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# Smart Government Empowering Communities for Green Initiatives

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## ABSTRACT

This research examines communication between government entities and citizens within the context of smart government, where digital communication tools are utilized to effectively address citizens' needs. The study particularly focuses on smart government from the perspective of two-way communication, emphasizing how reciprocal interaction between the government and citizens fosters transparency, trust, and collaborative problem-solving in the digital era. We employed netnography, a methodological approach rooted in online ethnography, to explore recent discourse between the government and citizens in the realm of smart government development, with particular focus on their daily interactions as key stakeholders. The study uncovers a dynamic landscape of reciprocal communication between government agencies and citizens, where social media platforms serve as the linchpin for information exchange, feedback mechanisms, and collaborative problem-solving. Community representatives in this communication ecosystem include local digital mass media, opinion leaders, and concerned individuals who advocate for more effective waste management practices as part of green initiatives within the city. Our findings demonstrate that social media enhances smart government–citizen communication, with local digital media amplifying citizens' voices and opinion leaders acting as catalysts for information exchange. Social media also challenges the culture of conventional bureaucracy, which is hierarchical and characterized by tiered vertical communication. The netnographic analysis reveals digital collaborative efforts aimed at achieving more efficient and eco-friendly waste management strategies as one of the major urban problems. In this context, smart government refers to the wise management of alternative communication channels to address issues of high urgency.

**Keywords:** *smart government; social media; digital society.*

## INTRODUCTION

The emergence of Society 5.0 presents a significant challenge for government affairs in the 21st century (Wagola, Nurmandi, Misran, & Subekti, 2023). As citizens become more empowered, connected, and informed through digital technology and social media, they demand a higher level of transparency, accountability, and responsiveness from their

governments. The government's ability to meet these challenges and foster a more meaningful and inclusive relationship with Society 5.0 will be pivotal in shaping the future of effective governance (Lathrop & Ruma, 2010). Thus, the implementation of smart government practices is increasingly recognized as a crucial response to the complex urban challenges of the 21st century. Smart governments have become essential in addressing the growing challenges of urbanization. Smart government initiatives leverage technology, data, and citizen engagement to optimize urban services, enhance infrastructure, and foster sustainable development (Jimenez-Gomez et al., 2016).

In 2023, Yogyakarta, Indonesia, confronted pressing challenges in its waste management system, culminating in the closure of the TPS Piyungan waste management facility. Data indicated that the facility was struggling to cope with the daily influx of approximately 400 tons of waste, far exceeding its operational capacity. This overcapacity led to a series of detrimental consequences, including environmental degradation and public health concerns. As a result, local authorities decided to close TPS Piyungan, recognizing the necessity of an immediate solution to address the waste management crisis. The closure of this facility underscores the urgency of tackling waste management issues in Yogyakarta, emphasizing the need for comprehensive and sustainable strategies to reduce the burden on existing facilities and mitigate the environmental and public health impacts caused by inadequate waste management practices. On social media, especially on X, there were 133 positive and 804 negative comments about this issue during the first week following the waste facility's closure. Although negative sentiment decreased after a week, waste remained scattered across public areas (Arimby, 2023). People continued to question the government's waste management performance for several months afterward. This situation serves as a compelling case study in the broader context of waste management challenges in rapidly growing urban areas and highlights the necessity for innovative and effective solutions to ensure a sustainable and healthy environment for the population. Yogyakarta residents increasingly turned to social media platforms to voice their concerns and complaints regarding the city's waste management.

Everyday urban challenges such as waste management are essential case studies for understanding how smart government functions in practice. These issues are deeply embedded in citizens' daily lives and directly reflect the quality of governance, service delivery, and sustainability. Addressing them through digital communication provides an opportunity to observe how governments apply technology to foster transparency, responsiveness, and participation (Szpilko, 2023; Hussain, 2024). In the Indonesian context, the waste management crisis at TPA Piyungan in Yogyakarta exemplifies this dynamic. The site, which had long exceeded its capacity, prompted the local government to develop new disposal strategies and intensify online communication with residents (Mayasari, Wardhana, & Tahir, 2023; ICLEI Indonesia, 2024). The mayor's proactive use of social media to inform citizens, receive feedback, and mobilize community participation demonstrates how digital platforms can embody the principles of smart governance. Analyzing this case is crucial

because it reveals how two-way symmetrical communication and citizen engagement can be operationalized within Indonesia's distinctive bureaucratic culture. Despite global studies emphasizing technology-driven participatory governance, few empirical works have explored how local leaders in Indonesia use social media to manage urgent civic problems. Thus, examining the Yogyakarta case provides valuable insight into how communication strategies contribute to effective, transparent, and sustainable urban governance. This issue is a pivotal concern in our exploration within this paper. The research question posed here is: How can smart government empower communities for green initiatives?

