Title:
A Scoping Review for SDG 16 and SDGs' socioeconomic targets: The Need of Nurturing A Responsive City for Sustainable Urban Communities in Asian Megacities

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A Scoping Review for SDG 16 and SDGs' socioeconomic targets: The Need of Nurturing A Responsive City for Sustainable Urban Communities in Asian Megacities*

Abstract

Asia is the most populated continent in the world that are home for more than half of the world's population. The huge urban population gaining benefit from the globalization of technology and finance affects the existence of Asian megacities. Complex urban issues persisting in Asian megacities force city governments to be more responsive. The city governments are expected to offer smart solutions to the complexities of societal problem yet implement basic services equally. Thus, the city governments have to transform itself into responsive city.

The responsive city as a term was introduced and popularized by Stephen Goldsmith, the former city manager of New York, the United States of America. The term emphasizes on how city governments can escalate their practices of smart city in a more responsive way through harnessing integrated data platform. In responsive city, the city governments not only have to fit the data platform into the current urban challenges but also foresee the unpredicted urban challenges. In view of this explanation, this paper will examine the applicability of the responsive city on sustainable urban communities in eight Asian megacities applying a scoping review. The Asian megacities include Tokyo, Japan; Shanghai, China; Jakarta, Indonesia; Delhi, India; Seoul, South Korea; Manila, Philippines; Dhaka, Bangladesh; Karachi, Pakistan.

The scoping review is a narrative integration of the relevant evidence that examines preliminary measurement of potential size and range of available research literature. It also aims to identify nature and extent of research evidence. In addition to the method, there are variables on sustainable communities and governance including civic engagement, urban transport, women and child protection, health policy, educational policy, security protection, and effective bureaucracy that will be scrutinized. Those variables are derived from social well-being aspect and paired with socioeconomic targets in SDG 3, 4, 5, 11, 16, and 17.

Our finding recommends that the abovementioned megacities have applied the responsive city with lacks of civic engagement taking from the application of the scoping review. As a result, the eight Asian megacities have also implemented the term of responsive city partially corresponding to the smart cities operated in theirs. Furthermore, this paper suggests relevant policy map drawing upon the responsive city.

Keywords: responsive city, sustainable communities, megacity

1. Introduction

City government has entered a new era of civic technology as mentioned by Stephen Goldsmith on his book, The Responsive City. This book excellently captured how American cities and few cities in the world transformed itself into city based data platform to better serve its citizen. The term stated in the book title as "the responsive city" is rarely heard particlularly in Asia where people and experts usually use a term of "smart city". In its operation, those two terms have similar meaning.

Furthermore, the book did not emphasise on definiton which differs it from smart city. Importantly, it put at the forefront of attention smart government based on data can bring a significant change for the entire local government administration. City officials can work faster and creatively to resolve development issues when their jobs are defined as problem solving rather than rule following (Goldsmith and Crawford, 2014). Instead of reporting and waiting for supervisors to respond, the officals can make their own decisions, assisted by curated and organized data as well as supported often by real-time advice from city manager or head of department. The result is a smarter and agile government that better employs its resources and attention.

This result is hardly achieved in Asia megacities especially in developing countries where its governance very depended upon a long bureaucracy. A long bureaucracy and its procedure hamper organizational change and halt transformation. This kind of government system is bound to end in the digital era and will be replaced by citizen and digital tools. Government and community will work together and use both data from city hall and generated by citizens themselves. It is designed in the purpose of tailoring responses, engaging and responding to problems, and even preventing problems from occuring in the first place.

Removing hierarchies and bureaucracies followed with strong leadership applying data sharing is beneficial for citizens very much. This has been shown by an example from the book specifically implemented by Mayor Menino of Boston City. The mayor has created a dramatic improvement in the city upon some innovative programmes. There are the Mayor's 24-Hour Hotline, Citizens Connect mobile application for consituent reports to the city; and an innovation center called the Mayor's Office of New Urban Mechanics.Those programmes have proven that technology was a treatment for the government mistake of keeping citizens at a distance. The fact the mayor's high touch ethos had been transformed into a high-tech world.

In addition to the leadership, the responsive city requires a massive demand from public so it can properly operate. This condition can be seen from each of the book chapters which expresses civic engagement is an essential part. Most of research concerning smart city in Asia cities do not put an attention on this particular aspect but it merely focuses on information and technology governance. In other words, the focus only covers on the object of smart city without discussing its enabling causes.

The enabling causes covering civic engagement and leadership affect sustainable development goals (SDGs) implementation or localising SDGs at local level. This is due to the fact that the responsive city had pioneered through their public services concerning social, economical, and urban sectors. This advanced knowledge needs to be grounded so it will be benifiting the general public. In doing so, the application of the responsive city's experience will be corresponded to urban policy and its sustainable communities attainment in Asian megacities with a scoping review approach. Megacities are chosen due to the rising of their chronic problem in planning and managing urban problems therefore this in turn implicates in inconclusive economic, spatial problem, and lack of urban services (Yeung, 2009).

