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Are Smart-City Projects Citizen-Centered?

Eva M. Sánchez-Teba * and Guillermo J. Bermúdez-González *

Department of Economics and Business Administration, University of Malaga, Campus El Ejido s/n, 29071 Málaga, Spain

* Correspondence: emsanchezteba@uma.es (E.M.S.-T.); gjbermudez@uma.es (G.J.B.-G.)

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Abstract: Smart cities have become a new urban model for thinking and designing cities in the connected society. It is time to ask ourselves what kind of city we want and need. There is still a long way to go in relation to the role of citizenship in the field of smart cities. This autoethnography reveals different contradictions found during the preparation of my doctoral thesis, which studied the citizens' perception of smart city policies in a city in southern Spain, in my double role as a doctoral student/researcher and public manager. Many of the statements and conclusions of different scientific research contrasted with the reality that I was experiencing in my daily work. My conclusions can help in the current debate on which cities we want to build at a time when the population is concentrated in cities and where it is necessary to respond to not only the economic, but also the social and environmental problems posed by sustainability

Keywords: autoethnography; smart city; citizen-centric

1. Introduction

Why a Personal Essay about Smart Cities?

I believe that qualitative research, and a way of writing and presenting results, called autoethnography, is a very personal way of presenting developed research. In my case, I carried out this research as a public manager, which allowed me to get to know first-hand the users to whom the different measures were implemented. This made me almost part of the research, an enriching process, from which I have drawn experiences that I want to capture here. My intention is to contrast what I have lived through with what I have researched regarding a current issue that concerns us all, since we all live in a city or town, in a group, in which we develop our daily lives. Thus, I have found in autoethnography the freedom I needed because "autoethnography is a genre of autobiographical writing and research that (. . . .) connects the personal with the cultural" (Ellis 2004). Richardson agrees with Ellis when he points out: "autoethnographies are highly personalized, revealing texts in which authors tell stories about their own lived experience, relating the personal with the cultural". (Richardson 2003). With a constructive spirit and avoiding any personal reference to anyone, and without wanting to be in possession of the truth but rather to share my life experience, which combines hours of data collection, enriching encounters, and hours of work for the community, I believe that my conclusions can give indications when it comes to continuing to build the cities not of the future, not just of the present. The term smart city has a similar root to the term sustainability. In fact, the first includes the second. They are words that begin to lose their meaning with use, most of the time political, interested and partisan. It is true that the term smart city is recent, as people began to look for solutions to increasing population densities in cities at the end of the 20th century which entails the problems of management and cost of all types of services, and neighbourhood coexistence. It became a "trendy" word in the political sphere. It was the moment in which every public manager who prided

themselves in their work, especially in the local sphere, had to manage an intelligent city or territory. It was time to deploy in cities the projects that technology companies had prepared to solve the problems of a population that was not asked what those problems were. The holistic solutions was an "intelligent city in a box" (Aguilera et al. 2017). To this was added the need for every public manager to justify their actions and to find an external person in charge to blame for making decisions about something. At a time when the management of cities was becoming more complex, with more variables to take into account, it was necessary to optimise processes and do more with less.

All of this was linked by the big data revolution. The solution to most of the problems will be to have the maximum amount of data that, when properly treated, will give the necessary information for decision making. Thus, the citizen has gone from being the passive actor who receives the action of public management, to becoming the provider of such data. The aim of this work is, firstly, to highlight the critical vision, from my practical perspective, of the policies of intelligent cities that have been carried out so far, providing data from my quantitative research, which shows that the citizen of the city of Malaga (Spain), is alien to the policies of smart cities carried out in his city. To do this I provided data from my research in the city of Malaga. The second aim is, to emphasize the need for these policies to be truly citizen-centered, and to point out the incongruities of technical and political discourse with the reality of our cities. I hope that this article will help to spread the idea that it is necessary to think "on a human scale" and that future research in this field will take into account the variable "people" before any other, and to give voice to the addressees of the actions that are put into practice. To this end, the work is divided into the following sections: after this introduction, I will review the literature in relation to intelligent citizens. I will then, continue with a section dedicated to other authors who also point out different controversies on the practical application of the intelligent city, to end with the conclusions I reach in my double role as a researcher and public manager in the field of intelligent cities.

