WORLD WOMEN CONFERENCE-VI

September 17-19, 2023 / Ankara, Türkiye

EDITOR

Prof. Dr. Sevinç RAHIMOVA
Prof. Dr. Harpreet KAUR

ISBN:978-625-8254-25-9

www.worldwomenconference.org

WORLD WOMEN CONFERENCE-VI

September 17-19, 2023 / Ankara, Türkiye

THE PROCEEDINGS BOOK

EDITOR

Prof. Dr. Sevinç RAHIMOVA
Prof. Dr. Harpreet KAUR

Issued: 10.10.2023
ISBN: 978-625-8254-25-9

Yayın Tarihi: 10.10.2023
ISBN: 978-625-8254-25-9

THE CONSTRUCTION OF SMARTNESS. SOME SOCIOLOGICAL REFLECTIONS ABOUT WOMEN AND SMART CITY

Ilaria Iannuzzi
"Sapienza" University of Rome - Postdoctoral Research Fellow in Sociology at the Department of Political Sciences, Sapienza University of Rome; Adjunct Professor at University of International Studies of Rome (UNINT)

Introduction

Our cities and in general our social contexts are becoming increasingly "smart". The process of smartification concerns every area: city, community, home, politics, individual person (Iannuzzi 2018; Iannone 2018; Iannone et al. 2018). In this process, the pivotal role is undoubtedly represented by the technological element. There is no smart context if it is not at the same time also technological.

In the relationship between technology and smart society, a fundamental role is played by women. It has been analyzed, for example, that women are much more sensitive and responsible than men towards environmental issues. Or again, a smart society is based on the importance of the pedagogical dimension, which is also realized through the practice of play: contexts in which the female element becomes central.

An example of the importance of the role of women in this area is Fumiko Hayashi, mayor of Yokohama from 2009 to 2021, who immediately set her city administration in terms of innovation, cooperation, sustainability, and efficiency. Previously, she was president of BMW Tokyo and Tokyo Nissan, gaining managerial experience of high responsibility.

Hayashi has not only dealt with markets and businesses, but also with civil rights, equal opportunities, and social inclusion. She launched one of the most innovative smart city platforms in the world: the "Yokohama Smart City Project" (YSCP).

This paper aims, therefore, to analyze from a sociological point of view the role of women within the smart society, with the aim of highlighting the characteristic elements of women's contribution to this topic.

Women and environmental issues

One of the fundamental elements of the smart society, as the case of the smart city clearly highlights, is represented by the attention to the environmental issue. No context can be considered truly "smart" if it does not adequately consider the issue of respect for the environment and all its consequences. Let's think, for example, of the issue of energy efficiency, which directs attention towards the construction of "smart" buildings, that is, that pollute little and that are able not to alter the environment in which they are in their relationship with nature (Abrahamse and Steg, 2011; Berry et al. 2014; Dawnay and Shah 2005; Frederiks, Stenner, and Hobman 2015; Janda 2011; Simonson 1993).

Smart buildings are buildings equipped with devices and systems that can communicate with the city and the world effectively but at the same time are able to guarantee to those who live there, for their characteristics, high safety qualities and comfort. All this without sacrificing a more "sustainable" energy management from both an economic and environmental point of view. Although the true smartness remains, fortunately, in those who live there who can decide whether to make the best use of what is offered to them by Information and Communication Technology (Dall'Ò 2014).

According to some studies that investigate how environmental demands are perceived by the population, in the Italian context women show a greater concern for the issue of the environment (Balzaretti and Gargiulo 2009; Nenci 2003).

It would be interesting to be able to carry out empirical research in other countries, European and non-European, to verify if this connection between women and the environment also occurs elsewhere.

Some classes of clusters emerge from the research. To simplify we can divide the population into 6 categories: diligent; disoriented; problematic; optimistic; payer and indifferent (Tacchi 1996).

Diligent people have a high sensitivity to environmental problems and confidence in the positive future evolution of environmental conditions. This category has a clear female value. Disoriented and problematic have not a clear idea about this type of issue. Optimists see with serenity the ecological future, both in terms of the safeguard measures that will be undertaken, and in terms of new opportunities allowed by scientific and technological development. Payers have a strong predisposition to personal economic contribution (i.e. they are convinced that paying is the best way to mitigate certain problems). Finally, indifferent people have no attention to environmental issues, do not intend to contribute in economic terms and have distrust of the possibilities for improvement that certain measures (such as, for example, waste management) could entail (Tacchi 1996).