2. Literature Review

A megacity is defined in terms of metropolitan population size and consists of at least 10 million (Brennan and Richardson, 1989; Yeung, 2009). The raising of megacity is affected by persisting rapid urbanization and its number continues to grow. In 2010, there were 511 cities predicted with a large population. Most of megacities came from developing countries that dominated by two continents, Asia and Africa. These cities are Lagos, Dhaka, Karachi, Jakarta, Manila, Seoul, and Delhi. In addition the cities from developing countries, there is Tokyo from more-developed countries classified as megacities. Megacitiy is usually primate city or national capital of a country that has strong economic leverage. Even though it maintains powerful economic force contributing to national and regional economy, the standard of living and the quality of life are problematic which needs to resolve. Resolving urban problems especially in megacities is a very complex activity which requires the development of city services (e.g. housing and settlement, water, health and educational facilities, and transportation), the creation of employment programme, the assembly of urban land for development, and importantly effective institutional arrangements.

In implementing such urban policies, megacities policy makers should not only have sound capacities in managing development services but also a capacity for development planning. It is more daunting due to the lack of resources, expertise, and experience on such capacities particularly in developing countries. Many research confirmed this situation, one of them is from the Population Division of the United Nations in the 1990s. Even if this research dated back long time ago, the urban problems are still relevant and exist in time being. Some of the findings are a widespread and severe lack of basic services in many mega-cities, including chronic shortage of housing, inadequacies of the water supply, poor solid-waste disposal, and polluted air and water. Needless to say, urban poverty is still grave and entrenched a situation as an affront to human progress when advanced technology and globalization have brought wealth and achievements.

The advanced technology and globalization instigate in many fields of our life today including in how local government works. Numerous local governments had successfully entailed higher data application into their administration. Consequently, this kind of local government also encourage their peers to do the same thus the advancement can be more beneficial. The type of local government which utilise technology in their governance known as smart city. Even though the definition of smart in smart city is still debatable, a group of academia had strongly posited the smart city as a strategy to mitigate the problems generated by the urban population growth and rapid urbanization (Chourabi et al., 2012). This opinion is also supported by other scholars who emphasise that public value should be the final goal of a smarter city, but it has prerequisites where all projects and initiatives would be addressed to the citizens (Moore, 1995; Sorrention and Niehaves, 2010). Public value is a complex idea as it includes different dimensions (Benington and Moore, 2010). The dimensions are:

- It requires to create both economic and social values, that are difficult to merge and sometimes in conflict each other;
- It requires to create value for different stakeholders, that have different expectations not ever compatible each other;
- It requires to create value respect to different dimensions of the life in city, and it further requires to understand which are the real needs and the priorities to carry on.

Public value itself is defined by many social scientists, one of them is Moore in his seminal work. Another expert who focuses on this issue is Bozman. He informed that public values are those providing normative consensus about the rights, benefits, and prerogatives to which

citizens should (and should not) be entitled; the obligations of citizens to society, the state and one another; and the principles on which governments and policies should be based (Bozeman, 2007). His opinion on public value was also supported by Alan Turrell who underlined the contention on public value that can only be created by a public body including three elements of strategic triangle (Turrell, 2017). The strategic triangle comprises of strategic goals and values, the authorising environment, and the operational capability. This explanation confirmed a description that mentioned smart city should possess public value and its strategic urban planning (Dameri and Rosenthal-Sabroux, 2014; Fontana, 2014).

The importance of public value in smart city had been stipulated in the responsive city. In there, civic engagement was mentioned frequently as this reflects the level of citizen participation in the context of smart city. Two of good cases are 311 and New York Big City Apps which engage with citizens in a very interactive way. However, the responsive city did not emphasise the technicality on how to initiate and sustain the civic engagement with more technocaratic approach. In the book the explanation is more on narrative approach aiming popular audience.

The public value in the context of responsive city can be framed in sustainable urban communities but the research concerning this is still limited and almost none. Because of this, that is why we can apply public value as an analytical frame (Williams and Shearer, 2011). This analytical frame has been mentioned in their journal which gathers a wide range of interesting points in that work. It gathered from researches from several policy experts. First point, there was the development of a framework for evaluating e-Government projects with a particular focus on the concept of public value –taken to include dimensions of outcomes, services, satisfaction and trust (Grimsley and Meehan, 2007). Second, the public value framework has been employed as a means of analysing reforms and modes of public sector practice (Bossert et al., 1998; Bozeman, 2002; Talbot and Wiggan, 2009). Application of public value as analytical framework can be complemented with the scoping review to bridge the differences and similarities between the smart city in Asia megacities and the responsive city.

3. Methodology

Scoping review is employed in the article which clusters each article depended on their relevance to variables. This method is adopted for identification of literature deeply in order to achieve broad results. It is guided by a requirement to identify all relevant literature regardless of study design. The 'scoping' study comprises a further type of literature review, yet until recently much less emphasis has been placed on the scoping study as a technique to 'map' relevant literature in the field of interest (Arksey and O'Malley, 2005). This article has taken a basis of method from the methodological framework on scoping studies of Arksey and O'Malley. At a general level, scoping studies might aim to map rapidly the key concepts underpinning a research area and the main sources and types of evidence available, and can be undertaken as stand-alone projects in their own right, especially where an area is complex or has not been reviewed comprehensively before (Mays et al., 2001).