2. Literature Review

2.1. The Smart City and Its Conceptualization

Smart Cities are a young concept that are influenced by factors as heterogeneous as the area of the world we are talking about, such as public management, technological development, etc. (Fu and Peng 2014). Initially, the concept of smart cities is not clear and there is no agreement among researchers on the meaning of the term (Ponting 2013). The lines between smart cities and similar concepts such as creative cities blurs, with numerous political leaders claiming that their cities are Smart even though they do not know the standards that they constitute of. authors like Hollands (Hollands 2008) wrote: "the article explores to what extent labelled smart cities can be understood as a high-tech variation of the 'entrepreneurial city', as well as speculates on some general principles which would make them more progressive and inclusive" ... Therefore, it is necessary to reach agreement on the factors that make a city to be considered as smart (Allwinkle and Cruickshank 2011; Hollands 2008).

In theory, smart cities differ from creative cities, offering a balanced centrality between technology, institutions and people. This is the theory which will not prove so clear in practice. The focus should not be from the bottom up, nor from the top down. The holistic urban system, or ecosystem, allows co-creation among all stakeholders. This is an idea that I have no doubt must be taken in consideration in the theoretical construction of the concept, but putting it into practice is very complex and utopian. In the end, the party that holds the power will assume leadership, listening more or less to the parties involved (which we will talk about later), but the final decision is taken by the party that has the capacity to decide. Giffinger sets out six characteristics that a smart city should have: economy, people or citizen participation, governance, mobility, environment and quality of life (Giffinger et al. 2007). An interesting approach is the one that Patridge gives, which considers social inclusion and citizen participation as a differentiating element, focusing on the creation of opportunities for collectives that would not otherwise form part of city life based on smart city initiatives (Partridge 2004). Smart Cities have seen some success in urban initiatives especially focused on the development and dissemination

of applications that integrate more in the day-to-day lives of disabled people. However, perhaps the most personal and philosophical definition is the one we find in the document Cities and Citizens in 2033, "an intelligent city is an intelligent ecosystem, in which the intelligence of people transcends the individual sphere and filters into the urban community as a whole, making the city a better place to live" (Fernández Güell and Lara 2014). Here, the community receives special attention, but it is understood not as a critical mass of people who are consumers of the services offered by the city and a key piece in the generation of data that matters so much in the technological field, but as capable individuals co-creating the city they want and need. Giffinger's vision responds to a transversal approach and affects all areas of management in the city: sustainable mobility, production and distribution of urban services (lighting, water, etc.), accessibility, transport, waste, energy efficiency, environment, communications, governance, etc. Therefore, an integrated and holistic vision is necessary. To have a realistic intelligent city project, it must adapt to the characteristics of each city, seeking a balance between the three pillars of sustainability: economy, ecology and society, paying close attention to the cohesion and social development of the city.

2.2. The Citizen

The concept of smart people includes several factors such as the predisposition to be formed throughout life, social and ethnic plurality, flexibility, creativity, being cosmopolitan or open-mindedness, and participation in public life. Population-related and population-related problems in cities can be solved through creativity, human capital and cooperation between stakeholders (Caragliu et al. 2011). Therefore, the intelligent city has to do with the intelligent solutions of creative people. As mentioned above, there is no acknowledged definition for the smart city concept, but there are coincidences in most of them. These same authors (Caragliu et al. 2011) write that "a city can be called Smart City when investments and human and social capital and traditional ICT [information and communication technology] infrastructure feed sustainable economic growth and high quality of life, with intelligent management of natural resources". Here, people are at the center of the definition, but from the point of view of forced participants in economic growth. Smart cities are based on technologies to improve people's quality of life, which can happen in some situations but perhaps not in others. Are you sure technology will be the antidote to all city management problems? (Thomas et al. 2016).

