SMART CITIES, SMART GOVERNANCE: THE ROLE OF COMMUNICATION AND SOCIAL PARTICIPATION IN BUILDING CITIES OF THE FUTURE

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Purpose: The article aims to determine the role of communication and social participation in implementing the concept of smart governance in smart cities. The article considers how modern communication tools and citizen engagement strategies affect the efficiency of urban governance, sustainability and residents' trust in public institutions.

Design/methodology/approach: This article is based on a review of secondary sources, including academic literature and reports, and case study analysis of selected cities implementing smart governance principles. The research approach is qualitative and interpretative, focused on identifying good practices, main barriers and success factors

Finding: It can be seen that cities that integrate digital communication tools with openness and co-decision policies achieve a higher level of resident engagement and greater managerial efficiency. An important factor of success is not only technology, but also the organizational culture of local governments, the ability to dialogue and include groups at risk of digital exclusion. Social participation strengthens trust in the authorities and contributes to the greater durability of urban projects. Projects that are based on data improve the quality of life. Some challenges were also indicated, including the risk of digital exclusion of certain social groups or a lack of proper communication.

Research limitations/implications: The article is based on a limited number of examples and secondary literature. The results are not representative, but allow for drawing conclusions at the exploratory level. Future research could include comparative and quantitative analyses, taking into account the perception of residents and the effectiveness of specific e-participation tools.

Practical implications: The results of the study can support data-based management in cities, broad communication and cooperation with residents. The article can be particularly useful for local governments.

Social implications: Communication and social participation have the potential to increase social capital, counteract digital exclusion and improve the quality of life of residents. This can contribute to building more just and sustainable urban communities.

Originality/value: The article emphasizes the current perspective on the issue of smart governance and smart cities, integrating the theoretical approach with practical observations from selected cities. It is mainly addressed to academic circles and local government administration.

Keywords: smart cities, smart governance, social participation, communication, AI.

Category of the paper: research paper, case study.

1. Introduction

The concept of smart cities, and in particular the role of governance and communication in their development, has attracted considerable attention in recent years. The communication strategies used by local governments have a significant impact on public participation in smart city initiatives. Effective communication fosters trust and engagement, enabling residents to feel more connected to the decision-making processes that affect their communities.

In recent years, the concept of "smart cities" has become one of the most important issues in research on urban development and management. By integrating new technologies, including the Internet of Things (IoT), artificial intelligence (AI), and data management systems, cities have the opportunity to improve the quality of life of their residents, increase the efficiency of public services, and minimize the negative effects of urbanization (Batty et al., 2012). Implementing smart cities is not just a technological challenge – effective communication management and engaging citizens in decision-making processes play a key role in their development. This is the foundation of smart governance, which is essential for achieving the goals of smart cities (Nam, Pardo, 2011).

In the literature on smart governance, the role of communication and public participation is increasingly seen as crucial for the success of processes towards smart cities. However, there is a need for a deeper understanding of how these elements work together and how they affect the effectiveness of local governments' activities in the context of sustainable urban development. There is a risk that, without appropriate public involvement, smart cities may deepen existing social and economic inequalities. An approach to city management that ignores the voice of citizens may lead to social alienation and distrust of public institutions. There is often a gap in research on the use of specific communication tools that support civic participation in smart city management processes. As indicated by Caragliu et al. (2011), the "smartness" of a city depends not only on technology but also on social capital and the ability of authorities to engage residents in decision-making processes. The UN report (2016) emphasized that the sustainable transformation of cities requires transparent governance mechanisms that enable citizens to co-create urban policies.

This article aims to examine how communication and social participation affect the development of smart cities and better management. The article is based on examples from selected cities implementing smart governance principles, analyzing both theoretical and practical aspects of engaging citizens in decision-making processes and urban management. The work aims to indicate good practices and challenges related to these processes, as well as to present specific examples of cities that have achieved success in this area.

