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Original Article

Public-Private Partnerships for Smart Cities in India: Survey Findings and Recommended Strategies

Pranav K. Lende[1*], S.D. Ambadkar[1]

[1]*Department of Civil Engineering, G. H. Raisoni University, Maharashtra, India.*

[*]*Corresponding Author : pranavlende9@gmail.com*

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Abstract - *Urbanization is identified as a major trend in modern society, driving significant efforts towards the development of efficient and intelligent cities. Due to the scale of this endeavour, collaboration among various stakeholders is essential, as no single entity can address it alone. The rise of smart cities worldwide has prompted intensified research efforts to optimize their functionality. Despite the pivotal role of collaboration, especially through Public-Private Partnerships (PPPs), in fostering urban progress, the smart city concept often remains somewhat nebulous and aspirational. While PPPs hold the potential for advancing smart city agendas, there remains a dearth of comprehensive studies on these endeavours. Thus, we undertook an extensive survey involving governmental and private entities to gain insights into existing models for smart city development under India's Smart City Mission. Despite the popular appeal of Public-Private Partnerships (PPPs), urban administrations must judiciously evaluate available options using a method such as Multi-Attribute Utility Analysis (MAUA). This approach involves prioritizing assessment criteria tailored for smart city projects and assessment of procurement options in fulfilling these criteria. A questionnaire survey that engages both public and private sector practitioners. The methodology of MAUA is used for analysis. The findings highlight that not all projects are ideally suited for PPPs, indicating potential disparities between public sector and private sector viewpoints. This underscores the importance of reaching a compromise that accommodates the preferences of both sectors in decision-making. This smart city study has been conducted by synthesizing existing literature and government reports, conducting surveys, analysing the findings, and suggesting modifications based on them.*

Keywords - *Urban Infrastructure, Smart City, Public Private Partnership, Government of India, Smart Infrastructure*

1. Introduction

1.1. The Smart Cities Mission in India

On June 25, 2015, the Government of India inaugurated the Smart Cities Mission as a flagship program to revolutionize urban areas. It seeks to utilize technology and innovation to uplift citizens' quality of life and foster sustainable urban development. This initiative entails selecting and developing 100 cities nationwide to serve as models of urban excellence. Under the mission, chosen cities receive financial support and autonomy to execute projects addressing urban challenges like infrastructure gaps, traffic congestion, housing shortages, and environmental issues.

These projects span multiple sectors, including transportation, energy, water management, waste management, and public services. The selection process is competitive, with cities chosen based on their proposals outlining their vision, strategies, and transformation plans. Selected cities receive funding from the central government and supplement it with resources from public-private partnerships, municipal bonds, and other financing avenues. Since its inception, the Smart Cities Mission has made significant strides in implementing diverse projects to enhance infrastructure, connectivity, and sustainable urban development across India's selected cities.

1.2. Public Private Partnership

PPP holds a vital role in shaping the development of smart cities in India. Launched in 2015 by the Government of India, the Smart Cities Mission promotes cooperation between public and private entities to realize urban transformation objectives. PPP models are employed in various aspects of smart city development, including infrastructure development, service delivery, technology implementation, and financing. Here are some key aspects of PPP in smart cities in India.

1.2.1. Infrastructure Development

PPPs are utilized to develop essential infrastructure such as roads, transportation systems, utilities (water supply, sewage, and management of solid waste), and affordable housing. Private sector participation helps in leveraging expertise, technology, and funding to accelerate the development process.

1.2.2. Service Delivery

Private sector participation is instrumental in delivering services efficiently and innovatively. This includes the provision of smart solutions for utilities management, public transportation, e-governance, and citizen services. PPP models ensure better service quality and accountability through performance-based contracts.

1.2.3. Technology Implementation

PPPs facilitate the integration of advanced technologies into urban infrastructure and services. This involves collaborations with private technology firms to deploy smart solutions for energy management, surveillance systems, traffic management, and environmental monitoring. Private sector expertise in technology deployment enhances the efficiency and effectiveness of urban services.