Following (Thomas et al. 2016) in their complete review of the literature on the participation of people living in a smart city in the development of a smart city, they concluded that city dwellers are on the margins and not involved in municipal management. As Khan et al. comment, "at the heart of Smart Cities is the collection, management, analysis and visualisation of an enormous amount of data that is generated every minute in an urban environment due to socio-economic or other activities" (Khan et al. 2013). Therefore, people are essential because of their suitability to provide this data that is fundamental to the development of the smart city, not because citizens are at the center of these policies. Therefore, (Thomas et al. 2016) reflect "based on the systematic literature review, we established that there is a dissonance between academic literature and engagement practices within the city. Despite growing calls for citizen participation, Smart Cities residents seem to have been largely uninvolved in Smart Cities research". In the cases in which such participation occurs, all managers justify the processes set in motion, which on the other hand, are limited in the subsequent phase to the design of the technological solution that will solve their problems and never co-creating, thinking together or creating from the beginning of the idea to its final implementation. According to (Calzada 2018) "the citizens of the intelligent city act within the limitations of predictable and acceptable patterns (...) or simply become active decision-makers". This theory surrenders to the evidence of the implementation of the different measures to be taken in the city. I do not think anyone disputes that education and training lead to creating talent in the city and attracting that talent from outside, especially in cities where, due to their geographical location and weather conditions, living there is an attraction. However, training must lead us to achieve a collective intelligence that is capable of locating problems and solving them through social learning. There are not many cities that set up

participatory laboratories where residents participate in the implementation of different measures for the management of the city they live in. There is nothing more effective than participation in a project for the individual participant to make it his own and defend it to the death. Another very interesting section is the capacity of smart cities to support social inclusion of the most disadvantaged. These days, we see many cases of deaths of elderly people in solitude, in their homes. There are already different projects underway in some Spanish cities to try to reduce this problem, but social issues have not been first in the list of priorities of public managers when implementing technology in the city. Never forget that you always govern for people, always. The citizen must be at the centre of every policy, management and decision taken. When examining the reports published by the European Commission in 2017 and 2018 (European Commission 2017a, 2017b, 2017c) examining the evolution of the participation of intelligent citizens in different Horizon 2020 projects, they explain that intelligent city projects develop citizen participation in a very restricted way with little citizen power. These reflections one could ask oneself (Calzada 2018), "is it possible to regroup the driving spirit of Smart Cities beyond a market rooted in the ownership of data?"

3. Criticism of the Smart Cities Model

This trend also has its critics. For the Catalan geographer and urban planner Jordi Borja, talking about smart cities implies the assumption that they used to be silly, and that everything is part of an advertising movement that previously tried to commercialize the competitive or creative city. According to Borja, cities do not deserve these interested qualifiers that obscure the vision of reality, facilitate business for companies that boast of technology and justify costly operations by policymakers. Something similar is affirmed by the English urban planner (Greenfield 2013) who emphasis that "it is notorious that none of these proposals has arisen from town planners or civil society, but that for-profit companies sponsor them all". Usman Haque of Umbrellium Urban Consulting points out that while technology companies are bidding on contracts related to smart cities, the real purpose of their advertising is obvious: "It's actually aimed at city administrators, who will be able to say: it wasn't me who made the decision, but the data". Dan Hill of Future Cities Catapult believes that "the smart city is a misconception presented in the wrong way to the wrong people" and that "it has never answered the question: in what tangible and material way will it affect the way people live, work and have fun". Recently, among academics, criticism of the positive aspect of the smart city concept is becoming more pronounced. Hollands (Hollands 2015) states that the subordination to the dictation of technology to solve all the problems of city management assumes ideological hypotheses that have not yet been debated in all their magnitude. Hollands asks: "Who is driving our concern for Smart City, and who can gain from losing in the race for such an urban future?" These questions, as well as citizens' views on how this new concept affects them, are very important and are not being answered either by academic researchers, local governments, or by technology development companies (Hollands 2008; Nam and Pardo 2011).

4. Fieldwork Methods

The study on which we base this ethnography was designed to find out the opinion of the inhabitants of the city of Malaga (southern Spain) in relation to the idea of the smart city and the different projects launched in the city related to this idea. In our case the survey was carried out with residents of Malaga in general and taking into account the associative fabric of the city. Thus, people belonging to federations and associations of neighbours and pensioners, as well as different non-governmental organizations (NGOs) participated in the survey. This was posed in a simple way in the response, understandable and brief, neutral, and avoiding raising prejudices. We wanted to reach all citizens, with no exceptions based on age or academic background. To carry out this evaluation, we conducted an opinion poll of 475 residents of the city of Malaga. We believe that the sample is representative of the neighbours, made up of citizens from all districts, all ages and all levels of education. Regarding the validity of the surveys received, 475 in total, it should be noted that, after

analysis, 62 of them have been eliminated, in some cases because of duplication of responses, and in others because they either did not provide information or the information they provided was erroneous. Thus, the number of valid surveys was 413.

