

Exploring the added value of digital tools in citizen participation in urban planning

A master's thesis in Spatial Planning



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Summary

In a time of global crisis due to the CoViD-19 pandemic, much has been asked for participatory urban planning projects to continue to be able to employ citizen participation; digital participation tools may be an answer to this issue. In academic literature, many questions about the usefulness and added value of Planning Support Systems (PSS) have been asked. There seems to be an implementation gap: although many different kinds of digital urban planning tools are available, not many of them are used in practice. This master's thesis poses that the added value of PSS and non-planning specific tools can be found in citizen participation. In order to explore this hypothesis, three cases of participatory urban planning projects that use digital participation tools in the municipality of Utrecht in The Netherlands have been studied: *Redesigning Kanaalstraat / Damstraat*, *Redeveloping Thomas à Kempisplantsoen* and *Utrecht Elektrisch*. These case studies use different digital participation tools such as Digital Participation Platforms (DPP) and Public Participation GIS (PPGIS) to varying degrees. This research employs a mixed methods approach, which consists of policy document analysis, semi-structured expert interviews, computer assisted content analysis and digital data analysis. The case studies have been explored on different elements that make up the conceptual model: what kind of digital participation tools they use, what actors are involved, what type of participation they employ, what instrumental knowledge is created in the digital participation, how much citizen participation takes place and how much decisive power citizens have within the projects. The added value is stated to be in the enabling of new and more groups of citizens, being able to create different kinds of knowledge and possibly giving citizens a higher place on Arnstein's (1969) ladder of participation. As is the case with traditional participation, there are still some challenges and problems with using digital tools in supporting citizen participation. For example, using digital participation tools generally results in less personal interaction and in-depth engagement between project managers and citizen participants. When digital tools are employed project managers should be weary off the fact that although they may reach a wider target audience, it also reaches a *different* audience and target groups of traditional participation methods might get excluded. There is potential in digital participation methods to increase citizen participation and citizen power, though this research suggests that a mix of traditional methods and newer digital methods is the most effective way to reach this goal. The willingness of project managers to invite citizens to participate and collaborate with them is still an important factor in the value of digital participation, as is the case with traditional participation. Urban planning project teams must carefully evaluate what their goal is and which methods, whether digital or traditional, are most effective and reaching those goals.

1. Introduction

The implementation of digital participation tools in urban planning project in The Netherlands is on the rise. Especially in the current environment of the COVID-19 pandemic where it has become harder for people to meet in a confined physical space, the utilization of digital alternatives has provided solutions to these new barriers. Digital participation tools are widely implemented in current spatial planning developments in The Netherlands in order to gather insight and input from local citizens. Another factor that explains the rise of digital participation tools is new *Environmental Planning Act* ('*Omgevingswet*') that encourages local governments to implement high degrees of public participation and will enter into force in 2022. In light of this new upcoming paradigm and the lockdown restrictions imposed by the Dutch government, municipalities have found digital solutions to the limitations and barriers caused by this. The digital movement in participatory planning is not new or caused by this current environment, but interest has increased rapidly due to this situation.

Digital participation tools have multiple advantages over traditional participation, such as potentially being able to reach a wider audience if implemented correctly and being able to gather more data with less labour investment within a smaller timeframe. However, there are disadvantages to these newer methods too. In a digital paradigm, participation becomes less personal and people that do not have digital access or the skill to work with digital tools may become excluded. Considering these pros and cons, an important question is whether these new participation methods add value to the current urban planning practices. In academic literature on Planning Support Systems (PSS), it is suggested that there is an implementation gap: although the tools are widely available, they are not used much in real world urban planning problems. This implementation gap could potentially be overcome by finding the added value, which this research sets out to do.

It is important to recognize that not all digital participation tools are the same. They differ in complexity and involvement. For example, an informational page on a municipal website on a current project can be considered a simple participatory tool. It increases in complexity when citizen participants can interact with the tools and respond with their own feedback, as is the case when *Public Participation Geographic Information Systems* (PPGIS) are utilized. Another way that different tools can be distinguished is to what extent citizens are enabled to have a degree of power in the planning process and outcome; Arnstein's (1969) classic ladder of participation once again comes into play here. Digital participation tools are not limited to tools that are developed and created specifically for this purpose. For example, another widespread tool commonly used by governments in order to gather citizen input is social media. Facebook, Twitter and other social media platforms are used to reach wide audiences.

This study focuses on three spatial planning projects that make use of varying degrees of digital participation methods: *Redesigning Kanaalstraat/Damstraat* uses a simple informational page on the municipal website to which interested citizens can respond. *Redeveloping Thomas à Kempisplantsoen* uses a designated website to present multiple stages of the planning process to the public to which citizens can respond with their own ideas and insights. Finally, *Utrecht Elektrisch* is a project that embraces a PPGIS platform in order to gather citizen's opinions. The main research question of this study is:

"What is the added value of digital participation tools in participatory urban planning projects?"

In order to help answer the main research question, the following sub questions have been formed:

1. How do digital tools allow and support participation in the three projects?
2. How can the different digital participation tools that are used in the projects be categorized?
3. How does utilizing digital participation tools impact citizen participation and decision-making power for citizens in urban planning projects?

The research employs a mixed methods approach combining a policy document analysis, semi-structured expert interview, computer assisted content analysis and digital data analysis. The mentioned three projects are analysed based on the key components in the conceptual model: what kind of digital participation tools they use, what actors are involved, what type of participation they employ, what instrumental knowledge is created in the digital participation, how much citizen participation takes place and how much decisive power citizens have within the projects. The aim is to find the added value of Planning Support Systems (PSS) and non-planning specific systems in urban planning contexts, which this thesis argues can be found in participation. With the collected data and a comparison of the three case studies, the main research question is attempted to be answered.

The main findings of this research are that digital participation tools have a large potential to add value to participatory urban planning projects, but there are some problems and constraints that need to be considered when employing these methods. Digital participation allows for different kinds of participation that reaches different, possibly more, groups of citizens and it results in a different kind of knowledge created: it is more quantitative as opposed to the qualitative knowledge from traditional methods. This could potentially increase citizen participation and citizen power, however project managers should be careful not to exclude audiences of traditional participation methods. This research suggests that a mix of both traditional and digital methods should be employed in order to increase citizen participation and citizen power. The willingness of project managers to cooperate with citizen participants is also still a deciding factor in whether this goal can be reached, just like with traditional participation methods.

2. Literature review

2.1 Context

2.1.1 *The Environmental and Planning Act*

In 2022, the new *Environmental and Planning Act* (Dutch: 'Omgevingswet') will finally enter into force. This was originally planned to happen in January 2021 but has been postponed due to CoViD-19 pandemic complicating matters. This new act aims to simplify legislation and rules in order to make it easier to effectively realize spatial interventions and other planning projects. An important part of the Environmental and Planning Act focuses on the stimulation of citizen participation. When new environmental strategies, visions, plans and projects are developed, it is now mandatory for local governments to elaborate on how they are going to include citizen participation in these plans. The current environment of the global CoViD-19 pandemic has made it difficult for traditional participation methods to take place. Digital participation tools make it possible for participation to still occur in the current planning environments, while also solving multiple limitations of traditional methods in the process. As such, digital participation tools may play a large role in shaping the planning environment in the coming months and years.

The Environmental and Planning act of 2022 is not just a single act, but a collection of 26 acts with wide ranging goals surrounding the built environment, housing infrastructure, environment, nature and water. The collective goal of this collection of acts are (1) faster and cheaper decision-making, (2) better solutions to social challenges, (3) more transparent decision-making for initiators and beneficiaries, (4) simplification of rules and (5) more flexibility and a better fit to the situation (Netherlands Enterprise Agency, 2021). In the municipal context, this act aims to make current and future planning projects more easily navigable through all the different layers of legislation, by severely simplifying the frameworks that projects can utilize and move within. This will make it easier for planning projects to work better and more efficient both socially and financially, and streamline processes to create better and quicker results. For government officials, the Act will clarify and untangle the vast web of legislation they have to move through to get their work done.

This process of simplification should also have a positive effect on third parties, both market and citizens. For example, the permit applications procedure will be much more efficient, cutting down the application time from 26 to 8 weeks. There will also be one singular service point for all permits instead of multiple service points for different kinds of permits. With the Environmental and Planning act, it should be much easier for private parties to work with government to realize their projects. Streamlining processes within the government layers, will also make it easier for third parties to work together and collaborate with government parties.

With the Environmental and Planning act also comes a network of nationally interconnected ICT-systems, called the *DSO (Digitaal Stelsel Omgevingswet)* (Digitale Overheid, 2021). This DSO will be a one-stop-shop for all questions that businesses and citizens might have, such as what legislation and rules are in effect at certain locations and all kinds of planning related inquiries they might have. This will also be the place where applications can be made for permits and locational information such as air quality and water quality.

Most interestingly for this study, the act obliges government to include large amounts of participation in all planning related tasks such as creating national, provincial and municipal environmental visions, but also at the much lower level such as specific planning decisions. The act defines participation as "*involving stakeholders in the process of decision-making at an early stage*". The act goes into deep detail as to what participatory obligations must be executed within each stage of the planning process (Ministerie van Binnenlandse Zaken en Koninkrijksrelaties (2021). The act describes that participation should be implemented during four different phases of the planning process: (1) *the idea*, (2) *creating a concrete plan*, (3) *realizing the plan* and (4) *evaluation*. To assist in

this process of participation, a *participation compass* is provided (see figure 2.1) that outlines six different angles of approaches and questions that can be of guidance when implementing participation in a planning process.



Figure 2.1: Participation compass. Source: IPO et al. (2017).

2.1.2 Utrecht

In 2019, the municipality of Utrecht published an action programme outlining their strategies for implementing participation in planning in Utrecht (Gemeente Utrecht, 2019). This publication was also partly made in preparation for the new Environmental and Planning Act and its new framework for public participation. The main thread of this programme is that implementing participation in spatial projects should not be standardized: every project is different and requires to be carefully looked at in order to decide what forms of participation should be implemented and how they should be implemented. Another key point is that the municipality wishes to reach all citizens, including those that do not usually partake in participation processes. The municipality strives to be a national forerunner of public participation and conforming to the new participatory framework that is outlined in the Environmental and Planning Act.

2.1.3 CoViD-19

The global CoViD-19 pandemic caused by the novel coronavirus had a significant impact on all aspects of life all over the world in 2020 and 2021. This also provided challenges for participation in spatial planning projects. The pandemic changed the playing field in participation too: due to social distancing and other lockdown measures taken in The Netherlands, it proved to be extremely difficult to hold traditional participation meetings, which was one of the most widespread tools of participation in the country. Although more research is needed to decide what impact this had on on-going and new participation projects, it seems that participation in general has not come to a halt in these circumstances. Many projects have opted to continue to hold participation meetings via online meeting rooms such as Zoom, or have shifted more towards input from social media platforms such as Facebook, Instagram and WhatsApp (ParCitypatory (2020).

2.2 Citizen participation and limitations of traditional participatory methods

The study in this thesis is about online citizen participation using digital tools in daily urban planning practices. What a long way urban planning has travelled from before the 1970s, when planning was considered a rational field of study with a blue-print nature and a top-down approach. It was assumed that planning was like a mathematical problem, where problems could relatively easily be solved logically, and every problem had its own particular solution. However, Rittel & Webber (1973) started a new movement in planning, stating that the era of post-war planning where problems are easily solvable is over and that planning problems are now inherently *Wicked*. Baum (1977) also acknowledged that the traditional methods of rational planning were insufficient to deal with complex problems and uncertainties in planning. There is no longer a single truth in planning, but the multitude of actors involved all view problems and solutions through different perceptions of justice and truth making the planning world a world of pluralistic truth (Hartmann, 2012). Urban planning problems also had become social issues.

Thus, the rationalistic and positivistic paradigm of planning made place for a more collaborative approach to planning: the communicative turn (Healey, 1997). The terms collaborative and communicative planning are largely used interchangeably in academic works. They both outline a new planning paradigm that emerged after the rejection of rational planning, a paradigm where collaboration between multiple stakeholders in a project is the norm. According to Goodspeed (2016a), this new planning paradigm is not easily defined, but it involves interaction between different actors within a governance process (Healey, 2003) and is based in Habermasian theories of communicative action.

In the early years of collaborative planning, the workings of it can be explained using the triple helix model (see figure 2.2), originally developed by Etzkowitz & Leyesdorff (2000) to explain economic and social development in a knowledge-driven economy. It was mostly a collaboration between governments, commercial parties and knowledge institutes. Experienced planners might recognize that this model excludes an important party that is often included in modern planning practices: civil society and citizens. Carayannis & Campbell (2009) recognized this omission and proposed an improved version that does not exclude this actor: the quadruple helix. They state that in 21st century innovation system, these four actors are intertwined and dependant on each other to move knowledge production and the economy forward (Carayannis & Campbell, 2012), and they all participate in this knowledge creation process because they have their own vested interests: government serves the public interest, knowledge institutes seek to create (scientific) knowledge, private businesses seek economic gains and citizens have personal interests such as improving their quality of life.

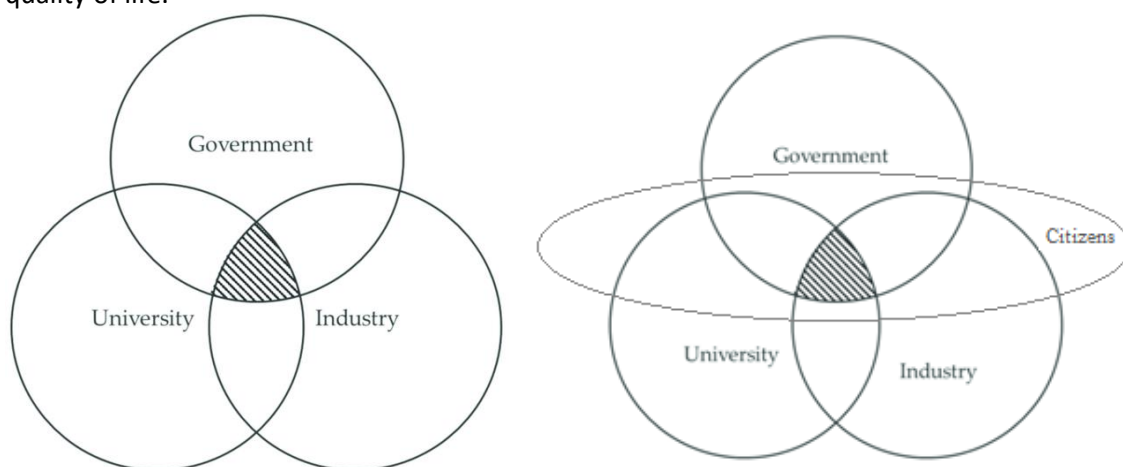


Figure 2.2: The triple helix and quadruple helix collaborations

In the quadruple helix collaboration, the role of the civil society and the individual citizen is twofold (Cayannis & Campbell, 2012). On one hand, citizens should be recognized as a crucial *part of*

the game, as innovations are driven by their desire for life quality. They are the ultimate users of the knowledge and innovation that is created in the form of products that are catered to their needs. Without this driving force, there would be no economic gain from innovations and the system would collapse, this can also be applied to urban planning as the goal of planning is the life improvement of citizens. On the other hand there are citizen experts, the creative class (creative experts), that individually or in groups seek to create knowledge themselves. In urban planning, these often take the form of citizen initiative groups and individual citizen participants. It should be noted that in the theory of the quadruple helix, citizens and civil society are put together as one category of actors. In the planning sphere civil society often takes form as a collective of citizens or citizen initiative, so in this study civil society is also included under the moniker of citizens when this actor is discussed. Because it is recognized how much value citizens can add to the knowledge creation process, but also the planning process, city governments tend to strive for citizen inclusion in the collaborative planning process in the form of *citizen participation*.

Scholarly discussion on citizen participation in urban planning dates back all the way to 1969, when Arnstein (1969) released her well known article *A Ladder of Citizen Participation*. The now-famous ladder of participation that she expands upon in her article is a typology of eight degrees of citizen participation, ranging from non-participation to tokenism to citizen power. Figure 2.3 shows this ladder of participation, that ranges from the lowest form of participation which she called manipulation to citizen control, the most involved form of citizen participation. The lowest two steps on the ladder of participation cover non-participation: although citizens may be stakeholders in the planning process in different ways, they are not at all involved in the process. Steps three, four and five of the ladder are called *tokenism*, where citizens get some increasing degree of involvement in spatial planning, but they are not powerful actors and have little to no decisive power. Finally, steps six, seven and eight describe different degrees of citizen power where citizens have active and decision-making power and involvement in planning processes. Real life applications are of course much more complex than can be described by the ladder, but the message of the article and concept remain strong: public participation can describe many different forms of involvement and there is a big difference between being involved in a participatory process and having actual power in decision-making processes.

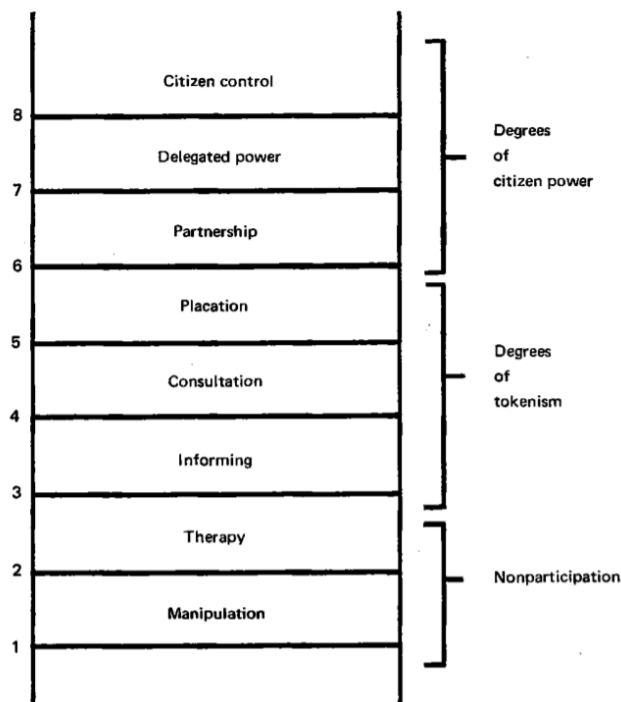


Figure 2.3: Arnstein's ladder of participation (Arnstein, 1969)

Impressive about this ladder of participation is that it withstood the test of time and is still used in academic circles nowadays. Even in the new media age where citizen participation is often conducted online with digital tools Arnstein's ladder can still be used for classifying different degrees of participation, even though traditional methods of participation have been replaced by vastly different modern methods made possible by widespread internet access and the increasing popularity of social media (Evans-Cowley & Hollander, 2010). These newer methods of participation are also made possible by the increasing use of smart city and smart collaboration ideas in city management.

A relatively new strategy to involve citizens in the participation game, is the concept of '*citizen science*'. According to Silvertown (2008), a citizen scientist is a volunteer that collects data and / or processes it as part of scientific research. This relation between volunteer citizens has the potential to improve scientific research as it opens up more possibilities to collect data and gather insights from more varying sources (Cohn, 2008). This form of co-operation between citizens and scientists can be called *contributive*: the citizen scientists merely contribute to science by collecting data but are not involved in the actual scientific process must. However, it must be noted that in citizen science, citizens can add to research in more ways than just collecting and processing data. Citizens can also partake in citizen science in a collaborative way or in a co-creating way (Bonney et al., 2009). Whereas in a contributive co-operation, citizens only collect data that will be used in scientific research, in a *collaboration*, citizens also assist scientists by analysing and interpreting data, answering research questions and presenting findings to other scientists and the public. In a *co-creation*, the participant is involved in the whole process of scientific research, from creating research questions to writing research proposals to drawing conclusions from the results. An obstacle to collaboration in citizen science, and co-creation even more so, is that not all citizens are capable of contributing to scientific processes in a meaningful way because they are they lack knowledge of the scientific field they participate in or they have no experience in conducting scientific research. This obstruction might exclude certain citizens from contributing in other valuable ways.