So, if the environmental issue is fully part of a smart society, then we can see that women have enormous potential in this area. Through their example they can also be an example for men and women who place themselves in the categories of indifferent or disoriented people.

Women, in particular, express greater concern about air pollution, hydrogeological instability and other natural disasters. Men are more concerned about greenhouse effect/ozone hole, waste, deforestation. This difference between women and men is interesting in terms of a mutual possibility of influencing one's own choices. And it is a potential that could be very useful in terms of improvement. In this sense, the role of women, from a simple domestic role, becomes a social role: the woman who takes care of the house and manages it in a way that is attentive to the environment is a woman who is contributing to the construction of a society more attentive to certain issues.

Women are often weak in terms of economic choices, but strong in terms of private choices. Who, for example, manages the kitchen in a house? Generally, it is the woman, who decides what to buy, how to cook, what to feed her family. So certain consumptions – energy, food, organic or not – belong precisely to the woman, who manages the domestic economy also from the point of view of the costs of certain choices.

It is therefore to be hoped that women will be increasingly involved in decision-making processes. When women are involved in a project that has to do with the environment, resource management tends to improve considerably. To be more precise: environmental protection is increased when the groups responsible for the project are made up of at least 50% of female representatives. We can also give a common sense explanation to this fact: very often women have a maternal sense that is also reflected in respect for nature: don't we often call her "Mother Nature"? Or does the relationship between women and the environment go beyond biological imprinting and is based on greater rationality or other aspects?

In 2019, interesting research was carried out by the University of Colorado, Boulder, and the results were published in *Nature*. Simulation games were made on resource management groups in various communities in Peru, Tanzania, and Indonesia. The members of these groups – consisting of 8 people – were offered a small amount in tokens for each tree felled. This unfortunately reproduces the reality: in the countries indicated above, the felling of trees is one of the few sources of local income. But there was another option: if the group decided not to cut down any trees it received a higher number of tokens that the leader of the group could distribute among the participants.

When this second offer was made, the number of those who were willing to cut down trees was considerably reduced, but only in groups with at least 50% of women.
According to a study by UNWomen, women and children are 14 times more likely to die and suffer injuries in the event of natural disasters (UNDP 2013).
Women play a key role in the management of natural resources at family and community level and are the most affected by environmental degradation. In communities around the world, women manage water, fuel sources and food, as well as forests and farmland. According to UN Women, women produce 60 to 80 percent of their food in developing countries, while inheritance laws and local customs often prevent them from owning or renting land and obtaining loans or insurance. In many developing countries, women work predominantly in agriculture, but only a minority of them own the land they work. And they are often the first to notice the impact of climate change.
Women's unequal participation in decision-making often prevents them from contributing to climate-relevant planning, policy-making and associated implementation processes.
This role becomes even more preponderant in the pedagogical field.

Women and pedagogy

If we think that, even today, it is women who mainly deal with the education and care of children (both at home and as professionals, or as teachers at school), we can see how the role of women in pedagogical terms is fundamental. This is even more important if we think about the smart society. From which figure do children first learn to take an example in their behaviors? From whom do they learn the values, the patterns of behavior, the ways in which to act in society?
Certainly, the role of the man is equally fundamental, but the role of the woman we can say that probably comes earlier than the male figure. It comes in the form of contact between woman and child, particularly in the mother-child relationship and in the child-teacher relationship.
Currently the child becomes with increasing precocity a direct and indirect consumer. He gradually develops his own identity as a consumer. Also fundamental in this is the role of women in educating in the values related to consumption and choices.
In this way, the practice of the play becomes of central importance. It has been studied those certain dynamics help to make people's behaviors become increasingly "smart". Let's think, for example, of nudging (Thaler and Sunstein 2014; Toffler 1980), that is a strategy of "behavioral economics" that pushes people to make the right choices to improve personal well-being and that of the country. The basic idea is to change the architecture of the context, entering the educational plans of states and the marketing strategies of companies, directing people to do the best thing in terms of education, health and energy saving. The most representative image is that of an adult animal that gives light blows to its puppy to make him walk better.
And let's think about the play: play can make you learn certain behaviors in a light and fun way, compared to an imposition.
The discourse on the smart city is now full of perspectives that question what the most suitable measures and tools can be to implement forms of smart city in new cities and to achieve the change of existing urban contexts in a *smart* perspective (Albino, Berardi and Dangelico, 2015; Almirall *et al.* 2016; Beretta 2015; Ciaffi 2015; Dall'Ò 2014; De Luca 2012; Deakin and Al Waer 2011; Etezadzadeh 2016; Rizzi 2014).