4.1. Results

In this section, we will focus on those issues that are a fundamental part of this article. Thus, we will present the results grouped according to the main question, that is, the relationship of citizenship with technology and citizen expectations in relation to the smart city.

4.1.1. The Relationship of Citizenship with Technology

Do you think you have adequate/sufficient training in technology? According to the data provided by the respondents, more than two thirds of them considered their training in technology to be adequate or sufficient (69%), while 31% did not consider themselves to have adequate training. This result is very interesting because it implies a positive predisposition towards technology and, therefore, towards changes that come from technology.

Do you think that technology helps to improve the quality of life for citizens? The result of this answer is categorical. The result is that 97% of those surveyed believe that technology helps to improve the quality of life of citizens. This result is in line with the result of the previous question. It marks a more than positive predisposition towards technology and all the advances and changes it brings with it.

4.1.2. Citizen Expectations in Relation to the Smart City

In which of the following areas do you think the use of technology is most important for the advancement of cities? Environment, mobility, open government, economy, governance or quality of life. For those surveyed, the area in which the use of technology is most important for the city to advance is quality of life, at 71.4%, and a long way from the second most important area for those surveyed, which is mobility with 44.8%; in third position was the area of governance with 40.2%.

Do you know what a smart city is? Respondents answered nothing familiar/unknown with 26.2% or "I have heard it before" with 26.4%, so neighbours who answered negatively represent 52.6%. While the respondents who know and have heard about it represented 31.1%, those who know it well represented 10.40% and those who know it very well represented 5.9%. In total, they represented 47.4%. This shows that respondents are tipping the balance towards the side of those who know little or nothing about the smart city.

5. Discussion and Conclusions

The reasons used to justify the reality of smart cities, according to Fernández (2016) were that "we opted to use the term myths, presenting as arguments that are usually used as justification for the Smart City in its most extended version and, although presented separately, all of them are interconnected and form part of the same underlying logic on the relations between technology, city and citizenship".

Thus, efficiency is doing more with less, responding to the problems presented by the increasingly populated city, whose citizens demand the same services while municipal budgets do not increase with the population. It should also be noted that the development of smart cities has taken place in times of an economic recession and, despite requiring a high initial investment in practically all the initiatives adopted, the promise of operational and economic efficiency compensated for that effort. The reasons for economic efficiency and optimisation of public administration are to improve bureaucratic organization and optimise enterprise management. To the reasoning of the economic efficiency links that of the optimisation of the work in public administration to try to improve a form of bureaucratic organisation and apply optimization to enterprise management. In my opinion, this combination can be successful without neglecting the ultimate objectives of public policies. In addition, if it is decontextualized, you can fall into the error of turning the city into an integrated system, the

management of the city as a panel of data where red, yellow and green pilots appear, where services are interconnected in such a way that it can be summarized as giving information regarding the state of each monitored service. As already noted, authors such as Khan et al. (2013) emphasise data collection as a fundamental part of the smart city, and the citizen as the provider of such data. The city is not exclusively its government. There is a tendency to confuse these terms and what happens in the city, always complex and unpredictable, is outside the strategy that starts from an institutional vision. In the end, it is a problem of scale. If you see the city from a bird's eye view at a macro level, you may lose the idea of citizenship, of street politics, of the use of public space, different components of life in the city that have always been and will be in spite of advances in technology. Sustainability is at the heart of the smart city concept and conveys the idea that the solution to all the city's environmental problems will be solved by technology. Moreover, the solutions are a kind of turnkey solution that is useful for all citizens, wherever they live, without taking into account ways of life and consumption and without implying a change in them. Any measure to improve the environmental situation involves changes in our most environmentally harmful habits. The measures implemented in a smart city seek to improve the quality of life of a standard citizen. This is contradictory to what authors such as Thomas et al. (2016) assert: "Smart City's discourse tends to present the opinion that only through the deployment of technologies will improve the quality of life, which may certainly be the case for some, but not for all, within the city", so this idea of standardisation is not the most accurate. It is a concept of sustainability that does not imply effort or responsibility, and involves acting automatically thanks to technology without the citizen having to act in decision-making. For example, "the installation of smart meters does not imply that users take measures to change their energy consumption patterns. Furthermore, concepts such as urban ecology, ecological footprint, and life cycles are not considered to solve environmental problems through Smart Cities measures" (Fernández 2016).