1.2.4. Financing

PPPs facilitate the mobilization of private capital for smart city initiatives, alleviating pressure on public budgets. Domestic and international private investors engage in project financing through diverse mechanisms like Build-Own-Operate-Transfer (BOOT) and various public-private partnership models such as Build-Operate-Transfer (BOT). These collaborations allow for inventive financing frameworks, including municipal bonds, Special Purpose Vehicles (SPVs), and revenue-sharing agreements.

1.2.5. Governance and Regulation

PPP frameworks in smart cities emphasize transparent and accountable governance structures. Regulatory mechanisms ensure compliance with legal and contractual obligations, risk allocation, dispute resolution, and performance monitoring. The government plays a crucial role in providing policy support, regulatory oversight, and institutional capacity building to facilitate successful PPP implementation. In essence, PPPs are essential for advancing smart city development in India, fostering collaboration between public and private entities to tackle urban challenges, drive innovation, and improve citizens' quality of life.

2. Literature Review

The current wave of urbanization is fundamentally transforming societies worldwide, with more than half of the global population now living in urban regions, and forecasts suggest this figure will exceed six billion by 2050 (United Nations, 2019). This swift urban growth presents cities with a myriad of opportunities and obstacles. Urban areas embracing technologies to address urban challenges are termed "smart cities." However, smart cities are not just technological progress but are also seen as a strategy to address urban issues and promote innovation within urban landscapes (Han & Hawken, 2018; Praharaj et al., 2018). Even as smart cities gain traction, a consensus on their definition remains elusive, with some regarding them as transient phenomena. However, a smart city is "an interconnected and multifaceted system designed to tackle urban issues through cooperative endeavours among diverse stakeholders" (Fernandez et al., 2018).

The fusion of smart technology and social innovations is deemed essential for the advancement of smart cities (Maye, 2019). The beginning of smart cities has sparked a surge in the field of research, with various global case studies underscoring the multifaceted nature of smart city endeavors, their goals, and the intricate power dynamics among stakeholders (Miller et al., 2021). Nevertheless, establishing a smart city demands substantial resources, rendering it unfeasible for any single entity to single-handedly provide all required resources. Studies reveal that merely 16% of cities worldwide possess the financial capacity to autonomously finance smart city initiatives (Fishman & Flynn, 2018).

Smart city evolution commonly encompasses diverse undertakings such as bike-sharing platforms, initiatives for open data, and e-government portals, rendering it a multifaceted process in technology dissemination situated in a dynamic interface intersecting the public sector and the private sector (Clark, 2020). Consequently, involving the private sector in the advancement of smart cities has emerged as a widespread approach to leverage supplementary expertise, distribute risks, and introduce inventive solutions (Siokas et al., 2022).

Public-Private Partnerships (PPPs) are pivotal in fostering such collaboration. Nevertheless, the concept of PPPs in smart cities remains nebulous and subject to intense debate (Hodge & Greve, 2017). Despite their widespread adoption, there is an urgent need to clarify insights drawn from existing literature, which predominantly relies on case studies. To scrutinize the current landscape of PPPs in smart cities in India, assess emerging themes of interest, and contribute to both academic discourse and practical implementation, this study has been conducted. Through a thorough literature review and data analysis of existing studies, this research endeavours to offer insights and remedies for shaping future research agendas in the realm of cross-sector collaboration and the development of smart cities.

3. Methodology

The research methodology begins with gathering data from relevant government and private organizations. This is followed by collecting data through questionnaires from citizens residing in smart cities. Subsequently, the collected data is analysed and categorized. Finally, based on the analysis, recommendations are formulated for enhancing Public-Private Partnerships (PPPs) in delivering development projects.

3.1. Research Approach

To achieve the study's objective of evaluating the factors impacting the effectiveness of Public-Private Partnerships (PPPs) in the development of smart cities within developing countries like India, a mixed-method research approach was utilized. Success criteria were assessed through satisfaction levels of the public sector, private sector, and end-users.

By combining qualitative and quantitative strategies, the research aimed to overcome the limitations associated with each method individually, as recommended in previous literature (Amaratunga et al., 2002). Thus, this study employed a dual qualitative and quantitative strategy to fulfil its objectives.