Although citizen science is a concept used to potentially improve scientific research, its potential contributions to other fields like spatial planning should not be ignored. Jarvis et al. (2014) note positive contributions of citizen science to marine spatial planning. McKinley et al. (2017) note that as well as contributing to conservation science, it can also improve natural resource management and environmental protection. Other contributions of citizen science span flood resilience (Newman et al., 2020), water resource management (Buytaert et al., 2016) and of course spatial planning (Mueller et al., 2017; Macaraig, 2015). Employing citizen science in participatory spatial planning has the potential to improve the citizens' standing on Arnstein's ladder of participation and using newer, digital participation methods it becomes easier and more feasible to involve citizens in the planning process in this way.

It is also important to recognize what kind of knowledge is created when involving citizen scientists and how the knowledge is used, whether it is in scientific research or urban planning projects. How knowledge created by research is used can be classified into three groups: instrumental, conceptual and symbolic (Beyer, 1997). If the research results are directly implemented to solve a specific problem, in a rational and positivistic manner, then this knowledge use is instrumental. Conceptual knowledge use does not seek to directly solve problems, but its goal is seeking knowledge itself and creating more general understandings. This conceptual knowledge might be used to solve other problems in an indirect way, but that was not the intention of the research that created it. Finally, symbolic knowledge is used to legitimize positions, decisions and opinions that were taken, created and made before the knowledge was created (Amara et al., 2004). As stated before, citizens participate in the quadruple helix collaboration because they have a personal interest in a certain matter. They see a problem that they want to solve to improve their own quality of life. In other words: they have a problem to solve. Thus, citizens will be most likely to participate in citizen science if the knowledge that is created will be used instrumentally to solve a problem they have a stake in.

Figure 2.4 is a visual representation of the quadruple helix collaboration: the different actors at play and which roles they fulfil, their contributions, out of what interest they act, and the role citizens play in this collaboration. In this whole machine working, it is important to keep reminding ourselves of how the knowledge that is created is used. Arguably, in order to raise citizens in the ladder of participation, it is important to involve citizens in instrumental knowledge creation, as they have a vested interest to solve problems in their own environments. As such, this is the primary way to involve and engage citizens in participatory urban planning.

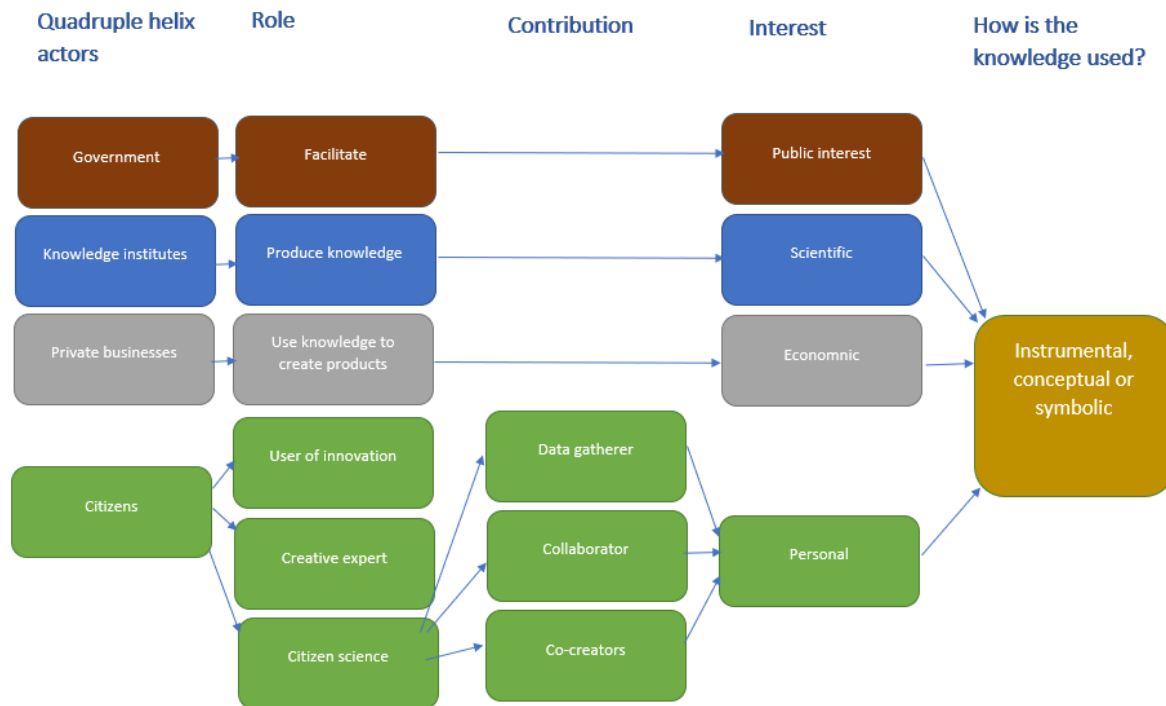


Figure 2.4: Visual model of citizen participation within the quadruple helix model. Sources: Carayannis & Campbell (2009); Carayannis & Campbell (2012); Bonney et al. (2009); Beyer (1997).

Most traditional citizen participation tools are deemed inadequate and unsatisfactory to inform policy makers about what people want (Kathlene & Marin, 1991; Glass, 1979). It is widely accepted that traditional citizen participation methods know some serious limitations. Among these limitations are that participation is often seen as an end in itself (Glass, 1979), participation methods are almost always biased towards certain citizen groups or individuals (Day, 1997) as the information channels only reach these people and participation meeting times are often set and inflexible and participants need to participate in physical spaces they need to travel to (which is especially an issue during times like the COVID-19 pandemic). Citizen participants are often in a position of unequal power as citizen information gained in the process is often ignored and citizens often do not have the means to make in impact on policy (Callahan, 2000). Lastly, consensus-building in participatory projects can also be difficult and costly (Brandt & Svendsen, 2013).

2.3 Smart governance and digital participation tools

A solution to these limitations might be found in *smart governance*. Smart governance combines collaborative and participatory methods with *smart* ideals. Simply said, the smart city envisions using technologies and data, to support city development in the fields of economy, sustainability and liveability and solve modern urban issues (Hollands, 2008; Lai et al., 2020). Smart governance is just one part of the smart city, it focuses on the application of ICTs in governmental management, participation and collaboration (Lin, 2018). To fully understand what this means, we can equate the paradigm shift from a rationalistic planning approach to a collaborative approach that was discussed before to the movement from *government* to *governance*. There is no longer a single decision maker (i.e. the government), but governance is more about managing different stakeholders and focuses on an interactive approach to decision-making (Lin, 2018). It can then be concluded that *smart governance* uses ICTs, data (particularly big data) in order to support and improve governance processes. It promotes inclusion in planning processes and empowers classically weaker parties like individual citizens to take part in governance decision-making in a planning context where government, knowledge-institutes, market-parties and civil society work together towards economic prosperity, sustainability and the life quality within the city. Smart governance supports the idea of governance as consensus building. As Innes & Booher (2007) concluded, consensus-building is a “*way to search for feasible strategies to deal with uncertain, complex and controversial planning and policy tasks*”. It is a strategy to deal with planning problems that are inherently *wicked* and the result of effective consensus-building is high-quality agreements that bring together parties that would otherwise not talk (or have talked) to each other (Innes & Booher, 2007). Smart governance employs digital tools to support the process and outcomes of governance as consensus-building.

Numerous examples of employing digital tools in *smart governance* exist in urban planning practices. One of the most illustrative examples is the *Digital Data Platform (DPP)*. A city government that uses digital data platforms to collect, share and use digital data in order to improve planning practices encourages external users (citizens, software developers, businesses) to co-design government digital services. These data platforms often are inspired by an open-source ideology that strives to make all digital data available to all interested parties as part of a wide ecosystem of data (Pettit, Lieske, and Jamal 2017). An example of such a digital data platform in the Netherlands is the award-winning project *Smart Emission Nijmegen* (2010), where volunteer citizen participants encouraged by city government could individually collect air quality data using relatively cheap digital sensor systems. These data were shared on a publicly available digital data platform. Another such tool to enable public participation in urban planning is *Public Participation GIS (PPGIS)* (Kahila-Tani, 2015), these are GIS-applications and GIS-platforms that are specifically designed to support participatory urban planning. Utilizing PPGIS in participatory urban planning can produce multifaceted information in the early stages of the planning process.

2.4 Digital Participation Platforms

In their aim to provide a globally comprehensive inventory of *Digital Participation Platforms (DPPs)*, Falco & Kleinhans (2018) found that there are three different types of DPPs employed in urban development projects and studied in academic literature. These three forms are distinct from each other in their level of engagement and interaction between citizen participants and the government. These three types are:

- 1) **Information sharing** (government as a platform). In this type of DPP there is a one-way communication between government and citizens. This can be communication from government to citizens (*informing*) where, for example, the government creates a website to inform citizens of urban development plans. Another form is where citizens share their knowledge, data or information with the government in a *consulting* role. In this type, there is no further interaction between the two parties.

- 2) **Interaction** (mutual discourse). In this type of DPP there is a two-way communication and dialogue between government and citizens. This form can be seen as a combination of the informing and consultation subtypes of the information sharing DPP. Citizens are encouraged to give feedback on information that the government shares, and government may act on feedback that they get from citizens. In this form, citizens still have no significant decisive power.
- 3) **Civic engagement, involvement, collaboration** (co-production). This type of DPP goes beyond the information sharing between the parties of government and citizen participants of the first two types. Citizens are operative actors in urban development projects and interact with government in creating policy measures and other spatial interventions. Citizens and government make use of each other's knowledge, assets and resources to achieve a better process and outcome.

Arguably, a fourth type of DPP can be identified as **self-organization**, but in this form there is very little to no interaction between government and citizens and can hardly be called participation in governmental development projects. In the case where self-organization results in a situation where governmental intervention is required, this should be seen as a collaborative or co-productive type of DPP with a bottom-up nature, as opposed to the traditional top-down nature of (digital) participation.

According to Falco & Kleinhans (2018), DPPs can be particularly useful when they are created within networks and communities and the platform is available to all members of the community. Members of the community can share their insights and knowledge, lay or professional, that are freely available to citizens and government and the platform can be used as a means to create more collaboration. However, they also note that even though there is a growing number of web-based and mobile-based DPPs, the use of it is not interactive enough to qualify as a collaborative type of DPP (Falco & Kleinhans, 2018).

Mukhtarov et al. (2018) also identify a similar typology of ICT-based interaction between government and citizens in urban water governance. They identify four types: (1) *citizen sourcing*, (2) *government as platform*, (3) *do it yourself government*, (4) *collaborative planning & groupware*. This categorization is similar to Falco & Kleinhans' (2018) categorization but differs from it because it considers *interaction* (the second type of Falco & Kleinhans) a form of collaboration. It also considers the two information subtypes of *informing* and *consulting* as two different types altogether, *government as platform* and *citizen sourcing*, respectively. Both studies identify the different forms of communication and interaction that happens between government and citizens in urban development projects successfully. However, Falco & Kleinhans (2018) correctly specify that there is a distinct difference between merely interaction and communication, and true collaboration where citizens have more decisive and operational power.

Interestingly, these studies and typologies have a lot of common ground with the academic literature of citizen science and also Arnstein's *ladder of participation*. Though the citizen science literature focuses more closely on the role that citizens play within the participation game, the aforementioned two typologies focus heavily on the interaction between the two parties of government and citizens. Still, a lot of similarities can be drawn. The *information sharing / consulting* type of Falco & Kleinhans and the *citizen sourcing* type of Mukhtarov et al. can be likened to *data-gathering* role that is identified in citizen science literature. When these categories are placed on Arnstein's ladder of participation, they would be called *consultation*. An interesting line of comparisons can be drawn between all the types and categories of these four theories, see figure 2.5 for the full comparison. In the end, all of these categorizations are different ways to rank the amount of participation within urban development projects.

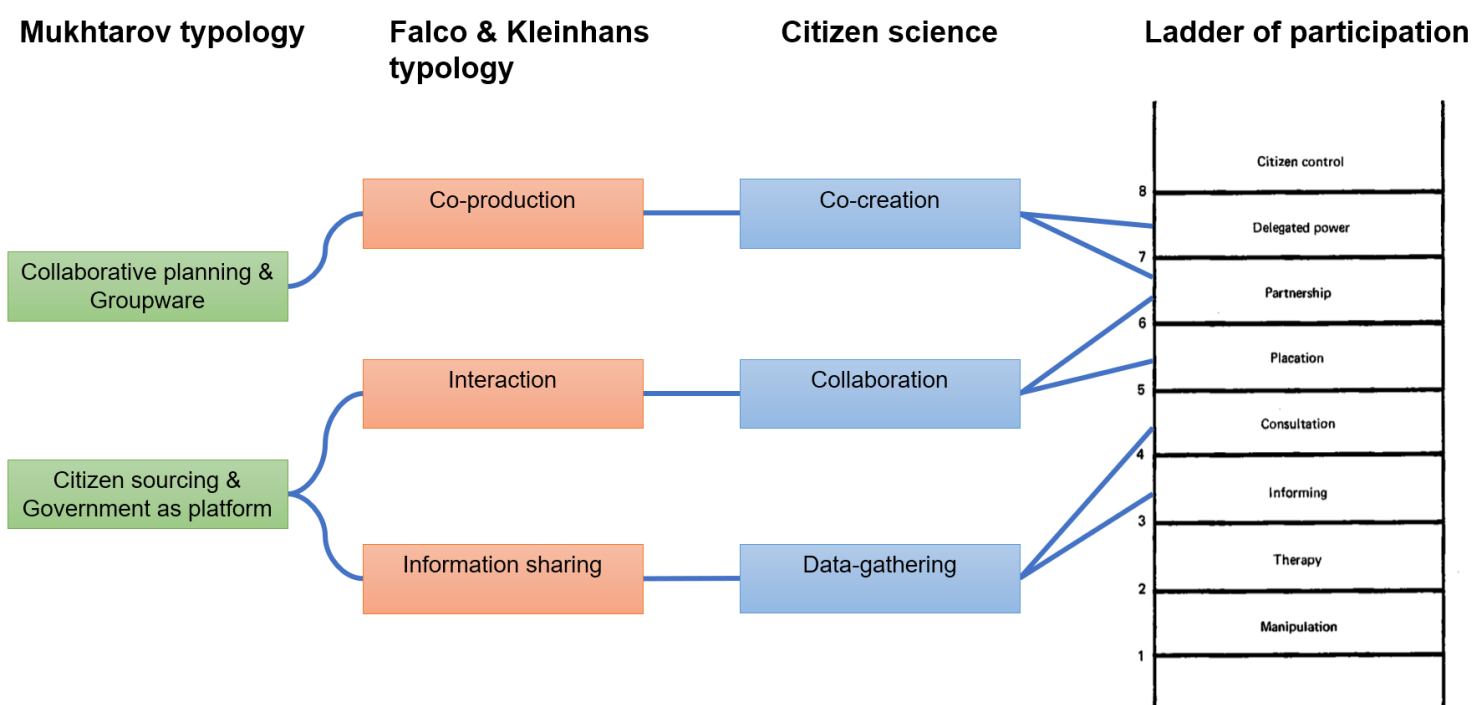


Figure 2.5: Similarities between typologies of digital participation typologies, citizen science and the ladder of participation. Sources: Falco & Kleinmans (2018), Mukhtarov et al. (2018), Bonney et al. (2009), Arnstein (1969).

Henceforth, when talking about Digital Participation Platforms, Planning Support Systems and other non-planning specific systems, the terms *information sharing*, *collaboration* and *co-creation* that are derived from the Falco & Kleinmans (2018) typology and Citizen Science theories will be used (see figure 2.6). The term *collaboration* will be used as it has a historical, academic background within planning literature. The term *co-creation* nicely encompasses a much deeper form of collaboration where citizens are on an equal or even higher level in the planning process than their governmental or market collaborators. Finally, *information-sharing* is a term that shows a low level of collaboration that could either be government sharing information with the public or the public sharing information with the government to use, whereas the term *data-gathering* can be considered too one-sided. It must be kept in mind that the distinction as explained above and shown in figure 2.6 also include all the typological distinctions that are shown in figure 2.5.

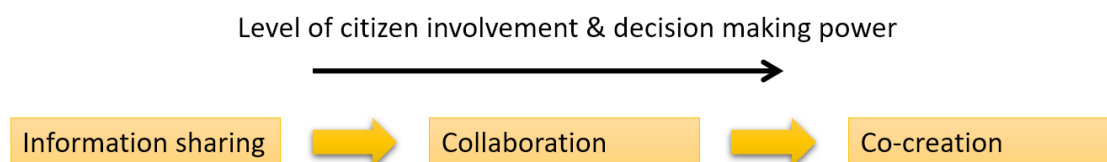


Figure 2.6: Typological distinction of participation types used in this research.

2.5 Planning support science

When they are used in urban planning contexts, Digital Data Platforms and PPGIS can be characterized as specific kinds of planning tools: Planning Support Systems (PSS). Planning support systems are involved digital ICT systems that are specifically designed to support urban planning processes. The first serious attempt of defining the term *Planning Support Systems* can be traced back to Harris & Batty (1993), as they described the first developments of PSS that were based on GIS systems in the 80s. The GIS systems these were based on were typically not suited for planning activities, as they were not developed to be sensitive to simulation, optimization and design tasks that were required for planning activities. In the 1990s, more tools were developed that allowed planners to interactively work with GIS systems as PSS, with software developments that allowed for simulative tasks by inputting parameters defined by planners. In that way, planners could use PSS to give answers to specific *what if*-questions by simulating different scenarios (Geertman et al., 2017). Examples of early systems like that were *CommunityViz*, *INDEX*, *What if?* and *UrbanSim*, many of these are still used in today's urban planning practices (Geertman et al., 2017). Today, these expert systems are more refined, powerful and interactive and can be used by expert planners for many different tasks.

However, it can be questioned whether these systems can be effectively used in order to solve practical planning problems in urban areas. Urban problems are complex social issues with political, cultural and economic dimensions that cannot just be solved by inputting large amounts of data and modelling it (Hollands, 2015). GIS-based Planning Support Systems are, in the end, systems that are driven by large amounts of data in order to find solutions to planning questions that are social in nature. This rationalizing of social data that drive GIS-based PSS may not be adequate to solve these issues, as Kitchin (2014) says that the limited rationality of humans trying to solve complex urban issues cannot be overcome by collecting and modelling large amounts of data. As discussed in a previous section, the planning paradigm shifted from a positivistic approach to solving planning problems to a collaborative approach, and this rationalistic PSS approach does not fit this new paradigm. The large scale of these systems also makes them hard to understand even for the expert users, no one really understands the process and why the systems give certain answers to certain queries (Goodspeed, 2016b), planning support systems are a black box.

In recent years, new technological developments have enabled PSS to be approached differently. A shift has taken place from the developments of planning support systems that are to be used purely by expert planners, to planning support systems that enable communication with and participation by citizens. These PSS are often in the form of web-based participation platforms like the *East Lake greenway planning project* (Zhang et al., 2019), or smartphone applications (Höffken & Streich, 2013), but can also incorporate social media platforms in order to extend the reach and reduce the barrier to entry (Lin & Geertman, 2019). Social media platforms can help citizens to initiate and organize themselves in order to provide input and impact on city planning and planning practices (Lin & Geertman, 2019), they can be used by planners to gather large amounts of data, knowledge and stimulate participation in a new form of PSS.

In order to discuss PSS, however, it is important to get a clear definition in order to define what is being talked about when PSS is mentioned. In other words, what makes all of these different, aforementioned examples a PSS? Definitions used of PSS in literature are widespread, making it a vague term, although most of them agree on that PSS are computer-based tools that provide support for planners in specific planning tasks (Geertman, 2015). For example, Aikins (2010) defines PSS as follows: "*A system that facilitates the process of planning via integrated developments usually based on multiple technologies and common interface. PSS contributes to data management, analysis, problem solving, and design, decision-making, and communication activities*". These definitions, however, share a common symptom: they are focussed on expert planners and the support the systems provide for expert planners in their planning tasks, while more recently the focus of planning support systems has begun shifting from the usage by expert planners to a more collaborative, communicative and participative usage. Although the definition that Aikins (2010) uses does incorporate the communicative aspect of PSS, the focus still lies on an expert actor (a planner) that

facilitates these activities by using a PSS. Klosterman & Petitt (2005) say that PSS can be identified into two main groups: Systems that support the planning tasks and systems that improve their communication and representation. This split also fails to accommodate for the participatory side of latest PSS developments.