If we look at the concept of competitiveness since the emergence of the smart city concept, there are different rankings of the most intelligent cities on the planet. The application of technology is what will make the cities that are at the top of these lists, will have success ensured by the differentiation that the new technologies represent. This competition goes hand in hand with economic growth and the attraction of talent, investors, and tourists, which will make one city more prepared than another for increasingly global economic exchanges. This is what is often called the pro-growth governance model (Tomàs 2015). Criticism of this section appears to focus on the promotion of new cities that are mainly destined for economic activities (commercial and/or industrial) and technology districts where companies all compete, changing the idea of the city as we have conceived it since we started to live in cities. From my experience, citizens need their most basic problems to be solved, which are often related to the six areas defined by Giffinger et al. in their study, and which we have already commented on previously, but without altering the idea of the city in which they live, without forgetting that life in the city is created by citizens, with their routines and moments of leisure, filling public space. They demand improvements in the city that have to do with the social function that public space represents. We must not forget what Lewis Mumford (Mumford and George 2014) said in his book The City in History, "perhaps the best definition that can be given of the city in its most notable aspect is that it is a place dedicated to offering the greatest possibilities of meaningful conversations". If we talk about technological integration, we have already discussed this in the efficiency section. Smart cities tend to integrate the management of the different services to achieve the improvement in decision making by having real information and giving citizens the ability to streamline procedures and travel using apps or different devices that make their lives easier. The process for the citizen is invisible, going unnoticed to the point of not having to pay attention to how it works. Nevertheless, we run the risk of the social decontextualisation of the practice involved in the use of multiple sensors and infrastructures installed in the city, which I warned about in the section on efficiency, because "technologies (. . .) can only be conceived as the result of social processes of negotiation and conflict" (Fernández 2016)

Smart cities are not futuristic representations, but realities. This concept goes beyond a buzzword or rankings that try to compare the incomparable. They must be an impulse response for transmitting

the citizen's feelings and demands to the different areas of municipal management and to the different innovative projects. The introduction of the smart city paradigm is not a technological sprint, but a commitment to make the city more habitable to its citizens.

In addition, as we have already seen many authors, and above all, public managers, defend citizen participation as a basic principle in smart cities projects, putting the citizen at the centre of all measures. However, has this been a reality? The citizen has been seen as a data collector or asking for his or her participation to justify taking certain measures, but his or her role should not stop there. Technology has made it possible for citizens to have a greater ability to intervene in public affairs. It is a level of participation that goes beyond participation through commissions or through formal procedures, to moving towards participation through contribution and getting involved in the organisation and improvement of the city. Developing services with citizens, designing them with them, based on their needs, is called either living labs, open participation platforms or co-creation spaces. These are in both the models that justify the concept of the smart city. This idea has to go in a both directions, on the one hand there has to be a process of cultural transformation of the connected society and on the other hand, public administration has to face the transformation that the way of doing politics and of managing and organising the city. Hence, open government, but a real open government, is one of the main challenges of our cities. There are already authors such as Evans, 2016 who state that until now, the concept of the smart city is focused on testing technological solutions in the city and benefiting large technological companies, so the experimental city approach arises as a response to the need for citizen participation that turns the local community into real main actors of urban solutions. This concept would be a complement to the solutions currently implemented in smart cities. According to (Evans 2016) "the experimental city produces a different type of city by offering new modes of engagement, governance and politics that challenge and complement conventional strategies, such as the ongoing smart city strategies".

