

Digital Platforms and Sustainable Urban Policy: Bridging Citizen Initiatives and Policymakers' Perspectives in Hengelo

Emre Adali, 2306913, B-MST

19-08-2024

Faculty of Behavioural, Management and Social Sciences (BMS)

1st Supervisor: Dr. I. Tempels Moreno Pessoa

2nd Supervisor: Dr. P.J. Klok

Words: 10471

Pages: 29

**UNIVERSITY
OF TWENTE.**

Abstract

This thesis explores the influence of social media on policymaking processes in Hengelo, particularly in sustainable urban development. The thesis evaluates the effective integration of social media into governance by conducting qualitative interviews with policymakers and leaders of citizen initiatives and by analysing digital interactions. Findings indicate that while social media enhances civic involvement, its use is predominantly limited, and more structured digital tools like the Hengelo Panel are preferred for collecting actionable citizen input. The effectiveness of digital engagement depends on issue relevance, method clarity, and integration with traditional engagement strategies. Despite the role of digital platforms in information dissemination and sentiment analysis, their direct impact on policy decisions is not as significant as they could be, this emphasizes on the rather supplementary role of these platforms in engagement strategies. This study underscores the potential and limitations of digital platforms in shaping urban governance, offering insights for enhancing policy responsiveness through digital civic engagement.

Table of Contents

Abstract.....	2
Introduction.....	4
Theory.....	7
Methods.....	12
Methods of Data Collection.....	12
Methods of Data Analysis.....	14
Analysis.....	16
Conclusion.....	23
References.....	25
Appendix.....	27
Appendix A: Interview Guide.....	27
Appendix B: Atlas.TI coding scheme.....	29

Introduction

In the emerging landscape of urban development, the embedding of governance frameworks with digital platforms offers an opportunity for transformation in broadening civic engagement and advancing sustainable urban policies. This understanding sets a new path for exploring the interactions that have emerged between digital competence and ecological awareness at urban levels (Gil et al., 2019). The title of this thesis is “Digital Platforms and Sustainable Urban Policy: Bridging Citizen Initiatives and Policymakers' Perspectives in Hengelo.” This research will explore how digital engagement can play its role as an instigator for sustainable urban development, with the city of Hengelo in the Netherlands being a primary focus. The study looks towards the creation of an understanding of how social media platforms can utilise the involvement of citizens towards sustainable urban co-governance and thus bridge the gap between Hengelo's governance methods and the untapped strength among its citizens for environmental sustainability initiatives (Janowski et al. 2018; Gil et al., 2019; Wilson & Tewdwr-Jones, 2021).

The significance of this research lies in its efforts to understand the complex relationship between digital platforms, civic engagement, and urban governance. Through investigating how social media influences initiatives in engaging and being practical, this research sought to identify the main barriers and facilitators in leveraging digital platforms for sustainable urban development (De Siqueira et al., 2022).

This theoretical contribution highlights the situated and applied nature of digital platforms in urban settings, as demonstrated through their application in the case of Hengelo. In this sense, findings will be precious for academic discussions towards sustainability and the adoption of ways that include the use of digital engagement by the municipality towards environmental excellence. This paper sheds light on how digital platforms could impact urban habitats and underlines their potential to enhance inclusiveness and citizen engagement (Janowski et al., 2018;). It points out how revolutionary these tools might be in improving citizens' voices, nudging societies towards more transparency, and making urban governance more responsive (Gil et al., 2019). From these various lessons are pulled values for diverse urban settings that may serve policy, planning, and community leadership (De Sequeira et al., 2022).

The central research question that guides the current research study is: To what extent are citizens' social media activities in Hengelo effectively integrated into the municipality's governance processes? The way to answer this central question is to subdivide the study into more specific sub-questions, as follows: (i) What are the determinants of the effectiveness of citizen engagement? (ii) How do digital platforms facilitate the means for engagement? (iii) In what ways will civic participation be transformed into actionable insights for policymakers of the municipality of Hengelo? (Janowski et al., 2018; Karhu, Gustafsson, & Lyytinen, 2018).

This thesis follows a qualitative approach and makes use of a case study design to delve into the complex dynamics of digital civic participation in Hengelo. Besides, the information from these digital interactions on social media platforms is analysed against that obtained from in-depth interviews with policymakers and leaders of citizen initiatives to arrive at a nuanced understanding of the dynamics, experiences, and perspectives within Hengelo's digital civic landscape (Janowski et al., 2018; De Siqueira et al., 2022). This study hypothesises that a positive relationship will be found between the volume and intensity of citizen-led social media campaigns and increased effectiveness in municipal policy development and decision-making (Gil et al., 2019; Wilson & Tewdwr-Jones, 2021).

The theoretical framework includes digital empowerment, civic initiatives, and urban planning. Digital platforms are seen as catalysts for raising citizen engagement and influencing urban policy, particularly for environmental sustainability. This framework encompasses theories on digital empowerment, public engagement via social media, grassroots digital governance, and cross-disciplinary empowerment perspectives. It highlights digital transformation, mobile technology, and redefined digital governance as keys to increased civic participation in sustainable development (Janowski et al., 2018; Gil et al., 2019; Wilson & Tewdwr-Jones, 2018; De Siqueira et al., 2022; Karhu Gustafsson & Lyytinen, 2018).

This research has a structure to take the reader through the journey of the research: it starts with the introduction, setting the stage for the study; it continues with a historical context and justification section regarding urban development in Hengelo and the emerging role of digital platforms in civic engagement (Janowski et al., 2018; Gil et al., 2019). In the literature review section, the theoretical foundation and related works in digital empowerment and urban sustainability are reviewed (Wilson & Tewdwr-Jones, 2018; Karhu, Gustafsson, & Lyytinen, 2018). The theoretical framework adopted in this research outlines digital transformation for civic participation, while the methodology specifies the design, type of participants, data collection, and analysis plan (De Siqueira et al., 2022). The subsequent findings section reports the results of the case study to show how digital platforms influence citizen engagement (Janowski et al., 2018). The discussion interprets the findings vis-à-vis the theoretical framework and contributes insights into the role of digital platforms in urban governance (Gil et al., 2019). The thesis concludes with recommendations and integration strategies for leveraging civic engagement to enhance policy-making, followed by a conclusion that summarises the essential findings and reflects on the study's contributions to urban sustainability (Wilson & Tewdwr-Jones, 2018; Karhu, Gustafsson, & Lyytinen, 2018).

The studies by Janowski, Estevez, and Baguma (2018) and Wilson and Tewdwr-Jones (2021) further explain the innovations in urban development concerning digital engagement. Janowski et al. (2018) discuss platform governance for sustainable development, which reshapes the interaction between citizens and administration in the digital space. In another work, Wilson and Tewdwr-Jones (2021), in their article on digital participatory planning, discuss how the use of digital tools is enhancing civic participation in attaining more sustainable urban policy. Considered collectively, these articles underscore the potential of platforms in the digital transformation of urban governance and in fostering community involvement. As we transit into the age of massive intrusion of technology into our everyday lives, from communication to community engagement (Mamusa, 2018), this research suggests that perhaps social media platforms go beyond just simple socialisation but, on the contrary, play an extended role in environmental awareness and sustainability (Wilson & Tewdwr-Jones, 2018).

This study is centred on Hengelo, motivated by the author's close link to it. It gives a distinct understanding of its urban and natural features. The viewpoint is unique because it comes from personal experience, but unintentional bias can also impact how stories are told and data is interpreted (Gil et al., 2019). The study shows that new media can have an effect on sustainable urban policy through community-based activism (Wilson & Tewdwr-Jones, 2018). The insights about Hengelo, even though they are specific to this place, can still encourage similar contemplations in other urban settings (Karhu et al., 2018).

This thesis narrative is built upon an in-depth qualitative study of the nexus between digital platforms and citizen-led environmental actions (Janowski et al., 2018). It narrates a story of change and resilience, showing how digital tools can fill historical gaps between traditional governance models and those adept in technology (De Siqueira et al., 2022). This research is not just a contribution to the

academic debate on sustainability but can be interpreted as a call to action: the use of digital involvement to achieve better environmental outcomes within the municipality (Gil et al., 2019).