In the field of planning support systems, much has been discussed about the so-called *implementation gap*. According to Geertman (2017), in the history of Planning Support Systems, they have been dominated by a discrepancy between supply and demand: the implementation gap. Despite the rapid developments of new systems and the diversity in uses of these systems, planning practitioners have not been applying them to support their planning tasks. Vonk et al. (2005) listed all the bottlenecks that prevent planning support systems from being implemented and divided them into three categories: little awareness (planners are not aware of the availability of systems and their advantages), lack of experience (users are reluctant to implement PSS because they are not used to them) and low intention (planners do not want to use PSS, because they are black boxes). The assumption is that if these bottlenecks can be overcome, widespread usage of PSS will be more common. Other research focuses on the user-friendliness of the complex PSS systems that imposes problems on the implementation (Te Brömmelstroet, 2017) and a fragmented insight between users and system developers (Vonk et al, 2007). Correlations have been found between the planning quality and usefulness of PSS, and its user-friendliness, but these are limited results and inconclusive (te Brömmelstroet, 2017). This implies that if the bottlenecks of PSS are overcome, this will indeed lead to a more widespread implementation of PSS as its usefulness increases with it. It seems, however, that the real bottlenecks of planning support systems are not its little awareness, lack of experience or low intention among planning practitioners, although they can certainly obstruct the implementation of PSS. The real question on planning support systems is how to increase its usefulness and increasing its user friendliness is just one way to reach its goal. In order to increase the usefulness of PSS in planning practice, there is a need to find out what the (potential) added value of planning support systems actually are.

And it is in the participatory side of urban planning where planning support systems may find their added value, by contributing to the system of smart governance. As Kahila-Tani et al. (2016) showed, public participation GIS proved a valuable tool as a PSS in the Helsinki master plan process. In addition to the constraints of PSS discussed above that exist, Kahila-Tani et al. (2016) discuss the issues that current public participation methods face: they are ineffective, laborious and reach few participants. They argue that PPGIS tools can contribute and evolve into a more comprehensive participatory planning support system. In a systematic review of 16 different case studies using interactive PSS, Flacke et al. (2020) found that all of these cases successfully used PSS to facilitate intensive stakeholder collaboration. Even before the inception of modern PSS applications, it was recognized that web-based PPGIS could be a useful aid to environmental local decision-making and that internet-based technologies could be effective in increasing participation (Kingston et al., 2000). These studies show that the potential to overcome the implementation gap and find the added value of PSS might be found in public participation. However, more research needs to be conducted and practical experiments need to be done before such a conclusion can be drawn.

Geertman & Stillwell (2020) argue that recent developments in the field of planning support systems have spurred a transformation and paradigm shift from planning support systems to *planning support science*, a new scientific field. Academic works in the early days of planning support systems mostly focused on the instruments and systems themselves, but that research focus has shifted to the application of PSS within certain scientific fields. PSScience as posed by Geertman & Stillwell (2020) consists of three different dimensions (see figure 2.7): the application dimension (what role can PSS play?), the governance field of spatial planning (in what context does PSScience exist?) and the instrumentation dimension (what is the methodological relationship between planning support systems and other related instruments?). Crucial within these dimensions of PSScience is a close co-operation between research (knowledge institutes), education (knowledge institutes) and practice

(government, industry & citizens/civil society), this collaboration is a “prerequisite to accomplish fine-tuning [of PSScience] in a satisfactory way” (Geertman & Stillwell, 2020).

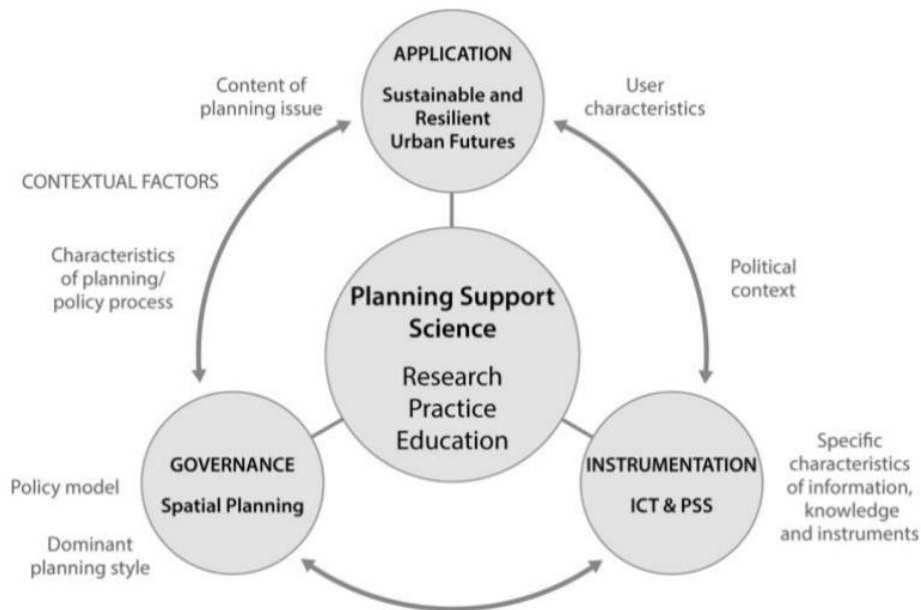


Figure 2.7: PSScience, dimensions and context. Source: Geertman & Stillwell (2020).

This development from planning support systems to planning support science has large implications for the field of research. It means that no longer are we hyper focused on the creation of planning support systems as a goal in itself, but that the systems exist in a three-dimensional context where the systems, whether they are of the informing, communicating or analysis kind, are part of a larger whole. As to not go back to the times of positivistic and rationalistic planning where social context is mostly ignored, the planning support systems cannot be all-encompassing systems that can be applied to every situation and produces an answer, but systems need to be applied within the specifics of the context, adjusted and fine-tuned to work specifically in certain environments. As they are part of a larger whole, planning support systems do not replace the whole planning process to produce an easy answer, but they support these processes in order to gain a broader understanding of issues and possible solutions. Simply said: Technical analyses conducted with planning support systems need to be linked with the social contexts of planning. Especially interesting in the context of this paper’s research is the *instrumentation* dimension, PSScience aims to include not only specialized planning support systems but also broader socio-technical ICT innovations like internet and social media.

2.6 Social media and other digital tools

As established before, planning support systems are tools that are specifically designed to aid and support the planning process and outcomes. However, there are also many other digital tools that can potentially be used to support spatial planning that are not specifically designed for this purpose. Such tools can be as simple as an informative website, where citizens can easily access all information about a certain project in their neighbourhoods or projects they might have other interests in (these informative websites are also especially useful for spatial planning students trying to find cases they want to study...). The line between participation and non-participation is admittedly a little blurry in these digital tools. For example, these websites would not exactly rate high on Arnstein’s (1969) ladder of participation, as it is merely an informing tool. But, if a website leaves an e-mail address where citizens can respond to plans and give their own input on it, it will probably score a little higher on the participatory scale.

An extremely potent non-PSS digital tool that is recently made possible by web 2.0 developments is social media. Fredericks & Foth (2013) state that social media and web 2.0 tools offer opportunities to create new participation strategies that are able to reach new segments of society in urban planning. The potential power and value of using social media in participatory planning is further examined and established in a lot of recent academic research. Social media participation is a useful tool in solving complex social problems (or wicked problems as discussed earlier) and these tools can be used to give citizens their right of participation and right of appropriation where planners can become activists to empower citizens (Tayebi, 2013; Deng et al., 2015). Afzalan and Muller (2014) show that social media can facilitate a valid dialogue between citizen participants between themselves and also planning project managers in green infrastructure planning. In a literature review it was found that data collected using social media in combination with conventional datasets has increasingly been used for urban analysis and modelling, but also that social media provided a new platform for participation, communication and collaboration (Lin & Geertman, 2019). According to this literature review, social media is a new way of participation that can give voices to unheard groups that do not usually involve themselves in public participation and that social media is also used by citizens to organize themselves in citizen initiatives and engage in collective action (Lin & Geertman, 2019). The constraints of social media should also be recognized, as data collected from social media can be inherently biased because it only reaches the actual users of the social media platforms, and it is challenging to gain usable data and useful information from data collected on social media.

If we go back and take a look at the limitations of traditional participation methods that were discussed earlier, these social media tools may have the potential to be a solution to these issues of traditional methods. Social media has the potential to reach a wide audience, and especially an audience that was previously difficult to reach (Fredericks & Foth, 2013). It also provides a platform and a simple, cheap way for real-time communication, something that was previously considered time-consuming and costly in traditional participation methods (Lin & Geertman). Finally, social media provides methods for fast information sharing, so that involved parties and stakeholders can always be up to date on recent developments (CIVITAS, 2015). Social media also fixes the traditional limitation of inflexibility of participation times, as participation via social media is often organized in a time-window of days, or even weeks, and willing citizens can choose to involve themselves whenever it is appropriate for their own time-schedules. Local governments can involve citizens using social media in five different ways (CIVITAS, 2015).

- 1) Providing citizens with information
- 2) Quick answering of questions (social customer care).
- 3) Creating civic engagement
- 4) Sharing real time information
- 5) Gathering information from the public for improvement of city services.

As shown, using social media in public participation has many advantages, however, few cities are utilizing these tools with a proper, well defined strategy (CIVITAS, 2015). It is important that in order to utilize the potential of social media a three-step strategy is employed: inform – listen – engage (Civitas, 2015).

However, using digital tools for participation and planning purposes also brings with it a number of issues. The term *new digital divide* applies well here. The new digital divide is a term that explains that there is a large discrepancy in internet usage between different demographic groups like age and geographic location, and there are not only differences between users and non-users, but also in how internet is being used between groups (Brandtzaeg et al., 2011). This suggests that although using digital participation tools may reach a wider audience, it also reaches a *different* audience. In a digital participation paradigm, different demographic groups are likely to be excluded. In web-based participation citizens may also not feel as involved as they feel in traditional participation methods (Stern et al, 2009) and communication is less personal and not as in-depth.

2.7 Conceptual model

Historically, there have been issues including the public (citizens) in urban planning processes via traditional participation methods because of the limitations of these methods. As explained before, planning support systems and other non-planning specific technological innovations have the potential to breach these limitations. Using digital participation tools correctly, as shown in the conceptual model, makes it possible to fully include citizen participants within the quadruple helix model (Carayannis & Campbell, 2009), tearing down walls that previously caused citizens to be excluded or limited their ability to make an impact on policy in other ways. In this category of citizens, civil society is also included, as in the participatory planning sphere civil society often exists as a collective of citizens or citizen initiative organization. Together, as a quadruple helix, these actors can create knowledge to solve issues that citizens have an interest in. In this process they create instrumental knowledge (Beyer, 1997) to fix these issues hands on. When digital participation tools are employed, it is expected to increase the amount of citizen participation. These participants can act as data gatherers, collaborators or be much more involved as co-creators. This involvement leads to an increase in citizen power and in turn elevates citizens on Arnstein's (1969) ladder of participation. In this whole process, it is important to consider what impact the institutional, legal, social and cultural context has on the planning project. Incidentally, but not less importantly, in this process the issue of finding added value of planning support systems can be solved: they can be used in participatory planning projects in order to include citizens and empower them in a system where they used to be excluded and struggled for meaningful impact. The hypothesis that this conceptual model works upon is that *digital participation tools* allow citizens for more and different ways to participate in urban planning projects and engage in participation types that can be considered higher up on the ladder of participation creating more meaningful instrumental knowledge. Depending on the context of particular projects, this higher amount and more involved engagement can potentially be the added value of digital participation tools in urban planning projects.

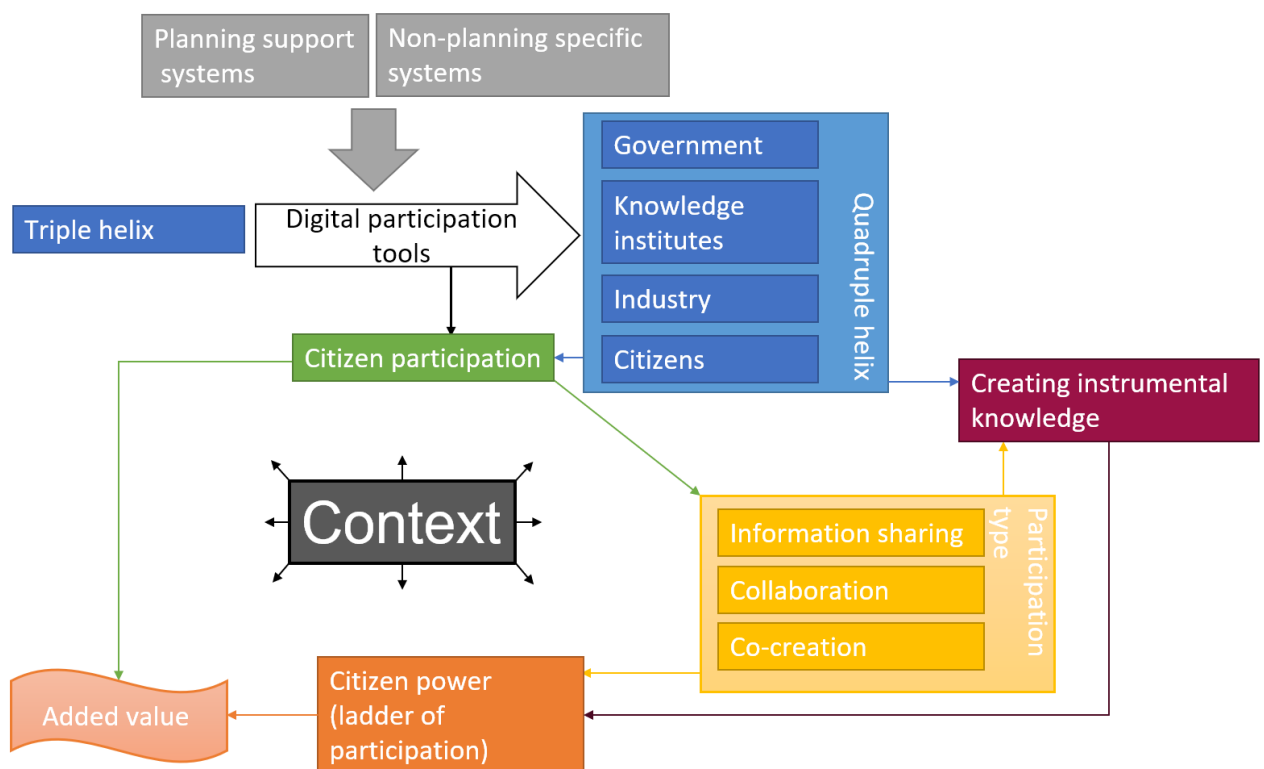


Figure 2.7: Conceptual model

3. Methodology

3.1 Research design

3.1.1 Mixed Research design

This study is designed to be a mix of qualitative and quantitative research. An in-depth study will be done on a limited number of cases, rather than analysing a large number of cases statistically. Planning projects in the modern day, especially participatory projects, are complex processes due to its communicative nature with many different stakeholders and a focus on democracy faced with diversity and difference (Healey, 1997). This is even more so the case in participatory planning projects. Due to this complex and social nature of urban planning, it would be impossible to find out how Planning Support Systems can add value to this system without doing in-depth qualitative research that studies many different perspectives and that does not rationalize complicated, divergent social and political information. According to Boeije et al. (2009), qualitative methods are the methods of choice when we are dealing with a network of different actors with differing backgrounds in a public-private collaboration and tensions between all different stakeholders. Semi-structured interviews will be conducted to gain insight and gather data on the perspectives of the project management side of the cases.

The quantitative side of the study will consist of scraping, collecting and analysing publicly available data from web pages that are an integral part to the studied cases. This method is chosen to be able to gather relatively large amounts of data on the studied planning projects and provide valuable data on the (digital) participatory process, the inputs of citizens, the response of project officials and the influence of citizens on the project outcomes.

Using a mix of qualitative and quantitative methods allows us to gain insight into the perspectives into both sides of participatory urban planning projects: the project management side and the citizen participants' side. By combining these two perspectives into a study, it can be determined whether using digital participation tools can be utilized to positively influence the process and outcome of a participatory urban planning project and find the added value of digital participation tools.

3.1.2 Comparative case study

The research will be conducted by doing a comparative case study. According to Bryman (2016), a basic case study entails an intensive analysis of a single case, studying the complexity and particular nature of the case in question. Because participative planning projects are so complex in nature, as described about, it is of importance to apply such a deep study. However, there are also limitations to the case study design, the main one being the question of external validity: "*how can a single case possibly be representative so that it might yield findings that can be applied more generally to other cases?*" (Bryman, 2016). In order to combat this limitation, multiple cases have been chosen that can be compared and with that comparison general lessons can be learned that can be representative of (participatory) planning support systems as a whole. This kind of comparative case study design also fills in the gap in literature that Pelzer et al. (2015) pointed out: there is a lack of empirical evaluations of PSS applications from a comparative perspective. The purpose of this comparison is to be able to identify the effects and differences in using different digital tools for participatory planning. The cases studied, as explained later, all use different kinds of digital tools in their participation strategy. Some of these tools are as simple in nature as an informative website, where other digital tools are much more involved and can be described as *Public Participation GIS (PPGIS)*. In comparing these different kinds of digital tools, it can be determined whether heavily involved digital tools can actually enhance citizen participation in participatory urban planning.

3.2 Case selection

3.2.1 Criteria

Before selecting the cases, a couple of criteria were applied that assisted in the consideration and selection of the cases. These criteria are as follows:

- 1) The project incorporates the use of online public participation via digital tools, either Planning Support Systems (PSS) or non-planning specific systems, such as Digital Participation Platforms (DPP) or Public Participation GIS (PPGIS).
- 2) The selected cases must concern currently running urban planning projects in The Netherlands. All selected cases should be within the municipal region of Utrecht. At least one of the cases should apply Planning Support Systems to support public citizen participation in some way, in order to compare non-PSS participatory projects with participatory projects that apply PSS.
- 3) The selected cases should strive to employ an open participatory system, where all citizens can participate regardless of their socio-economic and political background or any other characteristic that could exclude an individual citizen from participating. If participants in projects are selected on backgrounds, this might result in biased data that cannot be applied to other participatory (PSS-) projects. It must however be acknowledged that a true, fully open participation strategy is practically impossible, as there will always be citizens that will not be reached using certain methods.
- 4) The selected cases must be a public-private collaboration that involves a data-gathering, collaborating or co-creating relation between local government and its citizens but may also include third parties like businesses or knowledge institutions such as universities. In order to gain an understanding of public participation PSS and its added values, it is important to gain insights from all different parties that are typically at play in such a project.

3.2.2 Selected cases

With the help of these criteria, the following cases in the city of Utrecht have been selected:

1) *Redesigning Kanaalstraat/Damstraat:*

The project of redesigning Kanaalstraat / Damstraat takes place in the neighbourhood of Lombok, in the western part of the city of Utrecht. These streets and the surrounding areas face a few challenges and issues that can be summarized by traffic safety and (youth) criminality. In an attempt to solve these issues, the inhabitants and municipality want to redesign the area. Citizens and local businesses created a neighbourhood vision together that was adopted by municipal officials as the basis for their redesign plan. The first concept design was presented to the public in early 2020 (Gemeente Utrecht, 2020a). As a form of participation, involved citizens, local businesses and other stakeholders were invited to read and look at the concept design and react to it. There was also a PowerPoint presentation with a voiceover uploaded to YouTube that summarized the important point of the plans, in order to reach a wider audience and in turn gather more input. Reacting on the concept plans was done via a page in the municipal website of Gemeente Utrecht.