3.2. Data Collection

The research comprised four distinct phases of data collection:

Phase 1 encompassed an exhaustive literature review concentrated on smart cities, highlighting their pertinence to India and underscoring the significance of Public-Private Partnerships (PPPs) in fostering smart infrastructure. The objective of this phase was to scrutinize existing literature to elucidate the factors influencing PPPs in smart infrastructure projects.

In Phase 2 a survey of the questionnaire was conducted to know about the existing conditions of the development projects. This pilot survey targeted research and industry experts in India. Their feedback played a crucial role in improving the clarity and user-friendliness of the questionnaire, ensuring it was understandable to respondents.

In Phase 3, a national questionnaire survey was conducted in different cities in different regions of India to assess the factors influencing the reach of PPP initiatives in smart infrastructure development projects. The questionnaire and the target population were carefully defined to gather insights from relevant stakeholders across different regions, thereby contributing to a comprehensive understanding of the factors contributing to PPP success.

The questionnaire was structured into fourteen questions. The first questionnaire is dedicated to assessing advantages, enablers, obstructions, strategies, and enhancing factors. Respondents evaluated these items using a five-point Likert scale, widely employed in construction management research, for its capacity to yield precise and conclusive outcomes.

The next questions delineated the research objectives, while the subsequent section requested respondents to furnish background information encompassing their roles, industries, regions, and experience in smart city and/or Public-Private Partnership (PPP) projects.

The survey aimed at individuals in both industry and academia with expertise in Public-Private Partnerships (PPPs) and/or smart city development projects within India. Following the methodology of previous studies, nonprobability sampling methods were adopted due to the absence of a predefined sampling frame. Convenience and snowball sampling techniques were utilized to ensure a robust sample size, aligning with established practices in construction management research.

In total, 500 surveys were distributed to potential participants. Eventually, 272 fully completed surveys were received from 30 cities listed in the Indian government's smart city project, resulting in a response rate of 54.4%. After excluding incomplete surveys, 263 were deemed suitable for analysis, meeting the criteria of the central limit theorem.

Moreover, professionals in different regions have limited experience in smart infrastructure development, constraining the pool of knowledgeable individuals in this research domain. The sufficiency of the sample size was validated using the minimum R-squared method. The profiles of the respondents to the questionnaire, which includes their working experience and the regions from which responses were collected, are outlined in Table 1.

3.3. Analysis of Data (Multi-Attribute Utility Analysis)

The Multi-Attribute Utility theory is used to evaluate various criteria, with its benefits extensively explored in management (Butler, Morrice, & Mullarkey, 2001). Essentially, this method empowers decision-makers to gauge the relative significance of criteria and determine how effectively each alternative meets them. According to Zhao and Ying (2019), another prevalent technique for ranking alternatives in multiple criteria decision making is the Analytical Hierarchy Process (AHP) developed by Saaty (1980). Similar to MAUA, AHP decomposes intricate decision tasks into hierarchical components, assigning priority to each based on relevant attributes. However, ongoing debate surrounds the comparative advantages of MAUA and Analytical Hierarchy Process Analytical Hierarchy Process as ranking methods (Belton, 1986; Dyer, 1990). Evaluators often find AHP more cumbersome due to the need for repeated pairwise comparisons on a ratio scale, unlike the intuitive linear scale used in MAUA. Studies such as the one conducted by Lockett and Stratford (1987) suggest that both methods yield similar results when evaluators are consistent, though consistency is typically more challenging to achieve with the Analytical Hierarchy Process.

Alternatives like ELECTRE and PROMITHEE can also be used for pairwise comparisons of alternatives, providing similarly arduous processes (refer to Table 2). Therefore, MAUA is preferred for its practicality and straightforward execution, requiring no reliance on computer assistance.