While this thesis investigates the complexity of these relationships, it also uncovers an unobserved side of Hengelo's inhabitants. It shows a lively picture of how social media can go beyond its usual function, becoming a trigger for alteration, bringing people together, and creating group dedication towards the environment (Wilson & Tewdwr-Jones, 2018). This is not only about making spaces green or decreasing carbon footprints; it is also a way to redefine what civic involvement and participation mean in digital times (Rehm et al., 2021).

Furthermore, this exploration exemplifies how digitalization could change processes and outcomes. It illustrates that digital platforms can amplify voices, stimulate actions more effectively, and provide equal opportunities for everyone in the process of developing a sustainable city (Janowski et al., 2018). This is a call to witness the emergence of a vibrant community in Hengelo, united by a common goal: environmental sustainability.

Theory

In the current discourse of city growth, using digital technologies is seen as a very important thing to combine with making sure that cities can keep growing sustainably and improve how people take part in their community life. This review of literature wants to give an understanding of theories related to digital power and city sustainability, bringing together multiple academic perspectives. It talks about how digitalization changes urban settings, focusing on its impact on improving community involvement, governance methods, and sustainable habits within cities. This review emphasises the change-making capability of digital technologies in forming urban spaces that are more sustainable, inclusive, and participatory (Hovik & Giannoumis, 2022).

This paper examines the correlation between digital platforms, civic participation, and urban sustainability in Hengelo. The primary focus is on using digital empowerment as a crucial approach to improving civic involvement.

As Kamruzzaman (2019) pointed out, the key theoretical elements needed to understand the straightforward process through which digital platforms increase civic involvement and impact urban policy are outlined.

Digital Empowerment in Urban Contexts

The concept of digital empowerment in urban areas is an active idea where technology is used to increase the abilities of people and groups. This enables individuals and groups to actively participate in the governance and development of cities. For making urban planning and decision processes more democratic, this type of empowerment is very important. It lets a wider range of community members have their say, incorporating different viewpoints as well as needs into plans for development that are made by local bodies or governments (De Siqueira et al., 2022). The power of digital means helps with many activities, like getting information or talking about policies; it creates a citizen group that is both involved and knowledgeable (De Siqueira et al., 2022).

Empowerment through digital tools affects how city dwellers see and interact with their surroundings. Mobile apps, internet forums, and interactive maps can change people from being passive city dwellers into involved contributors who have an interest in their local area; this change improves democratic procedure while also aiding better reaction time and adaptability of urban management methods (Kleinmans et al., 2015).

Urban Sustainability and Technology

Urban sustainability is seen in this thesis as how well urban systems can keep up and improve the quality of life in environmental, economic, and social aspects without harming the ability of coming generations to fulfil their needs. In this sense, digital technologies are crucial for making sustainable progress in cities by improving functions such as transportation services (smart grids), energy use (intelligent transport systems), and managing waste better using Internet of Things (IoT)-enabled infrastructure, among other things like these mentioned before—all this aiming towards a more environment-friendly future where resources are used efficiently while enhancing liveability within cities themselves (Gil et al., 2019; Bibri, 2020).

Urban planning and management are improved by including digital technologies, making resource use more efficient, providing better service delivery, and enhancing the overall quality of life. For example, smart sensors can monitor air quality and traffic in real time, providing data that helps make instant changes on the ground or plan for future strategies. Digital advancements help not only with

environmental stability but also economic effectiveness and social welfare, creating smarter cities where people live better lives (Bibri 2020).

Enhancing Civic Engagement through Digital Platforms

Digital places do greatly boost civic involvement by making available tools for communication, working together, and sharing information between citizens, as well as with those who hold power in government. Such places also assist in improving transparency and responsibility towards governance, leading more people to participate in civic activities. The ease of using digital tools reduces the difficulty of participating, especially for younger age groups who are better with technology skills and more likely to get involved if they can do it through familiar digital means (Karhu et al., 2018; Wilson & Tewdwr-Jones, 2021).

Additionally, digital platforms help citizens surpass the limitations of place and time that conventionally restrict civic involvement. By using online discussion groups, social networking sites, and virtual community meetings, citizens can talk about matters, cast votes, or see council meetings live without needing a physical presence (De Siqueira et al., 2022). This expansion in the participation area not only broadens the participant's range but also enhances the engagement's depth by allowing more adaptable and continuous interaction between the government and its people (De Siqueira et al., 2022).

Citizen initiatives are essential for the role of urban policy-making since they give people and groups an immediate means to influence decisions that affect them personally. These initiatives often start as local movements highlighting community needs and hopes. This results in urban policies more tailored to the community needs and more effective in dealing with local issues. Citizens' actions in the field of urban sustainability can be influential. For example, the impacts of local projects that focus on renewable energy or recycling efforts within a community among local people can address definite environmental problems while contributing to the city's wider sustainability goals (Gil et al., 2019).

Citizens' feedback in policymaking enhances the respectability and trustworthiness of decisions. When people see that their involvement has an actual influence on policy results, it boosts their confidence in public establishments. This improved faith promotes a stronger and lasting dedication to civic activities, forming a positive loop where participation leads to betterment within urban management (Karhu, Gustafsson, & Lyytinen, 2018).

The Significance of Citizen Initiatives in Urban Policy-Making

Citizens' digital participation has a changing effect on the progress of social sustainability in urban settings. The involvement of a wider population in sustainability actions through digital channels can boost social unity or harmony within cities, making sure that efforts towards sustainability are accepted and put into practice by many people. The inclusiveness characteristic of participation in digital activities assists in closing social gaps, leading to an even distribution of resources and chances inside urban environments (Bouzguenda et al., 2019).

Digital platforms are making governance more decentralised, providing a different method for managing city development. These platforms encourage governance structures that are closer and quicker to respond, allowing for better handling of particular local problems and opportunities in cities. The shift towards decentralisation of decision-making processes aids in empowering local communities by offering them a larger role in shaping their surroundings as per their distinct situations and requirements (Janowski et al., 2018).

Conceptualising Digital Transformation for Civic Participation

The digital transformation of information and communication technologies (ICT), ecosystems for e-commerce, tools for urban planning and smart transit solutions may increase citizen engagement in a sustainable city development process. For instance, Leong et al. (2016) highlight how ICT have transformed rural China into a thriving e-commerce ecosystem, contributing to both the growth of rural areas and the maintenance of environmentally sustainable practices. De Siqueira et al. (2022) also emphasize the importance of digital tools in giving citizens power to actively participate in urban planning and sustainability work. These understandings show how digital changes can fill the divide between urban and rural areas, encouraging inclusiveness and lively participation in sustainability actions. In line with this idea, Gil et al. (2019) discussed how digitalization affects urban mobility in two ways: as a powerful force for change and also as a risk. Good governance is crucial to managing these risks and achieving sustainable results.

The challenges in governance related to smart mobility highlight the importance of having adaptable systems that can support digital changes while reducing negative outcomes. This viewpoint is critical to understanding how to construct governance outlines that enable citizens to promote environmental endurance and make informed decisions about urban mobility (Falco and Kleinhans, 2018a, 2018b). They further investigate the historical setting of urban growth in Hengelo along with the rising role played by digital platforms for civic participation. They emphasise a thorough examination of how digital platforms can fill the void between citizen initiatives and designing policy. This thesis attempts to fill this gap by using a qualitative research method for understanding the intricate aspects of digital civic participation in Hengelo.

Mobile Technology and Urban Engagement

For enhancing civic engagement and environmental advocacy, mobile technology plays a crucial role. Ingrams (2015) examines how mobile phones influence civic behaviour in South Africa and reveals that both basic and smartphone use can boost community engagement. This research underscores the significance of incorporating mobile connectivity into urban sustainability strategies, particularly at the grassroots level. Active Voice: Social media and mobile technologies foster citizen engagement and self-organisation in participatory urban planning, according to Kleinhans et al. (2015). They argue that these technologies significantly enhance public participation by providing new avenues for engagement and collaboration, lowering barriers to participation, and giving citizens accessible tools to engage in sustainability initiatives.