If we focus on the results of our study, we can highlight that the residents of the city of Malaga have a more than positive attitude to the use of technology to improve the city. Actions in this direction have been undertaken in the city for some time now. The area where they think it is most important to use it is in the improvement of quality of life, mobility and governance. These results correspond with data from the report of the Directorate General for Internal Policies of the European Parliament (Manville et al. 2014), which shows that Spain is among the countries with the most smart governance projects and smart mobility initiatives. In Malaga this pattern has been reproduced. This data contrast with the fact that more than half of the population either does not know what a smart city is or has only heard of the term. Exclusively 16.3% of the population knows well or very well, what a smart city is. This must lead us to reflect whether, if the inhabitants of a city in which many actions related to the smart city have been carried out and the majority do not even know what it consists of, does that demonstrat a distance from the concept and an evident lack of participation? It distances citizens from empathy with these types of actions, which are fundamental to fostering social capital in actions of this type, which focus precisely on efficiency and the search for data, without taking face-to-face interactions into account. As Thomas et al. (Thomas et al. 2016) recognise, "the intelligent vision of the city seems to be a utopian vision of technology, rather than a citizen-centered vision, which is being used to address complex urban problems". With this article I want to put the focus on people over smart cities because citizens have the right to build the city they want, the city they dream of. According to (Harvey 2003), the right to the city goes beyond individual access to the city's resources: it is a right of individuals that necessitates a transformation in the city. When one understands the problems to which citizens want to respond, action can be taken on a large scale. We hope that this work serves to underpin the idea that it is necessary to take into account the citizen in the discourse on smart cities (Thomas et al. 2016; Calzada 2018).

There is still a long way to go in relation to the role of citizenship in the field of smart cities. In the end, what we must ask ourselves is what form of city we want and need.

We believe that this work has its limitations. The opinions of the citizens were collected only in the city of Malaga. We have already said that the concept of the smart city varies depending on factors such as location, knowledge of technology, and local government, so it is very interesting to contrast data collected from different cities for comparison. In addition, the review of the literature has been carried out through the consultation of multidisciplinary works. We consider it very interesting in the future to delve into the relationship with other disciplines related to smart cities, such as human geography, urban planning, and urban informatics, among others. Other lines of future research would be to approach the issue of citizen participation by raising the smart city as opposed to the smart citizen (Hemment and Townsend 2013) or to confront the top-down and bottom-up approaches (Chelleri et al. 2015; Calderon and Chelleri 2013). This research, the fruit of my work with and for citizens in the field of a smart city, aims to reflect on the meaning of smart cities and the role that the citizen plays in this approach. As Italo Calvino said (Calvino 1972), "I could tell you how many steps are in its streets, of what type of arches of its arcades but already I know that what sheets of zinc cover the roofs; but I know already that it would be like not telling you anything". The city is not made of this, but of relations between the measures of its space and the events of its past. Our children deserve the best of cities.

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References

Aguilera, Unai, Oscar Peña, Oscar Belmonte, and Diego López-de-Ipiña. 2017. Citizen-centric data services for smarter cities. *Future Generation Computer Systems* 76: 234–47. [CrossRef]

Allwinkle, Sam, and Peter Cruickshank. 2011. Creating smart-er cities: An overview. *Journal of Urban Technology* 18: 1–16. [CrossRef]

Calderon, Camilo, and Lorenzo Chelleri. 2013. Social processes in the production of public spaces: Structuring forces and actors in the renewal of a deprived neighbourhood in Barcelona. *Journal of Urban Design* 18: 409–28. [CrossRef]

Calvino, Italo. 1972. *Las ciudades invisibles*. Madrid: Editorial Minotauro.

Calzada, Igor. 2018. (Smart) Citizens from Data Providers to Decision-Makers? The Case Study of Barcelona. *Sustainability* 10: 3252. [CrossRef]

Caragliu, Andrea, Chiara Del Bo, and Peter Nijkamp. 2011. Smart cities in Europe. *Journal of Urban Technology* 18: 65–82. [CrossRef]

Chelleri, Lorenzo, Harn Wei Kua, Juan Pablo Rodrigues, Gladman Thondhlana, Nahid Kh Md Nahiduzzaman, and Abdallah Said Abdullatif. 2015. Exploring the User-Driven Implications in Building Urban Sustainability and Resilience: Lessons from OURS CITIES Global Network Study Cases. Paper presented at the 8th Conference of the International Forum on Urbanism (IFoU), Incheon, Korea, June 22–24; pp. 58–69.

European Commission. 2017a. *La Construcción de Una Ciudad Inteligente: Buenas Prácticas en Toda Europa*. Luxemburgo: Oficina de Publicaciones de la Unión Europea.