2. Literature review

The concept of smart cities encompasses a wide range of strategies aimed at improving urban life through the integration of information and communication technologies (ICT) while promoting citizen participation and governance. Many concepts define smart cities through six main dimensions: people, government, economy, mobility, environment and life. Other studies confirm these areas, adding to them the quality of life of residents, city logistics, development of awareness of urban communities and evaluation of smart cities (Anthopoulos, 2016). Hartog, Akker and Houdt (2024) also propose six key elements: smart economy, smart mobility, smart citizens, smart governance, smart life and smart environment. Smart governance enables effective and collaborative interaction between citizens and local government. The European Commission (2020) emphasizes that the key challenge is not only digitalization, but also building trust and transparency in the relations between authorities and citizens. The importance of this issue is also evidenced by the creation of the UN document "International Guidelines on People-Centred Smart Cities" (2025) in 2025. This document presents the principles of smart city development, emphasizing community participation, transparent communication and inclusive decision-making processes. It encourages stakeholders to mainstream community involvement in urban policies and strategies. Therefore, social participation in the context of smart cities not only improves the quality of decisions but also builds trust between citizens and local authorities, which is essential in striving for sustainable urban development. It should be emphasized that smart cities are a synthesis of hard infrastructure (physical capital) with the availability and quality of knowledge capital, communication and social infrastructure, which is crucial for the competitiveness of cities. The literature review conducted by Kumar (2024) analyzed the practices of citizen participation in smart cities, pointing to the need for active involvement of residents in decision-making processes to ensure inclusive and equitable urban development.

Smart cities not only integrate advanced technologies into urban infrastructure but also redefine the way citizens participate in governance and decision-making processes. At the heart of this transformation is the idea of smart governance – intelligent governance that uses information and communication technologies (ICT) to promote transparency, efficiency and social participation in public administration. Effective use of digital tools enables citizens to actively participate in decision-making processes, which in turn leads to more responsive and inclusive urban policies. Examples such as the Decidim platform in Barcelona show how technologies can support the democratization of urban governance, enabling citizens to be directly involved in the creation of public policies.

The role of citizen participation in smart cities is crucial. Local governments that prioritize transparent and consistent communication see higher levels of civic engagement. Creative cities tend to initiate participatory governance practices, which significantly strengthen social

cohesion (Cortés-Cediel et al., 2019). A study conducted in Zabrze (Mańka-Szulik et al., 2023) showed that residents' perception of smart city solutions is closely related to the effectiveness of local government communication activities. The authors indicate that effective local government communication significantly affects public participation in smart city initiatives, as residents expressed the need for public consultations and preferred to be informed via online media, emphasizing the importance of engagement and awareness. Research conducted by Ismagilov et al. (2019) also suggests that trust in government initiatives must be supported to ensure the successful implementation of smart city services, emphasizing the importance of solid communication channels and engagement platforms for an open dialogue between citizens and local authorities. These observations indicate that citizen engagement strengthens the democratic structure of smart cities and plays a key role in bridging social divides, promoting equal access and participation in city governance.

The use of modern communication tools, such as digital platforms, mobile applications, social media or e-participation tools, creates new opportunities for engaging citizens, enabling them to actively participate in city governance. It should be emphasized that civic education and involvement in smart city projects often originate from social networks and various social platforms. Sontiwanich et al. (2022) argue that citizen participation is essential to drive sustainable development, and changes in social values are key to realizing the potential of smart city initiatives. The analysis of the links between civic engagement and technology is also carried out by Wahyuni et al. (2022), who emphasize the implementation of technologies that enable the effective provision of public services while increasing citizen participation. The emphasis on education and digital skills in the urban environment requires equipping citizens with skills that allow for meaningful engagement in the processes of managing smart cities (Valencia-Arías et al., 2021).

It should therefore be noted that governance in the context of smart cities has moved from a hierarchical model of governance to a more participatory and collaborative one. Citizen engagement and communication with them is increasingly recognised as a key element in the development of smart cities, particularly in the Smart City 3.0 concept, where their active participation in shaping the future of the city is essential.

3. Methods

This article adopts a qualitative approach, based on the analysis of selected examples and secondary data sources. The main goal was to identify and compare specific communication practices and solutions supporting social participation within the concept of smart governance in smart cities. Secondary data analysis is a frequently used research method in management

studies, as it allows for the examination of existing empirical data, reports and industry publications, enabling a systematic review and synthesis of results from multiple perspectives.

4. Practical applications and discussion

Smart cities are increasingly environments that foster civic participation and communication among citizens, using technology to create more inclusive urban spaces. For smart cities to fully realize their potential, they must prioritize citizen engagement and address existing social inequalities. Chen et al. (2022) emphasize the need to consider social inequalities and exclusion when planning, launching, and evaluating smart city initiatives. By adopting a bottom-up approach to civic engagement, smart cities can better respond to the needs of diverse populations, which significantly improves the quality of life of residents and leads to a more equitable approach. Smart city frameworks should not only focus on technological efficiency but also actively address social issues.

One important example of smart governance is the use of information and communication technologies (ICT) to facilitate collaborative decision-making processes with multiple stakeholders. For example, in cities such as Amsterdam and Barcelona, smart governance initiatives include open data platforms that allow citizens to access urban data, thus enabling them to engage in discussions about urban planning and service provision (Wang et al., 2021; Esposito et al., 2023).