The viewpoint that digital platforms can encourage decentralised governance and cooperative creation of knowledge is backed up by Tappert et al.'s (2024) findings. The use of mobile technology in urban engagement plans gets additional validation from Chen et al.'s (2020) work, which highlights how mobile apps could be utilised for collecting up-to-date information about environmental changes and inputs from citizens. Thus, this data can be used for making policy decisions and improving the adaptability of systems managing urban governance.

Redefining digital governance for sustainable mobility

According to Gil et al. (2019), the implementation of digitalization in urban mobility has the potential to revolutionise the field through collaboration, electrification, and automation. However, this development also poses certain risks that necessitate effective public policies to ensure sustainable results. The authors further consider the challenges of governance in smart mobility, stressing the importance of adaptable systems that promote technological advancements while preventing any adverse impacts. Understanding how to construct governance frameworks that utilise digital

technologies to empower citizens, promote environmental sustainability, and facilitate informed urban mobility decisions is imperative from this perspective.

In the realm of mobility-as-a-service (MaaS), Servou et al. (2023) delve into the interplay between data, AI, and governance. They bring forth a multi-level framework for understanding how hybrid decision-making shapes sustainable mobility along with its complex potentials. This underlines the need to include sustainability goals when creating and applying digital mobility solutions, guaranteeing that these technologies help in sustainable urban advancement.

The study by Peng et al. (2023) emphasises the necessity of combining regulatory structures for legitimacy and impact. They successfully illustrate how digitalization affects sustainability decision-making, particularly by highlighting how environmental regulations can moderate these impacts. It shows that it is essential to include these kinds of regulatory systems, not just for making digital transformation more efficient but also for confirming its environmental correctness.

Cross-Disciplinary Perspectives on Empowerment

Theories of empowerment from various academic fields provide a useful understanding of the role of digital platforms in civic involvement and city planning. The studies by Siqueira et al. (2022) and Rehm et al. (2023) show how these digital platforms can help citizens support urban sustainability efforts effectively. These viewpoints emphasise the crucial role of digital tools in empowering citizens to actively engage with urban governance.

Tappert et al. (2024) suggest that using digital transformation could assist in addressing problems related to citizen involvement and enhance collaborative methods of developing cities. They believe that digital instruments can make the decision-making process more democratic, promote wider participation in urban management, and aid in incorporating citizen input into planning procedures. The discoveries of Hasler et al. (2017) back up this view, emphasising how essential sustainable digital technologies are for assisting socio-ecological transformation processes.

The viewpoint of Irvin and Stansbury (2004) gives us a critical perspective on how community participation can be effective in some situations but not in others. They stress the importance of having governance structures that are flexible enough to adapt to the particular requirements and preparedness of a community. This perspective is crucial for understanding how to design inclusive and successful digital transformation initiatives.

Effectiveness of the Decision-Making Process in Digital Transformation for Civic Participation and Sustainability

When evaluating the transition to digital transformations, it is crucial to consider how effectively the decision-making processes are working. After interpreting the theories with regards to this subject, the following assessment can be made:

Evaluating Community Participation and Its Impact: Irvin & Stansbury (2004) bring to light that the success of community participation could vary with situation, implying that to be effective in digital transformation, it must adjust accordingly through adaptive governance structures.

Reconciling Managerial Strategies and Participatory Practices: Wik, Curto-Millet, & Lindroth (2023) highlight that for genuine involvement, it is crucial to align managerial assumptions with participatory practices.

Regulatory Frameworks: A recent study by Peng et al. (2023) showed that the inclusion of environmental regulations can enhance both effectiveness and legitimacy in digital transformation efforts.

Problems with IT Security and Skills: Rupeika-Apoga and Petrovska (2022) state that the main problems that may hamper digital movements are IT security and a lack of experts.

Integrating these elements into the evaluation of digital transformation efforts is critical for understanding their impact on civic participation and sustainability. The study seeks to investigate the effectiveness of such efforts in order to understand how digital platforms can improve civic involvement and shape urban policy.

This perspective combines various viewpoints to provide a comprehensive understanding of how digital platforms could enhance civic involvement and influence urban policy in Hengelo. The investigation delves into the role of digital transformation, mobile technology, and digital governance, incorporating theories of empowerment. This structure not only addresses the research questions but also lays the groundwork for future investigations into how these platforms could support citizen-led initiatives aimed at promoting city sustainability. The knowledge gained from this study will contribute to a broader conversation about electronic involvement and sustainable town progress.

This study investigates how digital tools like social media and other digital engagement methods impact citizen engagement, policymaking and participation. This qualitative investigation examines the interaction between traditional governance models and tech-savvy citizens to understand the ways these tools support democratic processes. This dissertation reviews citizen engagement, how digital platforms can support engagement, and how civic participation can be turned into concrete data for policymakers in Hengelo.

Methods

This chapter describes the research methods in the study, explains why these particular methods were chosen, and outlines data collection and analysis to investigate the impact of social media on policymaking within Hengelo. This should provide a map of step-by-step systematic moves through which the research questions would be addressed to ensure the results are coherent, reliable, and valid (Glimmerveen, 2020).

This study uses a qualitative case study design, concentrating on Hengelo. Hengelo is situated in the eastern part of the Netherlands, and it makes for an appropriate case because this city shows a commitment to environmental sustainability while also being open to digital technologies. These characteristics put Hengelo in a position to explore how citizens' involvement intersects with the sustainable management of urban areas.

Hengelo's historical background, marked by industrialization, rising population numbers, and evolving environmental concerns, has influenced the trajectory of its urban development. Hengelo has a strong history of industrial activity. This means that the industrial past has had a significant impact on the environment. In more recent times, Hengelo sees digital platforms as having potential for boosting citizen involvement and affecting policy decisions, especially in sustainability efforts. The municipality has been very active in encouraging the use of social media and other digital tools, which has allowed residents to participate more readily in discussions about urban planning and environmental sustainability.

This study looks into the workings of digital civic involvement in Hengelo. It focuses on understanding what factors influence the effectiveness of citizen participation, how digital platforms either help or hinder engagement, and the processes that transform social media inputs into policy insights that can be acted upon. The Hengelo case is unique because it gives a chance to study these dynamics in real-life situations, providing useful knowledge for other towns that want to use digital technology for long-term urban management.

Methods of Data Collection

The study used two main methods to gather comprehensive data: semi-structured interviews and analysis of digital interactions on social media applications.

Interviews with policymakers

11 people participated in semi-structured interviews (6 from the municipality and 5 citizens). These participants included municipal policymakers, leaders of citizen initiatives, and individuals who actively used social media for sustainability activities. The interviews were conducted using a flexible format centred around a series of open-ended queries that aim to prompt thorough answers tied to the study's sub-questions. The interviews that were held with the policymakers had more in-depth questions, revolving around how citizen initiatives were transformed into actionable insights and policies (see Appendix A). The questions asked during the interview were also transcribed in Dutch. After this, both the transcripts and questions from the interview were translated into English.

The interviews permitted a comprehensive examination of different investigations. Among other things, these include the factors that effectively influenced citizens to participate, the role of social media platforms in promoting or preventing engagement, the impact of social media on resident

involvement with sustainability campaigns, and the ways in which policymakers applied the insights they gained from participating on social media sites. Additionally, it inspected the systems for converting these insights into useful policies and ensured they resulted in effective decisions.

The interview questions were structured to cover the following areas:

Citizen Involvement: To understand the reasons why citizens in Hengelo participate in sustainability initiatives via social media, as well as identify significant elements that make citizen involvement successful, Questions explored participants' motivations, experiences, and views on how their involvement affected things.

Facilitating and impeding factors: This section investigated how social media platforms influenced citizen participation. Specifically, it examined features of such platforms that participants found challenging or helpful. The study investigated which components of the platform design and functionality enticed or even discouraged their involvement. Individuals shared their experiences utilizing social media for civic engagement, discussing what worked and what did not work effectively.

Influence on Participation: This section investigated how social media platforms influenced citizen participation. Specifically, it examined features of such platforms that participants found challenging or helpful. The study investigated which components of the platform design and functionality enticed or even discouraged their involvement. Individuals shared their experiences utilizing social media for civic engagement, discussing what worked and what did not work effectively.