The scoping review technique was conducted for literaure using the following databases: ScienceDirect, SAGE Journals, ResearchGate, university's journals, and offical reports from government. Search terms were clustered into four categories ("smart city", "responsive city", "sustainable communities", and "Asian megacity"). The Asian megacities ranged from Tokyo, Shanghai, Jakarta, Delhi, Seoul, Manila, Dhaka, to Karachi. Moreover, there are another two important researches supporting this article applying scoping review in the fields of health policy and social science. In there, author reflexivity is important because interpretation and narrative summation are central to the Arksey and O'Malley scoping review framework

focusing on frame-critical approaches or 'framing research' (Koon et al., 2016). Some weaknesses of scoping review technique have been discussed. The lack of a systematic analysis of methodological quality is both a weakness and a strength of scoping review techniques. Although it is difficult for a scoping review to draw conclusions based on the quality of the included studies, the strength of a scoping review is in its ability to condense large amounts of material and guide the direction of future research including more comprehensive analyses of the quality of relevant methods (Weiss et al., 2018; Levac et al., 2010; Arksey and O'Malley, 2005).

Furthermore, the scoping review had been successfully applied on urban and cities topics before this article written by several authors. Interventions on two aspects of the urban physical environment e.g. air pollution and heat extremes known to negatively affect health. The scoping method explored on how the concept of equity integrated into the interventions by characterization of intervention activities according to five dimensions. Results indicate that working at-risk groups were the most common strategies for incorporating equity into urban physical environment interventions (Canadian Population Health Initiative, 2012).

Another related research emphasised on the issue that over the past decade smart urban technologies, as part of the smart and sustainable city agenda, have begun to blanket our cities with an aim of forming the backbone of a large and intelligent infrastructure. Along with this development, dissemination of the sustainability ideology has had a significant imprint on the planning and development of our cities (Trindade et al., 2017). On the other hand, a more integrative approach in which core sustainability principles guide a goal-based framework should be employed (Cohen, 2017). This article seeks to meet this goal-based framework through the scoping review. The scoping review is also complemented with a brief of policy map addressing sustainable communities from the responsive city. It is previously expected that the policy map should also get description from eight Asian megacities but it can not be achieved due to lack of research and data on that.

In the scoping review, a data extraction form was used to systematically extract information relevant to the aims of this study as well as standard descriptive information in the figure of a master table (Weiss et al., 2018). The master table was created that included article details, corresponding method, policy initiatives related sustainable urban communities, and its conclusion. It is a core of this article and depended on the subjectivity of the investigators referencing to the Arksey and O'Malley framework. The scoping review has taken several stages in the implementation which is on below:

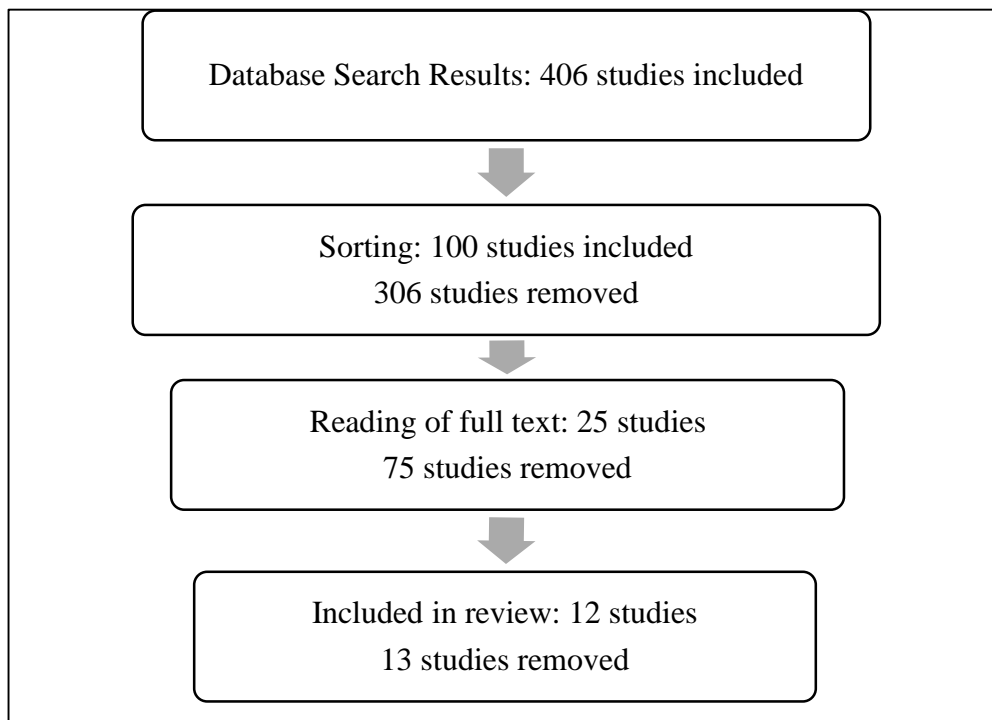**Table 1. The Scoping Review Stages**

Stages	Description
Stage 1: Identifying the research question	- What is known from the existing research about the applicability of the responsive city on sustainable urban communities in eight Asian megacities? - What is known from the existing research about the implementation of smart city affecting sustainable urban communities in eight Asian megacities? - How does the responsive city differ and match with smart city implementing in the sustainable urban communities in the Asian megacities?