Table 1. Details of the respondents

Primary Demographics	Category	No. of Responses	Percentage
Region in India	Uttar Pradesh	23	8.7
	Delhi	24	9.1
	Maharashtra	51	19.4
	Tamil Nadu	14	5.3
	Gujrat	22	8.4
	Madhya Pradesh	17	6.5
	Andhra Pradesh	23	8.7
	Rajasthan	9	3.4
	Kerala	25	9.5
	Karnataka	19	7.2
	West Bengal	17	6.5
	Telangana	19	7.2
Sector Type	Public Sector	99	37.6
	Private Sector	157	59.7
	Other	7	2.7
Profession	Researcher	32	12.2
	Engineer	107	40.7
	Project Manager	47	17.9
	Architect	36	13.7
	Public stakeholder	41	15.6
Years of Work Experience	< 5 years	113	43.0
	5-10 Years	89	33.8
	10-15 Years	39	14.8
	> 15 years	22	8.4

Table 2. Comparison of decision-making tools

Criteria	MAUA	ELECTRE	AHP	PROMITHEE
Comparing items in pairs	No	Yes	Yes	Yes
Restricted number of options	Yes (up to 3)	No	Yes (up to 15)	No
Requirement for sorting	No	Yes	No	No
High level of scrutiny	Not available	Credibility matrix	Coefficient of consistency	Net ranking flow

Multi-attribute utility analysis is a method commonly used to assess the suitability of different procurement options in smart city projects. It standardizes the score of each assessment criterion between 0 and 1, allowing for comparison across different criteria. This approach helps decision-makers weigh the relative importance of each criterion and evaluate how well each procurement option satisfies them. By multiplying the standardized scores with the utility score of each procurement mode obtained from stakeholders' input, the method generates a combined utility score for each option. This enables decision-makers to rank the procurement options based on their perceived utility in meeting the project's objectives. Equation (1) below delineates the process.

$$S = \sum_{i=0}^{n} (RPR_i \, U_i) \quad (1)$$

where S represents the outcome, indicating the weighted total utility of a procurement option for ranking purposes. RPR_i signifies the Rationalized Priority Rating for Criterion i, ranging from 0 to 1, derived from the PPP assessment criteria survey. U_i stands for the utility assigned by an expert regarding how effectively the procurement option meets the criterion i, with values ranging from 10 to 110. Lastly, n represents the number of assessment criteria.

4. Research Findings

4.1. Survey Findings

The questionnaire results are displayed in Table 3 for private sector data. The data for the public sector has been displayed in Table 4. In this case, for the Private Sector, Cronbach's Alpha value of 0.907 indicates a high level of internal consistency among the responses to the questions. This means that the questions in the questionnaire related to the Private Sector are reliably measuring whatever concept or constructs they are intended to measure. So, when respondents answer these questions, their responses consistently reflect their views or experiences regarding those assessment criteria. Similarly, for the Public Sector, although the Cronbach's Alpha value of 0.779 is slightly

lower than that of the Private Sector, it still falls within an acceptable range. This suggests that while there may be some variability in responses to questions related to the Public Sector, overall, the questionnaire demonstrates a reasonable level of internal consistency.The standard deviations of mean scores, which varied between 11.87 to 14.97 for both sectors, were found to be within a narrow range of 0.31 to 0.69. This indicates that there was not much spread or variability among the responses provided by the respondents. According to Nunnally's work in 1978, this level of dispersion falls within an acceptable range. Essentially, it suggests that respondents' opinions or experiences regarding the assessment criteria were relatively consistent across the board.

In the Public Sector, the assessment identified the most crucial factors as follows: Firstly, the availability of essential data for smart city service provision ranked highest. Secondly, expertise availability was noted as significantly important. Thirdly, the potential for ensuring transparency in procurement and operational monitoring emerged as a key concern. Similarly, in the Private Sector, the top-ranking factors were slightly different. Transparency in procurement and operational monitoring took precedence, indicating its paramount importance. Following closely was the complexity of coordinating government departments, highlighting the challenges faced in this area. Finally, expertise availability, while still crucial, was ranked third in importance. These findings shed light on the distinct priorities and challenges faced by both sectors. In the Public Sector, the emphasis appears to be on data availability, expertise, and transparency in procurement and operations. Similarly, in the Private Sector, transparency in procurement and operational monitoring remains critical, alongside the complexities of interdepartmental coordination and expertise availability. Therefore, it can be observed that both sectors display similar relative importance in their ranking order of mean scores for the top assessment criteria. Upon closer examination of each criterion across both sectors, it became apparent that, with the exception of the rate of technology becoming obsolete, the mean scores were consistently higher in the public sector compared to the private sector for all the remaining thirteen criteria. This observation suggests that among these assessment criteria, the private sector places significant emphasis on the potential obsolescence of smart city technology. This heightened focus indicates a recognition of the risks associated with investments in technology, particularly concerning its future relevance and longevity. Another noteworthy observation is that prior to normalization, all mean scores in both sectors surpassed 10, which represents the midpoint. This indicates the substantial importance attributed to the assessment criteria within the context of Public-Private Partnership (PPP) projects. The fact that all mean scores exceed this midpoint underscores the critical role these criteria play in evaluating and executing PPP projects effectively. Consistent with established literature, transparency in procurement emerges as a pivotal governmental policy, as highlighted by the World Bank in 2016.