## LITERATURE REVIEW

### Smart Government

A key challenge for local governments in the digital era is facilitating citizens with rapidly accelerated public services (Jimenez-Gomez et al., 2016). Most urban residents are well aware of the importance of open access to government information and actively engage in public services. This situation compels governments to create smart solutions for public problems.

A smart government is a concept that encompasses the use of advanced technologies and data-driven approaches to enhance governance and public administration (Anthopoulos & Reddick, 2016). It represents a paradigm shift in how governments interact with their citizens and deliver services. Smart governments leverage information and communication technologies to streamline operations, improve decision-making, and foster transparency, accountability, and citizen engagement.

One key aspect of a smart government is the utilization of big data and analytics. Governments collect vast amounts of data from various sources, including citizen feedback, social media, and sensors. By analyzing this data, they can gain valuable insights into citizens' needs, preferences, and trends. This data-driven approach enables governments to make informed policy decisions, allocate resources more efficiently, and respond proactively to emerging challenges such as traffic congestion, environmental issues, and public health crises.

Furthermore, a smart government focuses on digital transformation, offering a wide range of online services to its citizens. This not only simplifies and accelerates administrative processes but also enhances accessibility for individuals who may have difficulty accessing traditional government services. Smart governments also prioritize cybersecurity to protect sensitive information and invest in the development of user-friendly, secure digital platforms to ensure the safety and privacy of their citizens.

In essence, a smart government represents a progressive and efficient approach to governance in the digital age. It prioritizes data-driven decision-making, embraces technology, and seeks to improve the quality of life for its citizens. By leveraging advanced

tools and insights, smart governments aim to create more responsive, accountable, and citizen-centric administrations that address the complex challenges of the modern world. Moreover, smart governments utilize social media as a tool to communicate with the public (Mossberger, Wu, & Crawford, 2013).

The body of literature on smart government and social-media-based citizen engagement reveals a rapid evolution in how governments leverage digital platforms for transparency, participation, and service improvement. Early studies (2009–2012) identified Web 2.0 as a transformative tool for dialogue and e-democracy, while research from 2013–2015 emphasized adoption models and the shift from one-way information dissemination to interactive exchanges (Kavanaugh et al., 2009; Levy et al., 2015). Between 2016 and 2018, scholarship expanded toward co-production and participatory governance, examining barriers such as cultural context and digital readiness (Svidroňová et al., 2018; Babaoglu & Akman, 2018). From 2019 to 2021, smart-city frameworks and inclusive digital participation became central, with findings linking social media use to greater trust, accountability, and responsiveness in governance (Luna & Kolotouchkina, 2020; Han & Baird, 2022). The latest phase (2022–2025) integrates AI, IoT, and data analytics into strategic social-media utilization for policy innovation and crisis communication (Chi et al., 2024; Haruna et al., 2024; Machmud et al., 2024; Praratya et al., 2024). Collectively, these studies confirm social media's positive influence on two-way communication and participatory democracy, yet highlight persistent disparities due to infrastructure, institutional readiness, and sociocultural differences (Contri et al., 2023). Despite this growing global evidence, empirical studies specifically examining smart government communication through social media within the Indonesian context remain scarce. Considering Indonesia's accelerating digital transformation and its distinct bureaucratic culture, such research is crucial to contextualize how social-media-driven communication strategies can strengthen public trust and civic collaboration in local governance.

### ***Public Relations Models on Communicating with Public***

The evolution of public relations models, as proposed by James E. Grunig, has had a significant impact on the way organizations engage with their stakeholders (Grunig, 2023). Grunig's theoretical development in public relations can be traced from the traditional Public Information Model to the more contemporary Two-Way Symmetrical Communication Model. These models reflect the shifting paradigms in public relations practices.

