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Innovative civic engagement and digital urban infrastructure: Lessons from 100 Smart Cities Mission in India

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Abstract

In 2015 the Government of India announced an ambitious mission to develop 100 smart cities throughout the rapidly urbanising country. As part of this mission, the Government has initiated ICT based citizen engagement through a dedicated website - MyGov.in. The disparity in digital infrastructure between different socio-economic demographics is a challenge for cities in emerging economies wishing to implement smart city policies. Our research explores the relationship between active civic engagement and the availability of basic digital infrastructure and socio-economic standards in Indian cities. This study provides insights on factors that lead to the success or failure of cities' online citizen engagement platforms. Such insights offer important lessons for building future smart and connected cities as well as promoting healthy urban relationships and welfare, in the emerging economies of the world.
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Keywords: Smart cities; eParticipation, ICT led engagements, digital infrastructure, 100 Smart Cities Mission in India

1. Introduction

The urban landscape is changing dramatically in emerging economies around the world. Innovative planning approaches have been introduced to manage this dramatic urbanisation process. The integration of information technology to create "smart cities" provides a unique opportunity to manage this change through open, participatory and collaborative "e-governance". Although definitions and structural aspects of smart cities are diverse, the need for

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greater transparency in local governance and deployment of collective intelligence in city making is a point of consensus [1, 2]. This suggests that smart cities of the 21st century require more than technological innovation and need to integrate Institutional reforms and policies that engage citizens in democratic activities necessary to improve urban competitive advantages, and ensure new technologies have a genuine social impact [3].

Scholarship on smart cities often emphasises economic growth, and competitiveness. But, smart cities can also offer opportunities for enhancing citizen participation and encourage consultative decision making processes [4]. Such processes exploit the power of IT to enhance democratic debates about the vision of the city and help people create their own experiences in a type of virtual 'public culture'. The progressive smart city has the potential to address issues of political power and unjustness in the city, and thereby support equality, diversity and shape a democratic urban pluralism [5]. The landscape of active digital citizenship is evolving and can be supported by urban planners, smart cities professionals and others concerned with the contemporary urban condition.

The rise of smart cities, networked societies and networked governance powered by the use of ICTs has inspired new innovative approaches to governance and communication. Such theories have generated debates on the restructuring of government-citizen engagement, and knowledge transfer and dissemination. Contemporary works on ICT and smart communities strongly advocates that the use of ICT in local government can adequately enhance the management and functioning of cities. For example, Coe *et al.* (2001) observed that the use of ICT at local level leads to economic and socio-political transformations encapsulated by the new smart community movement [6]. These discourses indicate that the application of ICT in the urban context needs to go beyond its current focus on economic competition and must promote e-governance and social cohesion to foster inclusive urban societies.

The promise of ICT based citizen engagement and eParticipation faces specific challenges in the context of the developing world. The developments of inclusive smart cities are constrained by internet penetration and confusion regarding the target populations for these interfaces [7]. Internet technology has yet not been recognized as a basic urban infrastructure in cities of global south and as a result household internet access is extremely limited. Likewise, there are strong concerns that internet led engagements will reach a limited number of citizens who are already predisposed or interested in politics [8, 9]. For example, most technologically advanced cities in India like Ahmedabad had only 10.3% of its household accessing internet as of the year 2011. And the numbers are even more constrained for other medium sized cities (e.g., Solapur 4.6%, Davangere 5.1%, Surat 5.1% etc.) which have been selected as future smart cities by the Government of India.

In the year 2015, the Government of India rolled out the 'Smart Cities Mission' with an aim to drive economic growth and improve the quality of life for people in 100 selected cities by enabling local development and harnessing technology as a means to create smart solutions for citizens. The federal government launched ICT based citizen engagement through a specific website (MyGov.in) to engage citizens in debates, vision sharing through essays and e-voting for smart city service prioritisation. Majority of the 100 cities, including the ones mentioned above have engaged citizens through the online platform which has been a pre-condition for accessing central grants for rolling out smart city projects. Exactly how this eParticipation drive will attract different populations within the selected cities was an unknown.

