of stakeholders on the basis of power, legitimacy and urgency. These approaches are useful in prioritising stakeholders and selection of appropriate stakeholder management strategy. (Aaltonen, Jaakko, & Tuomas, 2008) in their study of salience in global projects concluded through the literature review, that more attention is given to the stakeholders who are perceived to have more salience (by virtue of power, legitimacy and urgency). The paper demonstrated through a pulp mill construction project case study, different strategies employed by the stakeholders to increase their salience. (Turkulainen, Aaltonen, & Lohikoski, 2016) study and recommend different communication strategies (impersonal, personal and group mode) depending on the stage in lifecycle as well as salience.

The next section illustrates how citizen engagement was conducted for identifying infrastructure projects for the Smart City Proposal for Pune, India.

Citizen Engagement in Case of Pune Smart City

The Pune smart city proposal(Pune Municipal Corporation, 2015) prides itself in creating one of the largest citizen engagement initiatives in India. This exercise was carried out from July 2015 to October 2015. According to the census 2011, the population of city was around 3.1 million with present day population estimated to be about 6.5 million. The interaction was a part of four phases: Envision, Diagnose, Co-create and Refine. In the 'Envision' phase, 300, 000 families filled out printed forms (questionnaires) and around 1.2 million inputs were received with citizens' emphasis on Green Pune, better transport and reliable / adequate water supply. In the second phase 'Diagnose', a voting exercise was carried out to identify specific goals / priorities which received about 1.3 million votes. In the third phase 'Co-create', citizens shared their ideas and about 10, 207 ideas were received through web portal, mobile app, hackathons (group discussions), contests, etc. In the fourth'Refine' phase, mini-labs (workshops) were conducted with citizen representatives to refine the solutions. Through various means, the smart city proposal reports that about 50 per cent Pune households were covered. Around 4.6 million impressions (likes, shares) were generated on social media accounts. As a part of Area Based Development citizen outreach exercise, about 19,000 citizens accepted the final shared proposal.

Looking at the statistics, the city of Pune seems to have conducted one of the best outreach programmes with the citizens. The expectations of the citizens are in line with the citizens of any country facing infrastructure deficit (good public transport, reliable water supply, proper sanitation, etc.). The noteworthy aspect of this outreach programme is that the solutions or votes are invited for some of the proposed solutions by the ULB.

A few important takeaways from citizen engagement are given below:

1. The smart city proposal has created a baseline (existing situation) and an aspirational situation based on the citizens' inputs which will be used for project identification.

2. Area Based Development gets a prominence in smart city proposals in India. More than 80 per cent of allotted money for that city is spent on the selected community (in the case of Pune, Aundh-Baner-Balewadi which is almost 900 acres (3.6 sq km) but small compared to entire city). This selection of Aundh-Baner-Balewadi was direct result of the citizen engagement.

3. As mentioned earlier most of the smart city proposals are on the expected lines. The citizens aspire for a sustainable/ environmental friendly city ('green' Pune, eco-friendly transportation, etc.). But one of the important aspects (in relation to the environment) of smart city which is missing in the city of Pune is the lack of emphasis on energy efficiency in the buildings. The general public can easily attribute pollution to the smoke coming out of a vehicle, but may not be aware of overall toll on the environment due to energy usages in the building. There are awareness initiatives such as 'Earth Hour' which raises these issues, but the energy efficient buildings are not included as a part of the Pune Smart City Proposal.

A newspaper report (Shinde-Nadhe, 2016); however, does not paint a rosy picture as described above in the Pune Smart City Proposal. One of the local Members of Parliament (upper house / Rajyasabha) quotes "It's a misnomer that the Smart City project has anything to do with the city. The way the plan has been developed, it seems it's only about a part of the city". The local NGO (Sajag Nagrik Mancha) also raises questions about participatory nature of citizen engagement in Pune Smart City (National Institute of Construction Management and Research (NICMAR), 2019). In spite of the criticism, the intention demonstrated by the municipal corporation / MoUD is laudable and the efforts undertaken are commendable. These types of exercises have been

carried out throughout the 100 smart cities listed in India. Meaningful citizen participation is expected to be a norm in future rather than an aberration. The effort undertaken during the conceptual phase of the smart cities; however, has not kept up during the execution phase. This issue is further discussed in the upcoming sections.