The Public Information Model, the earliest in this progression, is characterized by a one-way flow of information from the organization to the public. It primarily aims to distribute information and maintain a favourable image, often focusing on controlled and persuasive communication. In this model, organizations show limited interest in receiving feedback or engaging in dialogue with their stakeholders. It is essentially a top-down approach.

As public relations evolved, Grunig introduced the Two-Way Asymmetrical Model, which emphasized the importance of receiving feedback from audiences. However, this feedback was used primarily for the organization's benefit, focusing on persuasion and the manipulation of public opinion. While it allowed for more interaction than the Public Information Model, it was still rooted in a somewhat self-serving approach to communication.

The pinnacle of Grunig's models is the Two-Way Symmetrical Communication Model. In this approach, organizations aim for genuine dialogue and mutual understanding between themselves and their stakeholders. It emphasizes a balanced exchange of information, where both parties actively listen and adjust their positions based on feedback. The goal is to establish long-term, mutually beneficial relationships built on trust, transparency, and empathy. This model is widely regarded as the most ethical and effective form of public relations, aligning with the ideals of responsible communication.

It underscores the shift from a one-sided, information-centric approach to a more balanced, dialogue-driven communication paradigm. It reflects the evolving understanding of public relations as a discipline that prioritizes ethical engagement, openness, and responsiveness to the concerns and needs of both organizations and their stakeholders.

Social media is an ideal medium for fostering two-way symmetrical communication between society and the government. Compared to other channels, such as submitting complaints through government websites, social media enables direct, real-time interactions between citizens and government staff without delay (Falco & Kleinhans, 2018).

### ***Society 5.0 as the Main Public in Government Public Affair on Digital Era***

The evolution of human societies from Society 1.0 to Society 5.0 represents a profound transformation driven by technological progress and socio-economic change. Society 1.0 was characterized by hunter-gatherer communities that relied on basic tools and natural resources for survival. The emergence of Society 2.0 marked the agricultural revolution, leading to the establishment of settled communities and the foundations of early civilizations (Nepal & Prajapati, 2025). The Industrial Revolution gave rise to Society 3.0, introducing mechanization, mass production, and rapid urbanization (Nepal & Prajapati, 2025). With the advent of digital technologies and the internet, Society 4.0 emerged, transforming communication, industry, and everyday life (Özden, 2022). The contemporary phase, Society 5.0, represents a paradigm shift toward a "super-smart society" that integrates cyberspace and the physical world through the use of the Internet of Things (IoT), artificial intelligence (AI), and blockchain technologies (Taruna, 2022; Pratama & Wibawa, 2022). At its core, Society 5.0 seeks to balance technological innovation with human-centered values, sustainability, and inclusivity (Sisinyize, 2024; Suárez & Paredes, 2025). The development of smart cities and intelligent infrastructure within this framework aims to improve quality of life by enabling efficient resource management, enhancing connectivity, and fostering sustainable urban environments (Nepal & Prajapati, 2025; Suárez & Paredes, 2025). This

evolution highlights humanity's continuous adaptation to technological and environmental challenges while striving for a more equitable and sustainable future.

The evolution from Society 1.0 through to Society 5.0 represents a profound transformation in how societies address governance, environmental issues, and the role of social media. Society 5.0, a concept developed in Japan, envisions a "super smart society" in which advanced technologies such as artificial intelligence (AI), the Internet of Things (IoT), and big data are integrated to solve complex social, economic, and environmental problems (Mishra, Thakur, & Singh, 2022; UNESCO, 2024). This transition is not only about technological advancement but also about creating a balanced ecosystem that promotes sustainability, inclusivity, and human-centered development (UNESCO, 2024). In this regard, the role of smart governance and social media is crucial, as they facilitate better communication, transparency, and citizen engagement in addressing environmental issues and public service challenges (Kaiser, 2024). Smart governance under Society 5.0 demands transformational leadership, citizen engagement, and robust policy frameworks to align technology with ethical values (Ardinata, Rahmat, Andres, & Waryono, 2022). The shift toward a green economy and enhanced environmental governance leverages these digital platforms for resource management, policy communication, and collaborative problem solving (Mishra et al., 2022; Kaiser, 2024). However, achieving this vision also faces significant hurdles such as infrastructure limitations, digital inequalities, and ethical concerns around privacy and security (Mishra et al., 2022). Thus, studying the deployment of social media-driven governance in the Indonesian context becomes especially important—Indonesia has unique bureaucratic, cultural, and technological particularities, and exploring how smart government communicates and engages citizens via social media would fill a critical research gap.