This paper addresses this research question and critically investigates the nature and intensity of eEngagement across 100 smart cities in India. Our research also explores the reasons behind the diverse patterns of engagement and discusses the outcomes of the 100 smart cities citizen engagement platform one year since it was launched. To achieve this, internet access and digital inequalities across cities are investigated on a regional scale, and then relationship between the intensity of ICT led online engagements and internet penetration is analysed. The research also assesses the impact of the socio-economic status of cities on online engagements. Overall, the study provides insights on factors that lead to the success or failure of cities' online citizen engagement platforms and initiatives. Such insights on a continental scale are helpful for city leadership in tailoring smart city policy for specific geographical and socio-economic context and offer important lessons for building healthy urban relationships and welfare, in an increasingly interconnected and urban world.

2. Critical review

In this section we examine global case studies where eParticipation has been initiated to enhance democratic dimensions of smart city policies. A critical literature review of such initiatives establishes a comprehensive understanding of online participation in the smart city context and indicates specific principles for cities looking to implement digital transformation policies supporting e-governance.

2.1. Talk London

London has consistently been at the forefront of digital innovation and spearheading smart city policy. 'The Smart London Plan' is an example of such innovation. Launched in 2013 by Greater London Authority, it defines a vision for a smarter London, and provides a solid framework to integrate opportunities offered by cutting-edge digital technologies into London's urban fabric [10]. More importantly, the plan clearly articulates that 'Smart London' must put citizens at the core and aims to create an environment where Londoners drive change as much as technocrats, business or policy makers if it is to succeed. A specific 'Talk London community' was formed to facilitate this vision and to bring Londoners into the policy making process and generate new ideas. The 'Talk London' platform organizes online discussions, eVoting, live Q&A sessions, surveys and focus groups deliberating multiple topics focusing on improving Londoners lives and smart urban transformations. When people register to join the community, the hosts collect key demographic data and ask people about their areas of interest - enabling them to target certain groups of people for particular conversations and ensure that the agencies are engaging a broad range of Londoners [11]. In conjunction with other efforts such as the 'London Datastore' and the 'London Dashboard', which are open data platforms for the public, London is leading the drive to harness technology and data to increase transparency and citizen engagement.

2.2. My Ideal City Bogota

The Colombian capital, Bogota is well known for its progressive urban equalitarian policies. In recent years the city has begun to integrate ICT technology to support its collaborative governance agenda. Archi-Tectonics and Prodigy Network have developed 'My Ideal City'- an online platform for the citizens of Bogotá to influence their local downtown smart city planning proposals through real time interactions and direct feedback mechanism. 'My Ideal City' responds to the demand for bottom-up planning measures and focuses on crowd funding once the participation process is completed [12]. The goal of this platform is to ultimately generate a proposal for the Bogota of the future that will be created by the people and for the people. It emphasises on forming a "digital ecosystem" where the community is protagonist of change, discussing ways to improve increase and promoting the capital. The hosts invite citizens to answer questions related to Bogota, generated around weekly topics, and the visitors to the website can also upload their idea through text, image or videos. People are also asked to vote for ideas and the most controversial and debated issues are picked through crowdsourcing systems. From its inception in 2014, to the present, the platform has received 7000 proposals, 3500 ideas and about 130,000 people contributed with ideas in networks [13]. Two critical and innovative aspects emerge from our observation on 'My Ideal city Bogota' platform. The first one being, this process not only invite and incorporate suggestions from citizens but goes beyond to crowd funding and thereby looks for avenues that people and business fund their own ideas and not the government itself which is a facilitator in the case. Secondly, the ideas shared by citizens were actually scrutinized by experts in urbanism, architecture and planning to test their validity which gives a sense of esteem and credibility to the entire process.

2.3. MyGov.in

India, the world's fastest growing economy is taking giant steps to transform itself into a digitally empowered society and knowledge economy. As part of its digital transformation policy, Prime Minister of India on 26th July 2014 launched 'MyGov.in'- a dedicated national citizen engagement platform. The platform transcends boundaries