Actionable Insight: This was about investigating how policymakers used feedback and participation from social media, as well as the process of converting inputs from social media into policy decisions. For this, the participants were requested to give instances where insights from social media impacted a policy.

Mechanisms for Policy Decisions: Mechanisms for policy decisions: This section investigates how civic engagement via digital platforms influences Policy Decisions in Hengelo. The research ensured consistency between the variables (extent of citizen participation and responsiveness of policymakers) and research questions. This consistency was crucial in determining whether and how digital platforms translate citizen input into policy decisions by demonstrating a causal link between collected data and study goals.

interviews with citizens

To gather insights on how citizens were engaged with sustainability initiatives and how these interactions influenced policymaking, semi-structured interviews were conducted with representatives from citizen initiatives and citizens who were knowledgeable about these types of initiatives. These participants were primarily identified through LinkedIn and Noaberschap Twente. Some of these were selected through a method of 'snowball sampling' in which more participants were 'recruited' by asking participants whether they knew any other potential subjects that could contribute to this research (Parker et al., 2019).

The interviews were similar to those conducted among the policymakers, with the exception of 'parts 5 and 6' (Appendix A), as this question was not necessarily relevant (or not within the expertise) for citizens. These interviews evaluated the effect of citizen participation, the usage of digital resources for engagement, and also the capability to turn civic participation into practical policy knowledge. This approach targeted key research topics such as:

Determining the factors that contributed to effective citizen involvement through social media (and other digital platforms). Besides that, these interviews aided in understanding how the design and overall functionality of social media platforms impacted the engagement of citizens. The study also demonstrated the level of citizen participation in sustainability campaigns, the reasons behind their participation, and the process of transforming citizen discussions and feedback into policy-relevant insights. Last but not least, these interviews gave more insights regarding how existing mechanisms that facilitated the use of citizens' insights in policymaking were identified.

The interviews that were done with citizens had a certain process. First of all, participants were purposefully selected to ensure a diverse range of perspectives and experiences related to citizen initiatives in Hengelo. The interviews were semi-structured, allowing for flexibility in exploring topics while making sure key areas were covered consistently across all these interviews. The transcripts (of the conducted interviews) and notes were analysed to identify common themes, unique insights (which were 'fostered more by doing a semi-structured interview), and patterns in citizen engagement and its influence on policymaking.

This way of approaching the citizens provided rich, in-depth data on citizen initiatives and their interactions with the local government of Hengelo. This process allowed for a nuanced understanding of the dynamics at play in digital civic engagement and sustainability efforts.

Methods of Data Analysis

Thematic analysis was used to discover, study, and document patterns (themes) in the qualitative data gathered from interviews and social media conversations. This method was useful for looking into the detailed and extensive data collected in this study.

The thematic analysis was conducted in phases:

Familiarisation: Going deep into the data by reading and re-reading interview transcripts, reading into the literature available, and reading social media posts of citizens and the municipality to become fully familiar with the content. This step included making notes and finding possible areas of interest.

Coding: The process involved creating initial codes from the data, which were then linked to the research questions. This step necessitated the systematic identification of intriguing segments within the dataset. Codes were formed inductively, letting themes emerge from the data.

Theme Development (Main Codes): Collating codes into potential themes and collecting all data related to each potential theme. In this phase, the codes were sorted according to their similarities, and themes were created. Themes were then reviewed and refined to ensure they accurately represented the data. These themes were like main codes; they symbolised the main ideas from sub-questions (Appendix A).

Defining and Naming Themes (Main Codes): This process focused on making more precise the details of every theme as well as the story that came out of the analysis. It included creating clear overall definitions and names for each theme. Themes were defined in such a way that they could capture their nature and connection to research questions (see Appendix A).

Reporting: Last edited the report, putting in each theme's deep study with the help of data extracts. This part needed to combine the analytic narrative and data extracts into a single story that made sense of the information. The final report highlighted important discoveries and their implications for policymaking and practice.

The analysis has delved into various sub-questions by identifying and scrutinising themes related to factors that influence effective engagement, both supportive and obstructive aspects of social media platforms, the impact of social media on resident participation, the strategies for converting social media involvement into insights, and the existing mechanisms that promote the application of social media knowledge in policymaking.

This section of the research describes the methodological perspective used in this study, explaining the research design, data gathering methods, and analysis techniques. The qualitative case study design, along with deep interviews and digital interaction analysis, was a thorough structure for examining how social media initiatives affect policy-making processes inside Hengelo municipality.

The research activities that were planned included doing semi-structured interviews with key people (stakeholders) involved, such as policymakers and leaders from citizens' initiatives. This type of interview led to finding patterns and themes that answered our research sub-questions. The analysis showed insights into what affected good citizen participation, how social media (and other digital) platforms helped or stopped involvement, changes caused by social media on resident participation levels, turning understanding from social media into policy choices, and the ways it had to be clear that these understandings are used effectively.

This study was conducted using a methodological approach to offer a nuanced understanding of what was happening in the digital civic landscape of Hengelo and provide useful advice to improve civic involvement and lasting city governance.

The comprehensive approach of this chapter ensured rigorous and systematic execution of the research, laying a robust foundation for data analysis and interpretation. The insights from the study not only improved the understanding of digital platforms' role in urban governance but also proposed actionable strategies for utilising digital engagement to achieve sustainable urban development.

Analysis

The purpose of this chapter is to delve deeper into the data that has been collected through interviews with both policymakers and citizens and combine this together with the theoretical knowledge that have been displayed on this matter in the theory. Combining all this data and thoroughly analysing it, will ultimately lead to more in-depth and complete answers to the sub-questions that have been stated earlier in this thesis. This chapter is divided into 5 sections, the first 3 are separate analyses about each sub-question respectively. The 4th section is a thematic analysis in which comparative insights are also stated, combining the already existing data with the ones retrieved from this research. Last but not least, a conclusion and final answers to the sub-questions collectively are stated in the 5th section. Following this comprehensive structure will all aid in answering the main question, which again was stated as ‘To what extent are citizens’ social media activities in Hengelo effectively integrated into the governance processes of the municipality?’

When analysing the different factors for effective citizen engagement, it is crucial to consider that measuring variables can be difficult on the topic of effectiveness. The definition of effective citizen engagement in this section is derived from the perspectives of the interviewees. Based on the data from the interviews, participants define effectiveness in civic engagement through digital platforms as the measurable impact of citizen input on policy decisions and the municipality's responsiveness to that input. Therefore, factors of engagement methods are considered effective if citizen input has a significant influence on the decision-making processes of policymakers in Hengelo.

The importance of citizen engagement for local governance and community development cannot be overstated (De Siqueira et al., 2022). The following data is derived from the interviews with policymakers and citizens findings and delves into the crucial elements of successful citizen engagement in Hengelo.

Traditional citizen engagement methods, such as public meetings (walk-ins) and surveys are still prevalent. Despite this, digital platforms such as social media are increasingly being utilised to reach a broader audience. One participant noted, “Social media is essential for visibility and quick dissemination of information, but it lacks the depth of face-to-face interactions.”

Besides maintaining traditional methods, it seems like trust between citizens of Hengelo and the municipality is a crucial factor. The effective engagement requires transparent communication and consistent follow-up on how citizens think about projects the municipality is working on and their overall inputs. About this one participated stated, “transparency is key. If something (e.g. project, initiative) is not feasible, it is important to communicate this clearly to avoid false expectations.”

To further enhance citizen engagement it is important to show efforts in including diverse groups, such as migrants and the elderly, who can be seen as minority groups. Accessibility issues, especially digital literacy, were mentioned as one of the main barriers. “Not all residents of Hengelo are comfortable with digital tools, especially the elderly,” remarked one interviewee.

Additionally, the data indicates that it is important for maintaining engagement to provide feedback to citizens on how their input is used by the municipality. One participant stated, “Citizens need to see the direct impact of their contributions. Regular updates can keep them motivated.”