This criterion underscores the significance of openness and clarity in the procurement process, ensuring accountability and integrity in public sector transactions. The criterion of availability of essential data for smart city service provision underscores the increasing importance of big data, recognized as a valuable asset for the development of smart cities. Governments are increasingly leveraging vast datasets to inform decision-making and enhance service provision, reflecting the evolving landscape of urban development. Moreover, governments often rely on the expertise of the private sector to drive innovation and advance smart city services and infrastructure. This collaboration between the public and private sectors underscores the importance of partnerships in realizing smart city initiatives. Additionally, governments may seek innovative solutions from citizens or startups, as noted in various studies, including those by the Economist Intelligence Unit (EIU) in 2016, Kitchin in 2014, DXC in 2018, and Schiavone et al. in 2019. These sources highlight the dynamic nature of smart city development, wherein diverse stakeholders contribute to shaping urban innovation.

4.2. Analysis Result

Table 3. Overview of importance ratings provided by participants from the private sector survey

Question	Mean	Standard Error	95% Conf. Interval	
Accessibility to fund	12.58	0.64	11.31	13.86
Difficulty in coordinating government departments	13.44	0.58	12.28	14.59
Access to expertise	13.25	0.61	12.05	14.45
Potential for maintaining transparency in procurement and monitoring operations	13.56	0.59	12.4	14.73
Access to required data for delivering smart city services	13.23	0.55	12.15	14.31
Potential for competitive procurement	12.58	0.65	11.3	13.87
Initiating efficiency measures to facilitate an early start in the procurement stage	12.37	0.53	11.33	13.42
Capable of performance measurement	12.46	0.65	11.18	13.74
Implementing efficiency measures during the operational stage	12.12	0.52	12.11	13.14
Availability of assets	12.5	0.50	11.51	13.49

Risk-sharing necessity	11.87	0.61	10.66	13.09
Appropriate business models can be formulated to distribute income or savings	12.62	0.53	11.59	13.66
The pace of technology dissemination	12.98	0.55	11.89	14.07
The pace of technology obsolescence	12.62	0.55	11.54	13.7
Number of observations	99			

Table 4. Overview of importance ratings provided by participants from the public sector survey

Variables	Mean	Standard Error	95% Conf. Interval	
Accessibility to fund	12.97	0.69	11.3	14.65
Difficulty in coordinating government departments	12.91	0.51	11.59	14.22
Access to expertise	14.97	0.34	14	15.95
Potential for maintaining transparency in procurement and monitoring operations	14.18	0.44	13	15.35
Access to required data for delivering smart city services	15.41	0.33	14.46	16.35
Potential for competitive procurement	12.95	0.46	11.74	14.16
Initiating efficiency measures to facilitate an early start in the procurement stage	13.18	0.36	12.18	14.18
Capable of performance measurement	13.84	0.31	12.92	14.75
Implementing efficiency measures during the operational stage	13.72	0.30	12.84	14.61
Availability of assets	12.75	0.44	11.58	13.92
Risk-sharing necessity	12.2	0.40	11.12	13.29
Appropriate business models can be formulated to distribute income or savings	13.04	0.52	11.71	14.37
The pace of technology dissemination	13.43	0.38	12.38	14.48
The pace of technology obsolescence	11.88	0.45	10.69	13.08
Number of observations	157			

Their responses align with trends observed in the literature, given the demographic makeup of survey participants, with almost 1.5 times as many individuals from the public sector compared to the private sector, and their extensive professional experience (with over half having more than 20 years) in project management and consultancies (each comprising approximately 30%).