2) *Redeveloping Thomas à Kempisplantsoen:*

The project area of *Redeveloping Thomas à Kempisplantsoen* (THaK-plantsoen) is located a little bit northwest of Kanaalstraat / Damstraat. It is an isolated residential area that is surrounded by roads, train tracks and an industrial zone. The purpose of this project is to remove the isolated feel of the Thomas à Kempisplantsoen, connecting it to the residential area across the road and to develop the deprecated area in the process. This project is part of the larger project *Westelijke Stadsboulevard*, a series of redevelopments to make this western part of Utrecht more attractive and liveable that started in 2017 (Gemeente Utrecht, 2017). In February of 2020, a document was released to the public that outlined ambitions and starting principles of the redevelopment of the THaK-plantsoen. An informational website was also created to inform citizens and stakeholders of these plans. Originally, several participation meetings were planned for citizens to give their input on the plans, but these meetings had to be cancelled due to national COVID-19 restrictions. Instead, citizens could respond and give their input on the plans on the informational website. Later, when COVID-19 restrictions were relaxed, some physical meetings were still organized. Interesting about this project is that it was born from a bottom-up citizen initiative, a collection of citizens that did not like the current state of the project area.

3) *Utrecht Elektrisch:*

The last project that was studied, *Utrecht Elektrisch*, is a little different in nature as it is not necessarily a redevelopment or redesigning project. It is a citywide project that was created in order to prepare the city for the projected growth of the number of electric cars in the city by creating plans for (potential) locations for electric vehicle charging stations. In 2018, the initial plan for this project for charging infrastructure in the city was released (Gemeente Utrecht, 2018). In these plans it was decided that the availability of charging stations for electric vehicles should not be a limiting factor in citizens wanting to drive electric cars. In March 2020, an interactive online map created with GIS-software was published online, where interested citizens can review the planned locations for new (potential) charging stations and respond to these locations with personal input. City officials gathered these opinions from citizens and changed plans according to the feedback. The responses from municipal officials are published in the same interactive map. A second round of feedback collection started in September 2020.

3.3 Data collection and methods of analysis

Data for this study was collected using semi-structured expert interviews, computer assisted content analysis, digital data analysis and policy document analysis, more on these methods will be explained in their respective subsections. The goal of all these methods of data collection was to collect data on all the different topics that are represented in the conceptual model that was created in the literature review (see figure 2.7). These topics are: (1) how digital participation tools involve citizens in the quadruple helix, (2) whether and how digital tools increase citizen participation, (3) what instrumental knowledge is created using digital tools, (4) what participation type is supported using these digital participation tools, (5) whether used tools elevate citizens on Arnstein's (1969) ladder of participation and (6) what added value these digital tools bring in the process and outcomes of the studied cases. Collected data on these topics will be analysed and eventually used to answer the sub questions of this research, and finally the main research question.

3.3.1 Semi-structured expert interviews

In order to gather analysable data that will eventually result in the answering of the main research question, semi-structured interviews will be conducted with experts that are involved in organizing, designing, managing or participating in the projects in the selected cases. It was the goal to interview one involved person per studied case, however only respondents for *Redesigning Kanaalstraat / Damstraat* and *Redeveloping Thomas à Kempisplantsoen* could be found, and none for *Utrecht Elektrisch*. For this reason, only two interviews were conducted: one with a project manager of *Redesigning Kanaalstraat / Damstraat*, the other with an engaged citizen participant that has experience with participation and urban planning from their occupation.

In the semi-structured interviews, the interviewer prepared a topic list and a list with possible questions to be asked to get information on the specific topic. These questions may or may not be asked directly, depending on the flow of the conversation and at the discretion of the interviewer. It is up to the interviewee to decide whether more questions and information is needed on a particular topic but keeping the topic list at hand is a useful reminder of the goal of the interview and whether enough information has been gathered. In a semi-structured interview, the interviewer has the possibility to ask follow-up questions if a certain answer requires more elaboration or if the interviewee gives what is seen as a significantly interesting reply to a question (Boeie et al., 2009; Bryman, 2016). The purpose of these semi-structured interviews with experts is to gather insights on how the experts look at the usefulness and usability of the digital tools that were employed in their respective case studies. Questions will also be asked about how they think local contexts influenced that participation process and whether using digital participation tools empowered citizens in the projects they participated in, and what role citizens had in the collaboration. Reflective questions about the project will also be asked, determining what positive lessons were learned from using digital tools and what are possible improvements for future similar projects. To effectively gather this information in the semi-structured interview, the following topic list template shown in table 3.1 was used during the interviews, adjusted to whom was interviewed:

Topic list template	
Project general	
Progress of the project (timeline, history, present, future)	
Motivation for the project (why, what are the goals)	
Expectations (challenges, opportunities)	
Interim evaluation	
Actors & citizens	
Involved actors in project	
Roles of actors	
Citizen participation goals (why participation?)	
Citizen participation expectations	
Role of citizens (data collection, collaboration?)	
Knowledge use	
Obstacles & benefits of (digital) participation	
Digital technologies	
Digital participation aims (why digital?)	
Expectations of digital participation	
Obstacles and benefits of digital participation	
Evaluation of digital tools	
Conclusions	
Comparisons digital & traditional participations	
Lessons learned	
Are digital tools valuable for future planning projects?	

Table 3.1: Semi-structured interview template.

For the case of *Redesigning Kanaalstraat/Damstraat*, the municipal project manager was interviewed. For the case of *Redeveloping Thomas à Kempisplantsoen*, one of the citizens that is still an active participant and played a key role in creating the *Fris Alternatief* proposal that eventually got accepted by the city council was interviewed. For the last case *Utrecht Elektrisch* attempts have been made to contact project managers but they were unwilling to participate in an interview, stating that *Utrecht Elektrisch* is not relevant for researching digital participation. Attempts to argue against this fell on deaf ears. Transcriptions for the conducted interviews can be found in Appendix 1.

3.3.2 Computer assisted content analysis

Both the transcribed semi-structured interviews and the collected online data were analysed using a method called *computer-assisted content analysis*. According to Weber (1984), “*content analysis is the process of making inferences from a symbolic medium such as text*”. In computer-assisted content analysis, words and phrases can be used as units of measurement, these units can be analysed in different ways such as frequency count, existence of keywords in contexts, and categorization or classification of words and sentences (Weber, 1984). Word frequency count proved to be not very useful with the wide vocabulary and amount of jargon used in the interviews. Keywords and categorization of words and sentences have used divide texts into certain topics, this made it possible to analyse certain topics within large amounts of texts. These methods of text encoding were used for both the transcribed interviews and the comments made on the website for the Thomas à Kempisplantsoen project.

This analysis was done using the content analysis software *NVivo*. Regarding the conducted interviews, the large amount of transcription text has been categorized into a few separate topics. The purpose for this was to isolate and collect comments from interviewees on the different categories into separate comprehensible sections that makes for easy analysis for the researcher. Every part of

the interview that is relevant to the study is indexed and can be called up easily. Simply said, the categorization of the text makes it easy to pick out relevant information to the research question. The different topics and elements of the conceptual model are used as a basis for the categorization, see table 3.2. The interview data will be used to gather generalized insights on the macro level of the projects, as well as opinions, feelings and attitudes on the projects and relevant information that could not be found in the policy documents that were analysed before the interviews took place.

Topics	Subtopics
Project general	<i>History</i>
	<i>Context</i>
	<i>Expectations</i>
	<i>Challenges & opportunities</i>
	<i>Goals & motivations</i>
	<i>Evaluations</i>
	<i>Lessons learned</i>
Actors	<i>Citizens & civil society</i>
	<i>Government</i>
	<i>Industry</i>
	<i>Knowledge industries</i>
	<i>Process</i>
Citizen participation & power	<i>Information sharing</i>
	<i>Collaboration</i>
	<i>Co-creation</i>
	<i>Citizen power</i>
	<i>Process</i>
	<i>Motivations, goals and evaluations</i>
Digital participation tools	<i>Tools</i>
	<i>Pros & cons</i>
	<i>Process</i>
	<i>Evaluations</i>
	<i>Added value</i>
Knowledge creation	
Personal involvement	

Table 3.2: Categories used in the computer assisted content analysis of semi-structured expert interviews.

Regarding Redeveloping *Thomas à Kempisplantsoen* there was also a content analysis performed on the official DPP were much of the participation too place. The analysed content was that of two participation rounds that partly took place on the participation website. Interested citizen participants could leave publicly available comments responding to questions asked by the project managers and sharing their own insights, opinions and suggestions. There was also a third round of participation that took place, but this content was not analysed because at the time of data collection and analysis for this thesis, the results of that round of participation were not yet released which makes it hard to do a meaningful analysis for this research. More on these different rounds of participation is explained in the results section. The first round of participation consisted of 20 analysed comments, the second round of participation consisted of 70 analysed comments. All of these comments were scraped from the website (thakplantsoen.nl) using the web scraping tool

ScrapeStorm. These comments were categorized into topics that can be seen in the table 3.3. The reasons that the topics for rounds 1 and 2 are slightly different from each other is that the development of the project is a few months further along during round 2 and there was different feedback asked from participants, so naturally some different topics would come up in the citizen contributions. The goal of this part of the analysis was to be able to see whether the topics and suggestions that were brought up on the DPP were considered in the results of the participation rounds and future rounds as well. This way, the influence that citizen participants have on the project can be explored. All of the comments that were scraped can be found in Appendix 2.

Topics round 1	Topics round 2
Building height	Building height
Green and sustainability	Green and sustainability
Safety and nuisance	Safety and nuisance
Social and recreation	Social and recreation
Housing type	Housing type
Kid friendliness	Kid friendliness
Other	Openness
	Number of residences

Table 3.3: List of topics used for the categorization of citizen participant contributions in *Redeveloping Thomas à Kempisplantsoen* participation round 1 and 2.

A challenge for the computer-assisted content analysis regarding this study is that all the collected content is in Dutch and thus the collected results needed to be translated to English. Extra care is taken to make sure that translations are accurate and that contexts are not lost in translation, however it needs to be acknowledged that biases of the researcher may affect the translation and that some nuances and details in language are not easily translatable.

3.3.3 Digital data analysis

In the case of *Utrecht Elektrisch*, the PPGIS map that was used to inform citizens of planned locations for charging stations and where they could comment on these plans was scraped and analyzed. It was not possible to extract the specific comments that citizens made using the PPGIS map, but it was possible to identify which specific charging stations on the map got comments and what the municipal decision regarding these comments was. Because the scraping software that was used for the scraping of DPP data in *Redeveloping Thomas à Kempisplantsoen* did not work on the PPGIS platform, all of the data had to be manually collected. The data that was collected can be found in Appendix 3.

The PPGIS map consists of over a thousand data points, manually collecting all of this data would have been too much work for the scope of this thesis. Attempts have been made to contact the project managers about whether they could share the table data behind the visual PPGIS, but this was unfortunately not possible due to privacy reasons. For these reasons, it was chosen to analyze a selection of cases that were selected using cluster sampling. Cluster sampling was the most fitting form of sampling because it was the only way to ensure that the manual collection of data could be done within the time constraints, as the cases could be grouped before the collection of data actually began. The cases were grouped by the geographical location of the neighborhood they belonged in, there were a total of 10 neighborhoods as can be seen on the PPGIS map. The neighborhoods were assigned a number from 1 to 10 and a virtual 10-sided die was rolled four times using Google's innate

dice rolling program that can be found by typing “roll dice” into the Google search engine. Using this method, the following four neighborhoods were chosen: Oost (54 cases), Binnenstad (12 cases), West (46 Cases) and Noordwest (60 cases); with a total of 172 cases. It should be noted that only the data from cases that had responses from the municipal project managers were extracted, as the cases without any comments had no analyzable data.

The data on these 172 cases in the four neighborhoods was extracted manually by copying the address of the charging station and its associated municipal response into an excel table. The case was then categorized on three elements: whether they received a positive or negative citizen reaction, whether the plans were changed in response to this reaction and whether this change in the location, the amount of charging stations or if the rollout would be phased based on need. Using this data some descriptive statistics could be made on how these three elements, but more importantly it could be analyzed how many cases that had negative responses actually led to some amount of change. This is an indicator of how much influence, or citizen power, citizen participants had on the project.

The PPGIS-map is still available on

<https://rhk.maps.arcgis.com/apps/webappviewer/index.html?id=40ad8c213c264f01970fed24f61344bd>

3.3.4 Policy document analysis

Finally, policy documents regarding the specific studied projects were also analysed. These policy documents are important, unbiased primary data that is objective (Karpinnen & Moe, 2012), unlike the semi-structured interviews that are influenced by the researchers themselves. These policy documents can provide a solid basis of facts and can gain insights on the goals of the projects, upon which the data collected in the interview can be reflected against. These policy documents will not be used as a main way of data collection, but more of a supportive way to possibly gain additional insights in the selected cases, and possibly frame the respondents’ statements in an institutional context. Policy documents have been studied before the main data collection started in order to identify suitable cases and provide contextual information about the projects before data collection started. The purpose of this policy document analysis is firstly to learn about the cases, their specific circumstances and their local contexts. This information will be used to write an empirical analysis in the results section and to prepare for the expert interviews to be able to ask relevant and critical questions. The policy documents that were analysed per case are shown in table 3.4.

Case	Policy documents
Redesigning Kanaalstraat / Damstraat	<ol style="list-style-type: none"> 1. Buurtvisie Kanaalstraat / Damstraat. (<i>Werkgroep Visie Kanaalstraat / Damstraat, 2017</i>). 2. Herinrichting Kanaalstraat - Damstraat Integraal Programma van Eisen & Functioneel Ontwerp. (<i>Gemeente Utrecht, 2020a</i>).
Redeveloping Thomas à Kempisplantsoen	<ol style="list-style-type: none"> 1. Integraal Programma van Eisen en Functioneel Ontwerp Westelijke stadsboulevard. (<i>Gemeente Utrecht, 2017</i>). 2. Een Fris Alternatief (<i>Een Fris Alternatief, 2016</i>)

	<p>3. Startdocument herontwikkeling Thomas à Kempisplantsoen. <i>(Mitros & Portaal, 2019).</i></p> <p>4. Thàk Ambitie- en uitgangspuntendocument. <i>(Gemeente Utrecht, Mitros & Portaal, 2020).</i></p>
Utrecht Elektrisch	<p>1. Utrecht laadt op voor 2030, strategisch plan laadinfrastructuur. <i>(Gemeente Utrecht, 2018).</i></p>

Table 3.4: Analysed policy documents per case.

4. Case studies

For this study, three cases were chosen within the city of Utrecht: “*Redesigning Kanaalstraat / Damstraat*”, “*Redeveloping Thomas à Kempisplantsoen*” and “*Utrecht Elektrisch*”. These three projects were carefully chosen according to their different uses of citizen participation methods. *Redesigning Kanaalstraat / Damstraat* can be considered as using the least involved participation methods of the three, *Redeveloping Thomas a Kempisplantsoen* uses more involved methods and *Utrecht Elektrisch* has the most involved participation tools and methods of the three with tools like an interactive online GIS-platform and two-way communication on social media. In order to determine what more involved participation methods and Planning Support Systems can add to urban planning projects and processes, it is important that cases with different participation methods and different levels of participation are chosen within the same municipal context, as this eliminates institutional context as a possible explanation for different findings and results across the multiple cases. In this section, the three chosen cases will be described, and it will be explained why these cases were chosen to be studied.

4.1 Redesigning Kanaalstraat / Damstraat

4.1.1 Empirical analysis

The project of redesigning Kanaalstraat / Damstraat takes place in the neighbourhood of Lombok, in the western part of the city of Utrecht. Lombok is a diverse neighbourhood. This characteristic of the neighbourhood is clearly illustrated by its main streets: the Kanaalstraat and the Damstraat. Together, these streets form the shopping district of Lombok and ooze diversity: shops are run by owners with migration backgrounds from all over the world that sell products from all over the world. An Arabic fashion store, a Turkish bakery and a Surinamese eatery are just a few examples of the vast number of diverse stores and restaurants that can be found in this area, but a typical Dutch café also exists among this versatility of available commerce. The shopping district can be described best in three words: local, dynamic and multicultural. When visiting this neighbourhood, it becomes immediately clear that this is a typical example of the Dutch multicultural urban society.

However, the project area faces a few challenges that sparked the start of the project that would become *Redesigning Kanaalstraat / Damstraat*. Residents of the area experience nuisances from the large amounts of traffic that goes through the area, unruly youth and petty crime (Werkgroep Visie Kanaalstraat / Damstraat, 2017). Dirty streets plague the street scene and residents have expressed feelings of unsafety due to bad road safety, drug criminality and street harassment (Gemeente Utrecht, 2020a). The street design in the project area is deprecated, not of this time and not designed to handle the amounts of traffic that the area is currently exposed to. The sidewalks are too narrow for the amount of foot traffic and other functions that it provides like bicycle parking, street lightning and trees. Cyclists tend to also use the sidewalks as the shared roads are taken up by car-traffic. Simply said: whether you are in a car, on a bicycle or walking, no one feels safe and at home in this area (see figure 4.1.1).

These urban issues in the area fed a desire for improvement in redesign. This process started in 2017, when a neighbourhood vision was drafted by the residents and entrepreneurs of Lombok. This group of people recognized the issues in the area and wanted to change the bad reputation in the neighbourhood that it gained as it was often negatively portrayed in the news, while simultaneously improving the quality of life by solving traffic and social issues in the area. They called themselves the *Werkgroep Visie Kanaalstraat / Damstraat*, hereafter referred to as *the workgroup*. The workgroup drafted a redesign with the help of other residents and entrepreneurs in the area by organizing neighbourhood meetings and creating a *process group* that was tasked to make sure an

open dialog between all involved parties existed and advised the workgroup on the proceedings to create the eventual neighbourhood vision.

The neighbourhood vision, *Buurtvisie Kanaalstraat / Damstraat*, that was created consists of 7 key points (Werkgroep Visie Kanaalstraat / Damstraat, 2017):

- 1) Safe and peaceful living and growing up in a clean and sustainable environment.
- 2) Shops and restaurants for the local residents, the city and all of the Netherlands.
- 3) Preserving the multicultural character of the area: more diversity in available products completes the street scene.
- 4) Room for all residents and entrepreneurs
- 5) Improvement of the appearance with more room for green, encounter and stay.
- 6) Accessible and safe for cars, pedestrians, cyclists and public transport; more room for pedestrians.
- 7) The Damstraat as the main entrance for the neighbourhood of Lombok.



Figure 4.1.1: Chaotic traffic situation on the Kanaalstraat (Source: Gemeente Utrecht, 2020a).

This neighbourhood vision has since been approved and adopted by the local council of the municipality of Utrecht and taken as the main input for the creation of the redesign of the project area. In May of 2020, the first concept design of the project was presented to the public, called *Integraal Programma van Eisen en Functioneel Ontwerp* (Gemeente Utrecht, 2020a). Figure 4.1.2 shows the project area of the concept design. This concept design is freely available to the public and downloadable on the public website of the municipality of Utrecht. There is also a voiced-over PowerPoint presentation by the project manager available on YouTube. Summarized below are some of the key points of the concept design that are created to meet the key points outlined in the neighbourhood vision that are presented above. *“With this redesign, both streets will get an improved appearance, with more room for green, encounter and stay. This strengthens the shopping district and makes the neighbourhood safer and more liveable”* – Projectmanager Ben Norg (Gemeente Utrecht, 2020b).

- The Kanaalstraat will be changed to be a narrower one-way road and broader sidewalks that will have room for green and restaurant terraces.
- Asphalt roads will make place for clinker bricks that are more aesthetically pleasing and stretch from facade to facade.
- Multiple road improvements to slow down cars to ensure traffic safety and ease of cycling, more designated areas for loading and unloading and designated time slots where loading activities are allowed.

- The one-way road of the northern part of the Damstraat will be reversed and the southern part will have less parking spaces to increase room for pedestrian activities.
- The quality of green will be improved: more trees and plants to respond to climate change and improve rainwater drainage.
- The two squares in the project area will be improved: the mosque square will be more pleasing with more green, water and/or places to sit and the Antonius-church square will be developed together with the owner of the lot to make sure it connects with the developments of the project area.

The residents of the project area were invited to watch the PowerPoint presentation and read the concept design and react to these plans on the municipal website. Reacting was possible until June 3rd 2020. Neighbourhood meetings were initially planned too, but these could not take place because of national CoViD-19 measures in the Netherlands. The form of online participation is a fairly limited form of participation that all took place on the website of the municipality of Utrecht where people could send in their ideas and opinions on the plans, but a two-way dialogue did not actually take place. The type of citizen science in this case can be considered a *data-gathering* relation between the involved parties: government, citizens and local businesses that will be directly influenced by the redevelopment. There were no third-party industry actors involved in the project process. Participation took place on the municipal website of Utrecht; this digital tool can be considered a non-planning specific *Digital Participation Platform (DPP)*.