Citizens serve as the government's most essential public, forming the foundation of any democratic system. This relationship between citizens and the government lies at the core of representative democracy, where citizens elect officials to make decisions and policies on their behalf. Citizens are not merely passive recipients of government actions; they actively engage in shaping the nation's direction through voting, participation in civic processes, and providing feedback to government institutions (Neverauskas & Tijūnaitienė, 2007). Citizens are not simply consumers of government services but active participants in a continuous dialogue with their elected representatives. They hold the government accountable for its actions, expect transparency in decision-making, and demand responsible governance. In return, the government is expected to serve the public interest, protect individual rights, and provide essential services and infrastructure. The government's main public, the citizens, have diverse needs, preferences, and expectations. Thus, it is vital for the government to engage in two-way communication with its constituents, seeking input and feedback to create policies that reflect the broad spectrum of public interests. This interaction between the government and citizens fosters a sense of ownership and participation, reinforcing the democratic principles upon which many modern nations are built.

Moreover, in the context of urban communities, citizens' communication behavior is closely linked to communication technology. This is what we refer to as Society 5.0. Society 5.0 is a concept that envisions the next stage in the evolution of civic engagement and citizen participation in the digital era. This term builds on the idea of Web 2.0 and its emphasis on interactivity and collaboration on the internet. Citizen 5.0 represents a progressive shift toward more active, informed, and empowered citizens who play a central role in shaping their communities and the world (Apdillah, Panjaitan, Stefanny, & Surbakti, 2022). In a Society 5.0 environment, individuals are not passive recipients of government actions or corporate decisions but are highly engaged and connected. They leverage technology, social media, and digital platforms to participate in discussions, advocate for causes, and contribute to the co-creation of public policies and solutions. This level of involvement extends to issues ranging from climate change and social justice to local community development. The term "Citizen 5.0" reflects the changing dynamics of civic engagement, where people expect transparency, accountability, and responsiveness from both government and private sectors. This new era of citizenship encourages individuals to leverage their collective power to hold institutions accountable, demand ethical conduct, and work collaboratively for positive social change. As technology continues to advance, Citizen 5.0 embodies a future in which citizens are more empowered and interconnected than ever before, playing a pivotal role in shaping the world they aspire to live in.

### ***Green Initiatives***

The concept of green initiatives encompasses a wide range of strategies and practices designed to promote environmental sustainability and minimize the ecological footprint of human activities across multiple sectors. These initiatives are integral to achieving the United Nations Sustainable Development Goals (SDGs) by fostering responsible consumption, energy efficiency, and sustainable resource management. In various contexts, ranging from libraries and educational institutions to IT industries and national development programs, green initiatives serve both environmental and socio-economic functions. For instance, libraries in South South Nigeria have implemented eco-friendly practices such as renewable energy adoption and sustainable site management to mitigate ecological degradation, though they still face challenges like inadequate funding and limited awareness (David-West & Wali, 2024). Similarly, Green Human Resource Management (GHRM) in the IT sector integrates green recruitment, training, and workplace practices that simultaneously improve corporate sustainability and employee engagement (V. J. & T., 2020). In the business realm, green marketing initiatives promote products with recyclable materials and eco-friendly packaging, enhancing companies' market competitiveness among environmentally conscious consumers (Singh & Sharma, 2020; Kaur, 2017). On a macro level, countries such as Iraq are transitioning toward a green economy through programs like the green belt initiative, aimed at improving waste management and increasing urban green spaces (Hamad, 2022). However, these initiatives face persistent obstacles including limited awareness, insufficient

funding, and weak regulatory frameworks (Tshivhase & Bisschoff, 2023). Overcoming these challenges requires cross-sector collaboration, stronger institutional support, and greater public participation. Ultimately, in the context of smart governance, studying green initiatives, particularly within developing nations such as Indonesia, is essential. Examining how local governments leverage digital communication and social media to promote sustainable practices, like community-based waste management, fills an important research gap and highlights how participatory technology can enhance environmental accountability in the digital era.