Project Stakeholder Management in Smart Cities

This section presents as analysis of stakeholder management activities carried out by select smart cities in India from citizen point of view. Project Stakeholder Management is a coalition building process which is essential for smooth execution of the project. It is imperative from the Project Stakeholder Management theory that both internal (part of the project team) and external stakeholders (citizens) must be identified for the Smart Cities Mission in the initial stages of the project with a suitable stakeholder management plan in place. The stakeholder management plan essentially comprises of: *(i)* Identification / categorisation of stakeholders, *(ii)* Planning and executing stakeholder management (appropriate communication strategy), and *(iii)* Controlling stakeholder engagement process. The role of communication strategy is crucial. The stakeholder communication strategies can be pushed (e-mail, newspaper advertisement), pulled (website update which can be accessed whenever stakeholder feels like it) or interactive (meetings, workshops). The communication strategy also should include plan for periodic engagement with the stakeholders (weekly, monthly, etc.) and the stakeholders should be informed about availability of such feedback or redressal mechanism.

Internal Stakeholders

The internal stakeholders for the Smart Cities Mission are identified as follows:

In the initial stages of the process, the municipal corporations of each city are expected to play a key role in preparing the Smart City Proposal (SCP) and thus citizen engagement in the initial stages is also a responsibility of the municipal corporations. Citizen engagement in the proposal stage is achieved through extensive consultations with various citizen groups for the visioning and needs assessment process. As can be seen from the discussion on Pune city experience (which is replicated elsewhere), this stage was well managed by the Municipal corporations. All forms of communication strategies (push, pull and interactive) were leveraged to engage citizens for proposal formulation. The same level of communication appears to be missing from many smart city project initiatives during the execution phase. While it is expected that the need

TABLE 2: INTERNAL STAKEHOLDERS WITH THEIR ROLES AND
RESPONSIBILITIES

Sr. No.	Internal Stakeholders	Roles and Responsibilities
1.	Ministry of Housing and Urban Affairs	Prepare guidelines of the Mission, evaluate Smart City Proposals, qualify a panel of consulting firms, provide seed funding
2.	States / UTs	Select consultants from the suggested panel (or otherwise)
3.	Urban Local Body (Municipal Corporation)	Play a key role in forming the Special Purpose Vehicle for the city and prepare the initial Smart Cities Proposal (SCP) to compete in nationwide selection process, citizen engagement for visioning process
4.	Special Purpose Vehicle	Execute the project as per approved proposal, continuous citizen engagement throughout execution
5.	Project Management Consultant	Prepare the detailed project report and technical assistance in project execution

Source: Compiled by the authors.

for citizen engagement has been reduced since the proposals are frozen and thus engagement can be considered to be limited to updating the status of projects. In some instances, the communication strategies can be useful in getting citizen support and patronage to some of the smart city initiatives (such as ridership for electric bus initiative).

In the project execution stage, the role of the Special Purpose Vehicle (SPV) is a crucial one. The SPV is formed by the state government with support from the Urban Local Body (or Municipal Corporation). The SPV is responsible for execution of the entire project as per proposal and is thus responsible for management of external stakeholders including citizens and citizen organisations mainly during the execution stage (Refer Table 2). The SPV (though representing ULB and state government) is an independent body (with lesser oversight from the municipal corporation or the state government). This organisation is a lean organisation (very less direct employees) and majority of work done through private contractors with the aid of a Project Management Consultant (PMC). Each SPV has a PMC which looks after processes such as DPR preparation, tendering / bidding, execution, report preparation etc. The professionalism and efficiency of the private sector was expected to implement the project faster. This does not reflect in the actual speed

of implementation. As per the Smart Cities Mission official website of Government of India (smartcities.gov.in/content), only 20 per cent of the projects have been completed out of all possible 3,008 projects (as on 21st January 2019). In terms of share of project cost, it is only 5.4 per cent. Numerous reasons can be assigned here for lack of progress but the aspirations set in the proposal are not close to reality after five years of launch of such an ambitious programme. This paper emphasises the need for communication with the external stakeholders to avoid any delays.It is important that the citizens are informed regarding the progress of the dreams promised to them.