and attracts participants from across cities and states in India to debate on issues of national and local interest. Smart city is one of the key discussion themes in the portal, where the majority of India's 100 smart cities has taken part and invited comments, submissions and voting on smart city vision and proposals. The portal [14] has six interactive mediums to engage citizens- (a) group based discussions on issues impacting different sectors such as housing, industry or environment, (b) online and on ground tasks where people can submit essays on given topics and participate in logo, vision or tagline design competitions, (c) discussions on specific local themes where people can comment which are visible to fellow commenters, (d) survey and polls where participants can vote for selecting services and projects of their choice, (e) writing blogs and sharing of experiences on concerned issues and (f) hold and post talks at realtime to invite citizens to engage in dialogue with policy makers and political figures. At present the interface has 2.11 million registered members and attracted 177 thousand submissions on 427 tasks and 3.09 million comments in 564 discussion themes. One of the key features of this initiative is that this platform is hosted and managed by national government and thereby a highly top down approach of building connection between citizens and government is illustrated. This was also principally enforced by a competitive ranking methodology across 100 cities for granting central aid for smart cities, where by a maximum of 20% weight was given to the level of citizen engagement. The cities in a way had no option but to engage with citizens through this platform and other means in order to achieve higher ranks and access central funding.

2.4. Key comparative productions

The above discussions highlight some of the nuanced variations across eParticipation practices in London, Bogota and India. In this section we identify key comparative issues (Table 1) across these three initiatives on various parameters including goal and objective of the platforms, their ownership and operational level of governance, intended users and outcomes.

Table 1. Comparison across initiatives focusing on ICT led eConsultations.

Comparative measures	Talk London	My Ideal City Bogota	MyGov.in
Goal and objectives	The goal of this platform was to keep Londoners engaged and informed about the policy planning process	This initiative was primarily conceived to invite ideas and explore crowdsourced funding opportunities	This platform in India was utilized by cities as a means to access funds from central governments and prioritize smart city projects
Ownership and operation level of governance	This is owned by Greater London Authority, a metropolitan public agency overseeing implementation of Smart London Plan	This campaign was primarily designed and managed by private agencies and developers at the city level	India's 'MyGov.in' platform is a national level portal managed by Government of India and seems to lack local level proprietorship
Intended users	This initiative focused on contingents from within the city itself and therefore homogenous in nature	This platform attracted residents from the city concerned with local issues as well as transversely population interested in winning projects and funding opportunities for real estate developments	MyGov.in' being a national platform was aimed at people from across the nation and does not necessarily follow any local or city level boundaries.
Outcomes	The 'Talk London' platform emphasises on citizens access to information on policy processes and opening up of data and thus enabling them to innovate in their own way and contribute to cities economy, growth and transformation agenda	Bogota has allowed citizens to make more active contribution and take responsibilities in both identifying new ideas, voting most innovative designs and funding through crowdsourcing mechanism. And therefore the outcome of this initiative is directed towards the notion of citizens as actors, not as receivers	In both of the other cases, city stakeholder's looks to be more connected than in case of Indian cities. Direct engagement between city governments and its residents is clearly a missing point, as the scope of 'MyGov.in' is targeted to a much wider community and therefore the interactions are more passive and the outcomes are not tangible

3. Methodology

We began this research through investigating key concepts relevant to digital citizen engagement such as eParticipation, eDemocracy, networked society, smart cities etc. Then global best practices on ICT led eParticipation were analysed to understand the goal and objective of such platforms, their ownership issues, intended audience and the outcomes of such ventures. This research adopts a mixed method design to analyse data collected from secondary sources as well as semi structured interviews. Secondary data collected from Census of India 2011 has been analysed to highlight varying level of digital infrastructure (internet penetration, computer and mobile phone ownership) across 100 smart cities nominated by Government of India. Data was also gathered from MyGov.in website to analyse intensity of eEngagements across those 100 cities. We measure the intensity of online engagement as number of comments and suggestions made against discussion initiated by cities on smart city proposals. Among six different activities planned in the MyGov.in platform, discussions on the smart city theme were selected for analysis.

All these secondary data were mapped through GIS to showcase city level performance across India. We have also performed Pearson product-moment correlation analysis as part of this research to explore the relationship between access to digital infrastructure, socio-economic status of cities and their influence on intensity of eParticipation. All the secondary data were collected from national level government portals which may sometime miss some of the critical local nuances. To bridge this methodological gap we have also conducted semi structured interview of eight key city headships from across 5 cities in India. This is to develop grounded understanding and help validate interpretations and the outcomes from secondary data based assessments with inputs from local stakeholders in charge of managing such urban affairs.

