In search of a Gender-Balanced approach towards Smart Cities 3.0

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Executive Summary

The term Smart City evokes images of a futuristic, forward-looking city that leverages the power of information and communication technologies (ICTs) to provide more efficient services to its citizens. Yet, a universal definition of the term remains elusive and the implications of using ICTs to provide 'smarter' public administration, transportation and public utilities have yet to be fully examined. In the following brief, we will examine the various theories of smart cities and consider how they have been implemented to date. We will consider the implications of smart city policies for gender equality, with a specific focus on recent proposals to create 'smart villages' and increase digital connectivity within rural areas. Finally, we will make several recommendations for the future development of smart cities and villages that promote gender equality.

Fluid Dynamics of the Smart City

ICTs have radically transformed the organisation of economic, political and social activity in many countries over the past decade. The advent of the internet in particular opened new lines of communications that both complement and enhance traditional infrastructures. The Internet of Things (IoT), the term used to describe internet-enabled objects that are able to "talk to each other", has made it possible not only for human peer-to-peer interaction, but also interaction with the surrounding environment, thus further encouraging the growth of the Information Society. This was a key theme at the 2019 World Summit of the Information Society (WSIS) Forum, which brings together stakeholders from private

and public sectors to discuss how ICTs can be used to achieve the United Nations Sustainable Development Goals (SDGs). This includes several SDGs that underpin the United Smart Cities program which focuses on "urban mobility, sustainable housing, clean energy, waste management and ICT".

There are currently three generations of smart cities across the globe. *Smart Cities 1.0* refers to those circumstances when technologies developed by private corporations are proposed and adopted as solutions to problems facing cities, with little to no consideration of the actual impacts they have on the lives of their citizens. These were initially linked to the growth in surveillance technologies in the aftermath of terrorist atrocities such as the 9/11 attacks. *Smart Cities 2.0* shifts control of these initiatives from private corporations to municipal authorities, such as local government and city administrators. These initiatives are designed to help citizens be supported, rather than led, by technology.

As ICTs become increasingly pervasive within contemporary societies, citizen participation will become more influential within *Smart Cities 3.0*. This iteration involves a more collaborative model where communities takes on a stakeholder role in the development of smart cities, in areas such as affordable housing and gender equality.

The first two generations of the Smart City speak to the broader debate about the role of technological determinism in public policy which suggests that the structure and cultural values of society are directly influenced by its technology. However, it could be argued that technology should be an instrument used to advance societal goals. This is somewhat complicated by the surveillance capitalism that underpins social media platforms such as Facebook, which suggests that it is highly problematic to conceive of technologies as neutral tools. Moreover, Smart Cities 2.0 do not necessarily replace their 1.0 antecedents; the adopted iteration of a particular generation is largely determined by the type of challenge that a city needs to address.

Gender and the City

Despite women representing around half the world's population, their absence in the collective efforts of developing smart cities has only become a point of discussion in the recent past. Furthermore, gender inequality and discrimination against women continue to be propagated by the technological systems that have become synonymous with the concept of smart cities. Hence, a prominent theme of WSIS 2019 was SDG 5, with various speakers during the Summit calling for gender equality in discussions pertaining to smart cities.

In (En)gendering the Smart City, Caitlin Kraft-Buchman (CEO ,Women@theTable) discussed the dual nature of cities; she referred to popular representations of cities as "places of economic opportunity, liberation, and reinvention", but conversely also of "fear, danger, and violence for women, from dark city streets to public transport". Kraft-Buchman argued that deliberations about the future of smart cities should focus on how people experience these issues rather than focus on the efficiencies such as how to keep traffic running smoothly through urban areas.

One case discussion highlighted Sweden's gender-balancing snow-clearing policy based on gender analyses which revealed that there were fewer women drivers in the Stockholm region compared to men. Daniel Helldén, Stockholm's shadow city commissioner at the time, explained that conventional procedures prioritised the clearing of roads to reduce traffic congestion in areas of high employment, which were used mainly by men commuting to work, thus putting most women, children, and the elderly at risk of injury as they were more likely to utilise sidewalks and footpaths that were cleared later.