External Stakeholders

External stakeholders must be provided with information about list of projects underway, details of the same, online tendering system, chosen project contractors, progress of the project, etc. and continuous dialogue must be initiated regarding any inconveniences caused to local citizens during the execution phase. Dialogue with citizens must also be initiated in the operational phase on completion of project. It may also be noted that SPVs sometimes do not have separate staff of their own and thus may depend heavily on the municipal corporation's resources. It is implicit that the success of smart city projects will depend upon the role played by citizens as external stakeholders.

A representative analysis of external stakeholders (with respect to power-interest matrix) for smart city projects is indicated in Table 3.

TABLE 3: EXTERNAL STAKEHOLDER ANALYSIS IN THE EXECUTION STAGE

Stakeholder analysis	*External stakeholders for smart city project*
Manage closely (High power and high interest)	A. Board of Directors such as Chief Secretary, Chief Executive Officer, Law-makers, Mayor, etc. B. Project affected persons (land requirement for smart city projects) C. Patronage / support to offered initiatives
Keep informed (Low power and high interest)	General local residents living in the vicinity of the project, NGOs, citizen organisations, representatives of smart city forums
Keep satisfied (High power and low interest)	Local and central regulatory authorities that are not actively involved in the smart city project but may be associated for necessary approvals.
Monitor (Low power and low interest)	Neighbouring citizens and businesses not directly influenced by the project outcome

Source: Compiled by authors.

If the citizen engagement (external stakeholders) falls in the category of only 'Monitor' (refer Fig. 1 and Table 3) instead of 'Keep satisfied' or 'Manage closely' or 'Keep informed', the possibility of achieving the desired project outcomes from smart city project will be at stake. A compilation of citizen engagement initiatives by first ten selected smart cities in India as per their rank is presented in Table 4. Since the presence of SPV in itself is important for engaging external stakeholders in the execution stage of the project, this has been chosen as a parameter. The parameters used here for studying the effectiveness and transparency in citizen communication include: presence of an independent website, a citizens charter displayed on website, list of projects, project status updates, online tendering system, information about Right to Information (RTI), social media presence, annual reports availability, and a mobile app for citizen e-governance.

It can be inferred from Table 4 that Bhubaneshwar and Pune are the two cities which score 9 and 8 respectively out of 10. 'Formation of SPVs' is completed in all the selected cities with score of 10. SPVs are entrusted with the project implementation and thus being also responsible for public participation initiatives. 'Social media presence' is the second high scoring parameter (8), closely followed by 'List of projects available online' and 'tenders available online' (both with 7). Six out of ten cities also use an app for citizen communication. These apps are mostly common with the city corporation apps. Data shows that online 'availability of citizens' charter' and 'annual reports' is observed only in two cities. 'Information about RTI' and 'project status update' are the second most neglected parameters. As noted earlier, the SPV is typically heavily dependent on the resources of the municipal corporation and thus some SPVs also use the existing mobile apps of the cities for citizen communication.

Citizen Engagement in Pune Smart City

This section notes a couple of citizen engagement initiatives of Pune Smart City in detail. The Pune Smart City project has pedestrian-friendly streets as one of the initiatives in which the carriageway width (part of the road where vehicles are plying) is reduced and the footpaths are widened. In line with the National Urban Transport Policy (2007), the idea is to create more walkable, pedestrian-friendly communities encouraging Non-motorised Transport (NMT). This initiative, however, does not translate immediately into acceptance by one and all. The shopkeepers in some of the locations where such road improvements have been carried out are concerned about reduced foot fall in the shops because of lack of parking spaces. Few citizens also lament lack of parking

TABLE 4: CITIZEN COMMUNICATION AND COLLABORATION INITIATIVES BY
FIRST TEN SMART CITIES IN INDIA AS PER RANK (APRIL 2020)
(1= PRESENT, 0= ABSENT)