4. Analysis and results

In this section, we will first review the performance of Indian smart cities in attracting citizens to engage in discussions on 'MyGov.in' platform. Statistics on internet penetration and mobile phone ownership across cities will also be mapped to highlight the distribution of digital infrastructure. We will advance the analysis by correlating access to internet infrastructure and socio-economic profile with intensity of online engagements across cities in India.

4.1. Intensity of online engagements across 100 Smart Cities on MyGov.in platform

Among six different activities hosted in 'MyGov.in' website, this research focuses on two components: (1) number of comments that are observed in city specific discussion on smart city proposals and (2) number of submission of essays which were invited by cities on the platform, so that citizens can share their vision of smart city. The rest of the activities were generic in nature; neither could be statistically measured and therefore not taken within purview of this research. The data we present here was collected from the MyGov.in website [14] on 15 December 2015, the date on which the first round of citizen consultation was formally concluded on the platform.

The intensity of citizen engagement varied drastically across 89 cities that invited discussions on smart city proposals. Whereas seven cities recorded participation of more than 0.1 million citizen comments, 28 cities did not even attract 100 participants on the same platform. The city of Bhopal attracted the maximum number of discussion (.17 million) followed by Kanpur (.16 million), Allahabad (.16 million) and Indore (.15 million). Aligarh, Saharanpur and Jhansi have also performed exceedingly well and gathered more than 0.1 million participant observations. On the contrary, the city of Kavaratti sits at bottom receiving only 12 participant engagement on its smart city proposal, followed by Durgapur, Aizawl and Bidhannagar. Cities such as Guwahati, Ajmer, Thanjavur, Madurai, Hyderabad and Agartala also performed poorly receiving less than 100 comments. One interesting observation emerged from the analysis (figure 1), is that large metropolitan cities such as Mumbai, Delhi, Chennai, Ahmedabad, Hyderabad, Jaipur and Bhubaneswar etc. have failed to draw significant online citizen engagement. In

stark contrast, medium sized cities located in central part of India such as Bhopal, Indore, Jhansi, Aligarh etc. and smaller towns including Pasighat, Udaipur, Bihar Sharif, Jabalpur and Haldia have been successful in spearheading citizens engagement through eConsultations.
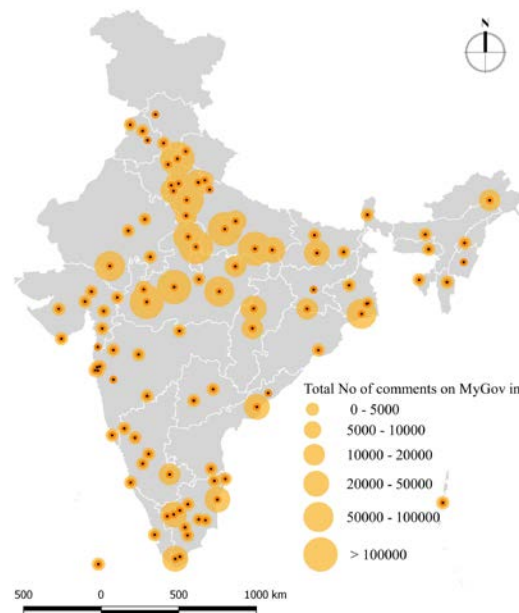

Fig. 1. Intensity of eEngagement across Indian cities on MyGov.in platform.

70 out of the 100 nominated smart cities in India accepted essay submissions from its citizens describing smart city vision. The city of Bhopal which did remarkably well in drawing citizens into discussions has also came out on top in number of essay submissions with 5091 entries. Kakinada a medium sized city in Southern India received 8014 submissions, the highest by any city. Cities such as Tirupati, Surat and Faridabad were also the ones attracting more than 1000 essay submissions. Again large cities such as Raipur, Vadodara, Mumbai and Hyderabad performed comparatively lower than its peers with small scale population. Overall, the number of submissions across cities has been less heterogeneous than observed in case of number of comments on smart city discussions.