Barcelona has become a model city that combines advanced technologies with social participation. The city authorities have implemented the Decidim platform, based on open software, which allows residents to submit ideas, vote on projects and monitor the implementation of city investments (Bakici et al., 2013; https://decidim.org/). Thanks to this, over 70,000 citizens have actively participated in decision-making processes in the years 2016-2023. Another innovative solution is the concept of superilles (superblocks), i.e. areas that limit car traffic in favor of public space. This project was consulted with residents through workshops and digital tools, which allowed for explaining the concept, collecting comments, and thus adapting it to local needs. Rueda (2018) emphasizes that Barcelona's success is due to the combination of digital tools with the direct involvement of residents, because then it is possible to reduce social resistance and increase acceptance of change. The example of Barcelona shows that effective citizen participation in a smart city requires more than just technology – institutional frameworks supporting openness are crucial, as well as the city's ability to translate citizen data into concrete policy actions. Despite their success, maintaining long-term citizen engagement remains a challenge.

Since 2009, Amsterdam has been implementing a policy of living labs, which brings together residents, companies and universities to test new urban solutions (Lai, 2024; Steen, van Bueren, 2017). Examples include over 170 different activities on mobility, energy and public spaces, in which residents play the role of active co-creators, not just recipients of services. Amsterdam proves that participation can be embedded in innovation processes. This model fosters shared responsibility and strengthens social capital. However, urban labs require time, resources and a willingness to experiment, which can be a barrier for cities with fewer opportunities. As part of the Amsterdam for All program, tools and methods for improving accessibility are being developed through collaboration with people who experience the daily challenges of navigating certain parts of the city. This approach builds public trust and increases the effectiveness of implementing innovations.

Social media and online platforms have transformed communication from a one-way process to a multi-way process, allowing citizens to become more actively involved in urban planning and development. A study by Delmastro et al. (2022) focuses on the role of mobile technologies in promoting civic participation in smart cities. The authors present the SmartCitizen app, which allows residents to actively participate in generating and sharing content related to the quality of life in the city. Smart City Laguna in Brazil uses the Planet App, which acts as a community engagement platform, facilitating conversations and collaboration among residents and helping to understand the changing needs of residents. Philadelphia, on the other hand, actively seeks to understand and map digital service gaps through surveys such as the Connecting Philadelphia Household Internet Assessment Survey, using the results to improve access to digital services for its residents. The city has also established a Transportation Advisory Committee, composed of residents and stakeholders, to address the city's transportation needs (SmartCitiesWorld, 2023). Such behaviours enable residents to contribute their point of view and cooperate with city officials, strengthening democratic processes and ensuring that city development is in line with the needs of the community.

Another example is Vienna, which has been consistently implementing the Smart City Wien Framework for years, based on sustainable development and involving residents in city management. One key tool is the BürgerInnen-Räte (citizens' councils), in which randomly selected residents co-decide on key investments such as the development of public transport or green energy. In addition, the city uses the "Sag's Wien" platform, where citizens can report problems (e.g. infrastructure failures) and propose solutions. In 2022, this initiative resulted in the implementation of over 1.2 thousand projects submitted by residents (https://smartcity.wien.gv.at/).

An interesting example is Medellín in Colombia (Green, 2018), which shows that in cities of the Global South, face-to-face communication is key, especially in areas with low trust in government. The then mayor Sergio Fajardo introduced a new approach, calling it "urban society". The aim was to use urban planning and landscape architecture to reduce inequalities

and heal environmental damage. He invited communities to participate in planning, which resulted in large investments in metros, aerial trams, bicycle infrastructure, libraries and beautiful parks – with most of the new facilities created in neglected communities. Thanks to Comuna Labs, it was possible to reach excluded groups (e.g. gang youth) and involve them in the process of city revitalization.

Copenhagen is also a city combining smart cities with smart governance, focused on communication with residents. Many projects are solved thanks to continuous cooperation between companies and knowledge providers, i.e. data providers. This not only results in a smarter, but also greener city. Copenhagen provides a wide range of public data, enabling residents and entrepreneurs to create innovative solutions and increasing the transparency of government activities. Access to high-quality public data is the basis for developing smart solutions that respond to the challenges of urbanization and climate change. The city integrates innovative technologies with active community participation. For example, it is implementing a project on lighting systems that adjust their intensity depending on the presence of pedestrians and cyclists, which increases safety and energy efficiency. The Copenhagen Solutions Lab is also a collaboration platform between the public and private sectors, focusing on creating solutions that improve the quality of life of residents. Some city applications also include gamification elements, such as challenges or rankings, to increase user engagement in pro-ecological activities. The example of Copenhagen shows that effective social participation in a smart city requires not only an advanced technological infrastructure but also a management culture based on trust and cooperation. The initiatives undertaken indicate how residents can actively participate in shaping their surroundings, which leads to more inclusive and effective urban solutions.