Rank	Name	SPV formed	Independent Website	Citizen Charter	List of Projects available online	Social Media Presence	RTI Information Available	Project Status Updated	Tenders Available Online	Annual Reports Available	App for Citizens Communication	Total Score
1	Bhubaneshwar	1	1	1	1	1	1	1	1	0	1	9
2	Pune	1	1	0	1	1	1	0	1	1	1	8
3	Jaipur	1	1	0	1	1	0	0	1	0	1	6
4	Surat	1	1	0	1	1	0	0	1	0	1	6
5	Kochi	1	1	0	1	1	0	1	1	0	0	6
6	Ahmedabad	1	0	0	0	0	0	0	0	0	0	1
7	Jabalpur	1	1	0	1	1	0	0	1	0	1	6
8	Vizag	1	0	0	0	0	0	0	0	0	1	2
9	Solapur	1	0	0	0	1	0	0	0	0	0	2
10	Davangere	1	1	0	1	1	0	0	1	0	0	5
	Total Score	10	7	1	7	8	2	2	7	1	6	

Source: Compiled by authors.

space on the street as well as general lack of parking in the vicinity. The problem of lack of parking is real and is expected to force people to opt for public transport. Unless there is an awareness campaign which is run by the SPV / ULB / Government, it is difficult to find ready acceptance of such improvements. The citizens while framing the proposal have highlighted urban mobility and sustainable transportation as priority areas. However, what sustainable transportation entails and sacrifices to be made are not readily apparent to them.

A survey by Tata Institute of Social Sciences in Aundh area of Pune highlighted that the residents had a very vague idea about the project and did not seem to understand the purpose of street redesign (Dharwadkar, 2017). The street vendors and some slum dwellers from the vicinity claimed to be completely left out during planning as well as the execution phase. They were unaware of any feedback channel or any redressal mechanism.

The bicycle sharing programme under the Pune Smart City Mission initiative is another noteworthy example. This initiative received the National Smart City Award from Ministry of Urban and Housing Affairs in the year 2018 (Welankar, 2019). The programme is now considered as a failure as the initiative did not find enough people ready to utilise the bike sharing facility. The authorities highlighted vandalism as one of the major causes of failure of the programme in the year 2019. While the bicycle sharing programme needed vigilance and maintenance by Pune Smart City Development Corporation Ltd (PSCDCL), the need for proper communication strategy cannot be emphasised more at the same time.

In terms of communication strategy at the execution phase, there is a greater emphasis on website updating, newspaper reports, use of variable message sign boards, etc. as a way of creating awareness regarding the smart city project initiatives. The component of interactive communication is missing. The PSCDCL officials do speak at public forums (conferences, symposiums, etc.), a dedicated interface for creating awareness or highlighting benefits of initiatives appears to be missing.

CONCLUSION

The level of satisfaction of the end user is one of the important parameters for judging a project as a success or a failure. Specifically, when we consider public projects, evaluation of benefits derived from the project, gains further significance. Citizen participation is crucial for realising benefits from investment in infrastructure projects. There

are many studies (Breese, 2012; Serra & Kunc, 2015) that attempt to relate benefits realisation management and project success. This article investigates the aspect of citizen participation in the Smart Cities Mission from conceptualisation phase to the execution phase. The programme has been able to ensure mass citizen participation during the project formulation phase. However, the level of engagement and transparency has reduced during the execution phase. Although the Smart Cities Mission emphasises on ICT and e-governance for citizen engagement, there are limitations to how citizen engagement can be achieved through it due to various issues such as access to digital infrastructure, choice of participation tool, etc. Literature shows that a key reason for lack of participation is poor communication and collaboration amongst various project stakeholders.

The project stakeholder management theory provides important insights in categorising the project stakeholders into internal and external stakeholders and also entrusting the responsibility of stakeholder management throughout the project in a methodical way to the project manager. In Smart Cities Mission, the participating cities thus should ensure citizen engagement in a methodical way in the initial stage and the SPV should be entrusted with citizen engagement after its formation until completion of the project. The current strategies for citizen communication and collaboration by the first ten participating smart cities (Table 4) shows that continuous citizen communication needs to be enhanced in the execution stage through project status updates, annual reports, citizen charter and RTI information, etc. A citizen engagement plan must be drafted for various internal and external stakeholders (refer Table 2 and 3) in the initial as well as execution stage of the project. For a truly 'citizen-centric' or 'citizen-driven' project as per the Smart City Mission Guidelines, different interactive forms of citizen engagement should be explored other than ICT and e-governance to overcome the limitations associated with the same. This paper has analysed the way in which citizen engagement was carried out in case of the Pune Smart City Mission. A citizen-centric approach will go a long way in removing at least some of the obstacles in upcoming infrastructure projects.