4.2. Internet penetration and level of digital infrastructure across 100 Smart Cities in India

The digital divide is a well-established concept that does not necessarily relate to digital illiteracy but rather unequal access to digital infrastructure such as computers and the internet. While city governments and agencies are increasingly using digital mediums to enhance direct citizen engagement and democratize planning processes, there are important issues to consider when designing such engagement programmes [15]. The most important concept that emerges from scholarly literature is the significant relationship between digital culture and the social context that sustains it [16]. This context comprises of the people and the enabling infrastructure that are key for creating a virtual networking environment. Therefore the question that should be asked before rolling out such ventures is what share of urban population has access to a computer or a mobile phone or access to regular internet services? This section attempts to answer some of these questions and measures household level computer, mobile phone ownership and internet penetration in 100 nominated smart cities in India and provides a critical understanding about the capacity of citizens to engage in eParticipation activities and their ability to use digital services.

We examined the latest statistics from Census of India published in the year 2011 and found an average 22% of households in the 100 identified cities have computer ownership; which means about 1 among 5 households in Indian cities own a computer. But the numbers vary significantly across cities. Whereas Panaji city has just about

half of its households owning a computer, Rampur records only 9.1% of its households having a computer. We also interestingly noted that most of the master planned cities shown high level of computer ownership including New Delhi (42.5%), Bidhannagar (41.8%), Ghaziabad (38.2%), Pune (38.6%) and Navi Mumbai (37.2%). As far as mobile phone possession is concerned (figure 2 b) smaller towns have again taken the lead with Kavaratti, Aizawl and Kohima showing more than 90% of its households using mobile phones. Majority of cities in the northern states (Rampur, Moradabad, Bareilly, Aligarh, Bihar Sharif, Raipur and Bilaspur) have shown low level of mobile phone ownership in compare to cities elsewhere.
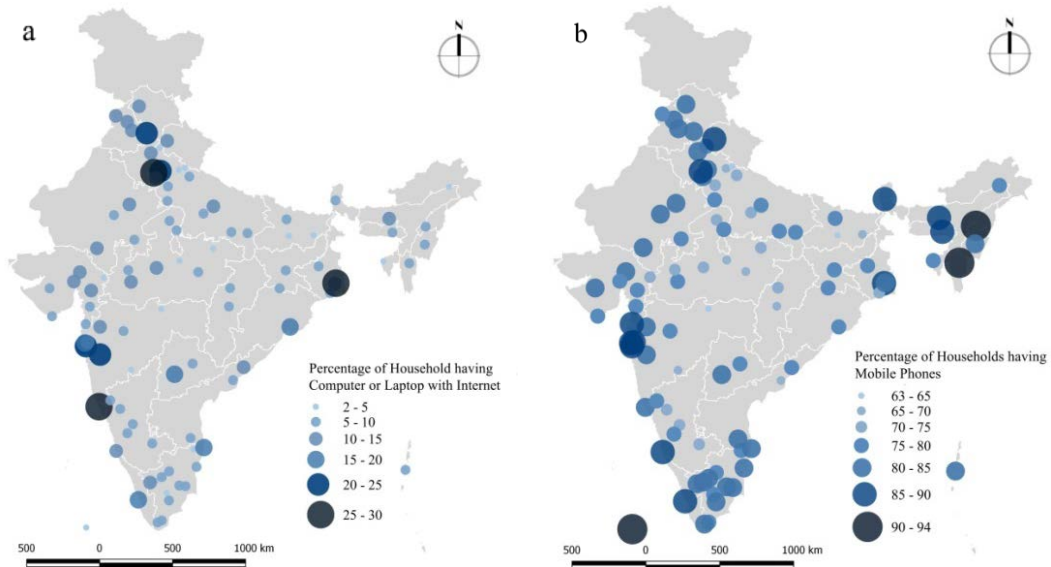

Fig. 2. (a) Household level internet penetration; (b) Mobile phone ownership across 100 smart cities.

Our analysis (figure 2 a) found that a meagre average of 9.8% households in Indian cities has computer or laptop with internet connection at home. Household internet access in smaller cities such as Pasighat, Bihar Sharif, Dahod, Kavaratti, Satna, Rampur, Sagar, Agartala, Dindigul etc. is even below 5%. Only 7 out of 100 cities analysed have shown more than 20% of households covered by internet infrastructure. Most of these are interestingly again the master planned cities such as Chandigarh, New Delhi, Panaji, Navi Mumbai, Pune, Ghaziabad and Bidhannagar. It is quite evident from the study that cities with smaller population size with semi-rural character have been experiencing lower level of digital infrastructure and internet penetration. On the contrary, modern planned cities across India although have digital infrastructure below global benchmarks, performs comparatively well in contrast to its national peers.