Stages	Description
Stage 2: Identifying relevant studies	• Relevevant studies through internet • Bibliography search • Citation search

Stage 3: Study selection	• Inclusion criteria
	    o The operational term of the responsive city including data smart governance and civic engagement is being applied in eight Asian megacities specifically in sustainable urban communities based on 7 related SDGs target and indicators (e.g. civic engagement, urban transport, women and child protection, health policy, educational policy, security protection, and effective bureaucracy).
	    o The smart city principle including ICT governance is incorporated in Asian megacities' policy for sustainable urban communities.
	    o The existing research describes the rationale of smart city, the process of implementation smart city, the challenges, and the future development of the smart city especially in Asian megacities as well as its relevance with public value.
	 • Exclusion criteria
	    o The public services implemented in Asian megacities have not maintained data smart governance and do not engage with citizens substantially in achieving sustainable urban communities.

Stage 4: Charting the data	Framing the existing literature into specific categories
Stage 5: Collating, summarising and reporting the results	Processing the results into narrative account

4. Findings

There are findings matching with the points in the responsive city. Smart cities has enhanced sustainable urban communities requiring collaboration from all stakeholders by interfacing with computerised systems (Hall, 2000). In country level, the rapid development of smart cities in China since 2009 is attributed as co-existence between government and private sectors, but this situation will change in the future that government will only provide standardization, law making, and arrangement (Li, 2015). Another research focusing on Greece where its cities are inadequate to implement smart city as they have not created cluster-hubs which interconnect stakeholders to use data in comparison with Barcelona, Yokohama, and Dublin (Dimelli, 2016). The figure below illustrates how the search of findings taken from the existing research to included studies.

Figure 1. The Sorting Process

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│  ┌───────────────────────────────────────┐  │
│  │  Database Search Results: 406 studies │  │
│  │              included                  │  │
│  └───────────────────────────────────────┘  │
│                     ↓                         │
│  ┌───────────────────────────────────────┐  │
│  │     Sorting: 100 studies included     │  │
│  │         306 studies removed           │  │
│  └───────────────────────────────────────┘  │
│                     ↓                         │
│  ┌───────────────────────────────────────┐  │
│  │    Reading of full text: 25 studies   │  │
│  │          75 studies removed           │  │
│  └───────────────────────────────────────┘  │
│                     ↓                         │
│  ┌───────────────────────────────────────┐  │
│  │    Included in review: 12 studies     │  │
│  │          13 studies removed           │  │
│  └───────────────────────────────────────┘  │
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Corresponding to the responsive city, initatives always came from multi-stakeholder engagement. There is one which came from outside from local governments where they just need to give support e.g. Children's Optimal Health (COH). Contending Li's opinion before, the book of the responsive city rarely addressed legislation supporting the implementation of civic technology for urban people but the city government in there is captured as facilitator in civic engagement on technology. Another finding, the work of Dimelli addressing inaccessible data is dissimilar with the responsive city where all stakeholders can utilize the available data. The application of smart city can meet the needs of public transparency at national level which Korean government should takes advantages of its smart governance (Suk-Joon, 2018). This indeed has been implemented in the responsive city especially combating financial crime and frauds.

There are some researchs supporting the smart city implementation, even though it is not directly related. The development of e-commerce in private sector created digital evolutions and subsequently promote economic growth in Southeast Asia (Kemp, 2018). In relation with migrant mobility, smart city usually occured in high human capital cities with higher education institutions as this situation cause intrastate brain drain and redistribution skilled workers within a state (Winters, 2011). Even though there is not available yet the official measurement on smart city, the International Urban Sustainability Indicators List (IUSIL) can be utilised as a measurement for sutainability. The IUSIL result can be also partly taken for measuring sustainable urban communities and smart city (Shen, 2011).

On the other hand, there are some critics on smart cities which are relevant to the responsive city as well. In the study from Alawadhi and Scholl, they put forward the view of Seattle city officials that smart government directed towards information integration in terms of both technology and services. It is consistent with their view on 'smart city projects' in this study that refers more to smart government at local city rather than to a complex and

multidimensional urban space (Alawadhi and Scholl, 2013). Their ideas are quite questionable as smart city came forward to tackle the complexity of urban issues instead of persisting in more non-complex environment. Whilst big data analytics offer a numbers of opportunities, they also raise a number of concern, such as corporatization and neo-liberalisation of city management, possibilities of technological lock-in, and ethical issues regarding fidelity and security of the data. So it is important to interrogate the source and how the data is produced, the function of urban analytics and control center, the implication of technocratic corporatized and real time forms of governance (Kitchin, 2014). Kitchin's conclusion on the smart city is very interesting to be discussed more especially in examining ethical rights.