However, a potential limitation is their relatively limited exposure to smart city projects, possibly due to the early stage of smart city development, despite approximately 65% being aware of ongoing projects.

5. Conclusion

Smart city development benefits from advances in technology, particularly in ICT. However, before initiating such projects, it's essential to evaluate their costs and benefits, as well as consider where the funding will come from. Public-Private Partnerships (PPPs) have emerged as viable options for implementing smart city initiatives, especially when there is input from citizens through consultations. This study delves into identifying factors that make PPPs suitable for smart city projects through a thorough literature review and survey weighting process, which revealed similar rankings across sectors. Additionally, a focus group was convened to assess utility values for procurement options across various pilot projects, shedding light on sector preferences. The study also introduces the Multi-Attribute Utility Analysis (MAUA) as a method for objectively evaluating different procurement approaches, showing potential for compromise between the public and private sectors. While PPPs show promise, their suitability varies depending on the specific characteristics of each project. Therefore, further research, including citizen involvement, is necessary for informed decision-making in the realm of smart city development.

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Appendix 1. Survey Questionnaire: Assessing the Viability of Public-Private Partnerships (PPPs) in Smart City Projects

This survey aims to evaluate the significance of specific criteria in determining the appropriateness of Public-Private Partnerships (PPPs) for upcoming smart city projects. Your responses will remain anonymous and will not include any identifiable information.

Part A - Criteria for Assessing the Suitability of Public-Private Partnerships (PPPs) in Smart City Projects

Please allocate a score between 1 and 20 to denote the Relative Importance Score for each criterion listed below. Additionally, you may include any additional criteria at the end and assign scores to them accordingly.

1	Accessibility to fund (in the event that private sector financing is required):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
2	Difficulty in coordinating government departments.																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
3	Access to expertise (if there is a necessity to access expertise from the private sector):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
4	Potential for maintaining transparency in procurement and monitoring operations																			

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
5	Access to required data for delivering smart city services (e.g., information regarding nearby private car park vacancies):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
6	Potential for competitive procurement																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
7	Initiating efficiency measures to facilitate an early start in the procurement stage:																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
8	Able to measure performance (For remunerating the private sector and ensuring quality control):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
9	Implementing efficiency measures during the operational stage																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
10	Asset availability (e.g., serving as collateral for financing or ensuring residual value once the private sector fulfils its obligations or returns facilities to the public sector for ongoing operation.):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
11	Risk-sharing necessity																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
12	Appropriate business models can be formulated to distribute income or savings.																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
13	The pace of technology dissemination (i.e., would private sector involvement hasten the process? For example, because of their established marketing and distribution networks).																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
14	The pace of technology obsolescence (if the process moves too fast, the private sector may be reluctant to invest.):																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
15	Others, please specify:																			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20

Part B - Background of the respondent to the questionnaire

1	Working experience (in years):
	A. < 5 years; B. 6~10 years; C. 11~15 years; D. > 15 years; E. Other: _____
2	What is the highest education you have attained?
	A. Certificate; B. Diploma; C. Undergraduate degree; D. Postgraduate; E. Doctorate; F. Other: _____
3	Type of sector:
	A. Non-Government Organizations (NGO); B. Public sector; C. Private sector; D. Other: _____
4	Profession
	A. Researcher; B. Engineer; C. Project Manager; D. Architect; E. Public stakeholder; F. Others (please specify): _____
5	Region in India
	A. Uttar Pradesh; B. Delhi; C. Maharashtra; D. Tamil Nadu; E. Gujrat; F. Madhya Pradesh; G. Andhra Pradesh; H. Rajasthan; I. Kerala; J. Karnataka; K. West Bengal; L. Telangana.
6	Your familiarity with the "Smart City" topic:
	A. Work on it; B. Read about it; C. Thought about it; D. Heard of it; E. None.