European Commission. 2017b. *La Construcción de Una Ciudad Inteligente: Recomendaciones Políticas*. Luxemburgo: Oficina de Publicaciones de la Unión Europea.

European Commission. 2017c. *La Construcción de Una Ciudad Inteligente: Replication and Scale-Up of Innovation in Europe*. Luxemburgo: Oficina de Publicaciones de la Unión Europea.

Ellis, Carolyn. 2004. *The Ethnographic I: A Methodological Novel about Autoethnography*. New York: Altarmira Press.

Evans, Joshua. 2016. Trials and Tribulations: Problematizing the City through/as Urban Experimentation. *Geography Compass* 10: 429–43. [CrossRef]

Fernández Güell, José Miguel, and Marta Collado Lara. 2014. *La Transformación Urbana de España*. Madrid: PricewaterhouseCoopers.

Fernández, Manu. 2016. *Descifrar las Smart Cities*. Barcelona: Me Gusta Escribir.

Fu, Weisi, and Ping Peng. 2014. A discussion on smart city management based on meta-synthesis method. *Management Science and Engineering* 8: 68–72.

Giffinger, Rudolf, Christian Fertner, Hans Kramar, Robert Kalasek, Nataša Pichiler-Milanović, and Evert Meijers. 2007. *Smart Cities: Ranking of European Medium-Sized Cities.* Vienna: Centre of Regional Science (SRF). Available online: http://www.smart-cities.eu/download/smart_cities_final_report.pdf (accessed on 4 August 2019).

Greenfield, Adam. 2013. *Against the Smart City*. New York: Do Projects.

Harvey, David. 2003. *El Nuevo Imperialismo*. Oxford: Oxford University Press.

Hemment, Drew, and Anthony Townsend. 2013. *Smart Citizens*. Manchester: Future Evening Publications, vol. 4.

Hollands, Robert G. 2015. Intervenciones críticas en la ciudad corporativa inteligente. *Cambridge Journal of Regions, Economy and Society* 8: 61–77. [CrossRef]

Hollands, Robert G. 2008. Will the real smart city please stand up? Intelligent, progressive or entrepreneurial? *City* 12: 303–20. [CrossRef]

Khan, Zaheer, Ashiq Anjum, and Saad Liaquat Kiani. 2013. Cloud based big data analtics for smart future cities. Paper presented at the IEEE/ACM 6tk International Conference on Utility and Cloud Computing (UCC), Desdren, Germany, December 9–12; pp. 381–86.

Manville, Catriona, Gavin Cochrane, Jonathan Cave, Jeremy Millard, Jeremy Kevin Pederson, Rasmus Kåre Thaarup, Andrea Liebe, Matthias Wissner, Roel Massink, Bas Kotterink, and et al. 2014. *Mapping Smart Cities in the EU*. Luxemburgo: Oficina de Publicaciones de la Unión Europea.

Mumford, Lewis, and Copeland George. 2014. *The City in History: Its Origins, its Transformations, and its Prospects*. Burwood: Royal Victorian Institute for the Blind Tertiary Resource Service.

Nam, Taewoo, and Theresa A. Pardo. 2011. Conceptualizing smart city with dimensions of technology, people, and institutions. Paper presented at the 12th Annual International Digital Government Research Conference: Digital Government Innovation in Challenging Times, College Park, MD, USA, June 12–15; pp. 282–291. [CrossRef]

Partridge, Helen L. 2004. Developing a human perspective to the digital divide in the 'smart city'. Paper presented at Biennial Conference, Gold Coast, QLD, Australia, September 21–24; Canberra: Australian Library and Information Association.

Ponting, Anna. 2013. *The Political and Economic Implications of the Smart City*. Redwood City: Standford University Press.

Richardson, Laurel. 2003. *Writing: A Method of Inquiry. Turning Points in Qualitative Research: Tying Knots in a Handkerchief*. Walnut Creek: Altamira Press.

Thomas, Vanessa, Ding Wang, Louise Mullagh, and Nick Dunn. 2016. Where's Wally? In Search of Citezen Perspectives on the Smart City. *Sustainability* 8: 207. [CrossRef]

Tomàs, Mariona. 2015. Gobernanza urbana and Smart Cities. El caso de Barcelona. In *11° Congreso Internacional Internet, Derecho and Política*. Barcelona: UOC-Huygens Editorial.