Needless to say, some articles offered its relevance with the responsive city. Knowledge city goes in hand with the Urban Innovative Engine as this innovation can trigger renewal in cities that support knowledge city such as the library, the museum, the gate, the capital market, and the science park (Dvir, 2004). In regards of this matter, another term including informational city is deeply ingrained in the knowledge city which based on digital information and its network. Physical infrastructure is less important (Stock, 2011). The important question needs to be raised in here is that "How can we ensure that the concept of knowledge city we offered to citizens meet the citizens' level of knowledge?. Educating our citizen with formal education, civic education, and reducing digital divide are the most important agenda. The responsive city also implicitly addresses this in the case of the Mayor's Broadband Challenge. This challenge is instigated by Chicago City Mayor aiming at addressing the city's public and private broadband needs. This resulted in the establishment of very high-capacity fiber-optic cables through the city's sewers, which is much cheaper and faster.

Intriguingly, there is an article mentioning multifaceted sides of the smart concept from 5 countries. The similarities are that the smart concept are being established locally by national or local government. The stress on smarts entails is very different and open to policy conceptualization. The difference in some cases is on the society or civic engagement (Gil, 2013). This difference is similar to the cases from the responsive city where civic engagement is being focused on. The smart city on sustainable urban communities is implemented in Asian megacities, but has deficiency of engagement with citizens. Advanced technology applying interactive feature in smart city services is inadequate in achieving a sound quality of smart city. This kind of technology can not serve as a guarantee for citizens involvement in the services. That is why strategies and operational capacity approach on civic engagement needed to be reoriented based on the public value concept. The public value concept can be drawn upon description and explanation in the responsive city. Moreover, the table below shows how the responsive city trying to achieve its public value and sustainable urban communities.

Table 2. The Policy Map of Responsive City

Sector and Initative	Local Government and Institution	Description of Initiative
Civic engagement	District of Columbia/Washington DC, the Mayor's Office	The Mayor of Washington DC had proposed Grade.DC.gov as a means of smart governance on addressing urban issues. As this application considered successful, it goes further by creating a new form of responsiveness by government to its residents. Digital tools are to achieve their potential to create

Sector and Initative	Local Government and Institution	Description of Initiative
		dialogue between citizens and government, citizens will have to not only use those tools but also develop their own tools that allow them to talk to one another about community issues without government's direction or prodding. Citizens need to develop a civic relationship among themselves in order to form a coherent community that is capable of having goals and a voice of its own—and of sometimes virtually marching on city hall on behalf of change.
Effective bureaucracy	New York City Government, the Mayor's Office of Operations	In fulfilling civic technology, the city government established Health and Human Services (HHS) Connect aiming for poor and marginalised people in New York. The initial establishment of the HHS is quite challenging due to resistance from city officials however it has been tackled tactfully. In its operation, the HHS required a sound and strong coordination among each of city departments. The HHS Connect team works within the Mayor's Office of Operations to break information silos through the use of modernized technology and coordinated agency practices to more efficiently and effectively provide Health and Human Services to New Yorkers.
Urban transport	New York City Government, Department of Transportation	The Department of Transportation worked together with IdeaHub to improve its performance. IdeaHub allows each of the federal Department of Transportation's (DOT) operating administrations to collaborate on ideas that will save money or produce better services. According to the DOT, IdeaHub engages 30 percent of employees, has garnered more than seventy-five hundred ideas, over ninety thousand ratings, and nearly twenty-five thousand comments, and more than one hundred employee-submitted ideas have been adopted.
Women and child protection	Indiana State Government, Indiana	The state government proposed a change on data integration and more

Sector and Initative	Local Government and Institution	Description of Initiative
	State Department of Child Services	responsive caseworkers so the child services can be accessed by all stakeholders. This reform also addressed for child abuse occurring in the state. Each caseworkers was provided with laptops and tablets, allowing them to add information to a case file in real time and giving neccesary information to adress child abuse. This reform was also supported by Annie E. Casey Foundation.
Health policy	Children's Optimal Health partnered with the Austin Independent School District, the University of Texas at Austin, the University of Texas at Houston School of Public Health, the Seton Family of Hospitals	A group of insititution proposed Children's Optimal Health (COH). COH began in 2006 as an informal cooperative effort among many organizations to share information about children's health in and around Austin, Texas, where the group is based. Even though it is not a Austin's city government initiative, the initative has reduced the percentage of obesity whereas 40 percent of fourth-graders were overweight, and 23 percent were obese. In addition to this, Texas state legislation requires that the body mass index and physical fitness of school children be measured by schools.
Educational policy	Chicago City Government/ the Mayor's Office	The Mayor's Broadband Challenge is instigated by Chicago City Mayor aiming at addressing the city's public and private broadband needs. One of those initiatives is running very high-capacity fiber-optic cables through the city's sewers, which is much cheaper and faster than ripping up city streets. Besides the fiber-optic, it increased the number and the quality of Wi-Fi which is beneficial for school students. They have more access to important resources for their educational purposes.
Security protection	*New York City Government, the Mayor's Office of Data Analytics*	The Mayor's Office of Data Analytics (DA) had handled financial crime during financial crisis in 2008 by proposing Unusual Property Activity Report (UPAR). The UPAR addressed for anticipating morgage frauds in the city which had reached 150 cases in 2008. This program helped in capturing

Sector and Initative	Local Government and Institution	Description of Initiative
		fraudulent activities, scrutinising transcaction from property and building records.