## METHODOLOGY

Netnography is a dynamic and innovative methodology that has gained prominence in the field of social research, particularly in the study of online communities and digital cultures (Costello, Witney, & Bradshaw, 2012). As a combination of “internet” and “ethnography,” netnography is designed to explore the intricacies of online interactions, social behaviors, and cultural phenomena. Researchers employing this method immerse themselves in digital spaces—such as social media platforms, forums, or virtual communities to observe, analyze, and understand the dynamics, values, and norms that shape these online environments.

There are four key processes in conducting netnography: determining user characteristics, identifying and selecting communities, observing and collecting data, and analyzing and interpreting findings (Füller, Jawecki, & Mühlbacher, 2007).

First, we defined digital conversations on X (formerly Twitter), specifically focusing on the account @azinggih, who was serving as the acting Mayor of Yogyakarta at the time.

**Table 1. Community Selection**

Community	@azinggih Following	@azinggih Following Local Media	@azinggih Follower	Local Media Follow @azinggih
@azinggih	62 accounts	@Merapi_Uncover Following 915 Follower 226.3k	385 accounts	@JogjaUpdate Following 62.3k Followers 1M

The selection of this account was based on its active engagement in conversations with the public, which included the exchange of texts, pictures, and videos, as well as responses from citizens. The account @azinggih serves as a representation of the government.

Second, we collected other accounts that interacted with @azinggih over a four-month period, from July to October 2023. All digital conversations were sorted to focus on specific discussions between @azinggih and citizens regarding waste management in Yogyakarta. The researchers conducted participatory observation and engaged in conversations within the @azinggih community, as well as with local media and the public.

In the practice of netnography, data collection is a multifaceted process that involves systematically gathering and analyzing digital content from various online sources (Costello, Witney, & Bradshaw, 2012). Researchers rely on a wide range of online platforms—including social media, forums, blogs, and virtual communities—to extract valuable data that helps them better understand online behaviors and interactions. This data collection often includes scraping texts, images, videos, and other media, all while respecting ethical considerations and user privacy.

There were 28 posts on the @azinggih account related to waste management. The third and fourth steps of the netnographic process are presented in the next subchapter.

## RESULTS AND DISCUSSION

The study uncovers a dynamic landscape of reciprocal communication between government agencies and citizens, where social media platforms serve as the linchpin for information exchange, feedback mechanisms, and collaborative problem-solving. The conversations cover several areas, ranging from public information dissemination and citizen requests to government responses and actions.

**Table 2. Conversational Topics**

Topic	Discussion	Communicator	Communicant	%
Requirement to Clean Waste on Public Site	Citizen Request, Government Action	Public	Government	79
Digital Public Engagement	Citizen Request	Public	Government	4
Yogyakarta Government Program for Waste Management	Public Information	Government	Public	7
Public Disposal Site Information	Public Information	Government	Public	7
Waste Management	Citizen Request	Public	Government	4

Source: X

Two-way communication between the government and the public is classified into several topics and discussions. The initiators of these conversations can be either the public or the government. The public is mostly concerned about the growing piles of waste in open areas, which originate from the residents of the city. During the first month of the main waste site's closure, information regarding the alternative waste disposal sites was not widely known among the public.



Figure 1. Example of a Post: Citizen Request, Government Action  
Source: X

Our findings demonstrate that social media enhances government–citizen communication, with local digital media acting as amplifiers of citizens’ voices and opinion leaders serving as catalysts for information exchange.

**Table 3. Conversation Between @Azzinggih with Local Media Account on His Repost Quotation**

No	@Merapi Uncover				@Jogja24Jam				@JogjaUpdate			
	Reply	Repost	Like	View	Reply	Repost	Like	View	Reply	Repost	Like	View
6	-	-	-	-	-	-	-	-	6	2	14	21k
8	-	-	-	-	-	-	-	-	1	1	6	2.7k
10	3	2	9	2.6k	-	-	-	-	-	-	-	-
12		1	2	2k								
14	1	-	2	557	-	-	-	-	-	-	-	-
17	-	-	1	445	-	-	-	-	-	-	-	-
20	1	-	2	625	-	-	-	-	-	-	-	-
21	-	-	-	647	-	-	-	-	-	-	-	-