4.3. Explaining factors influencing intensity of eParticipation

Two sets of theories exist that compete to explain the impact of internet on civic and political engagement. Some scholars believe the internet is making a detrimental impact on citizen participation, primarily because this medium is increasingly used for entertainment [17] and personalized communication [18] rather than engaging in civic or social activities. Another group of researchers argue that access to internet will encourage citizens to engage in civic and political affairs [19, 20]. Within the second set of academics two different ideologies exist. One which believes that internet will serve to activate those populations who are already empowered and absorbed in politics. The other counter this by affirming that internet use could mobilize politically inactive and marginalized populations as increased flow of information may bridge the knowledge deficits that generally prevails among disadvantaged groups. This research assesses whether higher level of access to household internet or mobile phone ownership influences higher intensity of eParticipation at the city level and whether the effect is significant.

We also critically looked at diverse literature to identify soft civic parameters that may potentially impact citizen engagement in development affairs. We found that educational attainment [21, 22] is cited as primary force behind citizen characteristics and their ability to effectively engage in political processes. Also common within the literature were gender issues and concern for the limited participation of women compared to men in citizen-government dialogues [23]. We also observed that civic participation, especially internet enabled engagements were found to be more popular among certain age groups and the literature [24] suggested that the role of youth and active age group population on positive outcome of eParticipation. Also there is an overriding emphasis among established academics about the importance of creative class in shaping smart networked cities [25] and thereby raising high skilled employment and work participation [26] as a key linking variable to ICT led engagements. We in this research apart from linking digital infrastructure with eParticipation, considered all these vital socio-economic aspects while interpreting factors that may have influenced the outcome of citizen engagement on MyGov.in platform.

A Pearson product-moment correlation was computed to assess the relationship between share of city population participated on smart city discussion in MyGov.in platform and level of digital infrastructure as well socio-economic attributes of the city. We found (Table 2), there was a negative correlation between access to internet and intensity of eParticipation, which was statistically significant ($r = -.221$, $n = 85$, $p < .05$). The correlation between ownership of mobile phones and eParticipation on MyGov.in was also found to be negative and statistically significant ($r = -.253$, $n = 85$, $p < .05$). Thus, it can established that, increase in access to internet or mobile phone penetration does not necessarily lead to higher level of online participation concerning civic affairs.

The results also refutes the theory that higher level of social development leads to augmented citizen participation on political affairs; as we observed negative correlation between literacy rate and eParticipation, which was statistically significant ($r = -.243$, $n = 85$, $p < .05$). We also could not demonstrate that higher concentration of skilled workers would necessarily result in higher public participation through ICT mediums as work participation rate and secondary and service sector workers share were found to be negatively correlated with participation on MyGov.in platform and the effects were statistically significant at ($r = -.390$, $n = 85$, $p < .01$) and ($r = -.293$, $n = 85$, $p < .01$) respectively.

Table 2. Correlation among factors that conceivably influenced eParticipation on MyGov.in.

		Population participated on MyGov.in (%)	Households having computer/laptop with internet (%)	Households having mobile phone (%)	Literacy Rate (%)	Work participation rate (%)	Service sector workers (%)
Population participated on MyGov.in (%)	Pearson Correlation	1	-.221[*]	-.253[*]	-.243[*]	-.390[**]	-.293[**]
	Sig. (2-tailed)		.042	.020	.025	.000	.006
	N	85	85	85	85	85	85
Households having computer/laptop with internet (%)	Pearson Correlation	-.221[*]	1	.455[**]	.296[**]	.409[**]	.382[**]
	Sig. (2-tailed)	.042		.000	.006	.000	.000
	N	85	85	85	85	85	85
Households having mobile phone (%)	Pearson Correlation	-.253[*]	.455[**]	1	.584[**]	.447[**]	.550[**]
	Sig. (2-tailed)	.020	.000		.000	.000	.000
	N	85	85	85	85	85	85
Literacy Rate (%)	Pearson Correlation	-.243[*]	.296[**]	.584[**]	1	.506[**]	.609[**]
	Sig. (2-tailed)	.025	.006	.000		.000	.000
	N	85	85	85	85	85	85
Work participation rate (%)	Pearson Correlation	-.390[**]	.409[**]	.447[**]	.506[**]	1	.425[**]
	Sig. (2-tailed)	.000	.000	.000	.000		.000
	N	85	85	85	85	85	85
Secondary and service sector workers (%)	Pearson Correlation	-.293[**]	.382[**]	.550[**]	.609[**]	.425[**]	1
	Sig. (2-tailed)	.006	.000	.000	.000	.000	
	N	85	85	85	85	85	85