Criteria focused on the use of digital as a means to implement the sharing and participation of citizens – through the idea of the web as a value system of "do it from ourselves" (Degli Esposti 2015) – are flanked by parameters based on the role of communication as a sphere capable of transforming the knowledge of problems – social, environmental and so on – into a real awareness of the problems themselves. There are, for example, well-known studies that highlight how communication, in order to be more effective, should focus not on the mechanism of renunciation and sacrifice, but on potential gain (Luhmann 1989) – or studies that sanction the greater effectiveness and importance, for the individual, of social involvement – focusing on the sense of social identity, on the need for social approval, on the desire for commitment (Abrahamse and Steg, 2011) – rather than economic incentives – which are also proposed as a solution to the activation of virtuous behaviors (Berry et al. 2014; Tajfel and Fraser 1984). There are also analyses that consider the sphere of education and training to be central, as sectors capable of activating changes in conduct, aiming, for example, at the implementation of the role of specific professional figures.
Among the techniques used to increase the *smartness* (Iannone 2018) of cities, the use of moments of play is increasingly assiduous. The so-called *serious games* (Aldrich 2009; Cavada and Rogers 2019) are often employed in this sense, with the aim of involving participants in games that, through the tool of fun, aim to develop and consolidate specific skills. Not surprisingly, there is repeated talk of using the game as a means to generate, develop and enhance certain behaviors.
Several studies, in fact, believe that the game, exploiting the playful desire of the subjects, is able to teach and engage through the mechanisms of incentive and persuasion.
That there is a close relationship between society and play – even if only in terms of values that the game can convey and how to structure the relationships between the subjects – now seems undisputed and Simmel had already highlighted it in 1917 (1983).

A concrete example of female innovation

Fumiko Hayashi was mayor of Yokohama, Japan, from 2009 to 2021. A long period in which a very ambitious project saw the light: Yokohama Smart City Project (YSCP).
The city of Yokohama is the second most populated city after the capital. It is an economically active and highly urbanized area, with consequent problems of mobility and pollution.
In its recent history of 150 years, Yokohama was confronted by difficulties including the damage of earthquakes and war, explosive population growth, and the pollution that resulted from economic development. All these issues were subsequently conquered by the city's citizens, its businesses and its administration coming together. Yokohama City is currently facing various challenges such as climate change, declining birthrate, aging population, and Deterioration of Urban Infrastructure.
Yokohama City, as a FutureCity, is responsible for establishing a "large city model" that simultaneously solves climate change countermeasures and economic and social issues using power of citizen and urban resource.
"In 2010, the City of Yokohama was selected by the Japanese Government to become a 'Next-Generation Energy Infrastructure and Social System Demonstration Area.' What is more, as the nation's largest demonstration of the smart city concept, the YSCP was proactively promoted over a period of five years throughout the city.
The YSCP was set in an urbanized metropolis that is home to approximately 3.7 million inhabitants. Through cooperation with some of the most famous names in Japanese business including Nissan, Panasonic, Toshiba, TEPCO, Tokyo Gas, Accenture Japan and Meidensha, etc., the project saw the development of photovoltaic power-generation systems.

It also saw the introduction of building energy management systems (BEMS), factory energy management systems (FEMS) and home energy management systems (HEMS), into commercial buildings, factories, and private homes. What is more, community energy management systems (CEMS) that are designed to strike an optimum balance between energy demand and supply were introduced, and the reform of social systems promoted" (https://iuc.eu/japan-en/bestpractice/yokohama/; Shinba et al. 2017).

"YSCP was a program that comprised a consortium of 34 Japanese companies, with its funding drawing on subsidies issued by the Ministry of Economy, Trade, and Industry. In addition to obtaining the cooperation of Yokohama's small and medium-sized builders, etc., with respect to HEMS introduction, during the project's demonstration phase, efforts were made to attract the cooperation of a wide variety of stakeholders, including numbers of participating citizens.