5. Conclusion

The applied scoping review has results in some relevant researches that address the implementation of smart city and related topics. It has not found out articles relating the responsive city, the smart city, and sustainable urban communities in the same occasion. The smart city and the responsive city are similar in operational term and definition in public sphere and academic term. On the other hand, both of them are different in their implementation due to the civic engagement lacking in the smart city. The existence of the civic engagement can be supported by the concept of public value. That is why civic engagement can improved the creation of public value by performing integrative and stronger strategic urban planning at city government. Public value can be put as a central focus of smart city development emphasising on the rights, benefits, and prerogatives to which citizens should be entitled as well as the principles on which governments and policies should be based. This development can be supported with the policy map from the responsive city.

The policy map from the responsive city is a good avenue for the eight Asian megacities to equip more their policy formulations with the practised policy inside. Morevoer, the responsive city's practices are applicable in the eight Asian megacities particularly in achieving sustainable urban communities. The policy map on Asian megacities' sustainable urban communities is not available thus it can not be corresponded with the policy map from the responsive city. The policy map is an attractive feature which explain more about how American cities delivering policy based on technological approach. Additionally, the research concerning the responsive city is not available nevertheless the research on smart city is flourished. The existing researches on smart city are very wide and most of them focuses on ICT governance, concept, and procedure.

6. References

Alawadhi, S., & Scholl, H. J. (2013). Aspirations and realizations: The smart city of Seattle. Proceedings of the annual Hawaii international conference on system sciences (pp. 1695–1703). . http://dx.doi.org/10.1109/HICSS.2013.102.

Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. International journal of social research methodology, 8(1), 19-32.

Benington, J., & Moore, M. H. (Eds.). (2010). Public value: Theory and practice. Macmillan International Higher Education.

Brennan, E. M., & Richardson, H. W. (1989). Asian megacity characteristics, problems, and policies. International Regional Science Review, 12(2), 117-129.

Bossert, T., Hsiao, W., Barrera, M., Alarcon, L., Leo, M., & Casares, C. (1998). Transformation of ministries of health in the era of health reform: the case of Colombia. Health Policy and Planning, 13(1), 59-77.

Bozeman, B. (2002). Public-value failure: When efficient markets may not do. Public administration review, 62(2), 145-161.

Bozeman, B. (2007). Public values and public interest: Counterbalancing economic individualism. Georgetown University Press.

Chourabi, H., Nam, T., Walker, S., Gil-Garcia, J. R., Mellouli, S., Nahon, K., ... & Scholl, H. J. (2012, January). Understanding smart cities: An integrative framework. In System Science (HICSS), 2012 45th Hawaii International Conference on (pp. 2289-2297). IEEE.

Cohen, M. (2017). A systematic review of urban sustainability assessment literature. Sustainability, 9(11), 2048.

Dameri, R. P., & Rosenthal-Sabroux, C. (2014). Smart city and value creation. In Smart City (pp. 1-12). Springer, Cham.

Dimelli, D. (2016). Can Greek cities be smart? Journal of Regional Socio-Economic Issues, 3(2), 8–22.

Dvir, R., & Pasher, E. (2004). Innovation engines for knowledge cities: an innovation ecology perspective. Journal of knowledge management, 8(5), 16-27.

Fontana, F. (2014). The smart city and the creation of local public value. In Smart City (pp. 117-137). Springer, Cham.

Gil, O., & Navarro, C. (2013). Innovations of Governance in Cities and Urban regions: Smart Cities in China, Iskandar (Malaysia), Japan, New York and Tarragona (Spain). In EURA Conference: Cities as Sheedbeds for Innovation (pp. 4-6).

Goldsmith, S., & Crawford, S. (2014). The responsive city: Engaging communities through data-smart governance. John Wiley & Sons.

Grimsley, M., & Meehan, A. (2007). e-Government information systems: Evaluation-led design for public value and client trust. European Journal of Information Systems, 16(2), 134-148.

Hall R E. (2000). The Vision of A Smart City: Paris.

Kemp, S. (2018, December 28). Digital in Southeast Asia in 2017. Retrieved from https://wearesocial.com: https://wearesocial.com/special-reports/digital-southeast-asia-2017

Kitchin, R. (2014). The real-time city? Big data and smart urbanism. GeoJournal, 79(1), 1-14.

Koon, A. D., Hawkins, B., & Mayhew, S. H. (2016). Framing and the health policy process: a scoping review. Health policy and planning, 31(6), 801-816.

Levac, D., Colquhoun, H., & O'Brien, K. K. (2010). Scoping studies: advancing the methodology. Implementation science, 5(1), 69.