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

5. Summary and conclusions

Contemporary scholarly work on ICT indicates that it can be a powerful tool for shaping collaborative digital environments that boost the capacity of neighborhoods and cities, helping them to become a 'smart city'. This notion is fundamentally connected not only to that of the 'knowledge- based economy' [27] where innovation and technology are the main drivers of regional and local growth, but also to the notion of 'collective community intelligence' [6], which underline such capacities and contribute to their success. These literatures indicate possible links between ICT, local governance and citizen engagement which this study builds upon and investigates. The results of this study analyse data from 100 cities in India and demonstrate that engaging people in online platforms for civic deliberations is not simply a matter of digital infrastructure, but is influenced by a complex set of socio-economic and political variables. Our findings suggest that higher access to digital infrastructure such as internet and mobile phone may have a detrimental impact on eParticipation. This research also provides evidence that socio-economic variables such as high literacy rate and availability of skilled workforce does not necessarily lead to high intensity of digital political engagement. These findings are supported by a body of literature which asserts that technology is being primarily used for entertainment and that access to ICT infrastructure does not guarantee self-participation in civic affairs [17, 18].

In order to explain these findings, we must look at cases where online participation initiatives worked and the factors that are behind such successful ventures. The case study analysis we presented from smart city initiatives in the form of 'Talk London' and 'My Ideal City Bogota' highlight the fact that the role of local government and ownership of eEngagement platforms plays a key role in attracting citizens to participate in smart city interchanges. India's MyGov.in platform on the contrary is being managed by the central government and lack local level engagement, which could be identified as a key reason for low level of participation in majority of cities and even the ones having considerable share of population within internet coverage. Our findings are in the same line as observed by Chadwick, 2014 [28] who identified the role of internal institutional variables and government settings as a powerful force in determining the effectiveness of online engagements. We therefore recommend that aspiring smart cities, especially those with diverse socio-economic and technological contexts must design locally dedicated platforms in order to capture the imagination and effectively engage with local residents.

It is also noticeable from outcomes of this study that the awareness and interest of citizens in engaging with governments and range of stakeholders plays a larger role than their abilities and digital skills. We observed that even higher literacy rates or clusters of highly skilled workers do not guarantee increased eParticipation in smart cities. This leads us to the conclusion that smart cities of the future should focus on digital initiatives based on objective local assessments of citizen's behaviors and aspirations. This supports findings from previous studies [29, 30] on urban innovation which outline that policies for smart cities must be demand-driven and should support collaboration and partnership as a strategy to promote and facilitate active citizenship and citizen-centered network governance. Governments should be careful in understanding people's aspirations and reach out to range of stakeholders before laying out ICT driven smart city platforms and policies.

Our findings clearly indicate that cities with small and medium population size have been able to engage people more effectively than the ones with metropolitan character. This helps us to validate the theory of civic intimacy at play between citizens and governments and its relation to the scale of urban spread. And clearly more aggressive approach is observed in case of cities which are forced to compete with their counterparts enjoying more resources and opportunities. In a way these conclusions highlights the success of the Government of India in fostering a culture of competitiveness while planning for smart and connected cities. The outcomes from this study hold important lessons for cities looking to implement digital transformation strategies by outlining the key insights on eParticipation and examining the complex relationship between accesses to digital infrastructure and multiple socio-economic variables. This research opens up to future work on the characteristics of urban landscapes and regions in terms of citizen digital engagement and socio-economic identity so that smart city policies can be tailored to better support urban populations and democratic city growth.

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