Figure 4.1.2: Project area of Redesigning Kanaalstraat / Damstraat (Gemeente Utrecht, 2020a).

4.1.2 Expert interview

During the expert interviews, some more information and context about the different projects was first established. Questions were asked about the history of the projects, and the roles of the interviewees within the projects. More in-depth questions about goals and motivations for the projects, expectations, challenges and opportunities, and evaluations were also asked. The answers that the interviewees give to these questions helps to frame the answers to the more specific questions about (digital) participation within the context of their own views on the projects. With these general questions, the interviewer aims to understand and gather information about the involvement of the respondents within the project context. Interesting anecdotes and other bits of information that arose during this general discussion also helped to answer more in-depth, specific questions later on in the interview.

The project official of *Redesigning Kanaalstraat / Damstraat* got involved with the project in 2018. During the interview, they continually wanted to create a clear distinction of two different phases of the project. The first phase of the distinction they made is when the neighbourhood vision in 2017 was made, and the second phase is roughly from 2018 onwards when the municipality got more involved and specific plans were made. As the respondent stated, the neighbourhood vision was largely created by inhabitants of the neighbourhood and the businesses within the project area themselves, although they were being guided by an external process expert and an urban planner. The municipality was barely involved within this process, but they facilitated and supported this process.

The reason it was proposed to be done this way, according to the interviewed project official, was because the municipality in the past had repeatedly tried to make plans for redesigning the neighbourhood, but always encountered a large resistance from the citizens and businesses in the neighbourhood. In an attempt to solve the issue of encountering this constant resistance, the municipal official told the citizens and businesses in the neighbourhood:

“The reason for the neighbourhood vision was that the municipality tried many times to change things, and that kept getting resistance from the residents and entrepreneurs. At one moment the neighbourhood alderman told the citizens that there will be maintenance for the sewer and trees and there are a lot of issues with traffic safety, so why don’t you go and decide what you want for yourselves?”

-Project manager of Redesigning Kanaalstraat/Damstraat, interview 30/11/2020.

It was clear that there were problems in the neighbourhood, like criminality and traffic, that needed an intervention and all involved parties agreed on that, but they could not agree on solutions that were proposed by the municipality. In this way, the burden of finding a solution that all parties could agree one was put on local citizens and businesses. Coincidentally, the respondent says, this unorthodox process proved to have advantages down the line. Even as the project has long moved into the second phase of the actual redesign of the area, the different stages of participation have all moved very smoothly. A lot of resistance from inhabitants that are to be expected during citizen participation have gone more effortlessly, and the interview thanks this to how the neighbourhood vision was created: by the citizens and businesses themselves and with little involvement from the municipality.

The first phase of the project, the creation of the neighbourhood vision, has clear characteristics of a *co-creation* type of participation, and may even go beyond that. Co-creation is defined as the municipality and citizens creating something together and where all involved parties are on equal footing, but in this particular phase of the project the municipality intentionally withdrew from being involved and let citizens and local businesses take the reins. It must however be noted that citizens in this phase were not given much decisive power, as after the neighbourhood vision was finished, they embraced the plans that were outlined but still decided on what the possibilities were to use these plans and what should be changed (with input from the involved parties).

Citizen participation for the redesign phase of the project started in 2019, citizens and other stakeholders could give their opinion on what they called the *70 percent version*. For this process multiple neighbourhood wide meetings were organized and multiple smaller scale talks with specific groups of citizens or stakeholders were conducted, such as with the retailer’s association. These meetings were organized in the municipal office but also in the local mosque and church and were met with enthusiasm from the locals, as around 80 to 100 people showed up for each meeting. The relatively high attendance of these participation meetings contrasts with the attendance and interest problems that are described in academic literature regarding citizen participation. The project manager gives two possible explanations for this fact: the traffic and safety problems are lively subjects in the neighbourhood and something that many citizens experience, and the neighbourhood

vision process already sparked the interests of many people that wanted to get involved. As the project manager of *Redesigning* stated:

“The topic is very much alive within the neighbourhood and people experience a lot of nuisance. Especially during the nightly hours with things like drug related crime, but during the day too with things like traffic nuisances. There is a lot of emotion regarding this topic, you could say.”

-Project manager of Redesigning Kanaalstraat/Damstraat, interview 30/11/2020.

Then, in mid-2020, the formal participation for the *100 percent version* was planned, but this process was of course affected by the CoViD-19 pandemic. Originally, a similar approach was planned for this part of the participation process, where multiple neighbourhood meetings were planned in different locations to reach as many people as possible. Out of necessity, some form of online participation had to be organized as physical meetings were not possible with the national lockdown restrictions in place. As explained earlier, the municipality opted to create a presentation video on YouTube that outlined the current plans and people could respond to these plans with a form on the municipal website. In this form, citizens were explicitly asked to point out what they thought were good things about the plan and what they thought could be improved. The project manager explains that this was a deliberate strategy because usually in participation you get mostly negative reactions and things that should be improved, and little positive reactions about what can be built upon. This was also a strategy to increase the number of responses, as citizens often do not feel the need to respond to plans they consider to be good already which skews the overall response to the negative side. Eventually, 143 responses were gathered with about 300 points of attention that were fairly evenly divided between positive points and points of improvement, according to the project manager.

The presentation video that was created to accompany the online participation form was positively received, by the citizen participants as well as within the municipality itself and it is a strategy that has also been implemented for other projects. The many and varied responses that were received via the participation form show that there may be a future for such a form of online participation, and the biggest advantage according to the project manager is that a broader audience can be reached with online participation. Project managers must be careful, however that the traditional participation audience will not be replaced by the new online participation audience and proposes a hybrid form of participation to solve this issue and reach the biggest audience possible. When online participation takes place people that might have an opinion on certain topics but do not feel like putting in a lot of effort can still participate, as it takes considerably less time and effort than physical participation meetings and can be done on a time of the participants' choosing. This will stimulate more participation for citizens that otherwise might have skipped physical meetings.

However, in order to not alienate traditional participation audiences and to accommodate more involved citizens that prefer to have a dialog with project representatives, traditional participation should still take place in the form of physical meetings. The project manager says this hybrid combination of participation forms is important to reach the largest amount of people, get the highest amount of responses and feedback, create the biggest support base from citizens and eventually improve the outcome and effectiveness of your project. The project manager of *Redesigning* said,

“By doing a hybrid form of physical and online participation, you can meet the needs of people that prefer to have in-depth conversations but also the citizens that prefer to just inform themselves and give a quick opinion without getting too involved: “quick and dirty”.

-Project manager of Redesigning Kanaalstraat/Damstraat, interview 30/11/2020.

The project manager thinks that a large part of participation is informing and correcting misinterpretations. In their experience with this project, as well as other projects, plans often meet a

lot of initial resistance in the participation responses, but this resistance fades when misconceptions are cleared up and questions answered. This is a point of contention for online participation, as it is much harder to address these issues when there is no ability to directly ask questions and as a result many of these misconceptions end up on the participation form responses. In the case of this project the project manager regrets that they did not put in more effort to precede these common questions and misconceptions, but also acknowledges that certain concessions must be made. The project managers chose to make a short presentation video in order to not scare off the “*quick and dirty*”-participants, but it is a learned lesson that in the future they could try to prevent possible misconceptions ending up on the participation forms. In response to a question about how in-depth you should go when informing citizens about project plans before asking them to fill in online participation forms, the project manager says:

“You need to carefully think about your goal, what are your goals and which tools fit? And it is also important to consider the stage of participation, is it early participation or are the plans almost finished? Different tools fit with different goals and that should also be considered when deciding on online versus offline participation or a hybrid form.”

-Project manager of Redesigning Kanaalstraat/Damstraat, interview 30/11/2020.

Concluding the interview, the project manager says that online participation can certainly be a valuable tool in urban planning projects, but the field is still in its infancy and there is much to learn about when and how to properly and effectively implement online participation.

4.2 Redeveloping Thomas à Kempisplantsoen

4.2.1 Empirical Analysis

The project area of the project *Redeveloping Thomas à Kempisplantsoen* lies just northwest of the project area of the *Kanaalstraat / Damstraat* project (see figure 4.2.1), in the neighbourhood of Nieuw-Engeland within the city of Utrecht. The project area is enclosed by busy roads, train tracks and an industrial area which makes this area seem like a residential island on an otherwise busy, industrial zone. The project area mostly consists of social rental housing that are owned by two housing organizations: Mitros and Portaal. Other than that, there are a few shops and some areas designated for warehousing in the zoning plan. Little development has taken place in the area over recent decades.



Figure 4.2.1: Project area of *Redeveloping Thomas à Kempisplantsoen* (Mitros & Portaal, 2019)

Over recent decades, little development has taken place in the project area of *Redeveloping Thomas à Kempisplantsoen* (*THaK-plantsoen*). Some 10 years ago, housing organizations Mitros and Portaal attempted to create a plan for redeveloping the area, as they own a large portion of the rental houses in the area (about 170 residences) they have a vested interest in this redevelopment. These plans fell through, however, due to concerns about noise and smell pollution from the nearby busy roads, as well as financial concerns. What sparked renewed interest in developing this area was actually another planning project in the city of Utrecht: *Westelijke Stadsboulevard*. This plan consists of a series of road improvements to change busy, traffic-rich roads in the western part of Utrecht into a more appealing part of the city that discourages use by through-traffic and increases accessibility for pedestrians and cyclists. The Thomas à Kempisweg is also a part of this series of roads that are due for improvement. As a response to the intention to improve these series of roads, residents of Nieuw-Engeland created an alternative plan that involved closing off one of the main roads of the original *Westelijke Stadsboulevard*: the Thomas à Kempisweg, and rerouting the *Westelijke Stadsboulevard* around the THaK-plantsoen. This citizen initiative was called *Een Fris Alternatief* (2016) (*A Fresh Alternative*). The main goal of this alternative plan was to reconnect the THaK-plantsoen with the rest of the neighbourhood of Nieuw-Engeland. In December of 2017, the local council accepted the proposal by *Een Fris Alternatief* and decided that the *Westelijke Stadsboulevard* should be rerouted around the THaK-plantsoen and the busy Thomas à Kempisweg should be taken out of use, connecting the THaK-plantsoen with Nieuw-Engeland. The new project area of the *Westelijke Stadsboulevard* can be seen in figure 4.2.2. The red square shows where the THaK-plantsoen is located, the rerouting can clearly be seen.



Figure 4.2.2: Project area of Westelijke Stadsboulevard (Gemeente Utrecht, 2017).

With the rerouting of the Westelijke Stadsboulevard, Mitros and Portaal saw a chance to once again come back to their original plans for improvement of the THaK-plantsoen that they created about a decade ago now. In February of 2020, they released a document outlining the ambitions and starting principles together with the municipality of Utrecht (Gemeente Utrecht et al., 2020). In this document describes in a few main points what these parties want to see in improving the THaK-plantsoen. The four main points are:

- 1) Welcome: inviting for residents and outsiders. It should be a place for residents with a diversity of backgrounds and a place where visitors can enjoy green environments.
- 2) Oasis: a shelter within the hustle and bustle. It should be a place where you can breathe and escape from the busy city life around it.
- 3) Together: Home is more than your own house. It should not just be a collection of diverse backgrounds, but a community where people genuinely live *together* and can meet easily.
- 4) Pride: A remarkable place within the city. It should be an outstanding area where people feel at home and it has an iconic urban-green character.

In this document it is also decided that the redevelopment should contribute to the affordable housing stock of Utrecht, which is a current issue in the city. The redevelopment should increase the amount of social housing in the area by at least 50% and it should attract diverse groups of residents. For this reason, the area will gain different types of housing: from smaller to larger and from affordable to midsection rental housing (Gemeente Utrecht et al., 2020).

In order to collect input and opinions from residents in the project area, participation rounds in the form of neighbourhood meetings were planned. However, due to national CoViD-19 restrictions, these participation meetings could not take place and they had to be postponed. On June 19th the first participation round for Redeveloping Thomas à Kempisplantsoen had started, this participation round ran until the 14th of July 2020. This participation round consisted mostly of online participation: a special website was launched (<https://thakplantsoen.nl>) where people could extensively review the current plans as well as the history of the project and relevant documents. On this website, citizen participants could also respond with their input and opinions on the plans. Two physical neighbourhood meetings were also planned now that the CoViD-19 restrictions had been relaxed, where citizens could go and discuss plans with people involved in the project team and give their input too. A lot of input was collected during this first round of participation, the collected input

Alle vier de plannen gaan uit van een verdubbeling van woningen. Dat is teveel voor deze plek. [Lees meer >](#)

Minder een blok vormen meer verspreid en openheid meer doorkijk. Max 300 woningen. [Lees meer >](#)



Houd het luchtig en niet te massaal

anoniem 13-11-2020 23 0 0

Denkrichtingen 3 en 4 spreken mij het meest aan. Die zijn opener en minder 1 groot blok. Bij alle denkrichtingen wil ik pleiten voor beperking van het aantal bewoners. Er komen er al ontzettend veel bij in deze buurt. Ik begrijp dat er meer woonruimte nodig is, maar hou het op Max 300 (dat is al 2x) [Lees meer >](#)



Denkrichting 3 met max verdichting tot 300vhe

anoniem 13-11-2020 16 0 0

Open, speels, afwisselend. Kijk qua verdichting wat past bij de buurt en andere herontwikkelingen in het gebied. Maximaal 300 zou heel goed passen. Succes! [Lees meer >](#)

Figure 4.2.4: Screenshot of participant's comments on thakplantsoen.nl.

Redeveloping Thomas à Kempisplantsoen presents an interesting mix of different citizen science typologies. The redevelopment started with an initiative by a group of independent citizens that created an alternative to a small part of a large municipal redevelopment plan. This form of participation can be considered co-creation. When the designing and redeveloping process actually started, the municipality of Utrecht and housing corporations Mitros and Portaal took the reins in the citizen participation process and started creating ideas and alternatives themselves. These alternatives were presented to citizens and the different parties would discuss and give feedback on each other about the redevelopment plans. This created a relation of two-way communication and dialogue and thus can be considered a collaboration form of citizen participation. The involved actors in the process are government in the form of the municipality of Utrecht, industry in the form of housing corporations Mitros and Portaal, and citizens in the form of citizen initiative *Een Fris Alternatief* and independent participants. The digital side of participation took place mostly after the co-creation phase, with a non-planning specific tool that can be considered a *Digital Participation Platform (DPP)*.

4.2.2 Expert interview

The project *Redeveloping Thomas à Kempisplantsoen* has a history that is somewhat comparable to what happened in *Kanaalstraat / Damstraat*. The respondent that was interviewed for this project was involved in the citizen initiative *Een Fris Alternatief*. They also tried to make clear that there is a distinction of two different phases in the project. The first phase, the phase where *Een Fris Alternatief* was most involved, took place from 2016 through 2017, when plans were being made to redesign the *Westelijke Stadsboulevard*. The respondent was a key player in creating the citizen initiative whose plans were eventually fully adopted by the municipality in their aim to redesign the *Westelijke Stadsboulevard*. The second phase of the project starts after this adoption of the plans by the municipality and is the part that can be considered the redevelopment of the Thomas à

Kempisplantsoen, the project area. In the plans made by *Een Fris Alternatief* the *Westelijke Stadsboulevard* is rerouted around the project area instead of straight through it, which would have created a hard separation between the project area and the rest of the area. This change, as the respondent states, creates opportunities for the project area and allows the redevelopment to take place. Without citizen initiative *Een Fris Alternatief*, this project would not have taken place.

Een Fris Alternatief, as the respondent explains, consisted of a small group of people that live in the neighbouring area of the project area. It was not a very consistent group of members; people came and went depending on their own interests and depending on what was required and needed for the initiative to move forward during certain moments. There were however two key players, that lead the initiative. Both of these key people had a certain degree of knowledge in government and participation processes, which according to the interviewee made it easier for the initiative to navigate themselves through the different layers of government and government processes. Without this experience, it would have been harder to get things done. This notion does not indicate a municipality that is open to involvement from citizen participants, as only experts with a certain amount of experience would have been able to participate.

This is a key difference between *Kanaalstraat / Damstraat* and *Thomas à Kempisplantsoen*, whereas the former invited citizens to come up with their own vision to what a redesign should look like, this project managers proved to be reluctant to any kind of citizen involvement and initially actively worked against the wishes from *Een Fris Alternatief*. The respondent recalls that the project manager was unwilling to talk with the citizen initiative, let alone work together, and tried to silently get decisions through the city council without involving them in the process. This unwillingness from municipal officials made it hard for the citizen initiative to get a foot in the door, the respondent recalls the process of presenting their plans to the municipality as frustrating and it created an adverse stance between the involved citizens against the government. However, as is outlined in the empirical analysis, they eventually managed to get their alternative approved by the city council.

Een Fris Alternatief was motivated by a desire for more liveability in their own part of the neighbourhood and were against the idea of having the busy road right next to their residential area to continue to exist. Apart from that, they also wanted to prevent the *Thomas à Kempisplantsoen* to become even more of an isolated island of living area than it already is. As the municipality and involved housing corporations already had a decade-old desire to redevelop the area, *Een Fris Alternatief* argues that their plans to reroute the road allows this redevelopment to actually take place and that this should be seen as a gift from *Een Fris Alternatief* to the municipality. The respondent argues that part of their success was because of how they framed this alternative to also spark the municipalities' and housing corporations' interests.

Although this phase of the project also had characteristics of *co-creation*, where citizens play a large part in the process of creating something that multiple parties can agree with, it can hardly be called *participation* at this stage. Participation implies that there is a leading party that is willing to invite other participants to their process and therefore improving the outcome. In this case, as the respondent explains, there was barely any willingness from the municipality to listen to the concerns of citizens.

Regarding the citizen participation in the active participation rounds in the second phase of the project *Redeveloping Thomas à Kempisplantsoen*, the respondent stressed that the ability to have an influence on the project as a citizen participant highly depends on which local officials are involved and how open these officials are to ideas from citizens. The interviewee said there is a large contrast between the project lead in the first phase, who was not at all open to citizen ideas, and the project lead in the second phase, who is open to sharing information and listening to citizen ideas and concerns. The respondent says that this is a large improvement for not only the citizens themselves, but also the project overall. When municipal officials are open to confer with citizens, it builds trust between the parties and willingness from people to participate and this should ultimately result in a better project outcome.

The respondent warns that a closed, defensive stance from project managers can ultimately be harmful for the planning project's goals. According to them it should be realized that while facilitating participation can be difficult and a hassle, it also eventually yields positive results. Too often, and in the case of the project manager of the first phase of the project, this positive part of participation is forgotten and it is only seen as a hassle for the projects progress. The respondent also mentions that project managers should be weary for the idea of "participation for the sake of participation". By this they mean that participation in planning projects can be implemented for the wrong reasons, such as just ticking off some legal, administrative box or just trying to create a larger support base while not actually taking the input gathered from the participation seriously. These are examples of issues that were encountered by citizens in the first phase of the project, but have since been improved upon for the second phase.

As is outlined and explained in the literature review, a goal of citizen participation is to include many different groups of people in the urban planning process. It is therefore important to make sure to try and reach wide audiences and not exclude certain groups from the participation process. From the interview, it is made clear that this participation goal was not pursued effectively in the first phase of the process. The respondent says that their citizen collective on some occasions was only able to go as far as they went because they had a certain amount of expertise with navigating government and participation processes within their group. This goes directly against the goal of complete openness in participation processes, as a lay man would not have been able to navigate themselves in the process and would not have been able to exert the same amount of influence, or any at all. However, as the interviewee explains, for the large part this has also been solved in the second phase with the new project manager that is more open to communication with citizens.

The interviewed citizen participant responds positively towards how online participation was implemented in the participation process, despite it being out of necessity. Citizens were notified about the participation via a flyer that they received in the mail, that flyer explained that participation about the project was taking place and were encouraged to inform themselves about the process and get engaged on the project website. As explained before, on this project website citizens could respond to and discuss certain questions asked by the project team. Regarding the information about the project that was shared on the website, the respondent says that it was a "clear story", and it was clearly outlined what part of the process you could participate in and what the framework within which you could give your own opinions on was.