When looking at the results of the conducted interviews, there is also a conflict visible in the preferred engagement method. On one hand digital tools offer convenience and a broader reach when compared to physical meetings, but the latter provide and foster more meaningful interactions. One of the

interviewees shared, “Face-to-face meetings simply allow for richer communication, capturing non-verbal cues that are otherwise ‘lost’ online.”

Based on the key findings mentioned above, several factors of effective citizen engagement in Hengelo can be interpreted. First of all, combining physical and digital engagement methods can increase engagement. Digital methods, such as posts on social media, can be used for initial outreach and information dissemination. To give this more depth, physical meetings can be employed for in-depth discussions and decision-making processes. Another important determinant of effective citizen engagement which became clear after the interviews is trust. Trust is built through a process of consistent, honest communication and a visible follow-through on promises. Policymakers should prioritize transparency in their communications, intelligibly explaining decisions and the rationale behind them. One participant stated the following about this matter, “When citizens feel heard and see actual and tangible results from their inputs, trust is built, and so engagement increases.”

Another determinant for effective citizen engagement that can be interpreted from the interviews is enhancing accessibility and inclusivity. Forming engagement strategies to accommodate diverse needs is essential. This includes providing alternative ways for people that are less digitally savvy to participate, but it also means ensuring that materials are available in multiple languages and accessible formats, such as not too long texts and text in relatively basic Dutch (B1).

Effective feedback loops appear to be of significant importance for the citizens of Hengelo. The interviews aided in important insights regarding this topic, establishing strong feedback mechanisms where citizens are regularly informed about how their input is utilized can sustain long-term engagement. Some interviewees stated that this type of feedback should be timely, clear and detailed. The context and nature of the specific issue at hand should dictate which engagement method is applied according to the interviewees. More personal and immediate issues be more beneficial when it is dealt with by having face-to-face interactions, while broader policy discussions can leverage digital platforms for a wider input from citizens.

Ultimately, the factors of effective citizen engagement in Hengelo consist of a strategic mix of (both digital and non-digital) of communication methods, transparency, inclusivity, quick feedback, and context-specific tactics. By tackling these factors, Hengelo can foster an engaged and collaborative community, which will eventually lead to better governance and responsive policymaking.

The increased application of digital platforms has transformed the way municipalities engage with their citizens (Wilson & Tewdwr-Jones, 2021). In Hengelo, digital platforms play an important role in facilitating communication, participation, and collaboration between the municipality and its residents. The following analysis is based on qualitative data which resulted from the interviews stated earlier. The aim of this part of the analysis is to identify key observations, overall findings, and interpretations regarding the facilitation of citizen engagement through digital platforms.

One thing that came forward out of the interviews was the fact that social media platforms such as Facebook and Instagram are extensively used to spread information quickly and engage a broad range of citizens. One of the interviewees noted this phenomenon as, “Social media is essential for visibility and quick dissemination of information, but it tend to lack the depth of face-to-face interactions.”

Another important aspect that was mentioned is that digital literacy tends to vary a lot among citizens. Some groups, especially the elderly, find it challenging to engage through digital means. One interviewee remarked, “Not all of the residents in Hengelo are comfortable with using digital tools,

particularly the elderly,” highlighting the call for alternative engagement methods. Immediate feedback and interaction seem to be important for citizens when looking at the data. Digital platforms enable direct feedback and interaction, allowing citizens to state their opinions and concerns swiftly. A participant mentioned, “It is amazing how fast citizens can mobilize once they see something online that they are passionate about.”

Something else that becomes apparent from the data is that digital platforms facilitate the collection and analysis of data on citizens engagement and opinions. This helps the municipality of Hengelo to make informed decisions. One of the interviewees stated, “We use social media to gauge public sentiment and adjust our strategies accordingly.” Hybrid engagement models tend to play an important factor in enhancing more citizen participation, as could be drawn from the data. Combining both digital platforms and traditional engagement methods provides a more comprehensive approach to citizens participation. One of the interviewees shared, “A hybrid approach allows us to reach more people and also ensure quality interactions.”

On the basis of the key findings stated above, several interpretations of how digital platforms facilitate citizen engagement in Hengelo can be drawn. Digital platforms are significantly enhancing the visibility and reach of municipal communications, making sure that information reaches a larger audience rapidly. Another important interpretation that can be concluded from the data retrieved from the interviews, is that the immediate nature of interactions on digital platforms allow for rapid feedback from citizens. This enables the municipality to respond and adapt in ‘real-time’.

While digital platforms are effective, for instance by having the ability to foster immediate interaction like stated earlier, it is important to address digital literacy gaps to ensure inclusivity. Offering training and alternative methods to engage for those less comfortable with technology can bridge this gap. Something else that came forward from the interviews regarding the topic of facilitation through digital platforms in Hengelo, is that data collected from digital platforms provides valuable insights into public sentiment and engagement levels. This enables more data-driven decision-making for policymakers of the municipality.

Last but not least, it appears that a hybrid model that combines digital and traditional (more physical) engagement methods ensures that the benefits of both of these approaches are realized. This approach aids in reaching a wider audience while also maintaining the quality of interactions. All in all, digital platforms have a pivotal role in facilitating citizens engagement in Hengelo by improving visibility, providing rapid feedback, enabling data-driven decision-making, and augmenting traditional engagement methods. Tackling digital literacy gaps and implementing a hybrid approach could further enhance the effectiveness of these platforms in engaging a more diverse population.

Effective civic participation is crucial for informed policymaking, providing meaningful insights that reflect the needs and preferences of a community (Karhu, Gustafsson, & Lyytinen, 2018). In the city of Hengelo, transforming input from civic participation into valuable insights for policymakers requires strategic engagement practices and robust analysis methods. This interpretation is based on qualitative data collected from the interviews, which for this part revolves more around how participants viewed the conversion of civic participation into meaningful insights for policymakers of the municipality of Hengelo.

Regarding the topic of how civic participation is transformed into insights for policymakers of the municipality in Hengelo there are several observations and findings on this topic that can be extracted from the interviews. First of all, the establishment of structured feedback mechanisms is important for collecting and analysing citizen input thoroughly. As one interviewee noted, “We have processes in place to make sure that citizen feedback is gathered and reviewed regularly.”

Another aspect that was mentioned during the interviews was that, digital platforms facilitate the efficient collection of data from a diverse group of citizens. Like one participant highlighted, “Social media and online surveys help us reach a wider audience and gather more comprehensive data.” Besides the use of digital platforms for data collection, integration of qualitative and quantitative data combined appears to be important in leveraging effective civic participation. Combining both qualitative insights from physical interactions with quantitative data from surveys and digital platforms provides a well-rounded understanding of citizen perspectives. “We analyse both qualitative feedback from meetings and quantitative data from online surveys to get a complete picture,” said one interviewee.

Data analysis tools and techniques also play a big role according to the data. Using advanced data analysis tools and techniques helps in deriving actionable insights in a more precise way from the collected data. Like one of the participants mentioned, “We use various data analysis tools to process and interpret the feedback we receive from citizens.” The last important observation that can be identified from the collected data is the feedback loop to citizens. Providing feedback to citizens on how their input has influenced a policy decision is important for maintaining engagement and overall trust. One interviewee stated, “We make sure to inform citizens about how their feedback has been used in policymaking.”

Based on these key findings several interpretations can be made of how civic participation can be transformed into insights for policymakers in Hengelo. First of all, structured feedback mechanisms appear to be essential for systematically collecting and reviewing input from citizens. Regular feedback loops ensure that policymakers constantly receive updated insights from the community (De Siqueira et al., 2022). It also seems that integrating qualitative and quantitative data for comprehensive insights is of significant importance to the municipality like one of the interviewees stated earlier. The integration of qualitative and quantitative data simultaneously provides a holistic view of citizens perspectives, which ensures that policymakers have a thorough understanding of the needs and preferences of the community of Hengelo.

Another interpretation that can be derived from the data is the fact that advanced data analysis tools for actionable insights are needed. Advanced data analysis tools and methods enable the processing of huge volumes of information to derive actionable data for policy making. Lastly, both the municipality and the citizens of Hengelo should keep a feedback loop with the citizens. Giving citizens feedback on how their input has influenced policy decisions is important for maintaining trust and engagement. This transparency encourages continued participation (Wilson and Tewdwr-Jones, 2021).