REFERENCES

1. Aaltonen, K., Jaakko, K., and Tuomas, O. (2008). Stakeholder salience in global projects. *International Journal of Project Management*, 26(5), 509-516. https://doi.org/10.1016/j.ijproman.2008.05.004

2. Afzalan, N., Sanchez, T. W., and Evans-Cowley, J. (2017). Creating smarter cities: Considerations for selecting online participatory tools. *Cities*, 67(May), 21-30. https://doi.org/10.1016/j.cities.2017.04.002

3.   Arnstein, S. R. (1969). A Ladder Of Citizen Participation. *Journal of the American Planning Association*, *35*(4), 216-224. https://doi.org/10.1080/01944366908977225

4.   Breese, R. (2012). Benefits realisation management: Panacea or false dawn? *International Journal of Project Management*, 30(3), 341-351. https://doi.org/10.1016/j.ijproman.2011.08.007

5.   Cardullo, P., and Kitchin, R. (2017). Living Labs, vacancy, and gentrification. *'The New Urban Ruins: Vacancy and the Post-Crisis City'*, 1-3 March 2017, Trinity College Dublin., 1-18.

6.   Chow, V., and Leiringer, R. (2020). The Practice of Public Engagement on Projects: From Managing External Stakeholders to Facilitating Active Contributors. *Project Management Journal*, *51*(1), 24-37. https://doi.org/10.1177/8756972819878346

7.   Crawford, L. H., and Helm, J. (2009). Government and Governance: The Value of Project Management in the Public Sector. *Project Management Journal*, 40(1), 73-87. https://doi.org/10.1002/pmj.20107

8.   Creighton, J. L. (2005). The public participation handbook. *San Francisco*. https://doi.org/10.1088/0031-9155/54/13/012

9.   Dharwadkar, J. (2017). Most stakeholders of Pune's Aundh Smart City Mission have no idea about project. *Hindustan Times*.

10.   Di Maddaloni, F., and Davis, K. (2017). The influence of local community stakeholders in megaprojects: Rethinking their inclusiveness to improve project performance. *International Journal of Project Management*, 35(8), 1537-1556. https://doi.org/10.1016/j.ijproman.2017.08.011

11.   Eskerod, P., Huemann, M., and Ringhofer, C. (2016). Stakeholder Inclusiveness: Enriching Project Management with General Stakeholder Theory. *Project Management Journal*, *46*(6), 42-53. https://doi.org/10.1002/pmj.21546

12.   Falco, E., and Kleinhans, R. (2018). Beyond technology: Identifying local government challenges for using digital platforms for citizen engagement. *International Journal of Information Management*, 40(October 2017), 17-20. https://doi.org/10.1016/j.ijinfomgt.2018.01.007

13.   Kumar, A., and Prakash, P. (2016). *Public Participation in Planning in India*. Cambridge Scholars Publishing.

14.   Leydesdorff, L. (2000). The triple helix: An evolutionary model of innovations. *Research Policy*, 29(2), 243-255. https://doi.org/10.1016/S0048-7333(99)00063-3

15.   Littau, P., Jujagiri, N. J., and Adlbrecht, G. (2010). 25 Years of stakeholder theory in project management literature (1984-2009). *Project Management Journal*, 41(4), 17-29. https://doi.org/10.1002/pmj.20195

16.   Mahadevia, D., Munshi, T., Joshi, R., Shah, K., Joseph, Y., and Advani, D. (2014). *A Methodology for Local Accessibility Planning in Indian Cities*.

17.   Maiti, S. and De Faria, J. V. (2017). Participatory planning processes in Indian cities: its challenges and opportunities. *Journal of Sustainable Urbanization, Planning and Progress*, 2(1), 1-17. https://doi.org/10.18063/jsupp.2017.01.001

18. Mazhar, M. U., Sarshar, M., Fayaz, R., Kaveh, B.and Bull, R. (2017). Community engagement as a tool to help deliver smart city innovation: a case study of Nottingham, United Kingdom. *ECEEE Summer Study Proceedings*.