Once again, the respondent positively stresses how open this part of the participation was, because citizens could give their own unfiltered opinion on the project openly on the website and their comments were public and open for everyone to see. From their own experiences, this is not always the case in (online) participation. This openness creates a certain amount of trust with the citizens and shows that project managers are not afraid for possible negative feedback and not afraid to freely engage with the citizens. As the interviewed citizen participant said:

"The information provided was clear, and people could respond without a filter. They were not afraid to engage in conversation, they weren't afraid to hear possible nasty things from participants. If there are nasty things to say, they should also be heard!"

-Citizen participant of Redeveloping Thomas à Kempisplantsoen, interview 07/12/2020.

Besides this online discussion platform, there were also some online digital meetings organized via Zoom. The experience the respondent had with these meetings was also a positive one. According to them, these meetings were organized to look a lot like a physical meeting, where people were invited in small groups to discuss the project with the municipality and other involved parties. The small groups allowed all the participants to have plenty time to speak and share their thoughts, as well as other parties to respond to this feedback. Just as with the online discussion website, this process was also completely open. The respondent recalls a negative experience in a different

participation project where all the participants microphones were muted, they were given little time to speak, and the group-chat function was hidden so only the organizers could see what was being typed. In contrast to that, in these meetings all the participants were free to intervene whenever they wanted with questions, observations and remarks and the chat function was fully visible to anyone. According to the respondent, such online digital meetings are a good alternative to physical meetings, but:

“Important conditions are that meetings are held in small groups so that discussions can take place, and microphones and chat should be completely open! If you are only sending information and closing the chat function, it will amount to nothing.”

-Citizen participant of Redeveloping Thomas à Kempisplantsoen, interview 07/12/2020.

To the questions whether online digital meetings could possibly fully replace physical meetings, the respondent finds that, when it is safe to do so, a combination of physical and online would be the ideal solution. The online part should also consist of an online discussion platform such as the one in *Redeveloping*, in addition to the meetings. An advantage of online meetings over physical ones is that it is more accessible. You can simply sit behind your computer for an hour or so and participate in the same way, whereas with traditional physical participation you often have to commit a full evening to it, arrange for a baby-sitter and other complications. Especially with an online discussion platform, you can fully decide for yourself when you want to read about the project and give a response in a time of your choosing. However, the respondent says that the online meeting alternative is not a full replacement for physical meetings, as the communication in a online meeting room feels less personal while some people might prefer the personal communication between citizens and project managers.

In such a hybrid construct, the respondent says, an audience with different perspectives can be reached and more people could potentially get involved with participation in planning projects. A footnote that the respondent places with this is that there is not much point in the idea of trying to get as many people as possible to participate when people do not want to engage. According to them, there is this idea that the more responses to participation projects there are, the better it is, but citizens that are not as engaged might give less informed and less valuable opinions that might distort the discussion and negatively affect to process and outcome. Finally, the respondent says that an important point of consideration should be the amount of anonymity you grant respondents in online participation processes. While a large amount of anonymity may make the process more accessible, low anonymity will encourage more serious and well thought out responses. The respondent says that a balance should be found between anonymity and non-anonymity according to the project and its goals.

4.2.3 Digital participation platform

The online participation that took place on the public participation platform on the website *thakplantsoen.nl* is split into multiple so-called rounds. The first round took place in June of 2020. The second round took place in October and November of 2020 and the final round is to be held in the spring of 2021.

Round 1

The first round of participation was called *Dromen* (English: Dreams). In this first round, a very open-ended question was asked by the project managers: what are your dreams? In the clarification of the question on the website it said that the project team would like to know what kind of neighbourhood the participants would like to see developed. It was explained that the project managers own dreams were: *Welcome, Oasis, Together* and *Pride*, as explained in the ambitions- and goals-document that was released by the municipality and Mitros & Portaal earlier in 2020. Other than that, very little context was given, and participants were free to address anything they could think of and would like to see happen.

For this round there were a total of 16 individual contributions and 4 reactions by other citizens to those contributions, this makes for a total of 20 posts. These posts can be seen in **Appendix 2.1**. Using the analysis software *NVivo*, these posts were analysed and sorted into different topics that were mentioned in the post in order to gather information on which topics were seen as important by the citizen participants. The frequency of mentioned topics is shown in table 4.2.1 below.

The topic category of *green and sustainability* includes all mentions of dreams for green living environments, such as space for trees and grass fields. Many of the posts that mentioned this wish also included some form of sustainability in their dreams, such as using sustainable materials for the residential buildings. The topic of *safety and nuisance* is comprised of concerns for traffic and criminal safety, as well as concerns for nuisances such as littering, and noise and air pollution. *Social and recreation* includes mentions wishes for social cohesion and mentions of places where residents can meet as well as possible recreation, like space for skating. The category of *housing type* are mentions that wish to see a certain amount or mix of certain housing types, such as low-income-, young family- or elderly housing. *Kid friendliness* encompasses mentions that express a wish for a neighbourhood where kids can grow up healthily, *building height* expresses concerns for the height of buildings and the impacts it might have, like the aesthetics of the neighbourhood and possibly blocking sunlight. Finally, *other* encompasses posts that are not useful or irrelevant to the participation project. An example of how a citizen contribution looks can be seen in figure 4.2.5.

Green and sustainability	11
Safety and nuisance	8
Social and recreation	7
Housing type	2
Kid friendliness	2
Building height	1
Other	1

Table 4.2.1: Frequency of topics in DPP-posts in the first round of participation of Redeveloping Thomas à Kempisplantsoen.

Ronde 3: Voorkeursmodel

Ronde 2: Denkrichtingen

Ronde 1: Dromen

Uitgangspunten

Randvoorwaarden

Groen, ontmoeten

anoniem 25-06-2020 55 0 0

Ik zou graag veel groen willen; groene gevels, groene daken, zodat regenwater ook goed weg kan. Parkeergarage bijv halfhoog met daarop groene tuin. Dit kan dan wellicht een ontmoetingsplek worden (buurtverbinding). Speeltuin lijkt me niet nodig ivm andere speeltuinen in de buurt.

Ook zou het prettig zijn als de wijk in lijn is met de wijk majella, dus in dezelfde stijl, zodat het niet een eiland op zich wordt. Op de hoek vleutenseweg en de parralelweg aan het spoor bijv een hoog markant gebouw (mooie binnenkoper als je de stad inrijdt). Verder liever niet al te hoog ivm zon die je dan wegneemt, dat is dan zelfs in het majellapark merkbaar.

Als geluidswering ook iets met groen.

Fietsenrekken, zodat e.e.a. netjes blijft.

Figure 4.2.5: Screenshot of an example of a citizen contribution in round 1.

It can be seen that *green and sustainability* is the most mentioned and most important topic in the posts by citizen participants, followed by *safety and nuisance, social and recreation* and *kid friendliness*. Concerns about building height was mentioned only once, but it proved to be an important topic in the second round that was held later. Finally, an advertisement was posted by a local business, this of course has no place in the analysis of opinions of citizen participants.

Of the respondents that mentioned topics regarding *green and sustainability*, many of their comments were positive and emphasized the opportunities in the project area to make a green and liveable neighbourhood as opposed to its current situation. The following comment is just one of the many examples of this:

“I would find it fantastic if there is going to be a lot of space for green and that sustainability returns to all building materials. A neighbourhood that breathes tranquillity, instead of the unrest that exists now sometimes. A pleasant place for humans and animals.”

-Citizen response to online participation round 1 (June 2020).

Many of the comments in this category were more general wishes and dreams to transform the area into a green neighbourhood, but some comments gave more specific suggestions, such as trees on specific locations or a bioswale that functions as drainage, a recreational area and a heat stress relief. Some responses also wish to use green as a means to achieve other goals such as safety and social cohesion. Other suggestions focus more on the sustainable side of the topic and hope to see energy-neutral houses built and more ecosystem diversity, such as this comment:

“I dream of a green neighbourhood and a green city, where there is more room for nature and animals and less for motor vehicle traffic. More trees, green, green roofs and facades, and energy-neutral houses that are fitted to be animal friendly (bats, birds etc.).”

-Citizen response to online participation round 1 (June 2020).

In the category of *safety and nuisance* many comments focus on safety concerns and other annoyances that exist in the current situation of the *Thomas à Kempisplantsoen* and wish to solve these issues with the redevelopment. These concerns range from worries about criminality and drug use, traffic safety but also nuisance and pollution caused by traffic, and other nuisances such as noise caused by youth and bicycles not being parked properly. The following comment by a concerned citizen addresses most of these issues mentioned regarding this topic, this response was also supported and corroborated by two separate replies by other citizens:

“It would be great if something could be done about criminality and nuisance. The road is sometimes used as a racing track! There is a lot of stealing, vandalism and littering. There is a lot of annoyance from men driving under the influence of laughing gas, drug dealers and speeding.”

-Citizen response to online participation round 1 (June 2020).

The next most frequently mentioned topics in the citizen responses is *social and recreation*. A lot of the times this topic is mentioned in conjunction with other topics where social cohesion is ultimately the goal, such as using *green and sustainability* or *safety and nuisance* as a means to achieve the goal of social cohesion and recreation. An example of this is the aforementioned quote of the citizen that wished to see a bioswale that could also function as a recreational area and a place for people to meet. A recurring theme of responses with this topic, is that people wish to see a place where you can simply be outside and meeting neighbours is easy. A more specific suggestion made by a citizen is that there should be a small-scale catering facility where people can drink a cup of coffee and eat a sandwich in the neighbourhood with their neighbours. The following quote is a response by a citizen that wishes to see green space being used for a social meeting place and recreation:

“We dream of a ThàKplantsoen that is green, cosy and peaceful. A nice green connection between owner-occupied- and rental houses. A place to relax in the green space with flowers and plants. A place for coffee or other beverage where you can peacefully sit and with paths for skating, scootering and cycling.

-Citizen response to online participation round 1 (June 2020).

The other relevant topics, *housing type*, *kid friendliness* and *building height* were mentioned less and can thus be assumed to be of less importance to the citizens that responded to this round of participation. One citizen responded with concerns about high housing prices that would go hand-in-hand with creating a green neighbourhood, comparing it to other similar places in Utrecht: *“the more beautiful, the more expensive”*, as the participant says. This citizen would like to see affordable housing as they think that that is what Utrecht currently needs, because it is already really hard to get a house in Utrecht as a starter. Another comment regarding the topic says that they like to see a diverse mix of people: young and old, different backgrounds, and from different social-economic backgrounds. Two comments also mentioned *kid friendliness*, but this topic was not usually the main point of the comment, but a supporting argument for *green* and/or *safety*. One comment made suggestions about building heights, saying that it would be nice to have a high building that looks beautiful when you drive into the neighbourhood, but otherwise the buildings should stay low as to not block too much sunlight.

Round 1 results

This first round of participation resulted in the image report that is shown earlier in figure 4.2.3. This image report is said to be a summary of both the online and offline participation and consists of a host of keywords placed in a playful-looking map of the area. The keywords are sorted and color-coded by larger broader topics. When looking at the image report it is apparent that not many similarities can be seen between the keywords that are mentioned in the report and the comments that are left by the citizens on the DPP. This suggests that most of these keywords were taken from the meetings that were held and not from the online participation, although the general more encompassing topics such as green, nuisance and meeting are topics that are both represented in the image report and in the comments on the DPP. The interviewed citizen participant for this project mentioned their dislike of this image report, stating that the image report is nonsense and wondering whether that is really the result of all the time and effort that citizens put in. According to the participant, the project managers should respond to each comment and question more directly.

When reading through the text summary that is provided with the image report and gives a more in-depth explanation (Mitros & Portaal, 2020), a very strong likeness to the *ambitions and starting points*-document that was created before the participation started. This summary is divided into the different topics that are outlined in this document: oasis, welcome, together and pride. The more specific concerns from citizens about safety and nuisances, for example, or not addressed. Although there is a separate topic about *nuisance*, this summary only explains that the project should abide to the legislation about noise pollution from traffic and rail and does not address the other concerns that citizens mentioned on the DPP. This image report and summary suggests that these four different starting points were already set in stone and comments that corroborated these points were specifically picked to support this decision, and that the project managers were not open to all kinds of ideas and the dreams that were mentioned in the question that was asked for this round of participation. However, this is merely a short summary of the participation round. In order to see whether the comments by citizens were indeed taken into account in the continuation of the project, we will look at the starting document that was part of the next round of participation.

At the start of the second round of participation, four “*mindsets*” (see figure 4.2.6), said to be the result of the collected opinions in the first round of participation, were created. Although the image report that was the result of round 1 consisted of a lot of abstract keywords that did not really encompass the dreams and wishes that were expressed in the online participation, these new designs seem to capture a lot of the input that was given on the DPP. The mindsets differ from each other in the design of the buildings and how the open space is shaped: mindsets 1 and 2 consist of a courtyard within a large building block, mindset 3 has a more open design to the rest of the neighbourhood with separate smaller building blocks and mindset four is divided into two separate closed off courtyards. These design shapes are the only meaningful differences in the four mindsets, but it is the similarities between them that seem to have taken the citizen input into account: all the designs have large open spaces with a lot of green, possibilities for recreation such as sports or a collective garden, places specifically designed to be spots for neighbours to meet and relax, and playgrounds for children. Even specific suggestions made by citizen participants have been considered, such as the suggestions for trees and bioswales in the courtyard. Concerns about nuisances have been taken into account by making the open spaces possible to be closed off for the public during late hours (except for mindset 3), and in the case of the two-courtyard design making the street in between the courtyards inaccessible to cars. The building height seems to be relatively high in the different designs, ranging from 5 to 9 layers of residence, despite one citizen being concerned about the building height in the first round of online participation. It can be concluded that, looking at the different mindsets, the comments and suggestions of citizen participants were taken into account, though understandably not all specific suggestions were implemented.

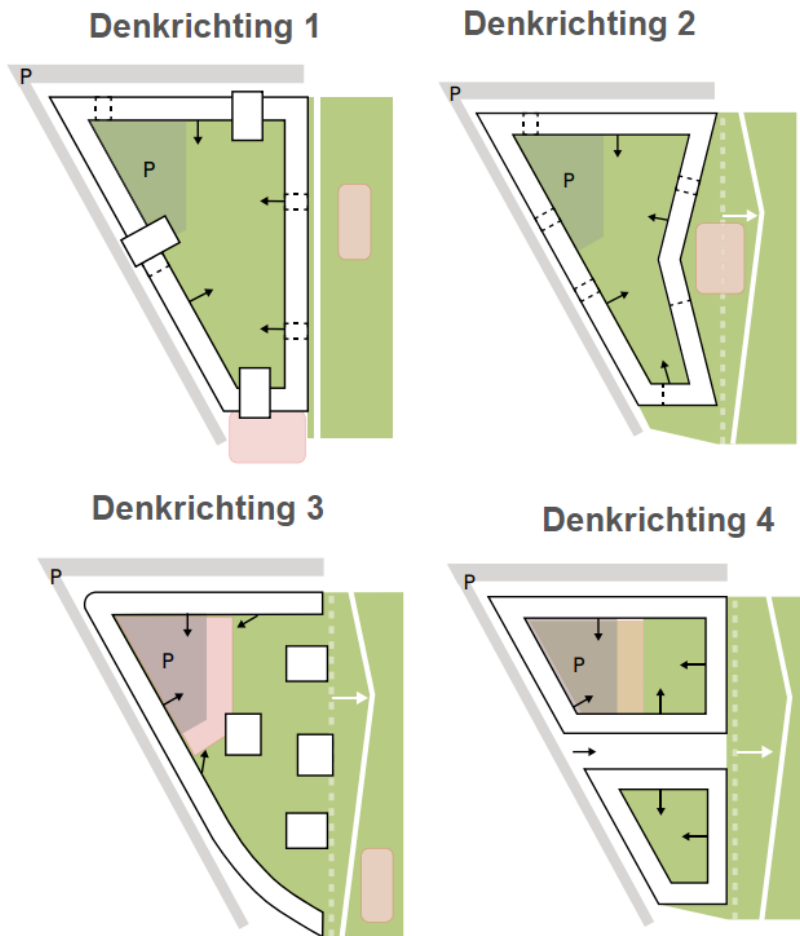


Figure 4.2.6: Four alternative 'mindsets' for the future of Thomas à Kempisplantsoen (Mitros & Portaal, 2020c). More detailed information on these mindsets can be found on the website: <https://thakplantsoen.nl>.

Round 2

The second round of participation that took place was called *Denkrichtingen* (English: *Mindsets*) and took place in October and November of 2020. In this round of participation, four different 'mindsets' were presented. These mindsets can be seen as first draft ideas of possible designs for the redevelopment process. Citizen participants were asked (1) which of the four presented mindsets they preferred and why they preferred them, (2) which ones they did not like and why they did not, and (3) what important points of concern they could identify going forwards with these designs. In this round of participation, 70 individual contributions were made and 4 reactions by other citizens were made on these contributions. The reactions to contributions were citizens agreeing and corroborating the statements made in the posts and were therefore not counted as individual contributions.

Using text analysis software NVivo, the contributions were first sorted according to which mindset they did or did not prefer. The frequency table for this can be seen below in table 4.2.2. It must be noted that many citizen participants did not just choose one preference, but multiple, and some chose to not state a preference at all but decided to just answer the third question stating their suggestions and points of concern. It can clearly be seen in the table that mindsets 1 and 3 had preference among the participants, with 27 and 22 participant preferences, respectively. Mindset 4 had 8 preferences, and mindset 2 had none at all. Mindsets 1 and 3 had no opposition within the contributions, but mindset 2 and 4 both count three and two people disliking them, respectively. 18 contributions did not state a preference for a particular mindset, but did give opinions or suggestions.

Mindset 1	27
Mindset 2	0
Mindset 3	22
Mindset 4	8
Not mindset 1	0
Not mindset 2	3
Not mindset 3	0
Not mindset 4	2
No preference	18

Table 4.2.2: Frequency of preferences of mindsets in participation round 2 of Redeveloping Thomas à Kempisplantsoen.

The preference for mindset 1 was generally stated to be because of its design with a large, open green space in the middle while still keeping some degree of seclusion for the residents and also its relatively low building height compared to mindset 2. The following contribution captures the essence of what many other participants agreed with:

“I find the idea that a busy road is going to make place for a park amazing: more green and less emission is good for the liveability in the city. My preference goes out to mindset 1, because of the fact that the building height stays somewhat low and there will be a large green space.”

-Citizen response to online participation round 2 (October-November 2020)

The building height is a common theme in participant contributions that preferred mindset 1, a mindset 2 was often perceived to be a different version of mindset 1 but with a higher building height. Contributions that stated their dislike for mindset two all gave the reason that it was too high and the building felt too massive. Citizen participants that preferred mindset 3, however praised its openness and the feeling of being connected to the rest of the neighbourhood:

“Mindset 3 is first place hands down! Because of the individual building blocks the neighbourhood Majellepark merges nicely with the neighbourhood Thomas à Kempis. It looks more open and greener, because of the residence blocks within the green. The linked houses form a barrier with the roads and industrial area and the houses have a view of green.”

-Citizen response to online participation round 2 (October-November 2020)

Of the participants that preferred mindset 4, the reasons given for their preference was that it still had some seclusion but did not feel like one large building block. These participants preferred smaller, private green spaces for the residents, and a relatively low building height:

“Mindset 4 speaks to me the most. A courtyard would be nice to have to be able to experience some tranquillity. However, mindsets 1 and 2 are too large and mindset 3 doesn’t speak to me because it would be too open”.

As with the contributions in participation round 1, multiple topics were discussed by the citizen participants. Using Nvivo, the amount of times a certain topic was mentioned in a participant contribution was compiled into a frequency table that is shown in table 4.2.3. Almost all the topics that were mentioned in round 1 return, such as *green and sustainability, safety and nuisance, social and recreation, building height and housing type*. Only *kid friendliness* was not discussed in the contributions of this round of participation. New topics that arose were *openness* and *number of residences*. The topic of *openness* includes all comments that discussed a feeling of openness versus seclusion in the redevelopment and also the interconnectivity with the rest of the neighbourhood.