Generally, transforming civic participation into insights usable by policymakers in Hengelo requires establishing structured feedback mechanisms, utilizing digital platforms for information collections combining quantitative and qualitative data, applying advanced data analysis tools and maintaining a feedback loop to people. These methods make sure that policymakers of the municipality in Hengelo

are informed about the community needs and preferences in a more responsive and effective governance.

Based on the data from the interviews and the theoretical analysis a thematic analysis can be made in which the comparative insights are highlighted. A Thematic analysis of such sorts is a qualitative research method used to identify, analyse, and report patterns (recurrent themes) within the data. In the context of this research, thematic analysis is employed to explore the factors of effective citizens engagement in Hengelo. Comparative insights are then drawn by juxtaposing practices in Hengelo with those of other municipalities and regions discussed in the theories. This section presents overarching themes identified through the analysis and provides comparative insights to contextualize Hengelo's approach within a broader framework.

Citizens engagement is significantly influenced by how relevant and proximate certain issues are to their daily lives and direct environment. One interviewee noted that the response to projects is less when people feel less overall relevance to them and that people simply say "if it's not in my garden why would it matter to me?" This observation aligns with theories on public participation which suggest that engagement is more present when the issues directly influence the citizens of a specific region (Karhu, Gustafsson, & Lyytinen, 2018). Effective citizen engagement initiatives clearly articulate their relevance and purpose. Participants emphasized that they need transparent communication from bodies within the municipality to build trust and encourage participation. Regarding this topic it appears from the data that transparency is key and if something is not feasible it is important to communicate this clearly to avoid false expectations. The findings from Hengelo resonate with studies by De Siqueira et al. (2022) and Wilson & Tewdwr-jones (2021), which both advocate for a multi-channel approach to engagement citizens. These studies emphasize the need of combining both digital and traditional methods to reach a broader audience to foster inclusivity in engagement efforts.

From the data, something that appears to come back when looking at the results stated above is the preference for targeted digital engagement tools like the Hengelo Panel over general social media platforms. As the data states, The Hengelo Panel is a digital survey tool used to gather citizen input on various issues and it poses as a structured approach to digital engagement, this is also supported by the literature which highlights the effectiveness of targeted digital tools in collecting meaningful feedback (De Siqueira et al., 2022). A multi-channel approach combining digital and physical methods is found to be most effective. Looking at the retrieved data, the combination of both social media or digital platforms while still maintaining physical aspects means that you reach the most people. This strategy ensures that as many people as possible are included, thus broadening the scope of engagement. The preference for structured digital tools like the Hengelo Panel is also something that is reflected in research from Wilson & Tewdwr-Jones (2021), which suggests that such tools are more effective in gathering actionable feedback compared to general social media platforms. This preference underlines the importance of tailored digital engagement strategies in urban governance.

The need for institutionalized processes to ensure citizens feedback converts into actionable (policy) insights was emphasized in the data. Interviewees pointed out that without clear pathways, important citizen input might not impact policy decisions effectively. Privacy issues are a substantial barrier to participation. Participants expressed concerns about how their input would be processed or secured. It appears that some citizens do not reach out to the municipality because they are scared that their information or personal information might be leaked. Concerns about privacy and trust mirror findings which were stated in the research by Karhu, Gustafsson, and Lyytinen (2018), who discuss the barriers of information exchange management in digital civic participation. Addressing these

concerns through vigorous data protection policies and clear communication will strengthen citizen trust and willingness to participate.

Relevance, transparency and a multi-channel approach are the thematic analysis above which describe citizen engagement methods. The comparative insights confirm these results and align with current literature on effective civic participation and digital engagement. These insights can help policymakers in Hengelo refine their engagement methods and encourage citizen feedback towards a sustainable urban development. The analysis along with comparative insights highlight the dynamic citizen engagement dynamics in Hengelo. This section aligns results with broader academic discussions and offers insight on how to utilize digital platforms for effective and inclusive civic involvement. The insights can help policymakers enhance urban governance and sustainability initiatives.

Using all of this data that has been analysed and compared with the theories, the research questions can be answered thoroughly. Within this section of the analysis, a consolidation of the key observations will be made per question, and the practical implications that were analysed prior will be laid out as follows: to conclude the findings and answer the sub-questions accordingly:

sub-question i: What are the determinants of effective citizen engagement?

The analysis has identified several key factors of effective citizen engagement in Hengelo:

Relevance and proximity of issues: Engagement is higher in case issues are pertinent to the citizens in Hengelo. This is consistent with theories of public participation which declare that individuals are more apt to participate when they recognize a direct effect in their everyday life (Irvin & Stansbury, 2004).

Clarity of purpose and communication are crucial to engagement initiatives. This establishes trust and also ensures citizens understand their participation and input is valued.

Accessibility & inclusivity: Ensure that engagement methods are available to all Hengelo citizens including those with limited digital literacy as full participation calls for feedback from a population (Bouzguenda et al., 2019).

Proper feedback mechanisms: Giving citizens clear feedback about just how their input is utilized builds trust and engagement.

Sub-question ii: How do digital platforms facilitate the means for engagement?

Something that came forward from the interviews is that digital platforms play a significant role in facilitating citizen engagement in Hengelo:

Targeted digital tools: Platforms such as ‘Hengelo Panel’ are preferred (over simple social media posts) for their structured approach, which allows for the collection of important and actionable feedback. This is supported by literature emphasizing the effectiveness of targeted digital tools in the sphere of urban governance (De Sequeira et al., 2022).

Multi-channel approach: combining both digital and physical engagement methods ensures inclusivity and broadens the reach of engagement. This multi-channel strategy is consistent with findings from other studies advocating for combined and diversified engagement methods (Wilson & Tewdwr-Jones, 2021).

Real-time feedback and interaction: Digital platforms make it possible for users (like policymakers in Hengelo) to get real-time feedback on ideas and project, besides that it enables for direct interaction. This allows citizens to voice their opinions quickly and policymakers to respond promptly and vice versa. This immediacy enhances the responsiveness of governance processes (Kleinhans et al., 2015).

Sub-question iii: In what ways will civic participation be transformed into actionable insights for policymakers in Hengelo?

Transforming civic participation into actionable insights for policymakers involves several key steps:

Institutionalized processes: Establishing transparent and formal mechanisms to translate citizen feedback into valuable assets for policy decisions is important. Without such processes, valuable insights might not impact policy effectively.

Data analysis and integration: Utilising advanced tools to analyse data, which can process and integrate feedback from citizens on digital platforms, can help derive meaningful insights. This ensures that input of citizens is systematically considered in the decision-making processes of policymakers in Hengelo.

Feedback loops: Maintaining robust feedback loops in which citizens are regularly informed about the (degree of) impact of their input enhances ongoing engagement and trust. This type of transparency from the municipality of Hengelo to its citizens is crucial for sustaining participation.

Possible practical implications and recommendations are derived from this analysis generally. To begin with, the municipality might build programs for digital literacy and inclusion that will make digital methods available to everybody in Hengelo for nearly all demographic groups. This might include training, (physical) community workshops or resources many languages. During the creation of holistic digital engagement strategies the municipality can create strategies which define each digital tool in the engagement process. This might include guidelines on combining physical and digital methods for maximum impact.

Strong data protection policies must be put into action and communicated to citizens of Hengelo to address citizens' privacy issues. This can alleviate privacy concerns and boost trust for digital engagement platforms. Along with privacy concerns, citizens said they weren't heard about their general opinions of particular projects. Because of this purpose institutionalising feedback mechanisms might be required. Establish formal mechanisms where citizen feedback can be reviewed and fed back into policy decisions. This might include periodic updates, public reports and digital or physical feedback sessions.

And last but not least, advanced data analysis software can help you. Such tools could be advantageous to invest in as they can process feedback from digital platforms in an orderly way. This will enable policymakers in Hengelo to take actionable insights and based decisions based on among other things, the analyses of such advanced data analysis tools.