No	@Merapi Uncover				@Jogja24Jam				@JogjaUpdate			
	Reply	Repost	Like	View	Reply	Repost	Like	View	Reply	Repost	Like	View
22	6	-	2	903	-	-	-	-	-	-	-	-
23	4	10	19	3.7k	-	-	-	-	-	-	-	-
24	-	-	-	-	4	5	6	653	-	-	-	-
25	6	3	8	2.1k	-	-	-	-	-	-	-	-
26	1	3	3	512	4	5	6	653	-	-	-	-
27	4	3	5	2.2k	-	-	-	-	-	-	-	-
28	4	3	3	2k	-	-	-	-	-	-	-	-

Source: X

Table 3 shows how @azinggih, representing the government, connected with local digital media through reposted quotations. On the other hand, the local digital media accounts were followed by a large number of public users who replied, reposted, liked, and viewed the original posts. The act of @azinggih reposting reports from local digital media represents a smart choice of communication channel. The government disseminates information about its waste management responsibilities through local digital media to reach a wider public more interactively than through conventional media, such as broadcast channels.



Figure 2. Example of Communication between Government, Local Digital Media and the Public

Source: X

The results of digital conversations, combined with real government actions, are evidenced by the number of public complaints:

**Table 4. Digital Complaint via X per Month**

Month	Post
July	3
August	13
September	5
October	6

Source: X

Furthermore, we analyze and interpret the data using several classifications.

***Smart Government in Digital Era: Two Way Symmetrical Communication Model***

In the realm of government public relations, the evolution from the Public Information Model to the Two-Way Symmetrical Communication Model, as envisioned by James E. Grunig, has brought about significant changes in how government agencies interact with their constituents and the broader public (Grunig, 2023). This shift mirrors the broader transformation of the public relations field within the government sector.

The Public Information Model, which was often prominent in the early stages of government public relations, was characterized by a top-down approach in which government agencies disseminated information to the public, long before the digital era. The primary focus was on conveying government policies, actions, and initiatives. While this model can still be seen in certain government communications, it is increasingly recognized as inadequate for fostering meaningful engagement with citizens.

As smart governments have recognized the importance of two-way communication with their constituents, they have gradually shifted toward the Two-Way Asymmetrical Model. In this model, government agencies not only provide information but also seek feedback from the public. For example, the @azzinggih account reposts its actions in response to public requests and remains open for comments, feedback, and further inquiries.

The most progressive model in the context of government public relations is the Two-Way Symmetrical Communication Model. In this model, smart government agencies aim for genuine dialogue with citizens and stakeholders. The focus is on fostering mutual understanding, trust, and collaboration. Government agencies actively listen to public feedback, adjust policies and actions based on that feedback, and strive to build long-term, mutually beneficial relationships with their constituents. This approach aligns with the principles of open, transparent, and ethical government communication.

This represents a significant step for smart government toward more effective and ethical engagement with citizens. It emphasizes the importance of authentic dialogue, transparency, and responsiveness to public concerns and needs. By adopting this model, smart government agencies can enhance their credibility and build stronger relationships with the public they serve—ultimately contributing to more effective governance and decision-making in empowering citizens to engage openly.

It is not only about collecting data from the public but also about engaging in discussions, identifying solutions, and providing evidence of how those solutions are

implemented. Transparency is essential for both parties the public and the government. Reciprocal communication is made possible through symmetrical communication channels that allow interactive participation from both sides.

Here, the characteristics of social media accommodate two-way symmetrical communication, allowing both parties to converse equally on the same platform without hierarchical structures or tiered procedures typical of conventional offices. The transformation of discussion from conventional bureaucracy to a fully two-way symmetrical interaction on social media represents an alternative for sustainable problem-solving in the era of smart government, while maintaining a positive reputation among society.

### ***Citizen Green Initiatives***

Society 5.0 fosters heightened public awareness and active involvement in government affairs. In this context, citizens engage in intense discussions about waste management as part of broader green initiatives. Citizen Green Initiatives, which encompass the relationship between environmentally conscious urban citizens and their local governments, play a pivotal role in promoting sustainability and improving the quality of life in cities. These initiatives represent a growing trend in which citizens take an active role in addressing environmental issues and advocating for greener policies within their communities. The partnership between citizens and local governments is therefore critical in shaping the future of urban sustainability.