19. Ministry of Urban Development. (2015). Smart Cities: Mission Statement and Guidelines. In *Government of India*. https://doi.org/10.7256/2313-0539.2014.3.12545

20. Mitchell, R. K., Agle, B. R.and Wood, D. J. (1997). Toward a theory of stakeholder identification and salience: Defining the principle of who and what really counts. *Academy of Management Review*, 22(4), 853-886. https://doi.org/10.5465/AMR.1997.9711022105

21. Narayanan, S., Kure, A. M. and Palaniappan, S. (2019). Study on Time and Cost Overruns in Mega Infrastructure Projects in India. *Journal of The Institution of Engineers (India): Series A*, 100(1), 139-145. https://doi.org/10.1007/s40030-018-0328-1

22. National Institute of Construction Management and Research (NICMAR). (2019). *Smart Cities Symposium*, 2019.

23. Ninan, J., Mahalingam, A. and Clegg, S. (2019). External Stakeholder Management Strategies and Resources in Megaprojects: An Organizational Power Perspective. *Project Management Journal*, 50(6), 625-640. https://doi.org/10.1177/8756972819847045

24. Praharaj, S., Han, J. H. and Hawken, S. (2017). Innovative Civic Engagement and Digital Urban Infrastructure: Lessons from 100 Smart Cities Mission in India. *Procedia Engineering*, 180, 1423-1432. https://doi.org/10.1016/j.proeng.2017.04.305

25. Project Management Institute. (2013). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* 5th ed.

26. Project Management Institute. (2017). *A Guide to the Project Management Body of Knowledge (PMBOK Guide)* 6th ed.

27. Pune Municipal Corporation. (2015). *Reimagining Pune: Mission Smart City*.

28. Ren, X. (2017). Land acquisition, rural protests, and the local state in China and India. *Environment and Planning C: Government and Policy*, 35(1), 25-41. https://doi.org/10.1177/0263774X16655802

29. Serra, C. E. M. and Kunc, M. (2015). Benefits Realisation Management and its influence on project success and on the execution of business strategies. *International Journal of Project Management*, 33(1), 53-56. https://doi.org/10.1016/j.ijproman.2014.03.011

30. Shinde-Nadhe, S. (2016). Pune on a smart mission after three false starts. *Business Standard*.

31. Sutterfield, J. S., Friday-Stroud, S. S. and Shivers-Blackwell, S. L. (2006). A Case Study of Project and Stakeholder Management Failures: Lessons Learned. *Project Management Journal*, 37(5), 26-35. https://doi.org/10.1177/875697280603700504

32. Tara Alshahede, A. M. (2018). Smart Cities, Smarter Management: Developing a Smart Framewrok for Smart City Projects Management in Europe. *GE-International Journal of Management Research*, 6(9), 41-73.

33. Turkulainen, V., Aaltonen, K. and Lohikoski, P. (2016). Managing Project Stakeholder Communication: The Qstock Festival Case. *Project Management Journal*, 46(6), 74-91. https://doi.org/10.1002/pmj.21547

34. Welankar, P. (2019). Public cycle plan in Pune: Award-winning project now a smart-ing failure. *Hindustan Times*.

35. Willems, J., Van den Bergh, J. and Viaene, S. (2017). Smart City Projects and Citizen Participation: The Case of London. In *Public Sector Management in a Globalized World* (pp. 249-266). https://doi.org/10.1007/978-3-658-16112-5_12

36. Williams, N. L., Ferdinand, N. and Pasian, B. (2016). Online Stakeholder Interactions in the Early Stage of a Megaproject. *Project Management Journal*, 46(6), 92-110. https://doi.org/10.1002/pmj.21548

37. Zhai, L., Xin, Y. and Cheng, C. (2009). Understanding the Value of Project Management from a Stakeholder's Perspective: Case Study of Mega-Project Management. *Project Management Journal*, 40(1), 99-109. https://doi.org/10.1002/pmj.20099

38. Zimmerman, M. A. and Rappaport, J. (1988). Citizen participation, perceived control, and psychological empowerment. *American Journal of Community Psychology*, 16(5), 725-760. https://doi.org/10.1007/BF00930023