Results from the above mentioned analysis describe what determinants effective citizen engagement are in Hengelo. By systematically answering every sub-question, the research highlights relevance, transparency, inclusion and robust structured feedback for effective municipal participation. Practical implications mainly focus on demonstrating how data gathered during interviews might be transformed into actionable recommendations with ideas for where to focus attention. These implications could be seen as a road map for policymakers of Hengelo to strengthen urban citizen and governance initiatives through better citizen engagement methods.

Conclusion

This thesis aimed to answer the research question, which was stated as: “To what extent do citizens’ social media activities in Hengelo influence the effectiveness of municipal policymaking processes?”. Several key insights were uncovered and analysed as a result of in-depth interviews with policymakers and citizen initiative leaders.

Findings indicate that while digital platforms, particularly social media, can foster civic engagement their current impact on policymaking processes in Hengelo are limited. Instead, structured tools like the Hengelo Panel are preferred, as they allow for more targeted and actionable citizen input by asking for more targeted opinions on certain matters. Key determinants of effective digital engagement include the relevance of the issues to citizens’ lives, clear communication of engagement purposes, and the integration of digital platforms with traditional (face-to-face) methods.

This research contributes to the existing body of literature on digital civic engagement and urban governance, in particular within the context of mid-sized European cities. While Wilson and Tewdwr-Jones (2021) highlight the effectiveness of multi-channel strategies in urban settings, this thesis goes further by illustrating the specific challenges mid-sized cities such as Hengelo face. An example of these challenges is the limited digital literacy and specific privacy concerns of some citizens. This thesis builds on Gil et al. (2019) findings that local relevance is critical to increase citizen engagement in urban sustainability efforts. Although Gil et al. surveyed citizens in larger urban centres, the results of the interviews indicated that the perceptions of citizens in Hengelo are similar to those analysed by the scholar. This thesis demonstrates that citizens in Hengelo are more open to involvement if they can see direct, concrete impacts in their everyday lives, such as local infrastructure projects or neighbourhood sustainability initiatives.

Janowski et al. (2018) discuss the role of feedback loops in enhancing citizen trust and participation in frameworks of digital governance. This thesis extends their work by illustrating challenges and opportunities in establishing effective feedback loops in mid-sized cities like Hengelo. This thesis reveals that while feedback loops are crucial, they demand careful adaptation to address the specific needs and expectations of a smaller, more social community, where personal relationships to the city and trust appear to play a significant role in citizen engagement.

Karhu, Gustafsson and Lyytinen (2018) discuss how to manage information flows and citizen trust in digital civic engagement platforms. This thesis contributes to this discourse with concrete examples from Hengelo where data privacy and the protection of personal information are particularly concerned. Practical recommendations on how to improve data protection measures and how to effectively communicate these to citizens are provided to increase trust in digital engagement initiatives are provided.

Kleinhans et al. (2015) investigated how digital tools can influence civic engagement in urban planning, especially in larger cities with diverse populations. This thesis extends their work by highlighting the digital divide in smaller municipalities like Hengelo, where digital literacy is highly variable among residents. The research highlights the need for multi-channel engagement strategies targeting both tech-savvy and low-tech skills to ensure more inclusive urban governance.

The concept of digital empowerment, as discussed by De Siqueira et al. (2022), is often framed within the context of large metropolitan areas. This thesis adapts and refines these theories for mid-sized cities like Hengelo, where the dynamics of digital empowerment are influenced by factors such as

community size, local governance structures, and the availability of resources. The research demonstrates that while digital empowerment is possible in smaller cities, it requires tailored strategies that consider the unique characteristics of these communities.

By focussing on a city such as Hengelo, this research fills a knowledge gap concerning digital engagement in smaller urban contexts, as stated before, which often tends to be overlooked in studies regarding the concept of digital engagement among citizens. The insights gained in this thesis accentuate the unique challenges and opportunities that municipalities such as Hengelo face in adopting digital engagement strategies.

Nevertheless, the scope of this thesis is confined to one city and this may restrict its generalisability. Future research could deal with this limitation by comparing several cities of similar size in a similar context. Furthermore, additional techniques to gather perspectives of citizens, particularly those less engaged on digital platforms, would offer a better picture of digital barriers confronting the whole population of citizens in Hengelo. Longitudinal studies will give insight into just how digital engagement practices change as time passes, revealing much more adaptive and sustainable strategies as sustainability would be much better measured for longer research.

The results of this study may be taken as several practical implications for the municipality of Hengelo and other urban contexts that aim to improve civic engagement through digital platforms. Firstly, it is important to establish a clearly defined digital engagement strategy that incorporates digital methods while still preserving traditional engagement options in a seamless matter. This approach aims to define the specific roles and purposes of different digital tools, ultimately making sure that these tools will supplement in-person approaches rather than replacing the status quo completely.

Results from the above mentioned analysis describe what determinants effective citizen engagement are in Hengelo. By systematically answering every sub-question, the research highlights relevance, transparency, inclusion and robust structured feedback for effective municipal participation. Practical implications mainly focus on demonstrating how data gathered during interviews might be transformed into actionable recommendations with ideas for where to focus attention. These implications could be seen as a road map for policymakers of Hengelo to strengthen urban citizen and governance initiatives through better citizen engagement methods.

Engagement activities should also be designed to demonstrate that issues directly impact citizens' lives, thus inspiring participation. Mechanisms to transform citizen feedback from digital platforms into actionable policy choices are required. This might mean more monitoring of digital interactions, structured analysis of citizen inputs and inclusion of those inputs in policymaking processes. The latter would additionally produce a feeling that citizens are heard and therefore contribute far more to such decision-making processes. Concentrating on such opportunities for improvement, policymakers in Hengelo would use digital platforms to develop a responsive, effective and inclusive governance model. Which can eventually result in better and sustainable policymaking in Hengelo.

References

- Bibri, S. E. (2020). The shaping of ambient intelligence and the Internet of Things: Historico-epistemic, socio-cultural, politico-institutional, and eco-environmental dimensions. Springer. <https://link.springer.com/book/10.2991/978-94-6239-142-0>
- Bouzguenda, I., Alalouch, C., & Fava, N. (2019). Towards smart sustainable cities: A review of the role digital citizen participation could play in advancing social sustainability. *Sustainable Cities and Society*, 50, 101627. <https://doi.org/10.1016/j.scs.2019.101627>
- Janowski, T., Estevez, E., & Baguma, R. (2018). Platform governance for sustainable development: Reshaping citizen-administration relationships in the digital age. *Government Information Quarterly*, 35(4), S1–S16. <https://doi.org/10.1016/j.giq.2018.09.002>
- De Siqueira, G., Malaj, S., & Hamdani, M. (2022). Digitalization, Participation and Interaction: Towards More Inclusive Tools in Urban Design—A Literature Review. *Sustainability*, 14(8), 4514. <https://doi.org/10.3390/su14084514>
- Falco, E., & Kleinhans, R. (2018a) Digital Participatory Platforms for Co-Production in Urban Development. *International Journal of E-planning Research*, 7(3), 52–79. <https://doi.org/10.4018/ijep.2018070105>
- Falco, E., & Kleinhans, R. (2018b) Beyond technology: Identifying local government challenges for using digital platforms for citizen engagement. *International Journal of Information Management*, 40, 17–20. <https://doi.org/10.1016/j.ijinfomgt.2018.01.007>
- Gil, O., Cortés-Cediel, M. E., & Iván Cantador. (2019). Citizen Participation and the Rise of Digital Media Platforms in Smart Governance and Smart Cities. *International Journal of E-Planning Research*, 8(1), 19–34. <https://doi.org/10.4018/ijep.2019010102>
- Glimmerveen, L. M. (2020). Citizen Participation: Bargaining over boundaries in the organization of care services [PhD-Thesis, Vrije Universiteit Amsterdam]. <https://research.vu.nl/ws/portalfiles/portal/103675913/54663.pdf>
- Hovik, S., & Giannoumis, G. A. (2022). Linkages between citizen participation, digital technology, and urban development. In Springer eBooks (pp. 1–23). https://doi.org/10.1007/978-3-030-99940-7_1
- Ingrams, A. (2015). Mobile phones, smartphones, and the transformation of civic behavior through mobile information and connectivity. *Government Information Quarterly*, 32(4), 506–515. <https://doi.org/10.1016/j.giq.2015.07.007>
- Irvin, R. A., & Stansbury, J. (2004). Citizen participation in decision making: Is it worth the effort? *Public Administration Review*, 64(1), 55-65. <https://doi.org/10.1111/j.1540-6210.2004.00346.x>
- Janowski, T., Estevez, E., & Baguma, R. (2018). Platform governance for sustainable development: Reshaping citizen-administration relationships in the digital age. *Government Information Quarterly*, 35(4), S1–S16. <https://doi.org/10.1016/j.giq.2018.09.002>
- Kamruzzaman, T. Y. & M. (2019). Smart cities and mobility: Does the smartness of Australian cities lead to sustainable commuting patterns? [ideas.repec.org. https://ideas.repec.org/a/taf/cjutxx/v26y2019i2p21-46.html](https://ideas.repec.org/a/taf/cjutxx/v26y2019i2p21-46.html)