Li, Yongling; Lin, Yanliu; Geertman, Stan (2015). The Development of Smart Cities in China. Available from http://web.mit.edu/cron/project/CUPUM2015/proceedings/Content/pss/291_li_h.pdf

Mays, N., Roberts, E., & Popay, J. (2001). Synthesising research evidence. Studying the organisation and delivery of health services: Research methods, 220.

Moore, M. H. (1995). Creating public value: Strategic management in government. Harvard university press.

Shen, L. Y., Ochoa, J. J., Shah, M. N., & Zhang, X. (2011). The application of urban sustainability indicators–A comparison between various practices. Habitat International, 35(1), 17-29.

Suk-Joon, K., (2018, December 28). Smart Governance Enhances Social Cohesion in Korea. http://bookr2.com/viewmanual/24124

Stock, W. G. (2011). Informational cities: Analysis and construction of cities in the knowledge society. Journal of the American Society for Information Science and Technology, 62(5), 963-986.

Talbot, C., & Wiggan, J. (2010). The public value of the National Audit Office. International Journal of Public Sector Management, 23(1), 54-70.

Trindade, E. P., Hinnig, M. P. F., Moreira da Costa, E., Marques, J., Bastos, R., & Yigitcanlar, T. (2017). Sustainable development of smart cities: A systematic review of the literature. Journal of Open Innovation: Technology, Market, and Complexity, 3(3), 11.

Turrell, A., (2017). Public Value Management Theory. CIPS Knowledge.

Weiss, D., Rydland, H. T., Øversveen, E., Jensen, M. R., Solhaug, S., & Krokstad, S. (2018). Innovative technologies and social inequalities in health: A scoping review of the literature. PloS one, 13(4), e0195447.

Williams, I., & Shearer, H. (2011). Appraising public value: Past, present and futures. public administration, 89(4), 1367-1384.

Winters, J. V. (2011). Why are smart cities growing? Who moves and who stays. Journal of regional science, 51(2), 253-270.

Yeung, Y. M. (2009). Mega-cities.

7. Appendices

No	Authors/Country	Method	Smart city initiative for sustainable urban communities	Main outcome and analysis
1.	Kemp, S. (2018, December 28)/ Southeast Asia	Literature Review	Government should initiate collaboration with private sector to provide good quality internet connection and broader coverage to support digital evolutions, because it can promote economic growth followed by increasing social well-being.	Internet use in Southeast Asia has been growing in the past 12 months. It is driven by increasing number of mobile internet user population. However, several countries still face broadband connectivity challenge (bandwidth challenge). In the Southeast Asia, internet is widely used to access social media and e-commerce. The development in e-commerce will create digital evolutions such as: integrated mobile centric platform, new avenue of self expression (emojis and stickers), and mobile payment. The digital evolutions can promote economic growth.
2.	Hall R E. (2000)/ Global	Multidiscipline study	Initiative of Smart Cities is the integration of science and technology through information systems aiming to create safe, environmentally friendly, and efficient cities, from mapping, planning, developing, also monitoring and reconstruction.	"Smart Cities" is the urban center of the future, made safe, secure environmentally green, and efficient, because all structures (whether for power, water, transportation, etc.) are designed, constructed, and maintained making use of advanced, integrated materials, sensors, electronics, and networks, which are interfaced with computerized systems comprised of databases, tracking, and decision-making algorithms. In achieving this, it required collaboration of government, city managers, business, academia and the research community.
3.	Li et al., (2015)/ China	Case study	Improving ICT quality and coverage to support smart cities planning and	The rapid development of smart cities in China since 2009 is largely attributed to the cooperation between IT companies

			development is discussed in the article. In doing so, the smart city includes 4 layers of smart cities : sensor layer, network layer, platform layer, and application layer.	and the government. Telecommunication services providers play role in extending their network coverage and improving their network quality to support smart cities planning and development. They also explored new technologies to build new network layer. Government still play dominant role in purchasing smart city products and services from private sectors. But in the future, the construction of smart city will become more market-oriented and the government will more focus on the standardization, law making, planning and comprehensive arrangement in developing smart cities.
4.	Alawadhi, S., & Scholl, H. J. (2013)/ Seattle (USA)	Mixed method/semi-structured interview	Government of Seattle collaborating with urban planner and multidiscipline scholars need to initiate plans to hold workshops to educate and give comprehensive explanations and understanding about 'Smart City' as well as how to implement it in a form of projects.	In this study can be concluded that Seattle City Officials understanding about 'Smart City' definitions are differ from the definitions in academic literature. Seattle city officials view 'Smart City' only as smart government directed towards information integration in terms of both technology and services. It is consistent with their view on 'smart city projects' in this study that refers more to smart government at local city rather than to a complex and multidimensional urban space.
5.	Winters, J. V. (2011)/ USA	Regression analysis, comparative study	While the city or areas with a higher education will continue to thrive, the city or areas that offer little higher education opportunities are likely to be less successful. This is the cause of intrastate brain drain, and over time, this can have	The largest source of population growth for smart cities appears to be people who move to pursue their higher educational degree. Smart city is usually high human capital cities with higher education institutions. Thus, many students moving to smart city for higher education and then staying in the city after their education is complete. Because they find the city they are in