With pedestrian injuries rising due to unsafe conditions and associated expenses exceeding the cost of snow ploughing activities, an alternative strategy was proposed in 2013 to prioritise the clearing of pedestrian pathways followed by roads for vehicle drivers. These efforts were widely lauded for addressing a safety issue through gender analyses. Bill Morneau, Canada's Minister of Finance suggested that it was an example of how to address gender inequality in federal budgeting through

similar methods. This was also cited in WSIS 2019 as an example of gender-sensitive policy enactment informed by gender analyses in the context of smart cities.

However, there were issues pertaining to its implementation that were not discussed at the Summit. For example, when Stockholm experienced unusually heavy snowfall in November 2016 causing major disruptions to transportation, the system was discovered to not have been adequately deployed in accordance with the local government's policy. The revised policy had not considered the high number of women who relied on public transportation and were directly affected by this disruption. Furthermore, city officials appeared dismissive of public concerns about the new policy, saying that "there is not much to say about it".

While policies such as these illustrate how gender inequality can be addressed in the development of smart cities, its failure in 2016 show that much more progress is needed in order to achieve SDG5. Equally important is the disclosure of the degree of female participation in the construction of these strategies, which are often proposed by male city administrators.

A Word on Smart Villages

WSIS 2019 also called for greater emphasis to be placed on the development of smart villages, a relatively new concept in the context of EU policy making aimed at upgrading rural legacy and creating new infrastructure "by means of digital, telecommunication technologies, innovations and the better use of knowledge, for the benefit of inhabitants and businesses". Global migration patterns show that as many as 68% of the world's population are expected to be living in cities by 2050. This is expected to overwhelm urban infrastructures, which are already struggling to cope with this unprecedented growth in the numbers of people accessing public utilities. Smart villages are proposed as a policy solution that could address issues caused by the rapid populations growth in cities by building greater capacity within rural communities to tackle societal problems. Moreover, rural communities would directly benefit from better access to healthcare, education, improved

productivity and opportunities to establish businesses in local remote areas (Malcolm Johnson, Deputy Secretary-General of the ITU).

One of the most widely cited statistic is that 51% of the world's population has access to ICTs. While digital divides have narrowed over the past two decades, connectivity is mostly available in urban areas within Global North countries. Connecting rural areas, often characterised as "the last mile" in this race for universal access, remains a considerable challenge due to the limited investment in many of the areas. An estimated 76% of the global population that are said to be living in poverty reside in rural areas. Globally, women account for 70% of the economically disadvantaged and in excess of a quarter of that population is represented by rural women. They experience barriers in terms of access to resources and are denied the right to participate in policy and decision making.

In 2011, the United Nations (UN) declared internet access a basic human right comparable to others such as the right to information and freedom of expression. ICTs facilitate access to healthcare and medical information, and public sector services. Smart villages should be developed with the understanding that gender balancing initiatives ensure equal opportunities for women to advance and mature as are available to men. Smart Cities 3.0 is particularly applicable to the progress of rural areas where representative governments, citizenry participation, and non-hierarchical strategies are important elements in the development of smart villages.

Conclusion

Government and authorities are arguably still taking a generation 2.0 approach in attempts to resolve gender equality issues. As per the example in Stockholm mentioned earlier, these have had mixed results to date. Efforts to reduce discrimination against women require a multi-stakeholder approach that utilises local knowledge and focuses specially on the experiences of women within these urban environments. In this respect, gender-balanced urban technology is required to ensure that women are stakeholders rather than just beneficiaries

of the system. In the creation of new technological cities and solutions, it is imperative that women are present in the room and accorded equal status as male colleagues in the design and administration of smart cities and villages. Such gender responsive initiatives should be carefully crafted so as to avoid perpetuating any form of discrimination themselves. The 'smart revolution' provides an unprecedented opportunity for policymakers to make cities and villages fully inclusive and sustainable for the next generation.

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