To give but one example of the project's successes, in city areas targeted for YSCP participation, Toshiba handled CEMS, integrated BEMS, and HEMS in the condominiums and the stand-alone houses. One solution that Toshiba introduced to condominiums was automatic demand response systems (ADR). By connecting to a CEMS unit the Toshiba air conditioning infrastructure and HEMS with which each of the targeted condominiums was equipped, based on electricity usage, the CEMS unit could act as a central control system, and thus the optimized operation of air conditioning infrastructure was achieved" (https://iuc.eu/japan-en/bestpractice/yokohama/; IUC 2019).

When a journalist asks Fumiko Yahashi "What obstacles do you think women leaders still face in delivering their agenda, including on climate change? ", the mayor replies: "Being a woman will not be an obstacle in implementing the agenda. The strength of women lies in leadership that employs empathy and acceptance. Better results are produced by men and women taking advantage of each other's strengths, coming together, and producing results in tandem" (C40 Cities 2017).

Conclusion

Even today it is not possible to define unequivocally what is meant by the expression "smart city", technology is undoubtedly fundamental to make a city "smart", but it is not enough. Smart cities mean smart people, smart institutions. It means cities that are not only technological, but also sustainable, from an environmental, economic, and social point of view.

A smart city works if all innovations are able to coexist and interact in a systemic and dynamic way, but especially if the term smart weighs more on human intelligence that can be stimulated within a process that aims at inclusion, a key element of this new way of urban life (Dall'Ò 2014, 11).

"The change of a city towards a smarter model certainly needs a technological innovation capable of making available alternative solutions compared to conventional ones. Technology, however, is not enough to generate change. Fundamental is the willingness of citizens to accept change that cannot be based only on new rules lowered from above by a more responsible governance model [...] but that must be confronted with the awareness, individual and collective, that the development model must change" (Dall'Ò 2014, 23).

Women, therefore, as citizens, can play a central role in the process of smartification of society, especially in the sense of a society that is "smart" as it is more inclusive, more equitable and more sensitive to issues that, otherwise, would remain in the background.

References

Abrahamse, Wokje and Linda Steg. 2011. "Factors Related to Household Energy Use and Intention to Reduce It: The Role of Psychological and Socio-Demographic Variables". *Human Ecology Review*" 18 (1): 30–40.

Albino, Vito, Berardi Umberto, and Rosa Maria Dangelico. 2015. "Smart Cities: Definitions, Dimensions, Performance, and Initiatives". *Journal of Urban Technology* 22 (1): 3–21. https://doi.org/10.1080/10630732.2014.942092.

Aldrich, Clark. 2009. *The Complete Guide to Simulations and Serious Games.* Hoboken: Pfeier/Wiley.

Almirall, Esteve, Wareham Jonathan, Ratti Carlo, Conesa Pilar, Bria Francesca, Gaviria Anibal, and Amy Edmondson. 2016. "Smart Cities at the Crossroads: New Tensions in City Transformation". *California Management Review* 59: 141–152. https://doi.org/10.1177/0008125616683949.

Balzaretti, Erik, and Benedetta Gargiulo. 2009. *La comunicazione ambientale: sistemi, scenari e prospettive. Buone pratiche per una comunicazione efficace*. Milan: FrancoAngeli.

Beretta, Ilaria, ed. 2015. *L'umanesimo della smart city: inclusione, innovazione, formazione*. Lecce: Pensa multimedia.

Berry, Stephen, Whaley David, Davidson Kathryn, and Wasim Saman. 2014. "Near zero energy homes - What do users think?", *Energy Policy* 73: 127–137. https://doi.org/10.1016/j.enpol.2014.05.011

C40 Cities. 2017. "Women4Climate: A Conversation with Mayor of Yokohama Fumiko Hayashi". Accessed February 10, 2022. https://www.c40.org/news/women4climate-a-conversation-with-mayor-of-yokohama-fumiko-hayashi/.

Cavada, Marianna, and Chris Rogers. 2019. "Serious gaming as a means of facilitating truly smart cities: a narrative review". *Behaviour & Information Technology*. https://doi.org/10.1080/0144929X.2019.1677775.