- Karhu, K., Gustafsson, R., & Lyytinen, K. (2018). Exploiting and defending open digital platforms with boundary resources: Android's five platform forks. *Information Systems Research*, 29(2), 479-497. <https://doi.org/10.1287/isre.2018.0786>
- Kleinhans, R., van Ham, M., & Evans-Cowley, J. (2015). Using social media and mobile technologies to foster engagement and self-organization in participatory urban planning and neighbourhood governance. *Planning Practice & Research*, 30(3), 237-247. <https://doi.org/10.1080/02697459.2015.1051320>
- Leong, C., Pan, S. L., & Cui, L. (n.d.). The Emergence of Self-Organizing E-Commerce ecosystems in remote villages of China: A tale of digital empowerment for rural development. *AIS Electronic Library (AISEL)*. <https://aisel.aisnet.org/misq/vol40/iss2/14/>
- Mamusa, E. (2018). New technologies and civic engagement: New agendas in communication. *African Journalism Studies*, 39(1), 129–131. <https://doi.org/10.1080/18146627.2018.1443738>
- Parker, C., Scott, S., & Geddes, A. (2019). Snowball Sampling - Research Repository. *Glos.ac.uk*. https://eprints.glos.ac.uk/6781/1/6781%20Parker%20and%20Scott%20%282019%29%20Snowball%20Sampling_Peer%20reviewed%20pre-copy%20edited%20version.pdf
- Peng, Y., Ahmad, S. F., Irshad, M., Al-Razgan, M., Ali, Y. A., & Awwad, E. M. (2023). Impact of Digitalization on Process Optimization and Decision-Making towards Sustainability: The Moderating Role of Environmental Regulation. *Sustainability*, 15(20), 15156. <https://doi.org/10.3390/su152015156>
- Rehm, S., McLoughlin, S., & Maccani, G. (2021). Experimentation Platforms as bridges to urban Sustainability. *Smart Cities*, 4(2), 569–587. <https://doi.org/10.3390/smartcities4020030>
- Rutte, R. (2016). Atlas of the Dutch urban landscape. *journals.open.tudelft.nl*. <https://doi.org/10.7480/iphs.2016.5.1786>
- Servou, E., Behrendt, F., & Horst, M. (2023). Data, AI and governance in MaaS – Leading to sustainable mobility? *Transportation Research Interdisciplinary Perspectives*, 19, 100806. <https://doi.org/10.1016/j.trip.2023.100806>
- Tappert, S., Mehan, A., Tuominen, P., & Varga, Z. (2024). Citizen participation, digital agency, and urban development. *Urban Planning*, 9. <https://doi.org/10.17645/up.7810>
- Hasler, S., Chenal, J., & Soutter, M. (2017). Digital Tools as a Means to Foster Inclusive, Data-informed Urban Planning. *Civil Engineering and Architecture*, 5(6), 230–239. <https://doi.org/10.13189/cea.2017.050605>
- Wik, M., Curto-Millet, D., & Lindroth, T. (2023). Modes of Engagement: Problematizing Managerial Assumptions of Participation in Public Sector Digital Transformation. <https://doi.org/10.1145/3598469.3598561>
- Wilson, A., & Tewdwr-Jones, M. (2021). Digital Participatory Planning. <https://doi.org/10.4324/9781003190639>

Appendix

Appendix A: Interview Guide

Introduction to the Interview:

- Thank the participant for their time.
- Briefly explain the purpose of the study: “This study aims to explore how social media initiatives of citizens in Hengelo influence the effectiveness of decision-making processes of policymakers within the municipality.”
- Ensure confidentiality and anonymity.
- Obtain consent for recording the interview.

Background Information (of the participants)

1. Personal Background:

- Can you tell me a little about yourself? (Name, age, occupation, role in the community)
- How long have you been living in Hengelo?

Main Questions

2. Citizen Involvement:

- In your opinion, what motivates citizens in Hengelo to participate in sustainability initiatives through social media?
- What do you think are the key factors that make citizen involvement effective in these initiatives?
- – what is effectiveness for you?
- Can you share any specific examples where citizen involvement has been particularly effective or ineffective?

3. Facilitation and Impediments:

- How do you think social media platforms help in engaging citizens in sustainability efforts?
- Are there any features of these platforms that you find particularly useful or hindering for engagement?
- Can you describe any challenges or barriers you have encountered while using social media for these initiatives?

4. Influence on Participation:

- How do you think social media platforms influence the participation of residents in Hengelo's sustainability campaigns?
- Have you noticed any changes in the level of participation since the introduction of social media initiatives? (**only for older/longer functioning people**)
- Can you provide examples of successful social media campaigns that have increased resident participation?

5. Translation into Actionable Insights:

- How do you think the feedback and participation from social media are utilized by policymakers?
- Can you describe the process through which social media inputs are translated into policy decisions?
- Are there any specific instances where social media participation has directly influenced a policy decision?

6. Mechanisms for Policy Decisions:

- What mechanisms do you think are in place to ensure that insights from social media lead to effective policy decisions?
- How do policymakers ensure that the insights gathered from social media are reliable and actionable?
- Can you suggest any improvements to the current mechanisms to enhance their effectiveness?

Closing Questions

7. Final Thoughts:

- Is there anything else you would like to add about the role of social media in Hengelo's sustainability efforts?
- Do you have any suggestions for improving citizen engagement through digital platforms?

Wrap-Up:

- Thank the participant for their time and insights.
- Reiterate the confidentiality of their responses.
- Inform them about the next steps in the research process and how they can stay informed about the study's progress

Appendix B: Atlas.TI coding scheme

Coding scheme as used in Atlas.TI:

COMMUNICATION WITH CITIZENS

Social Media Usage

- Facebook
- Twitter
- Instagram
- LinkedIn

Digital Platform

- Municipal Website
- Hengelo Panel
- Mobile Apps

Traditional Methods

- In-Person Meetings
- Phone Calls
- Letters/Mail

CITIZEN PARTICIPATION

Feedback Mechanisms

- Surveys
- Comment Forms
- Public Hearings

Initiatives

- Neighborhood Projects
- Volunteer Programs
- Participatory Budgeting

Advisory Boards

- Citizen Advisory Committees
- Focus Groups

POLICY DEVELOPMENT

Citizen Input

- Ideas/Suggestions
- Concerns Raised
- Priorities Identified

Data Analysis

- Survey Results
- Social Media Trends
- Public Comment Themes

Decision Making

- Policy Drafting
- Revisions Based on Feedback
- Final Approval

CHALLENGES

Accessibility

- Digital Divide
- Language Barriers
- Disability Access

Engagement

- Low Participation Rates
- Unrepresentative Sample
- Maintaining Interest

Resource Constraints

- Staff Limitations
- Budget Restrictions
- Time Constraints

EFFECTIVENESS

Reach

- Number of Citizens Engaged
- Demographic Diversity

Impact

- Policy Changes Made
- Citizen Satisfaction
- Trust in Government

Efficiency

- Time to Implement Ideas
- Cost-Effectiveness