Number of residences includes comments that voiced their concerns about the high number of residences that are planned to be built in the area.

Building height	34
Openness	27
Green and sustainability	18
Number of residences	17
Safety and nuisance	11
Social and recreation	6
Housing type	1
Kid friendliness	0

Table 4.2.3: Frequency of topics in DPP-posts in the second round of participation in Redeveloping Thomas à Kempisplantsoen.

As can be seen in the table above, *building height* was an often-discussed topic in this particular round of participation. Together with *number of residences*, these topics make up the bulk of people that did not state a preference in their contribution. Even among people that did state a clear preference, this was a much-discussed topic. Participants raised their concern that the project team wants to build too many houses, causing densification in an area that is supposed to be green and tranquil and that is also contributing to an undesirable building height. Although some alternatives have a lower maximum building height than others (height of six layers in mindset 1 vs. 9 layers in mindset 2), the building height is still perceived as being too high in all of the alternative mindsets. Citizens agreed that the maximum number of residences should in the project area should be no more than 300, which would already be almost double the 170 residences currently. Interestingly, in none of the mindsets the amount of residences is explicitly stated or spoken about. The following quotes are examples of the concerns that is raised by participants regarding the number of residences and building height:

“It seems like that in all mindsets the amount of residences increases significantly. Too much, if you ask me. It should fit with the rest of the neighbourhood! Too many residences will come at the expense of the liveability, so we should densify to a maximum of 300 residences.”

-Citizen response to online participation round 2 (October-November)

“I see concerns about building height in many contributions. I think that concern is associated with the number of residences that Mitros and Portaal want to build on this small piece of land. They want to more than double the number of residences! That seems like way too much to me.”

-Citizen response to online participation round 2 (October-November)

Other than citizens that did not give a preference and merely stated their concern for the amount of residences and the building height, participants that stated a preference for mindsets 1, 3 or 4 also gave the relative lower building height compared to the other mindset as a reason for their preference in multiple instances.

Although it was a topic that was not discussed by citizen participants in round 1, *openness* seemed to be an important topic for choosing a mindset this time around. For example, all participants that preferred mindset 3 said they did so because of either its open character or how it seems to be more connected to the rest of the neighbourhood. Some participants that preferred mindset 1 and 4 stated they preferred those alternatives but would still like to see some more openness integrated into the plan. A few participants, however, stated they preferred the seclusion that options like mindset 1 and 4 offer. Generally, it can be concluded that many citizens prefer to see some sort of openness and connectedness to the rest of the plan in the final design of the redevelopment.

“Alternatives 1, 2 and 4 are all too closed off from the existing neighbourhood. One large green space between a large building is not inviting to me. Option 3 is open, warm and cosy. It invites the whole neighbourhood whereas there is no connection right now. It might also be an idea to make a gym in one of the building blocks for all the residents of the new neighbourhood.”

-Citizen response to online participation round 2 (October-November)

A much-discussed topic in participation round 1 was *green and sustainability*. In this participation round it is still a lively topic, with many contributors stating their satisfaction with the amount of green space that is integrated in all of the different mindsets. The amount or shape of the green space was in some cases also given as a reason for choosing a certain mindset as the preferred one. The topic of *social and recreation* often goes hand in hand with *green and sustainability*, where citizens state they would like to see possibilities of being able to meet each other within the green park and possibilities for relaxation and recreation. *Safety and nuisance* topics were also brought up occasionally, some participants would like for the project managers to keep prevention of criminality and other forms of nuisance in mind when creating the final redevelopment design. Finally, one participant stated that they would like to see a mix of rental and purchasable housing, being the only contribution regarding the topic of *housing type*.

Round 2 results

For round two there was no image report or summary made for the contributions of the citizen participants, as opposed to round 1. However, in April of 2021 the third round of participation took place. In this round, all of the feedback that was collected from the DPP and the digital meetings that were held was collected and made into a singular first draft of a final design. This final design is called the *Preference Model*. The Preference Model is once again presented on the DPP-website and citizen participants were asked the question: “Which points of concern for further development of the model do you want to give us?” At the time of writing this thesis, results of this round of participation have not been published yet, so these contributions will not be analysed. However, the Preference Model can be considered an outcome of the second round of participation, so it is interesting to see how much of that feedback can be seen in the result of the participation round.



Figure 4.2.7: Preference Model presented at the start of the second round of participation of Redeveloping Thomas à Kempisplantsoen (Mitros & Portaal, 2020d)

When looking at the Preference Model that was presented at the start of round 2 (see figure 4.2.7, elements from mindset 4 can be seen clearly: there are two separate buildings with separate courtyards with space in between them, though the space that was previously envisioned as a street now seems to be part of the larger green park in the area. The green space also seems to be designed to be more open and more of a smooth transition from the existing neighbourhood to the new Thomas à Kempisplantsoen, thus incorporating elements of the open design of mindset 3. The design is said to be a balance between the two courtyard-design of mindset 4 and the open design of mindset 3, according to the description. The elaboration to the preference design also mentions that there is a clear separation between the private courtyards and the public park, something that was a primary wish from the project managers market parties Mitros & Portaal. Furthermore, it explicitly states that the design creates opportunities for climate and ecology due to the large and connected green space, even explaining what kind of flora and fauna the different parts of the park can attract.

When comparing the preference model to the citizen contributions on the DPP for this participation round there are some similarities between the citizen's wishes and the model but also some significant differences. It seems there was an attempt to create a fine balance between the wishes for openness, yet some seclusion that can be found in the participant contributions. Also, the desire for green and sustainability looks to have been taken to heart, even going so far as to conduct an ecological analysis for the different green spaces that are integrated into the plan. However, none of the elements of mindset 1, which was the clear preference in the citizen comments on the DPP, have been included in the plan. The issues that participants were most concerned about, namely number of residences and building height, were not addressed in the plan at all. In fact, the building height at the highest point of the new construction is 9 layers, while the reason that mindset 2 was disliked so much was because of its relative high building height of nine layers. In conclusion, it seems that the project managers have designed a preference model that meets the requirements mostly of their own vision while embracing some of the feedback that aligns with their own vision, while some of the most pressing issues and desires that were raised by the citizen participants have gone ignored.

locations as well as future planned charging station locations (see figure 4.3.1). In the month of March 2020 people could respond to this location plan with input and opinions about current and planned locations. When one of the dots on the interactive location plan are clicked it reveals extra information about the chosen location. This extra information includes a photo and a zoomed in map of the location, the address, whether reactions were received on the specific locations and whether changes to the location plan were made after receiving the reactions.

Other than the interaction via the GIS-based interactive map, citizens could and can also interact with the project team via social media. A special twitter account (@030elektrisch) was created in order to facilitate this interaction between the project team and citizens. Although this twitter account is still active, the dialogue with citizens has since died down and only took place in the reaction period to the location plan in March 2020.

This project uses a specialized Planning Support System (PSS) that can be considered a Public Participation GIS (PPGIS). This tool is an interactive ArcGIS-online map that is created specifically for the purpose of this project. Although the project uses a complex PPGIS Planning Support System, citizens do not necessarily have a large amount of participatory influence on the project. The relation between citizens and government can be seen as somewhere between a data-gathering type and collaborative type of citizen science, but closer to collaboration than *Redesigning*. The only influence that citizens have on the plans is reacting to possible charging station locations that are already pre-determined by the municipality. Citizens can give their thoughts and opinions on these locations, but are unable to give any personal suggestions for new locations themselves, so there is no co-creation to be identified. The municipality takes the feedback and may reconsider the proposed location, but there is no further feedback or dialogue between the parties. Besides citizens and government, an industry third party called Royal HaskoningDHV is also involved as they created the interactive PPGIS-map that was used in the participation process.

4.3.2 Public Participation GIS

As explained before, in March of 2020 the PPGIS-platform was published with the location of existing, planned and possible future charging station locations. In that same month, citizens had the possibility of responding to these (possible) charging station locations with their suggestions and feedback. Because of the large number of locations given on the PPGIS map, only a subset of neighbourhoods was chosen to be analysed for this study. Out of the 10 neighbourhoods represented on the PPGIS map, 4 were chosen at random: Oost, Binnenstad, West and Noordwest. Within these neighbourhoods, not all of the (potential) charging station locations had received contributions from citizens or there was no response from the municipality to the feedback. Figure 4.3.2 shows an information card of a selected charging station on the PPGIS-map, where there was a municipal decision after responses from citizen participants. Because this study tries to find out whether the digital participation tools are influencing and possibly changing citizen participation possibilities, only the charging station locations that received feedback and a response from the municipal project managers are taken into account. After this selection, there are a total of 173 cases left to be analysed: 54 in the neighbourhood Oost, 12 in Binnenstad, 46 in West and 60 in Noordwest, see table 4.3.1.

Neighbourhood	Cases included in analysis
Oost	54
Binnenstad	12
West	46
Noordwest	60
Total	172

Table 4.3.1: Frequency of analysed cases in the PPGIS-platform of Utrecht Elektrisch in the randomly selected neighbourhoods.



Figure 4.3.2: Screenshot of an information card that opens when selecting a charging station in the PPGIS-map.

The cases were analysed based on the response that the municipality has given to the individual cases and categorized into whether the reaction (positive, negative or mixed), whether there was a change in plans as result of the feedback (yes, no or phased rollout) and what the change in plans constituted of (fewer stations, location change or placement based on need). All of this data can be found in appendix 3. Further results from the descriptive statistics analysis can be found in table 4.3.2 and table 4.3.3

		Oost	Binnenstad	West	Noordwest	Total
Citizen reaction	<i>Positive</i>	18	6	23	42	89
	<i>Negative</i>	36	5	23	13	77
	<i>Mixed</i>	0	1	0	5	6
Change in plans	<i>Yes</i>	12	2	3	3	20
	<i>No</i>	24	8	34	49	115
	<i>Phased</i>	18	2	9	8	37
What change	<i>Location</i>	8	2	2	1	13
	<i>Fewer stations</i>	4	0	1	2	7
	<i>Phased</i>	18	2	9	8	37
	<i>No change</i>	24	8	34	49	115

Table 4.3.2: Results of descriptive statistics analysis of collected PPGIS-data in absolute numbers.

		Oost	Binnenstad	West	Noordwest	Total
Citizen reaction	<i>Positive %</i>	33.3	50.0	50.0	70.0	51.7
	<i>Negative %</i>	66.7	41.7	50.0	21.7	44.8
	<i>Mixed %</i>	0.0	8.3	0	8.3	3.5
Change in plans	<i>Yes %</i>	20.4	16.7	6.5	5.0	11.6
	<i>No %</i>	46.3	66.7	73.9	81.7	66.9
	<i>Phased %</i>	33.3	16.7	19.6	13.3	21.5
What change	<i>Location %</i>	14.8	16.7	4.3	1.7	7.6
	<i>Fewer stations %</i>	7.4	0.0	2.2	3.3	4.1
	<i>Phased %</i>	33.3	16.7	19.6	13.3	21.5
	<i>No change %</i>	44.4	66.7	73.9	81.7	66.9

Table 4.3.3: Relative results of descriptive statistics analysis of collected PPGIS-data.

Looking at the descriptive statistics, it can be seen that most of the reactions received from citizens in total were positive with a total of 51.7%. 44.8% of the reactions were negative and only 3.5% were mixed. The neighbourhoods of Binnenstad and West are somewhat representative of these total numbers, but the neighbourhood Oost had a considerably higher percentage of negative reactions (66.7%) while Noordwest had a higher percentage of positive reactions (70.0%). Somewhat expectedly, the neighbourhood Oost also had the highest relative amount of changed plans as response to the relatively large number of negative reactions: 20.4%, while the total of all neighbourhoods is 10.0%. Oost also had a decision rate for phased rollout of 33.3%, which is also high compared to the total of 21.5% and the other neighbourhoods. The phased rollout response was put into a separate category because the decision does not actually change the outcome of the plans, but only that the charging stations will be placed in a staggered fashion that is based on need. This was a response mostly given to citizen contributions that expressed concerns about there being too many charging station parking places compared to normal parking spaces. Interestingly, the phased rollout is the most common response to a negative or mixed reaction from citizens and the most common change in plans with 21.5% of total. The total of location change (7.6%) and fewer stations (4.1%) sums

up to 11.6%. It stands out that although the total reactions are 44.8% negative, only 11.6% of the cases show a change in plans, 33.1% if you include the phased rollout response. See table 4.3.4 and table 4.3.5 for a more in-depth look at the cases that had a negative reaction and how the municipality responded to this.

			Oost	Binnenstad	West	Noordwest	Total
Change in plans	Yes	Location	8	2	2	1	13
		Fewer stations	4	0	1	2	7
	No		6	2	11	7	26
	Phased		18	2	9	8	37
<i>Total negative or mixed reactions</i>			36	6	23	18	83

Table 4.3.4: Municipal response to negative reactions of (possible) charging station locations.

			Oost	Binnenstad	West	Noordwest	Total
Change in plans	Yes	Location	22.2	33.3	8.7	5.6	15.7
		Fewer stations	11.1	0	4.3	11.1	8.4
	No		16.7	33.3	47.8	38.9	31.3
	Phased		50.0	33.3	39.1	44.4	44.6
<i>Total negative or mixed reactions</i>			100.0	100.0	100.0	100.0	100.0

Table 4.3.5: Municipal response to negative reactions of (possible) charging station locations (relative).

In the tables above it can be seen clearly that the phased rollout is the most common municipal response to negative reactions from citizen participants in the total (44.6%). This is also true for all neighbourhoods except West, where no change in plans (47.8%) is more common than phased (39.1%). Comparatively, the amount of changed plans as a result of negative feedback is low. Combining the location change and the fewer stations changes, the relative amount comes down to 33.3% (Oost and Binnenstad), 13.0% (West), 16.7% (Noordwest) and 24.1% for the total of all negative reactions. 31.3% of all negative reactions resulted in no change in plans from the municipality's side.

These statistics beg the question of how much influence the citizen participants of the project Utrecht Elektrisch actually have. As expected, none of the positive reactions resulted in any change of plans, but also a relatively low amount of negative reactions failed to have a change in plans as a consequence. While one might argue that there is a high amount of municipal responses that state that the rollout will be phased as a consequence of the negative reactions, this is an invalid argument for two reasons: (1) there is no change in eventual outcome in the plans apart from the timeframe in which the plans are realized and (2) there was no indication of timeframe given for the realization of plans in the first place, so the phased rollout could very well have been the initial plan anyway. With these arguments, it can be concluded that the phased rollout is actually not a proper change in plan. If we then combine the phased rollout with no change in plans, it can be concluded that the relative amount of no effective changes as a result of negative feedback from citizen participants is 75.9%. This is the vast majority of the municipal responses to citizen concerns regarding charging stations in the project of Utrecht Elektrisch and it shows that citizen feedback had little influence over planning changes. What strengthens this conclusion even more is that some of the changes in plan were forced changes when citizens pointed out that charging station locations were impossible for different reasons such as disrupting traffic or disabled parking space.

4.4 Comparative analysis

In order to be able to draw conclusions from all of the data that is presented in the previous sections in the results, they must be compared and further analysed. This section will conduct this comparative analysis based on the conceptual model presented in figure 2.7 at the end of the literature review. A summary of the categorization of the cases can be found in table 4.4.1.

	Redesigning Kanaalstraat/Damstraat	Redeveloping Thomas à Kempisplantsoen	Utrecht Elektrisch
<i>Participation type</i>	Data-gathering - Collaboration	Collaboration – Co-creation	Collaboration – Data gathering
<i>Involved actors</i>	Government, citizens	Government, citizens, industry (<i>housing corporations</i>)	Government, citizens, industry (<i>PPGIS map creator</i>)
<i>Digital tool</i>	Municipal website	Project website	Interactive ArcGIS-online map
<i>Planning support system or Non-planning specific system</i>	Non-planning specific system	Non-planning specific system	Planning support system
<i>DPP or PPGIS</i>	DPP	DPP	PPGIS
<i>Instrumental knowledge created by citizen participants</i>	Experiences from living and entrepreneurship in project area	Opinions and wishes from neighbourhood surrounding project area	Mapping citizen desire for charging stations and willingness to change normal parking to electric parking
<i>Relative amount of citizen participation</i>	Low	High	Moderate
<i>Relative amount citizen decisive power</i>	Very low	Moderate	Low
<i>Placement of ladder of participation</i>	(4) Consultation	(5) Placation – (6) partnership	(4) Consultation – (5) placation

Table 4.4.1: Comparison of the characteristics of the three studied cases.

As discussed in the results section before this, it is quite clear that the three different projects use different kinds and types of digital participation tools. This distinction facilitates different kinds and types of participation, influences how citizens are able to participate and arguably also affects how much decisive power citizen participants can exercise. *Redesigning Kanaalstraat / Damstraat* and *Redeveloping Thomas à Kempisplantsoen* both use a *non-planning specific digital participation platform*. As the name suggests, this type of tool is a broad digital participation instrument that is not just used for urban planning purposes. Even though both of the projects use this same digital tool, there are meaningful differences between them. First of all, the DPP used in *Kanaalstraat / Damstraat* was mostly an informational section or page on the much larger municipal website and participants

were encouraged on this page to engage via e-mail. In contrast to that, the DPP used for *Thomas à Kempisplantsoen* is a website that is specifically designed for the purpose of the public participation for the project. This website has a larger scope that shares the basic project information and how to participate, keeps on top of updates of the progress of the project, and also hosts the participation on the website itself in the form of a publicly accessible forum. Finally, *Utrecht Elektrisch* uses a *public participation GIS planning support system*. The digital tool was designed by a third party specifically to aid in the purpose of the planning project and allows participants to interact with a GIS platform and share their input with the municipality. Unlike *Thomas à Kempisplantsoen*, there is no publicly available discussion platform where citizens can interact with each other and the project managers.

In the three analysed cases, the involved quadruple helix actors were always municipality and citizens; as one would expect from a public participation project. In the case of *Kanaalstraat / Damstraat*, there are mostly just citizens and government involved, although citizens were in some cases represented by civil society parties such as the cyclists' union and a collective of small entrepreneurs in the area. In *Thomas à Kempisplantsoen* there are the third parties Mitros and Portaal involved, housing corporations that are heavily involved in the redevelopment and play a leading role in the participation. In *Utrecht Elektrisch*, although there was a third party involved in developing the PPGIS platform, it took no part in the participatory part of the project. It must be noted that the participation was made possible and facilitated through the development of this PPGIS platform, however.

Regarding the different types of participation (informing, collaboration, co-creation), it proved difficult to categorize real life participatory urban planning projects into such distinct types. All three of the cases take some elements from different types of participation, so it is more useful to see the participation types as a spectrum rather than a hard categorization. The spectrum and where the three cases are placed on the spectrum can be seen in figure 4.4.1. Generally, the further along the spectrum a urban planning project is placed, the higher it will score on *Arnstein's (1969) ladder of participation*. Of the three projects, *Kanaalstraat / Damstraat* is the closest to informing and scores lowest on the spectrum. Although the project has some degree of collaboration, as the municipality does ask the input from citizens and does not just use the website as an informational tool, that degree is relatively low. Beyond the asking for participants' opinions, there is no further interaction at least on the digital side of participation; there were some physical meetings where citizens could engage and discuss with each other and the project managers, although they were limited due to CoViD-19 restrictions. *Utrecht Elektrisch*, although it has a complex and engaged digital participation tool, scores just a little higher on the spectrum and is a little closer to collaboration. This is mostly because all of the input from citizens could count on a reaction and decision based on the feedback, that decision can be seen on the PPGIS platform itself as well. Beyond this, there is no discussion and interaction between the two parties and sense of the parties working together towards something. Finally, *Thomas à Kempisplantsoen* is placed much further along the spectrum between collaboration and co-creation. This participatory project employs a lot of two-way communication on the public DPP and also has multiple participation stages that iterate upon the previous participation stages, where feedback from participants is addressed and changes are made according to the feedback. Every time there is a large development in the process, citizens are given the chance to participate and specific suggestions and ideas given by participants even make it into the newer designs which reminds us of elements from the co-creation type of participation. However, as the project managers from the housing corporations and the municipality still take the reins and heavily guide and steer the participation process, it cannot be fully considered co-creation.