Ciaffi, Daniela. 2015. "La smart city nel nuovo paradigma collaborativo: input dal 'Regolamento' di Bologna. In *L'umanesimo della smart city: inclusione, innovazione, formazione*, edited by Ilaria Beretta, 47–60. Lecce: Pensa multimedia.

Dall'Ò, Giuliano. 2014. *Smart city*: *la rivoluzione intelligente delle città.* Bologna: il Mulino.

Dawnay, Emma, and Hetan Shah. 2005. *Behavioural Economics: Seven Principles for Policy-Makers*. London: New Economics Foundation.

De Luca, Alberta. 2012. "Come (ri)pensare la smart city", *EyesReg. Giornale di Scienze Regionali* 2 (6): 143–146.

Deakin, Mark and Husam Al Waer. 2011. "From intelligent to smart cities", *Intelligent Buildings International* 3 (3): 133–139. https://doi.org/10.1080/17508975.2011.586673.

Degli Esposti, Piergiorgio. 2015. *Essere prosumer nella società digitale: produzione e consumo tra atomi e bit*. Milan: FrancoAngeli.

Etezadzadeh, Chirine. 2016. *Smart City - Future City?: Smart City 2.0 as a Livable City and Future Market*. Berlin: Springer.

Frederiks, Elisha R., Stenner Kaner. and Elizabeth V. Hobman. 2015. "Household energy use: Applying behavioural economics to understand consumer decision-making and behaviour". *Renewable and Sustainable Energy Reviews* 41: 1385–1394. https://doi.org/10.1016/j.rser.2014.09.026.

Iannone, Roberta. 2018. "Smartness. The face of the integration in the new 'performing' society". *Storiadelmondo. Periodico telematico di Storia e Scienze Umane* 86: pp. 1–13.

Iannone, Roberta, Gurashi Romina, Iannuzzi Ilaria and Melissa Sessa. 2018. "The smart home in the mind and in the practice of digital natives. The case of 'Sapienza' University". *Storiadelmondo. Periodico telematico di Storia e Scienze Umane* 86: 1–47.

Iannuzzi, Ilaria. 2018. "The smart city. Critical reading of a multiform phenomenon". *Storiadelmondo. Periodico telematico di Storia e Scienze Umane* 86: 1–13.

International Urban Cooperation (IUC) – European Union. 2019. "FutureCity Yokohama - Yokohama Smart City Project". Accessed February 10, 2022. https://iuc.eu/japan-en/bestpractice/yokohama/.

Janda, Kathryn B. 2011. "Buildings don't use energy: people do". *Architectural Science Review* 54: 15–22. https://doi.org/10.3763/asre.2009.0050.

Luhmann, Niklas. 1989. *Comunicazione ecologica*. Milan: FrancoAngeli.

Nenci, Anna Maria. ed. 2003. *Profili di ricerca e intervento psicologico-sociale nella gestione ambientale*. Milan: FrancoAngeli.

Rizzi, Francesco. 2014. *Smart city, smart community, smart specialization per il management della sostenibilità*. Milan: FrancoAngeli.

Shinba, Hironori, Hirashima Tomoaki, Hori Yuji, and Takashi Uyama. 2017. "Yokohama Smart City Project (YSCP)". *Meiden Review* 169 (1): 2–7.

Simmel G. 1983. *Forme e giochi di società. Problemi fondamentali della sociologia.* Milan: Feltrinelli.

Simonson, Itamar. 1993. "Get closer to your customers by understanding how they make choices". *California Management Review* 35: 68–84. https://doi.org/10.2307/41166755.

Tacchi, Enrico M. 1996. *Ambiente e opinione pubblica: un'inchiesta nell'area metropolitana di Milano*. Milan: FrancoAngeli.

Tajfel, Henryi, and Colin Fraser. 1984. *Introduzione alla psicologia sociale*. Bologna: il Mulino.

Thaler, Richard, and Cass R. Sunstein. 2014. *Nudge. La spinta gentile*. Milan: Feltrinelli.

Toffler, Alvin. 1980. *The third wave*. New York: William Morrow & Company.

United Nations Development Programme. 2013. "Gender and disaster risk reduction". Accessed February 17, 2022. https://www.undp.org/content/dam/undp/library /gender/Gender%20and%20Environment/PB3-AP-Gender-and-disaster-risk-reduction.pdf.