			important effects in redistributing skilled workers within a state.	to offer a higher level of utility than other alternative locations.
6.	Dimelli, D. (2016)/ Greek	Case study, Literature review	Greek cities need to develop better policy coordination and ICT management to become smart cities, as smart cities create an environment in which technology, infrastructure, policies and culture that promotes more satisfying living condtions.	There is not a typical example of a Greek city that has developed infrastructure that can characterize it as a smart city. Only Heraklion and Trikala have developed strategic planning in services and infrastructures which lead to their characterization as smart city. Compared to Barcelona, Yokohama, and Dublin, cities in Greece is not enough to be called smart, because Greek cities have not yet created the clusters-hubs which will interconnect the appropriate stakeholders and synthesize the data provided.
7.	Suk-Joon, K., (2018, December 28)/ South Korea	Comparative statistical data	The key to smart democratic governance: • Using the IT based democratic procedures to resolve social conflicts. • Build "smart leadership" that requires ideological sympathy, a strong political base and ability to unite people. • Encourage leaders from many different civic groups to join the leadership circle. • Transparency election for prime minister, ministers and other high-level officials.	The incumbent government in Korea is not adequately capitalizing on its IT strengths to strengthen its social cohesion development. Scuffles in national assembly and weakened government bureaucratic system has taking down Korea's figures as a good democratic country. The government must be involved in smart democratic governance. The government should takes advantage of its strong position in the IT industry to maintain public transparency, fight corruption, policy restoration, minimizing the negative effects of using ICT and developing a healthy internet community to increase country social cohesion.

| 8. | Shen et al., (2011)/Melbourne, Hong Kong, Iskandar, Barcelona, Mexico City, Taipei, Singapore, Candigarh, and Pune | Comprehensive literature review | Using International Urban Sustainability Indicators List (IUSIL) to measure performance of urban sustainability. | Comparative study of 9 different practices selected from both developed and developing countries including Melbourne, Hong Kong, Iskandar, Barcelona, Mexico City, Taipei, Singapore, Candigarh, and Pune, using International Urban Sustainability Indicators List (IUSIL) to measure performance of urban sustainability.

Discussions made on the comparative analysis are categorized in four different dimensions: environmental, economic, social, and governance.

The study not only reveals how different indicators are selected but also suggests the need for consistent processes of choosing indicators based on the benchmarks obtained from best practices.

Research results show how comparative basis can lead to knowledge sharing between different practices. |
| 9. | Dvir, R., & Pasher, E. (2004)/ Global | Literature review/ Innovative Engine Initiative | Integration of Innovative Engine to build Knowledge City, which consist of strategic intention, explicit vision to use it as innovation engine, exceptional leadership, stimulating physical space, urgent need or challenge, and special team. | The creation of knowledge city cannot be separated from the Urban Innovative Engine.

Urban innovative engine is a system which can trigger, generate, foster, and catalyze innovation in the city. Including people, relationship, values, processes, tools, and infrastructures.

11 examples of generic Innovation Engine that support knowledge city are: the café, the big event, the library, the museum, the gate, the future outlook tower, the university, the capital market, the digital infrastructure, the industrial district |

				and science park, the brownfield industrial zone, and the urban virtual space.
10.	Gil, O., & Navarro, C. (2013)/ China, Japan, Malaysia, Spain, USA	Exploratory comparative study	• Strategic use of informational technology for integration of every aspect of life • Accessible public data (smart data) • Collaboration with private sector • Develop smart grid as power transmission & supply power • Efficiency in power use	This paper emphasize in different ways to address the definition and implementation of the smart concept from China, Japan, Malaysia, Spain, and USA. The similarities from these 5 countries is multi faceted sides of the smart concept are being established locally by national or local government. The stress on smarts entails is very different and open to policy conceptualization. The difference in some cases is on the society engagement. This paper focused on areas such as management and organization, technology, policy, peoples and communities, economy, infrastructure, and natural environment.
11.	Kitchin, R. (2014)/ Global	Publication review	• The use of big data to support smart city development concept • Strengthen the function of urban analytics and control center to monitor big data analytics	Big data is a significant aspect for understanding, monitoring, regulating, and planning the city. It is varied, fine grained, indexical dynamic, and enabling real time analysis to provide detailed views between data. Big data has its own benefits for each of its user, whether it is for citizens, government, or corporations. Whilst big data analytics offer a numbers of opportunities, they also raise a number of concern, such as corporatization and neo-liberalisation of city management, possibilities of technological lock-in, and ethical issues regarding fidelity and security of the data. So it is important to interrogate the source and how the data is produced, the function of urban analytics

				and control center, the implication of technocratic corporatized and real time forms of governance.
12.	Stock, W. G. (2011)/ Global	Publication and citation analysis	ICT and knowledge embedded in infrastructures, labor market, corporate structure, world city, political will, and soft location factors.	Informational city is the prototypical cities of the knowledge society that developed as consequences of the informational revolution and changes in capitalist system. An informational city is deeply ingrained in the knowledge society, which is based on digital information and information network. ICT and knowledge are the basic foundation of informational city. Physical infrastructures are less important, but networks of information and communication technology are predominant.