In recent years, urban residents have become increasingly aware of environmental challenges such as air and water pollution, climate change, and waste management. In response, they have initiated various green projects and campaigns — ranging from community clean-ups and tree planting to advocating for sustainable transportation and renewable energy sources. These initiatives reflect a shared commitment to creating cleaner and more sustainable urban environments.

Local governments play a crucial role in facilitating and supporting these citizen-led green initiatives. They possess the resources and regulatory authority necessary to implement large-scale environmental changes. By collaborating with environmentally conscious citizens, governments can harness local knowledge, enthusiasm, and expertise. Such partnerships often result in the creation of more effective and practical sustainability policies and programs, as citizens provide valuable insights into the specific needs and concerns of their communities.

Furthermore, the relationship between citizen-led green initiatives and local governments can lead to a more responsive and accountable governance system. When governments actively engage with citizens and involve them in decision-making processes related to sustainability, it fosters a sense of ownership and empowerment among the people. This, in turn, can lead to more effective and equitable environmental policies that genuinely reflect the collective will of the community.

This phenomenon signifies a growing shift toward more inclusive, participatory, and community-driven approaches to addressing environmental challenges. When citizens and local governments work hand in hand, they can make cities more environmentally responsible, resilient, and livable for both current and future generations. This collaborative effort represents a promising pathway toward creating greener and more sustainable urban environments.

### *Digital Mass Media as a Dynamic Catalisyst*

Digital mass media—particularly when harnessed through social media platforms—has emerged as a transformative catalyst in the dynamic relationship between governments and citizens, creating immersive and interactive forms of engagement that redefine governance, communication, and participation. The immersive nature of these platforms has enabled governments and citizens to engage in more direct, immediate, and personalized interactions, thus revolutionizing the way they communicate.

There were 15 posts, or 50% of the total, that involve digital mass media in connecting citizens with government officials. With massive numbers of followers and viewers, mass media can exert powerful pressure on the government to respond immediately to public concerns. On the other hand, mass media also functions as an extension of the government, communicating transparently with the public about solutions to public problems. The mayor frequently reposts quotations of public requests through his personal account or digital mass media, often accompanied by pictures, videos, or text updates illustrating his actions in addressing those issues.

Social media, as a subset of digital mass media, offers an immersive experience by providing multi-sensory engagement with information. Through the use of text, images, videos, live streams, and interactive features, governments can deliver information to citizens in a compelling and easily digestible format. This visual and interactive richness captures citizens' attention, making it more likely for them to engage with and retain the information shared by the government.

Moreover, the real-time nature of social media allows for instantaneous and immersive communication. Citizens can participate in live discussions, debates, and dialogues with government representatives, providing immediate feedback and seeking clarification. This responsive and interactive engagement fosters a sense of active participation, where citizens are not passive recipients of information but active contributors to the discourse—cultivating a sense of ownership and involvement in governance processes.

The immersive quality of social media also extends to civic engagement and mobilization efforts. Citizens can become part of immersive campaigns and online movements designed to draw attention to various issues. Governments can utilize the viral nature of social media to amplify their messages, while citizens can feel deeply connected to causes and actions—creating a sense of shared mission and collective responsibility in addressing public problems.

## CONCLUSION

The netnographic analysis reveals collaborative efforts between smart governments and society toward more efficient and eco-friendly waste management strategies as one of the major urban problems. Smart governments require two-way symmetrical communication to establish immersive interactions with the public. The representation of digital mass media as a bridge between the public and the government compels the government to become more responsive to public needs and to demonstrate transparently how these needs are being addressed. Digital mass media, channelled through immersive social media platforms, has redefined the government–citizen relationship by offering multi-sensory engagement, real-time interaction, and dynamic civic mobilization. This immersive experience fosters a more informed, engaged, and empowered citizenry, while encouraging governments to adapt and respond to the evolving demands of the digital age ultimately revitalizing the participatory dimension of democratic governance. Smart governments demonstrate their responsiveness by choosing two-way symmetrical communication channels to handle urgent public issues. Thus, governments are able to more effectively support green initiatives initiated by the public.

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