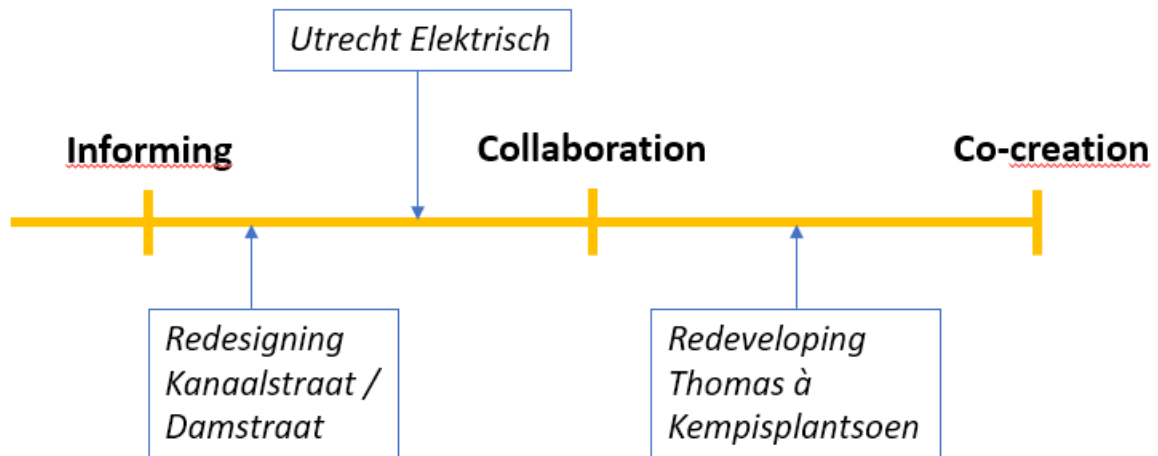


Figure 4.4.1: Spectrum of participation types and placement of cases on the spectrum.

Before the amount of citizen participation and citizen power can be discussed, it should be noted that in the three different projects different kinds of knowledge is created by participating citizens. In all the projects, participants provide feedback towards tangible goals and solving problems, so they can all be considered to be creating instrumental knowledge, however this instrumental knowledge differs from each other in what it looks like and, of course, what the goal of the project is. In the case of *Kanaalstraat / Damstraat*, the knowledge consists of experiences from residents and entrepreneurs in the area: they see certain problems and issues in the neighbourhood and want to see them solved. They identify these issues and through their experiences try to give suggestions for the redesign in order to improve on these issues. *Thomas à Kempisplantsoen* is more of a redevelopment project in the sense that much of the current area will be demolished, basically allowing redevelopment from a blank slate. As a result, there is less current-problem solving (although some feedback still specifically mentions they want to address issues like nuisance) and it is more focused towards ideas on what a new neighbourhood should like, and what elements people in the surrounding neighbourhood would like to see included in this new to-be-developed neighbourhood. Lastly, *Utrecht Elektrisch* focuses on mapping the desire and need for electric vehicle charging stations and willingness from participants to change regular parking spaces into charging spaces. This knowledge focuses much more on specific kind of need as opposed to the redevelopment of neighbourhoods.

In the three cases there is difference in the amount of participation facilitated by the different types of participation, the different participation tools and the involved actors. In this case, amount of participation does not mean how many citizens can partake, but how involved citizen participants are in the participation process. By this definition, it can be said that *Kanaalstraat / Damstraat* has a low amount of citizen participation in the digital phase of the process. There is only one stage of the process where citizens can give their input and even this stage is rather limited in the scope of participation: an almost complete design is presented and citizens are asked to give their thoughts in the near-final design. The participation in *Utrecht Elektrisch* is a little more involved: citizens can give their input on very specific cases and instances all over Utrecht, compared to *Kanaalstraat / Damstraat* this makes for a moderate amount of participation. However, *Thomas à Kempisplantsoen* has a much higher amount of participation compared to both other projects: citizens are included in the process in multiple participation stages and their input is asked on a broad range of subjects.

However, the amount of participation does not necessarily say much about the decisive power that citizens have within the projects. The decisive power can be explained by how much influence the citizen participants have over a certain project and in how far participants are allowed to make certain decisions, or at least influence decisions that project managers make. As the project manager of *Kanaalstraat / Damstraat* explained and admitted himself, the digital participation phase of the

project did not amount to changes in the final design. The goal of the participation was not to make sweeping changes in the design, but to allow the municipality to elaborate and explain their plans to residents of the area and create a support base. The project manager said that none of the issues that were brought up in the participation were unexpected and not already considered issues. This clearly shows a very low amount of decisive power from the citizen participants in the process, as it seems that most plans were already set in stone and the participation was organized not to let citizens get involved in creating plans or designs, but to elaborate on decisions that were already made by the municipality. *Utrecht Elektrisch* also shows a low, but a bit more, amount of decisive power based on the statistical analysis that was done: although there were 83 negative reactions from the cases in the randomly selected neighbourhoods, only 20 of these resulted in changes in plans and some of these were forced changes due to bad planning from the municipality. *Redeveloping Thomas à Kempisplantsoen* has a higher amount of decision power, as some of the input, opinions and suggestions that participants have given can be seen in the plans for the following participation stages. However, the amount of decision power can still not be considered to be very high, as some of the most pressing issues that citizens brought up on the DPP have gone ignored or barely addressed. As is discussed in the section on this project questions about cherry picking certain kinds of feedback that align with the project managers' plans should be asked when looking at the decisive power of citizens, although conclusions drawn on this should be considered carefully without more data.

Looking at the amount of citizen participation and amount of decisive power, the digital participation stages can be placed on the ladder of participation: *Redesigning Kanaalstraat / Damstraat* and *Utrecht Elektrisch* can be placed on the 4th step of consultation. As explained by Arnstein (1969), citizens' opinions are invited but there is not guarantee that their actual concerns and ideas are considered. This sounds exactly the largely ignored negative reactions from *Utrecht Elektrisch* and the expert from *Kanaalstraat / Damstraat* explaining that the participation was largely just to create a support base in the neighbourhood, rather than making actual changes in plans. *Utrecht Elektrisch* also shows some elements of the 5th placation step on the ladder: there was a limited agree of influence just to show that citizens were indeed involved, as a small percentage of the negative reactions did result in some sort of change. *Redeveloping Thomas à Kempisplantsoen* can be placed somewhere between the 5th step of placation and the 6th step of partnership. Citizens of this project are involved in the process and some requests are at least partially fulfilled, but the lion's share of the power is still in the hands of project managers. This and the fact that some of the most pressing issues from citizens were not included or mentioned in future designs shows that there is still some degree of placation.

5. Discussion

This master's thesis research sought out to find and understand the added value of digital participation tools in spatial planning. Due to the social restrictions as a consequence of the global Covid-19 pandemic and the new legal planning context with the Environmental Act that should have entered into force in 2021 but got delayed to 2022 because of the same pandemic, the application of digital participation tools has quickly increased in popularity in urban planning projects in The Netherlands. Three of these projects that applied different kinds of digital participation tools have been analysed for this study, *Redesigning Kanaalstraat / Damstraat*, *Redeveloping Thomas à Kempisplantsoen* and *Utrecht Elektrisch*. All of these cases are situated in the municipality of Utrecht, minimizing the differences in institutional contexts.

The three urban planning projects have been analysed according to the conceptual model that was developed in the literature section and is based on existing academic knowledge, which this study aims to build upon. The existing literature in planning support systems (PSS), and by extension digital participation tools, postulates that there is an implementation gap: although the digital tools are widely available, they are not widely implemented (Geertman, 2017). A suggested reason for this is that the tools that have been implemented in the past show little added value; there is simply not enough of a reason to put in the effort to change up traditional systems if newer systems do not bring anything to the table. This thesis tried to challenge the notion that the usefulness of planning support systems (and also non-planning specific systems employed in planning contexts) is low and can be of added value by employing them as digital participation tools. When digital participation tools prove their usefulness, other bottlenecks like little awareness, lack of experience and low intentions from planners can also be overcome.

By employing digital participation tools (which can be planning support systems or non-planning specific systems) this thesis suggests that citizens can gain a stronger position at the stakeholder table and triple helix can truly become a quadruple helix where all parties, including citizens, stand on equal footing (Carayannis & Campbell, 2009; Carayannis & Campbell, 2012). The hypothesis of the conceptual model is that digital participation tools will stimulate the amount of citizen participation both in the number of participants and also how much individual citizens can participate in urban planning projects, this will allow for more engaged participation types that create more in-depth and valuable instrumental knowledge, which will finally increase decisive power for citizens and elevate citizens on Arnstein's (1969) ladder of participation. The increased citizen participation and higher amount of citizen power are suggested to be the added value of planning support systems and non-planning specific systems in urban planning contexts as digital participation tools.

Whether these hypotheses are correct was explored by doing a mixed method study on the three cases, conducting semi-structured expert interviews, computer-assisted content analysis of a digital participation platform (DPP) (Falco & Kleinhans, 2018) and quantitative exploration of data from a Public Participation GIS (PPGIS) (Kahila-Tani, 2015) platform. A constraint of this method was that, because of the diverse nature of the three projects, different methods were used per case which makes comparing the results more challenging. To deal with this, the comparative analysis was based on subjects and concepts that were directly pulled from the conceptual model. This made it possible to create specific categories on which the cases could be compared, even though the methods of categorizing the characteristics of the cases were different per case.

The comparative analysis shows that *Thomas à Kempisplantsoen* has the highest amount of citizen participation and can be placed highest on the ladder of participation, showing a high amount of citizen power. *Kanaalstraat / Damstraat* showed a low to very low amount of citizen participation and decisive power, and *Utrecht Elektrisch* scored in between. Interestingly, it seems that the higher the amount of participation is (or how involved participants are in the process), correlates with the amount of decisive power that citizens hold. However, it does not seem to matter how advanced the digital tool is or whether it is a PSS or non-planning specific tool, as the non-planning specific DPP

(used in *Thomas à Kempisplantsoen* and *Kanaalstraat / Damstraat*) scored both the highest and lowest in the amount of citizen participation and decisive power, while arguably the more digitally advanced PPGIS platform, which is a true PSS, scored in between the DPPs.

What does seem to matter is where the project is placed on the spectrum of participation types. During the collection and analysis of the data it was found that categorizing projects that use digital participation tools into the three separate participation types of information gathering, collaboration and co-creation (based on existing literature: Falco & Kleinhans (2018), Mukhtarov et al. (2018), Bonney et al. (2009), Arnstein (1969)) proved to be difficult, as some elements of the participation types can cross-over to the other types. It was therefore more useful to look at the participation types as a spectrum, where a project with mostly information-gathering participation elements is placed at start of the spectrum and projects with mostly co-creation elements is placed at the end of the spectrum, the three cases that were analysed can all be placed in between the different breakpoints in the spectrum. *Kanaalstraat / Damstraat* is placed a little after information gathering, as it incorporates “some” elements of collaboration, *Utrecht Elektrisch* is placed closer to collaboration but still has some elements of information gathering, while *Thomas à Kempisplantsoen* is placed much further along the spectrum incorporating both elements of collaboration and co-creation (see figure 4.4.1). The further along the spectrum the three different projects are placed, the higher the amount of participation and the more decisive citizen power the projects know.

In the case of *Redeveloping Thomas à Kempisplantsoen*, the involved housing corporations Mitros & Portaal played a large role in the project’s digital participation. It was loosely suggested in the conducted interview that the fact that this industry third parties had a leading role in the process contributed to the success of the participation: Because citizens tend to distrust municipalities and other governmental bodies, such a third party can play an important link between the citizens and government to bring them closer together. This project certainly suggests this to be true, as it scores higher on citizen participation and citizen power than the other projects that did not have a third party in such a leading role, but there is not enough data on this topic to make a proper conclusion. It is an interesting avenue for further research, however.

The analysed cases suggest that the further along the participation type spectrum an urban planning project that employs digital participation tools scores, the more involved the citizen participation will be and the more decisive power citizens hold. The question then is how projects can incorporate more elements from co-creative and collaboration types of participation in order to stimulate this. Ironically, this comes down to the willingness from project managers to let citizen participants engage in a more involved and in-depth way. The citizen participant that was interviewed for *Thomas à Kempisplantsoen* showed that when the project manager changed, a much more open approach to citizen participation was adopted and thus citizens could participate in more involved ways that would score higher on the participation type spectrum. The respondent for *Kanaalstraat / Damstraat* also alluded to the fact that the participation was meant to create support base and not actually give citizens decisive power, showing a low willingness. Fortunately for the sake of (digital) citizen participation, the legal contexts of participation will change to allow and enforce more participation once the new Environmental Act enters into force in 2022, and the interviews show that municipalities and other involved parties have already become much more accepting of digital participation tools as a result of the pandemic events in 2020 and 2021.

It must be noted that just employing a higher degree of participation type on the spectrum will not necessarily increase the amount of citizen participation and citizen decisive power. For example, the project *Utrecht Elektrisch* would have scored better in the category of citizen power if a larger number of negative reactions were responded to with actual changes in plans. However, as with the participation type, this still comes down to the willingness from project managers to let people participate and let them make decisions. This is an issue not just in digital participation but has also been widely described in academic literature on traditional participation.

Digital participation tools do have characteristics that separate them from traditional tools in a positive way, though. For example, in both the conducted interviews it was said that digital

participation is an effective way to reach different kinds of groups that normally are not expected to engage in citizen participation. It can be an efficient way to gather more input with a relative low cost and effort such as in *Kanaalstraat / Damstraat*, but it could also cost a lot of capital and effort such as with the DPP of *Thomas à Kempisplantsoen*. Apart from reaching different kinds of groups, it also allows for different kinds of instrumental knowledge to be generated. For example, the elaborate and complex nature of the PPGIS map used in *Utrecht Elektrisch* allowed for participation in a project where it would be impossible to do so with traditional participation methods. It was generally agreed upon by the interviewees that digital participation can reach more and different kinds of people and collect more data than traditional participation, but the in-depth nature of traditional participation methods like neighbourhood meetings where face-to-face discussion between project managers, citizens and other stakeholders can take place is not translated to digital participation well. The respondent from *Thomas à Kempisplantsoen* argues that part of this issue can be alleviated by holding meetings in digital conference rooms with software like *Zoom*, *Skype* or *Teams*, but traditional participation meetings still provide a valuable niche for true in-person interaction. The issue can be compared to the difference in scientific methods between qualitative and quantitative data: do you want to collect a lot of data (digital is more suited) or do you want to collect complex in-depth data (traditional methods are more suited)? The answer to this question is also similar between the two subjects: it depends on what you want to do/research and what the aims and goals of the project/study are. Both respondents agree that if the goal is to reach as many people as possible, a combination of traditional methods and digital tools is advised.

This research aimed to find the added value of digital participation tools, in both the planning support systems (PSS) and non-planning specific systems categories. Finding this added value could potentially solve the implementation gap that is suggested in PSS literature (Geertman, 2017): although there are many digital tools available to support urban planning practices, not many of them are employed in practice. There are a multitude of reasons for this, but the most important one is that there is too little added value for these digital tools to even be considered. This research found that, if implemented the right way and when carefully considering the aims and tools needed to reach this aim, the added value of digital tools (PSS and non-planning specific) can be found in its potential to improve participation in urban planning projects. However, because traditional and digital methods have different pros and cons, digital methods will likely not fully replace traditional participation methods unless serious technological advances are made that can solve the problems of digital participation tools (reaching different audiences, no personal face-to-face in-depth interaction between government and citizens, and the dependency on willingness from project managers to include citizens and give them decision making power).

Overall, the results of this research were unsurprising yet important. Several advantages and disadvantages were already identified in employing digital participation tools in urban planning projects, such as reading wider but different audiences (Fredericks & Foth, 2013; Lin & Geertman, 2019; Afzalan & Muller (2014); Brandtzaeg et al., 2011). Based on all the literature that was examined in the literature review and the conceptual model that was created, the expectation was that the added value of digital tools in urban planning projects can be found when employing them to support participation. This research confirmed this hypothesis, but the drawbacks and problems mentioned in this discussion should carefully be considered. Perhaps one surprising finding is that traditional participation methods still carry an important value, such that it seems that the most effective participation implements both traditional *and* digital methods. The importance of this research is that it matches the theoretical potential of digital methods with empirical data that confirms the theory that digital methods can be a valuable tool in participatory urban planning projects.

6. Conclusion

Lastly, to conclude the research, the main research question posed in the introduction of this thesis should be answered:

“What is the added value of digital participation tools in participatory urban planning projects?”

This question is not easily answered and depends on many different factors, such as what type of digital tools are used, what the participation type is, what knowledge is being sought, and what the context of the urban planning project and the involved parties are. A clear added value is that more and different kinds of groups of citizens can be reached, thus increasing citizen participation. Another clear added value is that digital participation allows for different kinds of participation like DPP and PPGIS-platforms which enables different kinds of knowledge to be created, or knowledge to be created and shared publicly and available for everyone. The clearest added value came forward because of the CoViD-19 pandemic: it allows for participation where it would have been physically impossible were it not for digital tools to exist. However, the amount of participation that individual citizens can engage in and the amount of decisive power that citizens hold is still heavily dependent on the willingness of governmental bodies to allow citizens to participate. In The Netherlands, the new Environmental Act in 2022 might boost this willingness and cement it in the legal context of urban planning.

In short: digital participation tools allow for different kinds of participation that reaches different (and possibly more) groups of citizens and it allows for different kinds of knowledge to be generated. This could potentially increase citizen participation in both the amount of people involved and how involved and engaged individual citizens are and elevate them on the ladder of participation. This potential is constrained by the willingness from project managers to employ digital tools, to invite citizens to participate and allow them to have decisive power. Traditional and digital participation methods both serve their own niches and can both be a valuable planning tool. Which of these methods should be used should be evaluated per urban planning project.

6.1 Reflection and further research suggestions

This thesis studies three different urban planning cases that have a wide variety of characteristics. In order to minimize this issue, all cases have been categorized in the comparative analysis on the basis of elements established in the literature review and conceptual model. The thought process was that even though the cases have such a wide diversity of characteristics that need to be explored using different kinds of methods, eventually elements on which the cases can be compared will emerge and those elements can be analysed in order to answer the research question and determine the added value. The result of this approach was that it was difficult to compare the cases on the basis of different kinds of data that was collected using different methods. Although the research did not fail because of this issue, its scope was not fully realized. The lesson learned for the future is that it will be more effective to compare cases that employ similar kinds of digital participation tools with similar participation types. Another limitation of the study is that it proved to be difficult to find willing respondents to be interviewed, resulting in only two total interviews with one of the cases not having the qualitative data from interviews available for analysis. This was an upside of the mixed methods study because data had been collected in different ways the analysis could still take place. For the PPGIS-analysis specifically, the municipality was unwilling to share the raw data behind the map. The consequence of this was that the data had to be manually collected and categorized so only a small random selection of cases could be analysed, as it would have been too time-consuming to manually collect all the data. Whether there was a positive or negative response to the charging stations in the

PPGIS-map had to be insinuated by the municipal response, as the comments by citizens were also not publicly available.

There are many different subjects that came forward in this study that require more research to be fully understood. For example, the three participation types were not as clearly divided as was first thought. It would be interesting to explore the participation type spectrum that was shown in the comparative analysis in order to understand more of the cross-over between participation types. A qualitative study that categorizes many different digital participation urban planning projects would be helpful in creating a more thought-out categorization with each category consisting of clear diverse elements. Although much has been written about this in traditional participation, digital participation is a relatively new field where this categorization would be helpful to move it forward. For The Netherlands specifically, it would be desirable to study whether the Environmental Act of 2022 will stimulate proper involved citizen participation or whether it will result in participation for the sake of participation, as was a criticism of the respondent of *Redeveloping Thomas à Kempisplantsoen* and alluded to in the expert interview from *Redesigning Kanaalstraat / Damstraat*. Another interesting avenue for research is whether the inclusion of industry or market third parties have the potential to improve (digital) participation effectiveness; this seems to be the case in *Redeveloping Thomas à Kempisplantsoen*, but there is insufficient data to draw a conclusion on this. In order to answer this question, extensive analysis on multiple cases that have an involved industry third party needs to be done and compared to cases that do not have an involved industry third party.

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