It should be emphasized that many cities do not have comprehensive and long-term smart city strategies that include security risk management (Vitunskaite et al., 2019). Some forms of participation are criticized as being shams, so city authorities need to create accessible and familiar communication channels and be open to partnerships with various organizations and technology providers. Guo et al. (2024) also emphasize that raising public awareness through effective communication and community engagement strategies is crucial to supporting participation in smart city programs. They point out how information campaigns can stimulate a sense of responsibility among residents, prompting them to actively engage in smart initiatives. Examples of many cities show that the long-term success of smart cities depends on the active involvement of citizens. Effective communication between residents and local government is crucial to increasing public participation in smart city initiatives, supporting a more connected and participatory environment. For smart cities to be truly effective, they need to integrate advanced technologies with public engagement strategies. This requires a shift in perspective, where citizens are not just passive recipients of technological solutions, but active participants in the planning and implementation processes. Effective citizen engagement leads to more representative city governance that takes into account equity and integration, elements necessary for building sustainable smart cities.

5. Conclusion

In summary, the successful implementation of smart cities relies on the interaction of technology, governance and social participation, as well as effective communication. By supporting an environment conducive to citizen engagement within smart governance, cities can create sustainable solutions to urban challenges, leading to an improved quality of life for all residents. This requires a change in the approach to governance, giving priority to inclusive and participatory mechanisms that empower citizens as co-creators. Effective communication between local governments and residents has a significant impact on public participation in smart cities. Engaging citizens through various channels, including online platforms, increases their involvement in decision-making processes, which ultimately leads to improved governance and quality of life.

As indicated, the idea of smart cities is gaining increasing importance in the face of dynamic urbanization and challenges related to current trends and sustainable development. Modern cities are increasingly reaching for advanced technologies, but their true "intelligence" is manifested not only in innovative infrastructure but also in efficient management based on dialogue with residents. Communication and social participation are becoming key to creating cities of the future – cities that are not only technologically effective, but also respond to the real needs of the community. Effective communication in smart cities and smart governance, however, requires a two-way flow of information (facilitated by digital platforms, e.g. online civic budgets), broad education not only of office workers but also of residents in the use of digital tools, as well as the inclusion of excluded groups (e.g. the elderly or those with low digital skills). It is important to be aware of certain challenges. One of them is the risk of technocratization, i.e. excessive focus on technologies without taking into account social needs, as this can affect digital exclusion, i.e. deepening inequalities by basing participation on digital tools. It is also important to notice in time the risk of apparent participation, i.e. a situation in which the authorities conduct communication, e.g. consultations, without the residents having a real influence on decisions. Hybrid models of participation (combining online and offline tools), adaptive communication strategies that take into account the local socio-cultural context, as well as monitoring the actual influence of residents on decisions, may be crucial for the development of smart cities.

Therefore, certain recommendations for other cities can be indicated. Hybrid models of participation, adaptive communication strategies that take into account the local socio-cultural context, as well as monitoring the actual influence of residents on decisions, may be key to the development of smart cities. It is worth it for cities to develop hybrid models of participation, combining digital and traditional forms, adapted to local social and demographic conditions. They should also invest in digital education programs aimed at both officials and residents, especially those at risk of digital exclusion. It is important to create mechanisms for the

community to have a real influence on decisions, e.g. by evaluating social consultations and publicly reporting their results. It is worth establishing a team/unit that will deal with social dialogue and ethical supervision of implemented technologies, to ensure a balance between technological efficiency and the needs of residents. It is also recommended that communication tools be designed inclusively, involving marginalised groups already at the stage of creating a smart city strategy.

The author is aware of certain limitations. The article is based on an analysis of the literature on the subject and selected examples and secondary data sources. This approach was deliberate because it wanted to create a review space that would be a starting point for more in-depth empirical research. Future research should therefore be supplemented with quantitative analyses (e.g. surveys among residents) as well as in-depth qualitative research (e.g. in-depth interviews with experts, local government representatives or focus groups) to understand the real impact of implemented technologies on communication, participation and social trust. Quantitative research on larger, representative samples would allow for a comparison of the level of acceptance and involvement of residents in various types of smart governance tools. Further activities could also include comparative analyses, taking into account residents' perceptions and the effectiveness of specific e-participation tools. Such research could fill existing gaps and, at the same time, contribute to the development of more empirically grounded knowledge on smart governance and the use of artificial intelligence in the public sector.

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